Response to Submissions on Draft PER

Chalumbin Wind Farm

Prepared for:
Chalumbin Wind Farm Pty Ltd

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Prepared for:
Chalumbin Wind Farm Pty Ltd

Prepared by:
Attexo Group Pty Ltd
attexo.com.au
ABN 75 637 138 008

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1.0 Introduction

1.1 Overview of Proposed Action

The Chalumbin Wind Farm (CWF) (the Project) is being assessed by the Commonwealth Government's Department of Climate Change, Energy, the Environment and Water (DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). The EPBC Act reference for the Project is EPBC 2021/8983.

The objective of the proposed action is to construct and operate a renewable energy facility of approximately 602 MW nameplate generation capacity to efficiently supply renewable electricity to the National Electricity Market (NEM). Queensland reached 20 % renewable energy supply at the end of 2020, and the Queensland Government has a target of 70 % renewable energy by 2032 and 80% by 2035, including an additional 25,000MW (or 25 gigawatts) of large-scale wind and solar. The proposed action will play a considerable and timely role in helping Australia work towards meeting international agreements including the Paris Climate Accord and the Glasgow Climate Pact, to help achieve reductions in future greenhouse gas emissions and to lessen the impact of climate change. The Project is located within the Northern Queensland Renewable Energy Zone (QREZ), one of three such zones that have been identified by the Queensland Government and the Australian Electricity Market Operator (AEMO) that will be developed in a coordinated way to deliver a diverse mix of cleaner, cheaper and reliable energy generation. The Northern QREZ is considered to have some of the best untapped wind resource in the country.

Key Project components will include:

- 86 wind turbines, including foundations, blade laydown areas, hardstands and firebreaks;
- New Powerlink connection substations (one per Stage) to connect to the existing 275 kV line and an adjacent battery energy storage system (BESS) and synchronous plant for grid stability;
- Two wind farm collector substations, to electrically connect the two Stages if required;
- Medium voltage overhead and underground powerlines, predominantly aligned with the wind farm access roads;
- High voltage overhead powerline as part of Stage 2, to connect the collector substations to the Powerlink switchyard and into the wider grid;
- Up to 5 permanent wind monitoring masts;
- Approximately 122 km of unsealed access roads of varying width, depending on the earthworks required at each location. Areas disturbed for road construction outside of the 5.5 m operational track width will be rehabilitated following construction;
- Temporary concrete batching plants, temporary construction compounds and laydown / stockpile areas, and temporary site offices; and
- A permanent site entrance on Wooroora Road and permanent site office, with an alternative site entrance being investigated from Innot Hot Springs.

Due to global supply constraints and significant increases in the cost per installed megawatt, the Project is likely to be staged with development (Stage 1) of the Wooroora property first (including 52 wind turbine generators (WTGs), switching station and supporting infrastructure) followed by development (Stage 2) of the Glen Gordon property (including 34 WTGs, switching station and supporting infrastructure). A final investment decision (FID) for Stage 1 (circa A$1B) is anticipated in H2 2023 with construction to commence as soon as approval under the EPBC Act has been obtained, once pre-construction approval conditions are met, and outside of the peak wet season months of

January to March. A FID for Stage 2 is expected in 2024. Construction personnel of approximately 250 to 350 staff employed during the peak construction period are proposed to stay in local accommodation, most likely at Ravenshoe, Millstream or Innot Hot Springs.

However, Ark Energy is currently investigating the feasibility of an alternative accommodation option close to the Project area following feedback from Tablelands Regional Council, local residents and other stakeholders on the stressed accommodation market in the broader region and the potential to further reduce construction related impacts on nearby residents. Any accommodation facility would be temporary (during the construction period), subject to its own approvals and would be located in such a way that it does not have a significant impact on Matters of National Environmental Significance.

The operational life of the wind farm is expected to be 30 years. Approximately 15 to 30 full-time jobs will be generated during operation, typically 10 to 20 technicians along with a Project Manager, administration and other support roles. This will include environmental roles on an as-needed basis to assist in operational monitoring.

At the end of the initial operations phase, infrastructure may be repowered with new equipment for a further 30-year operating life, or decommissioned, with the site rehabilitated to facilitate continuation of the current land use (agriculture) or an alternative land use. If decommissioned, most above-ground infrastructure apart from roads (which are left to benefit the landholders) will be removed (e.g., all turbines, transmission lines, etc.) with concrete foundations buried in-situ. The land will then be rehabilitated in line with development approval conditions and specific landowner agreements. Some infrastructure may remain in-situ depending on landowner preferences.

1.2 Assessment Process and Publication of Draft Public Environment Report

On 12 August 2021, the Commonwealth Minister for the Environment (the Minister) determined the Project to be a 'controlled action' under the EPBC Act requiring assessment by Public Environment Report (PER). The following matters of national environmental significance (MNES) are controlling provisions, and were assessed in the PER:

- World Heritage properties (sections 12 and 15A);
- National Heritage places (sections 15B and 15C);
- Listed threatened species and communities (sections 18 and 18A); and
- Listed migratory species (sections 20 and 20A).

On 13 December 2021, the Minister issued the PER Guidelines set out the information requirements for the PER to address.

On 7 November 2022, DCCEEW considered the Draft PER to have adequately addressed the PER Guidelines and directed the proponent to publish the Draft PER for a minimum of 30 business days. Due to an administrative oversight with the original direction to publish, a second notice period was effected under 6 December 2022. The Draft PER was consequently available for public comment from 7 November 2022 to 9 January 2023.

DCCEEW has confirmed that all submissions received between Monday 7 November 2022 and 9 January 2023 are valid and must be considered in the finalisation of the PER.

Details of the public display of the Draft PER are provided in **Table 1.1**.

Table 1.1 Written notice of public display of Draft PER

Type of advertisement	Details
Statutory advertising as required and approved by DCCEEW	Notices were issued in State and Regional newspapers: • Courier Mail • Cairns Post • Ark Energy website live from 7 November 2022 Hard copies of the Draft PER (and original referral) were displayed at the following locations at the commencement of the exhibition period: • Ravenshoe Library (public reading area), 24 Moore St, Ravenshoe, QLD 4888 • Tablelands Regional Council (Front reception), 45 Mabel Street, Atherton, QLD 4883 • State Library of Queensland (John Oxley Library – Level 4), Stanley Place, South Brisbane, QLD 4101
Chalumbin Wind Farm Website	The Ark Energy website – Chalumbin Wind Farm project page was updated to advise the commencement of the public notification period and inviting stakeholders to provide comment on the Draft PER. The website update also informed the public about the community information sessions held in Ravenshoe on 29 and 30 November 2022.

1.3 Purpose of this Report

This report has been prepared for Chalumbin Wind Farm Pty Ltd in accordance with Section 99 of the EPBC Act, requiring the finalisation of the Public Environment Report (PER) to:

a. Take account of any comments received within the period for comment; and

b. Contain a summary of any such comments and how those comments have been addressed.

All comments received during the exhibition period were reviewed and are considered in this report. This report provides a summary of all public comments received at **Appendix A**. The report outlines the proponent's response to all comments and identifies where changes have been made in the PER. The public comments (i.e. all submissions in their entirety) have been submitted to DCCEEW for consideration as per the EPBC Act.

Submissions included personal information for the purpose of contacting the submitters about their submission where necessary. Personal information provided was managed in accordance with the *Information Privacy Act 2009* (Qld) and was not disclosed to anyone without the commentor's consent, unless as required and/or authorised by law.

2.0 Summary of Submissions

A total of 783 submissions on the draft PER were received from individuals, organisations, networks and local government between 7 November 2022 and 9 January 2023. Submissions were received via email and post. All submissions containing personal information have been dealt with in accordance with the *Information Privacy Act 2009* (Qld).

Of the 783 submissions:

- 432 were prepared by networks (Friends of Chalumbin the Cairns and Far North Environment Centre) and signed by individuals. These networks provided submission templates for individuals to sign and provide additional commentary on the Draft PER;
- 292 were received via an online campaign (the "do-gooder" website) and are each considered as an individual submission; and
- 59 were received from individuals, organisations, government owned corporations and local government through a medium other than a proforma submission or via an online campaign website.

All submissions were read by the Project team and considered on their merits. A summary of the issues raised is found in **Section 3.3** of this report. Many submissions raised matters already addressed in the PER; however, in some cases, submissions noted areas of the PER which could benefit from increased clarity, additional context or information. Where appropriate, the Final PER has been updated in response to these submissions.

All submissions received were read, categorised and a response provided to every matter, as set out in **Appendix A**. In accordance with section 99 of the EPBC Act, the PER has been finalised considering all 783 submissions made.

3.0 Analysis of Submissions

3.1 Methodology

A standardised approach was applied to analyse all issues raised in submissions on the Draft PER. Once received, each submission was assigned a unique submission number and each individual issue raised within the submission was extracted and assigned a unique issue number. Each issue was also allocated a broad topic/category descriptor for ease of filtering and response.

There were 2,135 issues captured across the 783 submissions.

The process of reviewing submissions on the Draft PER was as follows:

- Each issue raised in a submission was captured as a separate item for response (see *Submitter issue* column in the table at **Appendix A**) and allocated a broad topic/category related to the issue. This assisted with the response process. If the submission provided a recommendation, this was also captured. This ensured that all issues raised were provided a response.
- Each issue was considered on its merits, and analysed to determine if the issue had previously been addressed in the Draft PER, or if a change to the PER was required. Changes to the PER were warranted if they met one or more of the criteria described in **Section 3.2**. If an amendment was made to the PER in response to a submission, the section of the Final PER is referenced in the *Response to submitter* column in **Appendix A**.
- If it was determined that an amendment to the PER was not required, a specific response to the issue was provided in the *Response to submitter* column at **Appendix A**.

3.2 Criteria for PER amendment

Amendments/changes were made to the PER where a comment:

- Provided additional information that corrected inaccuracies or clarified unclear information contained in the Draft PER;
- Proposed strategies that are feasible and appropriate for the improvement of environmental outcomes in the context of the Project's design, construction, operation or decommissioning; and/or
- Identified further information and/or research that was required to adequately determine the impacts of the proposed action.

3.3 Issues Raised in Submissions

Each issue raised in a submission was assigned an overarching topic/category. Categories were created to reflect the sections of the PER (MNES and other topics). By itemising each issue and assigning categories, each issue raised by a submitter was responded to directly. The result of this process can be seen at **Appendix A**.

The following key issue categories were raised in submissions:

- Adequacy of the Draft PER in relation to the PER Guidelines;
- Alignment of the Project with broader Federal and State Government Policies and initiatives;

- Methodology applied for the field surveys and significant residual impact assessment for MNES;
- Potential impacts associated with noise emission and electromagnetic frequencies;
- Landscape and visual impacts attributable to the Project;
- Construction and operational impacts of the Project and the cumulative effects in the context of other wind farm projects in the region;
- Loss of habitat, survey effort and impacts from the introduction of weed and pest species contributing to the reduction of MNES species including koala, magnificent brood frog and red goshawk;
- Indirect impacts to the Wet Tropics Queensland World Heritage Area and its associated Outstanding Universal Values, including clearing of wet sclerophyll forest;
- Alternatives to the Project including: location, capacity, configuration and other energy generating technologies;
- Support for the Project and the objectives to assist with achieving Queensland's renewable energy targets;
- Reliability of proposed environmental offsets for delivering net benefit for MNES;
- Soil loss during construction, the appropriateness of erosion and sediment control measures, and potential impacts to waterways, the Great Barrier Reef and aquatic species;
- Emissions generated by the manufacturing of the Project materials, loss of carbon storage from vegetation clearing and the viability of the Project in comparison to other electricity generating alternatives;
- Success of rehabilitation of temporary construction areas and ongoing maintenance and responsibility of the rehabilitation program;
- Scope and effectiveness of consultation and engagement with local residents and other stakeholders;
- Effectiveness of consultation with Traditional Owners;
- Social and economic benefits of the Project, short and long term, and the outcomes for local and regional communities;
- Impacts of proposed transportation routes and construction activities on local communities; and
- Management of materials and the reuse and recycling of turbines at decommissioning.

3.4 Geographic analysis

Of the 783 submissions received, 380 submissions included locational information of the submitter (i.e. a postal address, suburb or postcode). Spatial analysis was undertaken using the postcodes provided to determine broad areas where the submitters were located.

For those with locational information, the majority of the submissions were received from people in Australia and within Queensland. Data shows that residents within the Tablelands Regional Council local government area were the highest percentage of submitters (based on the subset of 380 people which provided locality information). A summary of the analysis is provided in **Table 3.1**, with further detail included in **Figures 3-1** and **3-2**.

Table 3.1 Analysis of Submission

LOCATION	COUNT	PERCENTAGE OF TOTAL (380)
Country		
Queensland	346	91.0
Other Australian States	30	7.9
Outside of Australia	4	1.1
Queensland Federal Electorate (Top Three only)		
Kennedy	194	56.1
Leichhardt	69	19.9
Herbert	36	10.4
Queensland Local Government Area (Top Three only)		
Tablelands	152	40.4
Townsville	73	19.1
Cairns	55	14.4

Figure 3-1 – Submissions by Federal Electoral Division

Figure 3-2 – Submissions by LGA

4.0 Consideration of Submissions

4.1 Response to Issues Raised

Each submission received was considered through the process of responding to each individual issue raised. The results of this process are captured in **Appendix A**. Due to the volume of submissions received via the Friends of Chalumbin and Cairns and Far North Environment Centre template submission forms, the response to the issues raised in these submissions are also collated at **Appendix B** for ease of review.

4.2 Amendments to the PER

In response submissions, the following amendments have been made to the PER for consideration by DCCEEW:

- Typographical or administrative changes:
  - Plates 3-1 and 3-2 updated to address typographical error in the legend;
  - Various typographical or formatting errors amended within the document;
- Additional datasets:
  - Section 13.1 updated to include 2021 census data;
  - Results of additional surveys undertaken between the Draft PER and Final PER (e.g. red goshawk nesting surveys, Bird and Bat Utilisation Surveys, etc.);
- Further analysis or assessment:
  - Section 4.1.8 added on Geochemistry in response to the suggestion that the Project may introduce a risk of arsenic or other heavy metal contamination in the surrounding waterways;
  - Section 4.10.1 and Section 8.9.1 added on the Lake Eacham Rainbowfish;
- Updated management plans/strategies:
  - Appendix F – Preliminary Weed and Pest Management Plan updated to include consideration of Yellow Crazy Ants; and
  - Appendix O – Preliminary Offsets Strategy updated to include revised proposed Offset Management Areas and associated habitat quality scores.

The changes to the PER are considered to be relatively minor in nature, with the most significant relating to the revised Offset Management Areas and associated supporting documentation in Appendix O – Preliminary Offsets Strategy. The Project footprint remains the same (between the Draft PER and the Final PER), with some additional clarification included for management of impacts on MNES and to further outline construction and operational requirements.

Appendix A

Response to Submission Issues

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
1a	.001	Cumulative impacts	I am writing in respect of the Draft PER for the abovementioned project, which has left the crucial turning issue of cumulative impact inadequately addressed. The guidelines for the PER require the proponent to comprehensively identify and address cumulative impacts of this development in Section 5.0. The PER glosses over the enormous implications of the cumulative impacts that this project and others that would encase Ravenshoe with in a completely industrialised landscape on a scale hitherto unseen in Australia. Impacts on biodiversity would be catastrophic and regional species extinction inevitable if allowed to proceed. The cumulative impacts of clearing 1,031ha of habitat, on top of clearing already undertaken for the adjacent Kaban wind infrastructure would be significant for any endangered species but for the Red Goshawk it would be severe and regional extinction would be a real possibility. A nest was found on the site (Page 93 of MNES Report) which then almost immediately disappeared.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. There is insufficient publicly available information on the potential impacts from other windfarm projects on the red goshawk, nor indeed any other species, for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
1a	.002	Cumulative impacts	The impact of the proposed transmission line connecting the proposed High Road Wind Farm to the 275kV transmission line through the Bluff State Forest is another local unaddressed impact, which, when added to the impacts of existing and proposed wind infrastructure on Brolgas and Sarus Cranes (for which the Atherton Tablelands KBA was created), would lead to a level of regional cumulative impact of catastrophic proportions. It is understood that it is intended that the Chalumbin Wind Farm be developed in two Stages. Stage One can utilise existing transmission availability, whereas Stage Two will require upgrades to the line, most likely a new parallel transmission line next to the present one, requiring more vegetation clearing, not included in the cumulative impact of the project. Moreover, the proponent uses the AEMO REZ expansion guide for planning, whereas the latest ten-year energy plan announced by the State government does not include transmission upgrades north of Ross.		No	A transmission connection for the High Road Wind Farm is not currently determined and therefore cannot be included in the cumulative impact assessment presented in Section 5.5 of the PER. At present, the proponent has been advised by Powerlink Queensland that there is sufficient capacity within the existing transmission network that runs through the Project area to connect the full nameplate generation capacity of both Stage 1 and Stage 2 of the Chalumbin Wind Farm. Section 5.6.1 of the PER describes the future upgrade of the National Electricity Grid in this region, which will likely take place with or without the Chalumbin Wind Farm being constructed.
1b	.001	Koala	Section 8.6.3 of the Draft PER indicates an inadequate survey effort conducted to find and map Koalas, which have been found on adjacent properties at Yourka Reserve, Kaban, Ravenshoe and Tumoulin and which are locally believed to exist on the subject site.	Latest technology such as thermal imagery drones should be used to identify koala density and populations. For this project to proceed without conducting baseline surveys of the proposed site and environs, using latest technology is completely inappropriate. The western edge of the Wet Tropics World Heritage Area is identified as a key movement corridor for Koalas, so loss of feeding habitat, fragmentation, altered fire regimes and weed incursions would significantly affect the species.	No	Thermal drones are a relatively new method for koalas and is suited for detecting the species at low densities whilst spotlighting along a walked or driven transect is a well-used method to obtain estimates of nocturnal arboreal mammal, including koala, incidence and abundance in wooded habitats. Like all survey techniques, there are limitations in this case, that affect detection rate. Limitations to thermal drone surveys include the requirement of specialised equipment, training and experience that was not accessible at the time surveys were undertaken. In addition, terrain, temperature, wind speed, canopy cover and height of the koala in a tree can affect the detectability of koalas by thermal drones and pilot experience, drone speed and height, and the use of manual versus automated processing of imagery can influence the rate of false detections (that is, thermal signatures from other sources that are incorrectly identified as koalas) and duplicate detections (that is, the same koala detected twice due to overlapping images from adjacent transect lines. Where an unknown detection by drones is apparent, this would need to be verified in the field, which can be difficult logistically due to landscape structure and Project size. Limitations to spotlighting are acknowledged, so understanding the species' behaviour, life histories and ecology was taken as part of the desktop assessment prior to field surveys to improve the spotlighting methodology. Spotlighting surveys in the Project Area were undertaken in accordance with methods outlined in the Queensland Terrestrial Vertebrate Fauna Survey Guidelines (Eyre et al 2018) to target arboreal mammals, including koala. Spotlighting was undertaken for a total of 103 person hours, across repeated efforts in January 2021, March 2021 and June 2021 to capture seasonal variation, within the Wet Tropics (WET) and Einasleigh Uplands (EIU) bioregion recommended survey periods (Eyre et al. 2018). Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
2	.001	Alignment with government policy	To Ark Energy, In my view as an ecologist the Draft PER has inadequately addressed the counterproductive impact this project will have on Queensland's initiative to address carbon emissions. While the introduction of renewable energy is welcome as a mean to reduce carbon-producing energy generation (such via coal and gas), renewable energy initiatives should not be at the expense of existing carbon sinks. This is counterproductive.		No	Section 13.2 of the PER investigates the greenhouse gas emissions and savings attributable to the Project. This includes consideration of the loss of the carbon sink that is caused by the vegetation clearing associated with the Project (see Section 13.2.1.3 of the PER). Over the Project life, the removal of vegetation is predicted to reduce the available carbon sequestration potential by 65,605 t CO2-e. The full carbon lifecycle assessment for the Project is summarised in Table 13-20 within the PER, which determines that there is a net benefit of 16,968,595 t CO2-e across the assumed 30-year operational life of the Project. This is a ratio of 20:1 (savings to costs).
2	.002	Red goshawk	The PER does not address adequately the cumulative impacts that this project will have on biodiversity and species that occur within the project area and are at risk of extinction although the guidelines for the PER require the proponent to identify the cumulative impacts of this development in Section 5.0. I ask you to address these cumulative impacts accordingly. Here I just mention two impacts that need to be properly outlined and included in a decision on the future of this proposed project: 1. The cumulative impact on species such as the red goshawk is unknown. One would assume the species will see regional extinction, if not state-wide extinction considering their vast ranges. The proponent says in Table 5.5.2 that the Project will not result in residual impact. Clearing 1,031ha of habitat is significant for an endangered species.		No	As noted in Section 4.6.3, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. There is insufficient publicly available information on the potential impacts from other windfarm projects on the red goshawk for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
2	.003	Cumulative impacts	2. The proponent has not included the cumulative impact of the proposed transmission line connecting the proposed High Road Wind Farm to the 275kV transmission line through the Bluff State Forest. This will certainly affect the survival of the Magnificent Brood frog and will have impacts on nearby wet sclerophyll forests which have an enormous importance for many rainforests as well as savannah species, and have locally been reduced to small areas.		No	A transmission connection for the High Road Wind Farm is not currently determined and therefore cannot be included in the cumulative impact assessment presented in Section 5.5 of the PER.
2	.004	Transmission capacity	I would also like to ask you to provide more clarification about the different stages of this project. Are any upgrades of existing transmission lines required? Will there be new transmission lines? What is the impact on existing carbon storages (meaning clearing of native vegetation??). The cumulative impacts of these plans need to be addressed. As far as I know, the latest ten-year energy plan announced by the state government does not include transmission upgrades north of Ross.		No	The grid connection process under the National Electricity Rules requires each new generator (e.g. wind farm) to lodge a grid connection enquiry with Powerlink Queensland. Powerlink Queensland undertakes detailed modelling of generators with existing connections (e.g. Mt Emerald, Kaban etc.) and those that have lodged a grid connection enquiry (e.g. Chalumbin Wind Farm) then advises the new generator whether there is capacity in the network in order to proceed with a grid connection application under the national electricity rules. Powerlink Queensland has advised that there is currently sufficient capacity in the network to connect the Chalumbin Wind Farm, subject to the project complying with grid connection rules. Powerlink Queensland has also advised there is no requirement for additional augmentation of the existing network, in the form of transmission lines through the national park, to facilitate the project. A copy of Powerlink Queensland's 2022 Transmission Annual Planning Report can be found at the address below which does not foresee any requirement to augment the Ross to Woree transmission lines (via existing Chalumbin substation) through the national parks in the next 10 years https://www.powerlink.com.au/reports/transmission-annual-planning-report-2022). With respect to the carbon impacts of clearing native vegetation for the project, Section 13.2 of the PER investigates the greenhouse gas emissions and savings attributable to the Project. This includes consideration of the loss of the carbon sink that is caused by the vegetation clearing associated with the Project (see Section 13.2.1.3 of the PER). Over the Project life, the removal of vegetation is predicted to reduce the available carbon sequestration potential by 65,605 t CO2-e. The full carbon lifecycle assessment for the Project is summarised in Table 13-20 within the PER, which determines that there is a net benefit of 16,968,595 t CO2-e across the assumed 30-year operational life of the Project. This is a ratio of 20:1 (savings to costs).
3a	.001	Opposition to project	To whom it may concern, I am writing in response to the draft Public Environment Report for the proposed Chalumbin wind farm, Far North Queensland. I stand against the proposed Chalumbin wind farm because: I am very concerned about Chalumbin Wind going ahead. The FNQ landscapes of rolling hills and mountains is why I live here. For over 30 years I have considered that the natural assets need to be protected because land clearing has destroyed millions of hectares of biodiversity.		No	Section 5.3.9 of the PER addresses the Visual amenity aspects of the Project. A detailed Landscape and Visual Impact Assessment has been undertaken for the Project and is included as Appendix M to the PER. With respect to biodiversity, the PER identifies potential residual impacts of the Project to Matters of National Environmental Significance (MNES) after the avoidance, minimisation and mitigation measures are considered. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life).
3a	.002	Community consultation	It is against the public interest that we don't get a say in these proposals. I am distressed to see the massive wind turbines at Kaban. I didn't even know about this until recently as they started to become more prominent. I know the farmers that live nearby who have said if Chalumbin Wind Farm goes ahead, then we'll be surrounded by them. These wind turbines are so tall, that is all that the eyes focus on.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. As evidenced by this submission on the draft Public Environment Report, the Federal environmental assessment process involves public exhibition and provides members of the public with the opportunity to have a say in the proposal as part of the assessment process. In addition, the proponent has undertaken extensive consultation voluntarily and given members of the public many opportunities to have a say including through the voluntary establishment of a Community Advisory Group, a feedback form on the website, a local information centre and direct enquiries. The submitter's concerns associated with visual impacts are noted. The Project has included a comprehensive Landscape and Visual Impact Assessment as Appendix M to the PER. This assessment is prepared in accordance with recognised national and international guidelines and methodologies. This assessment also investigates the cumulative visual impacts of the Project in conjunction with the Kaban Green Energy Hub, the High Road Wind Farm and the Windy Hill Wind Farm. The assessment concludes that the potential landscape and visual impacts of the Project will be significant within the Project area and limited areas of the adjacent landscape. The assessment goes on to state that while there will be a significant change to the Project area's character due to the introduction of wind turbines into a rural and natural landscape, and significant impacts on some views towards the Project (typical for any wind farm development), the impacts are typically contained. It is also noted that people are likely to respond in different ways to the change, based on the subjective nature of landscape appreciation.
3a	.003	Project viability	My other concerns are that the wind energy is intermittent, unreliable and extremely damaging to the environment. Chalumbin Wind Farm, would be an unethical mistake that would be risky for investors.		No	The wind resource of the site has been measured over the course of multiple years in order to obtain a reliable understanding of the wind characteristics and potential yield of the Project. All aspects of the Project, including potential risks, are taken into consideration by potential investors. With respect to the Project's ethical performance, Section 14 of the PER describes how the Project advances the environmental, social and economic aspects of ecologically sustainable development (the object of the EPBC Act).

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
3a	.004	N/A to PER matters	These global driven profiteers are exploiting their host, us, and indigenous custodians who should be shown respect. Coming from the building industry to rezone land to Commercial or industrial had to go through environmental concerns and objections were taken very seriously then. Now these global corporations and private equity investors are having way to much influence on our government.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
3a	.005	Opposition to project	The Chalumbin Windfarm proposal threatens our regions vistas, threatens agriculture and the community are being treated like the indigenous people in third world countries. I urge the proponents to respect the community by leaving Chalumbin the way it is.		No	The submitter's concerns associated with visual impacts are noted. The Project has included a comprehensive Landscape and Visual Impact Assessment as Appendix M to the PER. This assessment is prepared in accordance with recognised national and international guidelines and methodologies. This assessment also investigates the cumulative visual impacts of the Project in conjunction with the Kaban Green Energy Hub, the High Road Wind Farm and the Windy Hill Wind Farm. The assessment concludes that the potential landscape and visual impacts of the Project will be significant within the Project area and limited areas of the adjacent landscape. The assessment goes on to state that while there will be a significant change to the Project area's character due to the introduction of wind turbines into a rural and natural landscape, and significant impacts on some views towards the Project (typical for any wind farm development), the impacts are typically contained. It is also noted that people are likely to respond in different ways to the change, based on the subjective nature of landscape appreciation. The ongoing agricultural (grazing) land use of the two host properties will be retained through the construction and operation of the Project.
4	.001	Koala	I am requesting a higher level of assessment for this project for these reasons: - In considering the likely impacts Koala habitat, I consider that there should be careful regard to the adequacy of the information submitted. - Koalas were found to have potential habitat within the Project Area, however no Koalas were found onsite by surveyors. - Koala survey methods have been insufficient. - Acumulative impacts will be loss of forest on mountain tops will lessen rainfall and lead to more droughts and flooding. This will have an enormous impact on the koala habitat and their future security should this proposal go ahead. - The PER does not address that Koalas would be impacted by the sounds of dynamite blasting, drilling, including the haulage trucks going backwards and forwards during development.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
5	.001	Opposition to project	I stand against the proposed Chalumbin wind farm because of where it will be situated. This area is a very special place, 'where the rainforest meets the open forest ' and is right beside a pristine world heritage area. This place has always been a sacred place to our local indigenous tribes, what a travesty it would be to desecrate this beautiful place.		No	The Project has been designed to ensure at least a 600m buffer between the WTQWHA and the closest infrastructure associated with the Project. Furthermore, the distance between the WTQWHA boundary and the nearest infrastructure is 600 m in one location only, in a few places 900 m and otherwise much more. This will protect the WTQWHA from edge effects that could potentially occur as a result of the Project. The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent.
6a	.001	Project viability	To Ark Energy, I wish to make comment on a statement in Section 14 (pg. 635) of this PER: "Key factors to determine the most prospective places within the Northern QREZ for renewable energy projects (and in this case, wind farm projects) include certainty of wind resource, ready access to the grid (i.e. high voltage transmission lines) and appropriate separation from dense settlements." Certainty of Wind Resource On investigating the Ravenshoe area (900m elevation) I went to an internet site called weatherspark.com to perform a site by site comparison of wind speeds in four locations in North Queensland – Ravenshoe, Cairns (on coast), Cooktown (on coast) and Hughenden (324m elevation). I have included a chart of the results for average wind speed comparison (Fig 1). This chart clearly shows that the area around Ravenshoe, despite its 900m elevation, has very poor wind reliability, with average wind speeds throughout the year of between 9.3 and 10.9 kph. If this evidence is accepted it shows that the proposed Chalumbin Wind Farm site would produce very unreliable quantities of electricity. The conclusion is that this site does not have certainty of wind resource!		No	The proponent has measured the wind resource throughout the Project area (through a combination of sodars and meteorological monitoring masts) over a number of years. The proponent has a comprehensive understanding of the wind resource characteristics of the Project area and the potential commerciality of the Project once it is operational. The Project would not be pursued if it were not commercially viable.
6a	.002	Project location	Access to the Grid The Queensland Government has designated a huge area of North Queensland as the Northern QREZ (Qld. Renewable Energy Zone). Listed as components of the QREZ are a) energy infrastructure, b) community benefits and c) industry demand. Refer Technical Discussion Paper (QREZ technical discussion paper (epw.qld.gov.au) pg. 5. There is no mention of biodiversity, threatened species or the general natural environment being taken into consideration as determinants of suitable locations for any renewable energy projects. So I maintain that the classification of the Northern QREZ fails to consider all impacts, especially environmental, in deciding where to locate renewable energy projects. This applies exactly in relation to the proposed Chalumbin Wind Farm – it is situated in entirely the wrong place.		No	The designation of the Northern QREZ is broad in nature and the general assumption on behalf of the Queensland Government is that renewable energy projects within this area will be sited and designed with consideration to environmental, economic and social imperatives. To this end, the Project has received a Development Permit under the Planning Act 2016 and is considered to be an appropriate land use outcome by the Queensland Government. The drivers supporting the development of the Project are described in Section 1.5 of the PER. A discussion of the alternatives to the Project is provided in Section 3.0 of the PER. Section 14.0 of the PER brings together the pertinent aspects of the assessment to conclude that the Project achieves a balance between the environmental, economic and social imperatives that define ecologically sustainable development and the object of the EPBC Act.
6a	.003	Transmission capacity	Which brings me to the point of existing transmission line capacity viz. "access to the grid". If we consider the cumulative impact of all the existing and proposed wind farm projects in our region – a total of 400 wind turbines from Mt. Emerald to the Burdekin. (Windy Hill – 20 turbines, Mt. Emerald – 63 turbines, Kaban – 28 turbines, Chalumbin – 86 turbines, High Road – 20 turbines, Mt. Fox – 57 turbines, upper Burdekin – 136 turbines) Can the existing 275Kv line from Ross to Chalumbin handle this extra capacity? If not what is proposed and what does this mean for more clearing and environmental degradation? I refer to section 5.6.1 (pg. 287) of the PER where Ark Energy lists in Plate 5-1 all the "augmentations" required to satisfy future transmission capacity in the Northern QREZ. Therefore I can conclude that "access to the grid" at this stage can not be accommodated.		No	The grid connection process under the National Electricity Rules requires each new generator (e.g. wind farm) to lodge a grid connection enquiry with Powerlink Queensland. Powerlink Queensland undertakes detailed modelling of generators with existing connections (e.g. Mt Emerald, Kaban etc.) and those that have lodged a grid connection enquiry (e.g. Chalumbin Wind Farm) then advises the new generator whether there is capacity in the network in order to proceed with a grid connection application under the national electricity rules. Powerlink Queensland has advised that there is currently sufficient capacity in the network to connect the Chalumbin Wind Farm, subject to the project complying with grid connection rules. Powerlink Queensland has also advised there is no requirement for additional augmentation of the existing network, in the form of transmission lines through the national park, to facilitate the project. A copy of Powerlink Queensland's 2022 Transmission Annual Planning Report can be found at the address below which does not foresee any requirement to augment the Ross to Woree transmission lines (via existing Chalumbin substation) through the national parks in the next 10 years. https://www.powerlink.com.au/reports/transmission-annual-planning-report-2022).
6a	.004	Project location	Separation from Dense Settlements If construction of wind farms, and Chalumbin in this particular case, was dependent on low population density then it would have to be sited way out in western areas. This area of Northern Queensland, the Evelyn Tableland, is a high elevation region of tremendous ecological significance. It is host to the Wet Tropics World Heritage Area as well as the Yourka Nature Refuge. The main watercourse is the Herbert River which drains into the Coral Sea at Ingham and hence can impact on the Great Barrier Reef. All Australian Governments of either political persuasion have committed to preserving its unique values. Historically it has a rural industry economic base – agriculture and mining. In recent years more people have migrated to the area for lifestyle reasons – high, cool elevation in the tropics, plenty of bushland and wild spaces, in short, an area of northern Queensland to cherish and protect. Regardless of population numbers, any destruction of the natural environment (viz. Chalumbin Wind Farm) can not be justified because it will only impact on less "dense settlements". It is because of less "dense" communities that the protection and preservation of this unique part of Australia has so far been accomplished. I therefore submit that this is exactly the reason why such industrial, large scale wind farm developments can not be allowed to proceed. Summary The so called "key factors" of a) certainty of wind resource, b) access to the grid and c) separation from dense settlement are all called into question in this submission to the PER document. In fact not one of the 'key factors" can stand up to critical scrutiny. The wind resource is a chimera, the access to the grid is not guaranteed in its present configuration and separation from dense settlement is just the reason not to undermine the environmental integrity of this area with industrial, large scale wind farms.		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
7	.001	Project viability	Clean Energy for a better tomorrow – you very well know that this headline is misleading! What is clean energy anyway?! What are the energy costs to produce a windmill vs their output? I have not seen that addressed anywhere in the Draft PER. The EPBC Act 1999 states: 3A Principles of ecologically sustainable development The following principles are principles of ecologically sustainable development: (a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations; This principle will not be maintained. Life span of a wind turbine is less than 25 years on a good run. Furthermore according to section 24E (1) b of EPBC Act 1999 installation of a wind farm (i) results or will result in a significant impact on a water resource; or (ii) is likely to have a significant impact on a water resource. Professor Ian Plimer - A prominent Australian Geologist, a former professor of Mining Geology at the University of Adelaide, and Emeritus Professor of Earth Sciences at the University of Melbourne discussed real science behind climate change in a recent video (https://rumble.com/v1o1pq2-professor-ian-plimer-renowned-australian-geologist-discussesreal-science-b.html) Below is a transcript at about 28 minutes into the video: "To make wind and solar generators we actually use more energy to make them then they ever produce in their working life and we omit more carbon dioxide in making and maintaining them than they ever emit. It's a process, which is bonkers.		No	Section 13.2 of the PER investigates the greenhouse gas emissions and savings attributable to the Project. This includes consideration of (a) energy expended in the production of materials (i.e. embodied energy), (b) fuel consumed through the transportation of materials to site, and (c) the loss of the carbon sequestration potential that is caused by the vegetation clearing associated with the Project. The full carbon lifecycle assessment for the Project is summarised in Table 13-20 within the PER, which determines that there is a net benefit of 16,968,595 t CO2-e across the assumed 30-year operational life of the Project. This is a ratio of 20:1 (savings to costs).
7	.002	Fauna mortality turbines	To make it worse: Wind turbines destroy about 25ha per turbine. … We slice and dice birds and bats.		No	Each WTG hardstand area is designed to be approximately 1.5 to 2ha in size. If the construction Project footprint (1,071ha) is divided by the number of WTGs associated with the Project (86), the average disturbance per WTG equates to 12.45ha. This is largely owing to the length of Project access tracks. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
7	.003	Contamination	40% of the epoxy that is used in the laminated blades is made of a chemical called Bisphenol A. Bisphenol A is extraordinarily toxic. It's banned in many countries in the world. We cannot recycle those turbine blades. We lose about 2.5g of Bisphenol A every year from a blade. We only need 1g of Bisphenol A and we have destroyed 10 million liters of water. Over the life of a turbine blade, we destroyed half a trillion liters of water by contaminating it with this high toxin. We cannot recycle these blades. No third world country any longer will take them. We cut them up, put them in soils and substance Bisphenol A leaks out into the soils and waterways." We cannot be supporting wind farms on environmental grounds!		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
8	.001	Contamination	Dear Ark Energy, I'm grateful for being made aware of this Wind Farm project and for your Draft PER, because my indebt research has shown me how detrimental - on all levels - wind generated energy actually is. In the past, I have welcomed a wind farm and looked at it as 'Good Green Energy' BUT unfortunately IT IS actually NOT. When looked at it in detail no wind farm should have ever been erected, because they don't comply with the Environment Protection and Biodiversity Conservation Act 1999. • Wind farms will always have a significant impact on a water resource (toxic compounds, i.e. Bisphenol A leaking from the blades will sooner or later always leak into the soil and find its way into polluting our (everyone's) water) EPBC 1999 24E Offences relating to water resources (1) A constitutional corporation, or a Commonwealth agency that does not enjoy the immunities of the Commonwealth, commits an offence if: (b) the action: (i) results or will result in a significant impact on a water resource; or • Wind farms will always be in violation of Section 3A Principles of ecologically sustainable development (25 years of operation is not considered long---term) The following principles are principles of ecologically sustainable development: (a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
8	.002	MNES	• Very likely there will always will be vulnerable, endangered critically endangered migratory species and endangered communities affected.		No	Your submission has been noted. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species. Where these are unavoidable a full impact assessment has been carried out and is outlined in Section 5.0 of the PER, this assessment take into consideration the current conservation advice provide by DCCEEW and has be used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna and flora. When these are unavoidable significant offsets are to be provided to mitigate these impacts.
8	.003	Opposition to project	These are just 3 of my humble findings browsing through the Environment Protection and Biodiversity Conservation Act 1999. Have you had a look at the Criminal Code Act 1899, section 245 Definition of Assault? (2)In this section— applies force includes the case of applying heat, light, electrical force, gas, odour, or any other substance or thing whatever if applied in such a degree as to cause injury or personal discomfort. Will you be able to comply with the above? I'm utterly annoyed that you wasting my time and the time of many more people and have the audacity to make such a proposal, as it appears to me that you haven't even looked at Environment Protection and Biodiversity Conservation Act 1999 or at the many other thousands of Act all corporation have to comply with --- as one in your position would expect. All wind farms will have to stop now and please will you find something else to make money with!		No	Section 10.0 of the PER sets out the relevant legislation for the Project. Section 245 of the Criminal Code Act 1899 (Qld) is not relevant to the approval processes under the EPBC Act.
9	.001	Biodiversity general	To Ark Energy I, Robert GoSam, of Jirrbal descendance in Ravenshoe, wish to make my concerns over the proposed development of the Chalumbin Wind Farm. I am currently employed as a Land Protection Officer and my duties include eradication and control of various weed species in and around this area. The proposed wind farm location is in an environmentally sensitive area that is not only a wildlife corridor for the movement of species between the tropics and the western higher altitude areas but is also surrounded by Wet Tropics Area and National Park. I also believe that the construction of the wind farm will disturb the endemic flora and fauna specific to the bio-region.		No	Your submission has been noted. The location of the project has been selected and refined to avoid areas of highest quality habitat and refuge for listed species. Where these are unavoidable a full impact assessment has been carried out and is outlined in Section 5.0 of the PER. This assessment takes into consideration current conservation advice and other relevant documentation provided by DCCEEW, and has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna and flora. Where these are unavoidable, offsets are to be provided to mitigate these impacts.
9	.002	Weeds and pests	My concerns are that the classified weeds in that area, particularly Stevia Ovata and Siam, will be spread further by machinery. These weeds have already become a major problem due to the construction of the powerlines and roads, etc, in this environmentally valuable area in the past and control can be extremely difficult due to the access issues and difficult terrain. In some instances, control is impossible. I believe the movement of machinery will spread these weeds further and set us back in control efforts. (Appendix F)		No	The implementation and use of weed washdown facilities and the requirement of all vehicles and machinery to be certified weed free before commencing work on site (Weed Hygiene Declarations), alongside a range of additional measures aimed at mitigating the introduction of weeds to site is outlined in the "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan" located in Appendix E & F of the PER respectively. These plans will be further developed by CWF and/or the Contractor prior to works commencing on site.
9	.003	Indigenous Cultural Heritage / Engagement	Another concern is that the proposed development will affect the Stock Route and related cultural heritage values in the area. I am also concerned that the cultural history and stories of the killing grounds will be lost/damaged. (Appendix C)		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
9	.004	Social impacts	There is the situation to consider as well, of the possible unmoral (financial) royalty gains made by certain indigenous groups who do not have the best intentions for the natural and cultural protection for the area.		No	The proponent has followed prevailing law in Australia in relation to the agreement making under the Native Title Act 1993. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the Project proponent. This is the recognised process in Australia for dealing with Native Title.
10a	.001	Biodiversity general	Dear Sir, EPBC 2021/8983 I am writing to inform you that I do not give my permission or consent, for your Company, or for any other group of people, to proceed with your proposed building of any windmills in the Chalumbin area. This area is a high altitude, wet and dry sclerophyll forest which borders world heritage and wet tropics land. It is a precious natural resource to be kept for future generations and we should not destroy it just because there is a power line running near by. Build the windmills by all means but not right there. I believe that not only will vegetation and animal and insect life suffer catastrophically, but that area carries extreme emotional memories for the local Indigenous people, many of whom lost their lives in that area during early settlement of this area. Recently a small area on the other side of Ravenshoe was made into a National Park due to the hard work of volunteers working to save the Yellow Bellied Glider. To the best of my knowledge there are 13 of those individuals in that area. According to Govt. statistics there are 4001 in the Chalumbin area. This project must Not be allowed to proceed in this area. There is a massive list of vulnerable creatures who will be negatively and probably catastrophically affected by this project Just in case you have forgotten these individuals include Lumholtz Tree Kangaroo, Swamp Rat, Yellow Bellied Glider, Musky Rat Kangaroo, Spotted Tail Quoll, White Footed Dunnart, Brush Tail Bettong, Prehensile Tail Rat, not to mention all bats who will be affected by barotrauma .		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
10a	.002	Project location	As an Australian citizen and a long term resident of this beautiful Ravenshoe District I ask the Government to Please have these windmills moved away from the Chalumbin area. I cannot believe that somewhere nearby there is not already cleared land that will be windy enough and suitable for the windmills to be installed Each year irreplaceable little pockets of Australia are whittled away, destroyed for this or that project which must go ahead. Please do not let this happen in this case. Every day we hear of another species even Koalas that are becoming affected and dwindling in various areas of Australia. We have a few precious koalas here in our district . Every now and then there is a sighting usually in the Millstream National Park or in one of the quieter areas What a joy that they are still here.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. Despite koalas not being found within the Project area during the survey effort, the Project is committed to ensuring that a net positive outcome for the species is achieved through avoidance, minimisation and mitigation measures, as well as a comprehensive environmental offsets program that will seek to improve the value and utility of the koala habitat within the Project area. The project area does not involve or impact the area of wilderness known locally as Chalumbin or Chalumbin Hill. It is within two cattle grazing properties, Wooroora Station and Glen Gordon Station.
10a	.003	Project location	Please keep little pockets of healthy native land untouched. I live in Ravenshoe township and I already have two wind farms in my direct environment. These are the Windy Hill and Tumoulin sites We do not need a third one in this tiny area. You wish to build 84 windmills , totally destroying the area (regardless what you say about restoration) Build your 84 Windmills in in area that is already cleared and leave Chalumbin pristine.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act. The project area does not involve or impact the area of wilderness known locally as Chalumbin or Chalumbin Hill. It is within two cattle grazing properties, Wooroora Station and Glen Gordon Station.
11	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: it's already impacting my life, my family, my friends everywhere and the community, just the thought and the angst of what is possible with the thought of devastation is already dividing the community. The tourists that are coming from near and far are signing petitions to STOP CHALUMBIN WIND FARM. There's my favourite drive that I and many locals share and have been doing for many years, was my Mum's favourite place, she was 97 when she passed - we celebrate still her birthday, etc. (so much more), and as an artist, painting one of my favourite paintings and prints are of the Woodleigh waterlillies and photographing the journey with so much nature to observe, also my daughter made a movie here to the beautiful music and words of Don Mclean's 'Starry Starry Night, paint your palette blue and grey (the Australian version about Vincent van Gough). This short film, straight from the heart, was very special and to everyone viewing it. Only, a month ago -it was my birthday I took my friend we packed a picnic an indigenous lady from Ingham who had never been on this drive. She blessed and thanked past and present nation's people for us being on these beautiful stations now owned by developers (how can they own this land?) we shared the beauty of a goanna, a taipan, river lizards and turtles on Blunder Creek which is under threat, the bird life was amazing, the orchids on the beautiful eucalypts, the black cockatoos letting us know they were there, so much more. We were sorry to see at the beginning of this journey driving a public road into Wooroora Station (I believe), all the area that had been cleared already with many high voltage power lines from electrical towers going up the hill I guess on the way to serve the Chalumbin Windfarm. At the other end of our journey through Glen Gordon then onto Woodleigh dam, where permission was sort many years ago to paint with our art group (Tafe Diploma Visual Arts Course) plein air painting, the black swans and ducks, the waterlilies, the old dead trees and trunks that housed so much birdlife, the Sarus cranes (where they were counted), Jacanas commonly known as Jesus birds that walk on the lilly pads, the pelicans, the Herons, galahs etc. etc. my friend just teared up at the beauty. It was the best birthday present ever, being in Nature. What is to happen here? The Herbert river flows nearby which I guess feeds the toxic cotton fields, which then flows all the way down to the Great Barrier Reef and Ingham where my friend has grown up. My friend has let all her indigenous friends from the Tully/Ingham region know, re Chalumbin windfarm they are devastated. Please, please, how can you allow this to happen? Nature owns all of it.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. A landscape and visual impact assessment (LVIA) was prepared as part of the development application in accordance with the Planning Act 2016 - State Code 23. The LVIA illustrates and proposed rehabilitation and the site as it is restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
12	.001	Emissions	To whom it may concern, The Chalumbin wind farm should not be approved because these monsters are extremely detrimental to the environment . Not only do they require an enormous amount of CO2 to mine , manufacture , ship , transport , erect , maintain , demolish and dispose of , (the latter has not even been resolved yet) , this has been estimated by Geoff Gibbs and Michael Moore at as much as 23,900 times more CO2 than emitted by a coal-fired power plant .to create the same amount of KWHs , but it has been proven they leach into the water table Iso-cyanates from the epoxy , but even worse , Bisphenol A from the polyurethane , which at 1 Kg per 10 Billion Litres renders the water undrinkable by the USA EPA .		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
12	.002	Biodiversity general	Also , their EIS reognizes the impacts to theMaskedOwl , the Magnificent Brood Frog , The Spotted Tail Glider and others , but ignores transitory Bat flights through the area , and impacts on Apex predatory birds , Both of which are known to be massively affected .All of this is apart from the destruc tion of natural rain forest .to the extent of AT LEAST !,500 Ha , denuding the ridge lines which will be subject to extreme erosion .		No	Appendix Q (Bird Utilisation Survey report) and Appendix G (Preliminary Bird and Management Plan) address potential impacts on birds (including raptors) and bats.
13	.001	Emissions	Note submission has been summarized to extract key points requiring a response. The Chalumbin project will give emissions of 921 000 CO2e according to Ark Energy/ Epuron. That would make emissions of almost 11 000 tons of CO2e per turbine, given the proposed total of 86 x 7MW turbines. Each turbine will be more than TWICE the size & mass of the Mt Emerald turbines. We know roughly how much materials are used to make a 2MW turbine, 1688 tons (1). For a 7MW turbine, this will be approximately 5900 tons (using an approximate multiplication of 3.5x), including 4500 tons concrete, 1000 tons of steel, 170 tons of iron, 84 tons of fibreglass, 14 tons of copper, 1.5 tons of neodymium, and smaller amounts of dysprosium, boron etc. if you tally the carbon footprint of all those materials up, that will easily give around 10 000 - 11 000 tons of CO2e. So Ark Energy has not factored in any other emissions costs except the carbon footprint of the materials of the turbine. So there's no emissions cost of actual manufacture of each turbine, international transport by sea (presumably Vestas – whilst hubs and drive trains can be manufactured in Geelong, most components are imported from Vestas factories in other countries (2,3)), local transport from the port, or assembly on site. In addition there's no emissions given for the actual clearing of forest, of blasting using high emissions explosives, of extensive wide roadworks, or quarrying of rock for road base and construction, of removal of earth for each turbine. So it's not hard to imagine the carbon footprint per turbine could end up easily being double what is stated, just by adding the above facets only. I will add that this study (3) showed that the foundation of an onshore wind turbine constituted 37% of its total ecological footprint. Given this, it could easily be anticipated that the extensive blasting, quarrying and roadworks necessary to install wind turbines in rugged country would easily add more significant emissions to the carbon footprint as well as ecological damage. I imagine NONE of this has been factored into the quoted emissions		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). Section 13.2.1.1 of the PER calculates the GHG costs associated with the dominant construction materials for the Project (steel, concrete and composite materials). It should be noted that a GHG calculation for material composition within a WTG is not a linear relationship with the WTG nameplate generation capacity. The GHG costs associated with transportation of materials and components (including via sea from China) are outlined in Section 13.2.1.2 of the PER. The GHG costs associated with vegetation clearing (i.e. the loss of the carbon sequestration potential associated with the vegetation to be cleared) are outlined in Section 13.2.1.3 of the PER.
13	.002	Emissions	There is also an ongoing emissions cost of function & maintenance of this windfarm. All employees' vehicles are fossil-fuel powered and fossil fuels are extensively used in the ongoing maintenance and running of components, for example lubricants and replacement parts. Its anticipated that there is normally 7-11 maintenance employees per 100MW of wind power (5). So Chalumbin is proposed to be 600MW, therefore there are 42-66 employees, all driving fossil-fuel powered vehicles. All will be living in Ravenshoe or further afield. They would easily be driving 60-100km per day. As a midpoint calculation, lets assume 50 employees drive on average 75km per day. A petrol Hilux averages about 11l/100km; diesel about 8l/100km, but that's on the open sealed road. Let's assume the average is a conservative 10/100km. That means 375 litres of diesel are burnt by the windfarm employees every single day. Assuming most don't work week-ends, that is 100 000 litres of fuel per year. Each litre becomes 2.68kg CO2; that's 268 000 tons of CO2, or 5.36 million tons of CO2 over 20 years. Ark Energy claims only 15-30 employees will needed; even if that's the case that's still 2-3 million tons of extra CO2 unaccounted for. Where is this acknowledged in Chalumbin's supposed emissions? And that doesn't include emissions costs of replacement parts, their transport, and petroleum-based lubricants necessary for every turbine's ongoing operation.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. According to James Bailey and Associates, during the operational phase the emissions will largely be limited to light vehicle movements within the site (for inspections and maintenance) and occasional deliveries of replacement parts. The quantity and distance of these vehicle movements is negligible compared to the construction phase and will not materially contribute to the GHG costs of the Project. With respect to the comment about the GHG costs of a wind turbine's ongoing operation, the embodied energy calculation of the wind turbines presented in the GHG assessment in Section 13.2 of the PER included energy required in the manufacturing, construction, installation and ongoing maintenance stages (adopted from Crawford (2009)) - 'Life cycle energy and greenhouse emissions analysis of wind turbines and the effect of size on energy yield', Renewable and Sustainable Energy Reviews, 13, pp. 2653-2660.
13	.003	Loss of carbon stores	Crucially there's no consideration of emissions by destruction of wet sclerophyll forest or ongoing loss of carbon sequestration. Wet sclerophyll forest in Queensland can contain around 370 - 1800 tons of CO2 equivalent per hectare (6,7). When this is cleared, much of that carbon ends up in the atmosphere either from burning and/or decomposition. So assuming this is 1000 tons per hectare, direct emissions from forest clearing will add 1.25 MILLION tons of CO2. That's again double the emissions as stated by Ark Energy. Add to that the ongoing loss of carbon sequestration resulting from permanent clearing of wet sclerophyll forests. Wet sclerophyll forests can sequester 6->30 tons of CO2 per hectare per year (8). As this is high sequestering mature forest, we should be using 25-30 tons. So, assuming 25 tons, this means that this project will stop the sequestration of 25 x 1250 x 20 = 625 000 tons of CO2 over its lifetime. However, this will be permanent, as no forest can grow back on concrete or compacted earth for the foreseeable future, and no doubt Ark Energy or future owners will prevent this happening via liberal use of noxious herbicides. So millions of tons of carbon sequestration will be lost as a result of this project. Remember that carbon uptake is the only real way we have of stabilising and bringing CO2 levels back down to help the climate. This project will make our climate emergency much worse through extra emissions as well as loss of carbon uptake. In addition there are significant edge effects due to forest clearing. Surrounding areas of forests are often degraded and have their carbon sequestration capacity impaired due to microclimate effects due to wind, desiccation and heating. Cleared areas can often be 2-3 degrees warmer (up to 4.5 degrees Celsius (9)) than areas of intact forest. Surrounding forests are more fire prone and also more likely to be degraded by invasive species Eg lantana. In any case, the climate & ecological impacts of clearing are not limited only to the cleared areas.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 2t per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from that which was quoted by the submitter within the Peeters and Butler (2014) reference which was between 100t and 500t of carbon per hectare ("Wet sclerophyll forest: regrowth benefits management guideline"). The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
13	.004	Emissions	Ark Energy claim there will be a saving of emissions of almost 600 000 tons of CO2e per year. That statement is only perhaps minimally true is this project were to REPLACE existing coal fired power generation in transitioning away from fossil fuels. This clearly is not the case. Ark Energy themselves say this, "expand Epuron's existing business model and leverage the group's internal demand from the production of green non-ferrous metals, and our own demand from green hydrogen production, to fast-track the build-out of Epuron's development portfolio" (9). This clearly implies that Ark Energy have NO INTENTION of supplying power for any kind of transition away from fossil fuels, but instead want to use this power to increase their own industrial and mining output and profits. Ark Energy claim in their propaganda that it will supply enough electricity to power 300 000 homes. But that is only when the turbines are operating at their maximal capacity (rarely) and it WILL NOT be used to supply electricity for 300 000 homes. This electricity will be used to supply industrial and mining expansion like the rest of Ark Energy's projects. To pretend that this project will offset ANY emissions is clearly a BLATANT LIE. The capacity factor of wind farms is usually only about 30% - that is, on average, they supply only 30% of their claimed maximal output (22). There is no reason to suggest that this wind farm would be any different.		No	This Project is proposed to connect into the national electricity grid. The energy generated by the Project is not proposed to be used for green hydrogen production. An investor is expected to acquire Chalumbin Wind Farm Pty Ltd from Ark Energy and will own and operate the asset in accordance with the commercial drivers that precipitated the investment. The benefits of the Project - as outlined in Table 13-19 of the PER - uses a conservative capacity factor of 35%, to lead to an estimated generation of 1,840GWh per year.
13	.005	Project viability	What is also not mentioned is that wind turbines generally lose about 1.6% output per year, about 16% per decade (23). So over a 20 year life expectancy a wind farm can be expected to lose 32% of its output. This means that this wind farm's already low 'capacity credit' (amount of fossil fuel power it can replace) of 4-16% will become EVEN LOWER over time (22). For example, if this wind farm is rated at 600MW, if the capacity credit is 10%, it can at best only replace 60MW of fossil fuel-derived electricity (which is not even the case), than that declines to 41MW over its lifetime. Much of the loss in output is due to 'wear and tear' of the blades.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
13	.006	Contamination	What Ark Energy 'forgot' to tell everyone in their PER is that much of the loss of efficiency of wind turbines is due to the shedding of microplastics – about 60kg per turbine per year (24) – so 103 TONS of microplastics will be dumped by this windfarm into the ecosystem over the 20 year lifespan of the wind farm. What a wonderful thing to be doing to ecosystems. Its clear Ark Energy just do not care. Environmental contamination by microplastics is now considered an emerging threat to biodiversity and ecosystem functioning. (25, 26)		No	The purported issue of the release of microplastics from the leading edge erosion of wind turbine blades has been an emerging topic within wind farm opposition circles for the last 2-3 years. The proponent is not aware of any peer-reviewed scientific articles that confirm this is an issue for the industry to mitigate.
13	.007	Emissions	Let's revisit the claim by Ark Energy that this project will somehow save 600 000 tons of CO2e per year. Obviously, this is a blatant lie, as this project will not displace ANY existing fossil fuel power generation. However, lets assume that this is what this project is actually going to do. 600MW of wind power generation, assuming a reasonable capacity credit of 10%, will displace a 60MW coal fired power station. Assuming that coal gives emissions of 820g CO2e/kWh, that coal-fired power station will give emissions of 820kg CO2e/MWh, or a total of 48 tons CO2/hour if running at full capacity. Therefore 421 000 tons of CO2 per year. Now wind farms have variable carbon footprints. The RE industry is now claiming that all wind farms irrespective of location, size, winds, ecological impacts, distance from demand, have footprints of 11g CO2e/kWh. Unfortunately this mistruth is now repeated by the IPCC since 2014. Only a year earlier in 2013 the NREL gave a 'haromonised' value of 30g CO2e/kWh, more than double that. A review article pointing out deficiencies of LCA assessments (28) found values of up to 125.8 g CO2e/kWh for onshore wind farms. Its likely that the Chalumbin project, given its widescale ecocide emissions and loss of carbon sequestration, and distance from the electricity demand, will be at the upper end of life cycle carbon footprints. So, assuming a carbon footprint of 30g CO2e/kWh (probably vastly underestimated), the carbon emissions of this wind farm work out to be 18t CO2/hour, therefore 158 000t CO2/year. That gives a 'saving' of 263 000t CO2/year. If the carbon footprint of this wind farm is assumed to be close to 125g CO2e/kWh, that would equate to emissions of 75 tons CO2 per hour, giving 657 000 tons per year. That gives 236 000 tons MORE CO2 per year than an equivalent coal-fired power station. Remember too that these emissions are largely 'upfront' – emitted during construction. Of course, all these calculations are purely hypothetical, as this proposed wind farm is not about replacing fossil fuel power generation, but adding to energy production for unsustainable industrial use. So this is all about ADDING to energy demand, not replacing demand, by supplying energy for profit-driven increasing industrial production and economic growth. So there is NO SAVING of emissions, just adding to them and adding to ecocide and loss of carbon uptake. Chalumbin is a climate as well as ecological disaster.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
13	.008	Emissions	In addition, the project requires a synchronous condenser to stabilise the power output from the windfarm. These require permanent magnets, like wind turbines do, and the materials and manufacture carbon footprints can be considerable. Rare earths are normally used for such magnets, and mining of these is ecologically destructive and materials-intensive and heavily polluting (11). Mining of rare earths often gives more radioactive waste than mining of uranium does. The carbon footprint of mining and initial processing of neodymium (the element most widely used for permanent magnets) varies between 12-66 tons of CO2e per ton of rare earth mineral (12). The carbon footprint of a synchronous condenser is unlikely to be included in the calculations. It seems customary that no life cycle emissions analysis of wind turbines includes the catastrophic effects of mining of rare earths – this includes deforestation, ecocide emissions and toxic degradation of soils such that nothing grows due to heavy metal pollution.		No	The Project may or may not require a synchronous condenser (this depends on the ultimate contents of the connection agreement with Powerlink and AEMO). Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
13	.009	Emissions	The other component of wind turbines which is rarely mentioned is SF6. SF6 is the worst greenhouse gas, 24 000 times more potent as a greenhouse gas than CO2, and is used extensively in wind turbines and electrical grids generally, regardless of energy source. It is electrically inert and is used in junction boxes & switchgear to prevent short-circuits. And it is cheap. There are alternatives but they are more expensive & relatively untried. Leaks of this gas from wind turbines and other electrical infrastructure from the EU in 2017 alone were the same as adding another 1.3 million fossil fuel burning cars on the road. Scientists are detecting concentrations in the atmosphere that are 10 times the amount declared by countries in their reports. It's still used in wind turbines, about 5kg per wind turbine (13). The gas will likely not be recovered and allowed to escape at the end of the turbine's life, as recovery will be expensive. 5kg is equivalent to 117 tons of CO2. Because that will essentially NEVER be broken down, this windfarm, if SF6 is used, which it likely will, will have contributed an extra 10 000 tons of CO2e, at the end of its life, due to SF6 alone. There is no evidence that I have found that SF6 is not used in any windfarm in Australia. SF6-free switchgear is currently being trialled in windfarms in Europe experimentally. Wind farms are completely unregulated by governments and are allowed to do as they please, once they are allowed. Their continued use of SF6 is good evidence of this.		No	SF6 is widely used in switchgear required for all other forms of power generation and distribution, including coal fired power plants. The issue is not solely with wind power plants, noting wind turbines increased contribution to the use of this gas, but more so with the entire power industry and the use of SF6 in general.
13	.010	Emissions	I will add that EVEN IF the project's electricity output is to be used to replace coal-fired power stations, it may well be that adding this windfarm to the grid may result in MORE emissions if fast-acting natural gas generators are to be used as back-up to stabilise the wind farm's output. Because the natural gas generator needs to be of sufficient capacity to take over the entirety of the wind farm's output, and because there are times when there is no wind, the gas generator often has to rapidly increase and decrease power output. This means that the gas generator can produce MORE EMISSIONS if used in combination with a wind farm than if used alone. Research from the Netherlands has supported this (14), as has experience in Ireland (15). It has been found that large scale wind farms have the potential to warm the earth's surface by 0.24 degrees celsius through atmospheric interactions (16). Surely this is counterproductive. We know that in addition to this, there is surface warming due to deforestation, as stated above.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Recent studies have investigated the phenomenon of highly localised land surface temperature warming that might be attributable to operational wind farms. The studies are inconsistent and inconclusive in their findings.
13	.011	Emissions	"Energy experts" have also grossly underestimated the power output of wind turbines. "For wind, we found that the average power density — meaning the rate of energy generation divided by the encompassing area of the wind plant — was up to 100 times lower than estimates by some leading energy experts". (16) So this calls into question projected power outputs from windfarms - especially those which are 5-10km deep. In SE trade winds, Chalumbin qualifies - its multiples of that deep. It's very likely Chalumbin will not have anything like as much output as projected (16).		No	Complex models are prepared to predict the electrical output of an operational wind farm, using various inputs such as turbine efficiency, capacity factor and location-specific wind resource characteristics. These models are calibrated based on empirical data from operational wind farms and their accuracy is continually being analysed and improved. Large investment decisions are made based on these complex models. These models are reliable and form the basis of any commercially feasible large-scale wind farm project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
13	.012	Emissions	If big batteries like the Tesla Hornsdale battery are used to stabilise this wind farms output, this can also result in a considerable amount of emissions to replace fossil fuel and coal generation. Producing big batteries is emissions-intensive, and just mining and processing lithium can result in 22 tons CO2e per ton of Lithium (17). This does not include again loss of carbon sequestration which occurs as a result of mining. The heavy carbon footprint of mining and manufacture of lithium batteries can mean that the electricity delivered from the batteries has a carbon footprint as high as 548g CO2e/kWh (Victorian big battery current estimate) (18), which is in addition to the footprint of the initial wind or solar electricity generation. Contrast that to natural gas' footprint of 490g/kWh and coal of 820g/kWh. There is no significant emissions reduction, at least none that will significantly address the climate emergency, especially in the context of endless economic growth and ongoing ecocide.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
13	.013	Loss of carbon stores	The other aspect of climate change which is rarely mentioned, as the focus seems to be almost always on fossil fuel emissions, is destruction of forests and consequent loss of hydrological cycling. Some scientists maintain that this as important as CO2 as a mediator of climate change. The world's forests play a far greater and more complex role in tackling climate crisis than previously thought, due to their physical effects on global and local temperatures, according to new research. (19) Forest loss and degradation reduce evapotranspiration, with important implications for rainfall thousands of kilometres downwind. In addition, forests affect the Earth's surface albedo, temperature, and surface roughness, and thus also alter moisture and heat fluxes between terrestrial surfaces and the atmosphere. (20) So the destruction of 1000 hectares of wet sclerophyll forests, and degradation of remaining margins, by Ark Energy will also have other terrible climate impacts. The UN itself has said that we must REWILD on a global scale to heal the climate and biodiversity (21). Siting wind farms in largely untouched wet sclerophyll forests is not doing that. In fact it is totally the opposite, abetting even more climate and biosphere destruction. This project has absolutely no justification to be allowed on any basis, as it will be destructive to both the climate and ecosystems, and further destroy precious habitat of many species which are already threatened and endangered.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The Project is not proposing to clear 1,000ha of wet sclerophyll forest.
14	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: It is vital, pristine and stunning Wilderness, home to many protected wildlife species. Far too much habitat has already been destroyed and Chalumbin needs to be protected.		No	The construction and operation of the project has been assessed in accordance with the EPBC Act requirements to ensure the potential impacts to flora and fauna have been appropriately addressed and suitable mitigation and management measures have been applied. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. A landscape and visual impact assessment (LVIA) was prepared as Appendix M to the PER. The LVIA illustrates and proposed rehabilitation and the site as it is restored. The revegetation will support the native flora and fauna throughout the project area. The project area does not involve or impact the area of wilderness known locally as Chalumbin or Chalumbin Hill. It is within two cattle grazing properties, Woorooora Station and Glen Gordon Station.
15	.001	Traffic and transport	We are residents of Tully Falls Road, and we're very concerned about the potential traffic build up in the construction phase of Chalumbin Wind Farm and the building of the sub-station.		No	Tully Falls Road is not proposed for use as a transportation route for the Project during construction or during operation.
15	.002	Biodiversity general	We have seen a massive amount of flying foxes, that are coming out of that area, so we're extremely concerned about the impacts to them.		No	The potential risks posed to the spectacled flying-fox and mitigation measures to address these are outlined in Section 8.6.10 of the PER. Offsets have been proposed in accordance with the EPBC Act Environmental Offsets Policy.
15	.003	Cumulative impacts	The other massive concern for us is we're within 10 kilometers from Windy Hill, Kaban, and if Chalumbin goes ahead, what are the impacts to our environment, our health and our peaceful serenity. Tablelands Regional council have not come out and spoken about the impacts on Tully Falls Road, because some of it is single lane. We live in a very quiet area with beautiful surroundings, with birdsongs and nature. This is why we live here. We grow vegetables. We're a small market garden so the water is going to be an issue for us, if this goes ahead. We have to pay for our water.		No	Construction traffic will be prohibited from accessing the site via Tully Falls Road (south of the intersection with Wooroora Road) and therefore impacts on Tully Falls Road are not anticipated.
15	.004	Waste management	The impact on the rubbish is going to get worse than it already is. Are TRC prepared for the massive rubbish impacts, and I would like an explanation.		No	As outlined in Section 10.12 of the PER, waste generated during construction and operation must be managed in accordance with the Waste Act and the Waste Reduction and Recycling Regulation 2011. The purpose of the Waste Act is to reduce the amount of waste generated through the implementation of the waste management hierarchy (avoid, reduce, reuse, recycle, recover, treat, dispose).
15	.005	Erosion and sedimentation	The erosion issues on the Blunder Creek and other areas are going to be astronomical, erosion and sedimentation.		No	Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site specific construction Erosion and Sediment Control Plans (ESCPs) will be prepared and implemented for the construction of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site.
15	.006	N/A to PER matters	The unforeseeable issues that are going to arise from this proposal are not ever going to be resolved, because no one in the PER is responsible for the Waste, Pollution, the sedimentation, the decommissioning of the turbines. The high voltage power lines in the area is not really for our use, but instead designed to still go in the grid, but Korea Zinc have already stated that their goal is to supply to Korea. Perhaps, to make hydrogen, for green energy, to offset their carbon credits. There is no transparency. If we don't stand, what is the future for the next generation. They will have nothing to thank us if we do not speak up against this invasion of our environment. Where is the statement from Tablelands Regional Council, that our rates and water will not go up. Where is the assurance, that we will not get power outages due to the Chalumbin proposal. We have hundreds of issues that need to be answered.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
15	.007	Biodiversity general	The EPBC Act Protects, matters of national environmental significance and the Proposed Chalumbin Windfarm will have a massive environmental and social impact on my family and our whole region. I am very concerned about this proposal is in the catchment area of the Great Barrier Reef; migratory species; the environment, where actions proposed are on, or will affect Commonwealth land and a severe social negative impact on the community. No amount of planning will compensate the destruction this area, the forests, blunder Creek, Herbert River Catchment area pollution and erosion flowing into the Great Barrier Reef. Cutting down trees is NOT 'GREEN' and the proposed Chalumbin wind farm will only add to climate change.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
15	.008	Opposition to project	Ravenshoe is a small country town and I want it to remain this way and for it not to become industrialised. I have witnessed the destruction with the Kaban wind farm and the ugliness of the massive turbines on the skyline which has already ruined the natural beauty of the area. I say NO to Chalumbin wind farm, I do not consent to be assaulted by Electrical and Magnetic Frequency Emissions from wind turbines.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
16	.001	Biodiversity general	To whom it may concern, The Chalumbin wind farm should not be approved because: 1. Bulldozing Forestland for expensive and unreliable wind turbines makes no sense. 2. Bulldozing forest land full of protected species should be illegal, this is a clear show of disrespect to the environment. 3. Bulldozing land that has not even been properly assessed for animal and plant life is insanely irresponsible and displays a lack of environmental care that is beyond reckoning.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
16	.002	Visual impacts	4. Wind energy is extremely expensive, unreliable and a horrendous eyesore. In my time in Regional Victoria, I found the sight of these things to be offensive to the eye and a blight on the landscape.		No	A Landscape and Visual Impact Assessment has been undertaken (see Appendix M) and considers that the Project will result in a significant direct impact on the landscape character of the immediate Project area and limited areas of the adjacent landscape. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Views from six identified viewpoints are also considered to be potentially significantly impacted by the Chalumbin Wind Farm. These views include the accessible lookouts on Majors Mountain and Bally Knob, view from a small part of the Koolmoon Creek track, views from the Kennedy Highway as well as views from residential properties in Millstream and the few rural properties west of Site on Herbert River Road. It is noted that some of these views (particularly from Bally Knob, Majors Mountain and the localised affected part of the Koolmoon Creek track) would be experienced by very few receptors due to the strenuous nature of the hike to these locations.
16	.003	Hazard and risk	5. Wind energy is known to have many problems for the environment, from noise pollution to electromagnetic pollution to the killing of birds of prey among other bird life and a MASSIVE FIRE HAZARD. I would hate to be the person responsible for burning down some of the rarest undisturbed rainforest in the world in a vein attempt to save the environment.		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. Section 8.10.2 of the PER investigates potential for bushfire to impact the WTQWHA and bordering wet sclerophyll forest. This states that through improvements to access throughout much of the Project area, creation and implementation of construction and operational bushfire management plans, and preparation of a bespoke fire regime for the Project area (including land-based offset sites), the Project is anticipated to improve the prospects of managing the risk of bushfires within the Project area that may detrimentally impact the WTQWHA. CWF is committed to preparing and implementing a fire regime for the Project that is based on key input from industry experts and the Queensland Fire and Emergency Service (QFES) that also accords with the development permit requirements for the Project under the Planning Act. For these reasons, the high-level concerns around the perception that the Project will detrimentally impact the WTQWHA through clearing of wet sclerophyll forest and increasing the fire risk is not expected to manifest in an actual increased risk.
16	.004	Opposition to project	6. This is disrespectful to the tradition landowners and their culture. 7. Many true environmentalists and traditional landowners are concerned, shocked and devastated, they have voiced their concerns in this amazing short documentary. https://rumble.com/v1epnwv-wind-farms-a-man-made-disaster.html		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Woorooora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. The Project will seek to maximise the involvement of Traditional Owner knowledge in the rehabilitation, revegetation and offset management aspects of the Project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
17	.001	N/A to PER matters	CHALUMBIN WIND FARM SUBMISSION There is considerable community push back to renewable projects. In the US over 471 wind farms have been rejected. Source robertbryce.com. I object to paying subsidies. If it is so good, let it stand on its own merits. I especially object to providing government subsidies, as they are be better spent directly on the environment, and their contingency will reduce our credit standing. I ask the proponent to itemise: 1. Public monies. Detail the description and dollar amount of each subsidy, and other benefit, both direct and indirect, to be received from the public purse in a time line. Indirect receipts, including the value of a guarantee, to include an actuarial calculation.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
17	.002	Emissions	2. The amount of materials needed to manufacture and construct all parts of this project. And to include rare earths, where they are going to be sourced from and disposed to. 3.The amount of CO2 released in all aspects of creating this project, and compare it with the anticipated CO2 to be saved. with timeline, including from the loss of vegetation from the site and connecting roads and transmission lines. 4. Detail the change to global carbon dioxide levels and temperature to be achieved by this project both in gross terms and net after 3. above. 5. A calculation of energy in to energy out to create the project.		No	2. Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials). 3. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). 4. Refer to response to item (3) above. The proponent does not claim that the Project itself will lead to a material change in global temperature. Rather, the Project will contribute to the decarbonisation of the local, regional, national and global economies (which on a much larger scale is expected to tangibly influence global temperature). 5. Refer to response to item (3) above.
17	.003	Waste management	6. Detail how the turbines and blades will be recycled or not and amount of material to be disposed of and where.		No	Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects' and one of the Charter commitments is to: During the life of the project, we will recycle waste materials where feasible and commit to responsible decommissioning or refurbishment/repowering of the site at the end of the project's life. As outlined in Section 10.12 of the PER, waste generated during construction and operation must be managed in accordance with the Waste Reduction and Recycling Act 2011 (Waste Act) and the Waste Reduction and Recycling Regulation 2011. The purpose of the Waste Act is to reduce the amount of waste generated through the implementation of the waste management hierarchy (avoid, reduce, reuse, recycle, recover, treat, dispose). When turbines and blades need to be replaced or disposed of the options available will be evaluated against the waste management hierarchy and in accordance with the Waste Act and Regulation. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
17	.004	Social impacts	7.Detail the number and skill level of the jobs to be created and to be exported.		No	At this stage in the project development, details of the employment opportunities are to be determined. CWF will prioritise local and regional employment and export jobs where skills are not available. Section 13.1.2.1 of the PER details the expected economic impact of the construction workforce on the local and regional economy, indicating the capacity and benefits CWF will provide through employment on a local and regional scale.
17	.005	N/A to PER matters	I request the Planning department: 1. To require a bond or irrevocable third party AAA guarantee for damage repair, removal, rehabilitation, and toxicity to third parties. 2. To ensure that NO SLAVERY or CHILD LABOUR be used in the manufacture of any of its components. 3. To require the proponent to publicly provide annual reports for the project, including itemisation of each government support, and where those are indirect, an actuarial calculation of their value to the proponent and cost to the economy, and 5 min generation and supply. 4. To provide annual ESG reports. 5. To make the project, and its owner non transferable. 6.That as turbines have shown a 1 in 1000 experience of fire and oil leakage, that this is statistically about 2.5 in the project's lifetime or a probabilty of about 5 or 6 occurrences, that adequate environmental safeguards be required. 7.The fire and toxicity of BESS have adequate safequards. 8.I further ask the Planning Department to apply the Precautionary Principle in relation to the uncertainty of the net benefits, and the known and likely risks to the environment, to reject the		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
18	.001	Fauna mortality turbines	To whom it may concern, The Chalumbin wind farm should not be approved because: RESPONSE – SUMMARY INTRODUCTION AND SECTION 5.0 PER It is not mentioned in the PER, it should, regardless, because many species that are not listed on the PER will be driven to extinction, and it will be too late. The Black and White cockatoos, have a huge range of travel, and the wind turbines at their flight height path all the time. We can expect to have these precious birds chopped up if Chalumbin Wind Farm proposal is approved. I strongly object to the proposed Chalumbin wind Farm because. The cumulative affects to the, black and white cockatoos are that they are already being killed, chopped up that I have witnessed between Mareeba and Atherton. Looking over to the Emerald Heights Wind turbines, watching 6 black red tailed cockatoos fly through the wind turbines. But two were hit and fell to the ground. The remaining 4 came out the other side. This has shocked me because out of six birds, 1/3rd of them are dead from one flight. These are slow breeding birds. They live for a long time 100 to 150 years. They only ever have one mate. They only have a lifetime partner, and this means that they can never breed again if they lose their partner. Once gone, they cannot be replaced. They are simply irreplaceable. Why are these birds so important. Please allow me to explain. These cockatoos have a very important job of pruning the bush, and they're the only ones that can do it. These birds are already greatly reduced in number compared to their original numbers, and these wind turbines are fast ensuring their extinction. That in turn means the death of our entire bushland, because there is no other species that can do that job. By pruning the bush prevents the death of the trees. If they do not get pruned, the gumnuts and too many leaves stay on the branches, then when the rain comes, and the trees suck up the water, the branches get too heavy to hold the load, and not just twigs fall off, but entire large branches off the trees. For all young and old trees, this means the end of life for the tree, including the hollows. After that the heavy debri will dry on the ground, the trees are dead. This will destroy the habitats of many other animals and species that depend on the gum trees. It also will be a massive fire danger. This threatens the whole ecosystems of our region.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. Appendix G specifically discusses sulphur-crested (white) and red-tailed black cockatoos.
18	.002	Red goshawk	I wish to highlight that the cumulative impacts on this project is inadequate. The cumulative impacts that this project with have on flora, fauna biodiversity is underestimated. Species extinction will result if this project is allowed to go ahead. We are risking entire species by clearing habitat for this project. The guidelines for the PER required the proponent to identify the cumulative impacts of this development in Section 5.0 The cumulative impact on endangered species is unknown, one which includes the red goshawk. Red goshawks are known to return to their nests. A nest was considered highly likely to belong to the red goshawk was observed in the Glen Gordon property in January 2021. (Page 93 of MNES Report) A photograph of the nest was sent to a number of recognised red goshawk experts, one a QPWS ranger, who confirmed the nest as belonging to the red goshawk. This nest has miraculously disappeared. Has the nest been removed. Would vested interests go to any length that would harm our endangered and vulnerable wildlife. This species needs vast ranges if it is to be prevented from regional extinction. In Table 5.5.2 the proponent states that the project will not result in residual impact. The clearing 1,031 ha of habitat is not only highly destructive for an endangered species, but the likely collision of the red goshawk will have a dramatic cumulative impact.		No	As noted in Section 4.6.3, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. There is insufficient publicly available information on the potential impacts from other windfarm projects on the red goshawk for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
18	.003	N/A to PER matters	One wind turbine is too many on this environment. Because of the change of land use, this one turbine, could easily be applied again to be 200, and the public would have no say. They could reapply for mining, extraction, simply due to the change of land use under State planning code section 23. This process is unconsciounable.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
18	.004	Loss of carbon stores	Cutting down trees is NOT 'GREEN' and the proposed Chalumbin wind farm will only add to climate change.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
18	.005	Opposition to project	Ravenshoe is a small country town and I want it to remain this way and for it not to become industrialised. I have witnessed the destruction with the Kaban wind farm and the ugliness of the massive turbines on the skyline which have already ruined the natural beauty of the area. I say NO to Chalumbin wind farm, I do not consent to be assaulted by Electrical and Magnetic Frequency Emissions from wind turbines. All wildlife matters to me, even if they're stated on the PER. The proponent does not have any social, environmental license to injure, kill, or maim our irreplaceable cockatoos. I am putting this on notice that the large scale proposal of Chalumbin would be a crime against our environment, and our community.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.

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19	.001	Opposition to project	To Ark Energy, This is another Australian Government short term money grab, with no care for the future, only now – money and votes. I agree with and have read all the information about the negativity and destruction of environment that will be caused by the windfarm development, the information supplied by Rainforest Reserves Australia Website, Matt Lachlan, Steven Nowakowski, Stop Chalumbin Website, Carolyn Emms. This information is nothing but well researched and presented facts with links to prove all research. It is a crime against our society, wildlife, and environment if this development was to take place.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
19	.002	Community consultation	I have also been to 6 community meetings and not witnessed one person representing Ark Energy, despite them being invited. These meetings have been in Ravenshoe, Tully and Cairns.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project.
19	.003	Opposition to project	Wind turbines are not clean energy. The carbon footprint of manufacture, installation and maintenance are enormous. Read submission information submitted to you. The irreparable damage to the environment is criminal. The fact that we have so much country with wind and minimal impact of placing wind turbines is complete lack and care of our environment that the government may allow this development. The fact that Epuron an Australian company now, 100 percent owned by Ark Energy ie Korean Zinc, is not transparent to all, is deceptive. As is this whole development. We have been brain washed into thinking that wind turbines are clean energy. They are produced by mining and burning of fossil fuels and loss of human life. They are environmentally destructive depending on locality, not recyclable and need fossil fuel for maintenance. This development is not just about producing power for Australian citizens. Korean Zinc plans to use Australia as a renewable energy export. Should the Government approve this, it shows once again, how short-term money, with very little plan for rehabilitation for the environment, is so synonymous of our Governments. As shown by worldwide precedence these wind turbines are non-recyclable and have a life span of 20 – 25 years, leaving another environmental disaster. A mining boom like we have never seen before in Australia is predicted for rare minerals to produce these turbines. More environmental destruction and fossil fuel emissions. Is this clean, green energy?! I don't think so!		No	As discussed in the PER, the project would have a total nameplate wind farm generating capacity of 602MW and contribute to the Queensland Government's target of 70% renewable energy by 2032 and 80% by 2035. The Queensland Government identified the Northern Renewable Energy Zone which has been selected because of the suitability for renewable energy projects, including a high wind resource. The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. Decommissioning of the project has been considered in the PER and all above ground infrastructure will be removed from the site. Further detail on the decommissioning will be determined closer to the time of the project decommissioning and consider the technologies available at the time.
19	.004	Koala	The koala, one of our national icons, is now listed as an endangered species by the Government. This area is a known koala habitat despite what is in the public environment report. The PER lacks integrity, environmental concern and is misleading and full of lies.		No	The PER acknowledges that the koala is now listed as Endangered under the EPBC Act 1999; however, the species is assessed per its former Vulnerable listing as required by the PER Guidelines. The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
19	.005	Opposition to project	I hold ARK Energy, the Federal, State and Local Government responsible as environmental criminals if this development is to proceed and hope the Australian public (who have been deceived), sue your arses, lock you up and witness you rotting in jail, as you seem so prepared to do to our local environment and world.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
20	.001	Opposition to project	I am deeply concerned about the social, environmental, and cultural impact this proposal will have if approved. In a time when all environmental and cultural heritage values should be subject to the strictest and most conservative interpretation of the 'precautionary principle', it is abhorrent to me that the proposal in this location is even being considered.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
20	.002	Community consultation	•There has been a blatant lack of transparency and stonewalling regarding community consultation, community engagement and community input by the developer. •There have been blatant mistruths purported by the developer. •There has been a blatant disregard for the cultural, heritage and historical significance of this land and environment for the local indigenous custodians.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
20	.003	Biodiversity general	•There is misleading, vague and lack of genuine scientific study regarding flora and fauna surveys on the site. •The location of the site is completely inappropriate. More appropriate sites where less impact will be inflicted, exist. •The site does not exist in isolation and impacts directly on the adjacent World Heritage Wet Tropics Rainforest – ecology, hydrology, flora and fauna. It is part of a catchment. •This is home to many native species, some endangered, some threatened. For this reason alone, for the sake of biodiversity, this environment should be preserved at all costs. •The area is an ecologically significant region, despite the developers misleading PR that it is only scrub land. •The entirety of the environmental cost of pre-construction, construction, post construction and decommission should be considered beyond any monetary value gains.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
20	.004	Social impacts	•The footprint of the development has been extremely and seriously underplayed to the point of deception. •The social gains for the local communities are minimal in terms of jobs. •The potential housing crisis that will arise in the local areas as construction workers need to be housed, is barely mentioned, let alone addressed.		No	The Project area and footprint are defined in section 2.0 of the PER. The assessment presented in the PER are consistent with the Project footprint described in this section. If approved by the DCCEEW, the description of the action and Project footprint assessed through the process under the EPBC Act is the Project that is brought forward through the detailed design and refinement stage. Section 13.0 of the PER details the proposed benefits to the local and regional economies as a result of direct and indirect opportunities created by the Project. CWF will prioritise employment of local and regional communities. In response to feedback from the community through ongoing consultation, CWF is investigating potential locations for a workforce accommodation facility to avoid further pressure on local housing stock. This is outlined in section 2.3 of the PER.
20	.005	Opposition to project	•The money to be paid out each year for each wind turbine is poor use of taxpayer funds. Taxpayers would be in effect paying for ecological destruction, not preservation. As a taxpayer I refuse to let my tax dollars be spent supporting this project. •This is a money grab. Business and votes at any cost. We have had the wool pulled over our eyes that wind farms are part of a sustainable and clean energy future. They are not. They have been painted as "green" but scratch the surface and they are "brown" in every respect. •Wind turbines provide no guarantee of continuous production of energy. No wind, no power generated. •Much of the power generated will be moved offshore and not for domestic consumption.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
20	.006	Transmission capacity	•Placement of this wind farm is pure convenience, located close to existing power lines. i.e more profit to the developer. The existing lines cannot even handle the power that is proposed to be generated.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
20	.007	Social impacts	•The health impacts to humans from proximity to wind turbines is only now starting to be understood. The information is by no means in the public realm to date.		No	The purpose of the assessment under the EPBC Act is to assess the potential impacts from the Project of MNES and address the Guidelines issued by the DCCEEW. The PER responds to these matters. The Queensland Planning Act 2016 development approval requires the proponent to address the criteria of the State Code 23 for wind farm development. The process includes an assessment of the potential impacts from the Project on identified sensitive land uses, which includes a list of receptors as per the State Code guideline. CWF received state approval under the Planning Act on 29 June 2022. The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans.
20	.008	Project alternatives	•There are alternative sources of energy to wind farms. Australia is slow and conservative when it comes to more innovative, sustainable, and clean approaches.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
20	.009	Rehabilitation	•Complete farce regarding rehabilitation plan of site. Even if there was a suggestion of a genuine attempt (which there isn't), it would be impossible given the age of some of the flora and the intricacies of the relationships that exist between plant species. To restore these networks once they are gone is not humanly possible.		No	The rehabilitation plan meets the required rehabilitation requirements for the project as presented in Section 1.1 of the Preliminary Rehabilitation Plan (Appendix K of the PER). The purpose of this Preliminary Rehabilitation Plan is to facilitate the re-establishment of native ecosystems that are self-sustaining in the long-term and provide comparable habitat value to the pre-construction ecosystems.
20	0.010	Opposition to project	•I have read and support the submissions by and affiliated with Rainforests Reserves Australia and Stop Chalumbin Windfarm. Australia as a nation has the opportunity to lead the world in biodiversity, ecology, heritage and environmental preservation, restoration and rehabilitation. We are currently failing radically to meet this calling. As a nation, we purport token efforts as if they are enough to radically contribute to the betterment and preservation of our planet. To deny the approval of this project would by one very small but significant step towards turning the tide on Australia's environmental record. I am not naive either. Each one of us benefits from the availability of power, but this is not the way.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
21	.001	Opposition to project	With reference to EPBC 2021/8983 Chalumbin Wind Farm as a community member of Ravenshoe and surrounds I object and do not consent to the proposed Chalumbin wind farm going ahead. I object and do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and I say NO to Chalumbin Wind Farm. The EPBC Act Protects, matters of national environmental significance and the Proposed Chalumbin Windfarm will have a massive environmental and social impact on: World Heritage Wet Tropics; National Heritage Places, including Cultural Heritage sacred sites; nationally threatened species; the Great Barrier Reef; migratory species; the environment, where actions proposed are on, or will affect Commonwealth land and a severe social negative impact on the community. The Department of Environment have a "Duty of Care" to Protect Natural Heritage. No amount of planning will compensate the destruction of High Biodiverse remanent Wet & Dry Sclerophyll forests bordering World Heritage Wet Tropics, Herbert River Catchment area pollution and erosion flowing into the Great Barrier Reef. Threatened Endangered Flora & Fauna are at risk of Extinction. Chalumbin is the wrong site for a wind farm, wind farms only lasts 25 years, forest REGENERATE for 1000's of years. Cutting down trees is NOT 'GREEN' and the proposed Chalumbin wind farm will only add to climate change. Ravenshoe is a small country town and I want it to remain this way and for it not to become industrialised. I have witnessed the destruction with the Kaban wind farm and the ugliness of the massive turbines on the skyline which have already ruined the natural beauty of the area. I say NO to Chalumbin wind farm, I do not consent to be assaulted by Electrical and Magnetic Frequency Emissions from wind turbines.		No	Noted. Section 4 of the PER provides description of the environment within the Project area and surrounding landscape for matters protected under the EPBC Act.With a full impact assessment of the Proposed action outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact Assessment is outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts. The LVIA states that while there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values. Research (discussed in the LVIA) typically suggests that many viewers find windfarms acceptable even in high quality landscape, and other factors such as previous exposure to wind farms (such as the nearby Windy Hill scheme) or appreciation of wind farms as a means of taking action against climate change can also increase acceptability. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
22	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: our animals are an important part of our ecosystem and have a right to life. We as humans must respect this.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
23	.001	Opposition to project	As per Submission 21, with the addition of: Threatened and endangered flora and fauna are just that, at risk of extinction, they don't have alternatives. The planned Chalumbin Wind Farm is the wrong project in the wrong place! The intention of wind farms is to move to a 'greener' future - cutting down old-growth forests (which take thousands of years to regenerate, if they even can with transformational climate change) is NOT GREEN and will only further fuel climate change. Ravenshoe is a small community and we want it to stay that way, surrounded by forests which earn it the title of the "possum capital of Australia", with more gliders and possum species than anywhere else. It is rural in nature, not industrial. The destructive record of other wind projects on the Tablelands only serves to consolidate my objection to this one - both on the the ground, and on the skyline.		No	See response to Submission 21
24	.001	Opposition to project	As per Submission 23		No	See response to Submission 21
25	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: The vast area of natural bush land that is only 4km from my home is beautiful and priceless and shouldn't be destroyed by greedy overseas corporations that have no care or concern for the Australian bush, let alone native wildlife or residents. My family and I have lived on Wooroora rd for 13 years and DO NOT consent to the destruction of Chalumbin. Ark Energy/Epuron you have no right to chase residents and native wildlife out of their homes for your own personal enlarging bank accounts. Ark Energy you are destroying peoples lives in the Millstream and Ravenshoe area not to mention the innocent wildlife. GET OUT OF OUR TOWN WE DON'T WANT YOU HERE.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
26	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: It is a sacred site for First Nations people and it is harmful to the biodiversity.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. Indigenous values of the project area is addressed in Section 4.11.2.2 of the PER.
27a	.001	Cumulative impacts	To Ark Energy, The Draft PER for the proposed Chalumbin Wind Farm - EPBC 2021/8983 - has not adequately addressed the cumulative impact of this proposed project. Identification of the cumulative impacts on the biodiversity in this area as a result of this proposed development (Chalumbin Wind Farm), required in the PER guidelines in Section 5.0 is inadequate and lacking in detailed research. With Ref. to: PER Draft Ref.: 5.2 Potential Construction Impacts and sections 5.2.2 and 5.2.3 and 5.3 any expected Injuries and death to wildlife during construction should NOT be deemed to be acceptable. The Expectation that animals, who frequent Wet Tropics World Heritage areas, who may also travel out of World Heritage and into surrounding areas and back again, who happen to cross a wind mill site roadway under construction subsequently resulting in death or injury to the animal is indicative that this project is incompatible to the proposed site. Research as outlined in Draft PER for proposed Chalumbin Wind Farm is insufficient and has not adequately addressed the cumulative impact on fauna in Chalumbin and surrounding areas. Our native animals, as part of our National Identity, should be respected and not seen as expendable construction collateral-damage. People living up here in the mountains, Ravenshoe and surrounding areas, take great pride in and care for the pristine richly diverse forest country, it's native wildlife, birds & waterways. I am all for clean and green alternative energy sources but clearing forested country and subsequently adversely affecting resident wildlife by impinging so cruelly and rudely upon their habitat to acquire it is counter-productive and not at all 'green'.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
27a	.002	Project location	Chalumbin is not an appropriate location for a wind farm. A more suitable site for this windmill farm venture needs to be found, one that would not cost this richly diverse forested country and it's natural inhabitants so dearly. Thank you.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
28a	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
29	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: The environmental impact and long term damage doesn't justify the power out put, these designs are creating change for the positive. They need to go.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
30	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: You will be destroying trees and ecosystems of many animals and plants. Wind farms are not environmentally friendly. I don't not consent.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
31	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
32	.001	Opposition to project	As per submission 21		No	See response to Submission 21
33	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: as it's been stated, nearly extinct wildlife need that and so do we humans. Please find another spot that won't affect the wildlife's well being.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
3b	.001	Erosion and sedimentation	To Chalumbin WindFarm PER RESPONSE Summary p14 17 and sections throughout the PER The Chalumbin wind farm proposal is a serious threat to our rivers and creeks. Kaban Wind Farm has received a lot of rain. The sedimentation and erosion is evidently not really considered important to the Chalumbin proposal by suggesting that yiu will stop works between January February and March.		No	Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. It is due to the increased seasonal risk of high intensity rainfall that the project will stop works between January and March. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard.
3b	.002	Biodiversity general	We may be due fir a cyclone this year which resulting in terrential rain that could last for 8 weeks. Chalumbin Wind Farm proposal has no benefit to the region. It's impact will have a major impact on the Magnificent Brood Frog. Chalumbin Wind Farm does not have the social license to destroy the species that depends on these habitats for their survival. YOUR proposal to create a major industry on the highest biodiversity of global and State significance is against the public interest.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
3b	.003	Opposition to project	Plesse be decent by showing respect to the Ravenshoe and the Tablelands by dropping your proposal. There is nothing but destruction to our environment should this project be approved. Stage 1 or any sign off collaborations with the Land Council, Aboriginal Corporations certainly does not represent me, nor the people who signed thousands of petitions with Shane Knuff and Stop Chalumbin Wind Farm. Chalumbin is the wrong place for a wind farm .		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
34	.001	Support for project	It is great to see people with a vision and make it happen. I would like too see U use the Wooroora Rd route it would make travelling out along the road safer for myself and other who use the road, I have a property near the vine creek bridge. The farm will be great for town people and the business in it.		No	The main access to the Project is proposed off Wooroora Road, however ongoing consideration of alternatives are being undertaken in response to stakeholder feedback. Consideration will be given to safety and constructability of any required upgrades and outcomes of consultation with Tableland Regional Council. The Project will generate benefits to the local, regional and State economies as discussed in the PER section 13.1.2.
35	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end, with the addition of: I have witnessed the destruction with the Kaban wind farm and the ugliness of massive turbines on the skyline which have already ruined the natural beauty of the area. Concerned for the native fauna and flora.		No	See response to Submission 21
36	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
37	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
38	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end, with the addition of: Protect northern koala and other wildlife attractions. Tourism industry.		No	See response to Submission 21
39	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end, with the addition of: The effect to threatened species		No	See response to Submission 21
6b	.001	Offsets	To Ark Energy, I wish to make further comments regarding certain aspects of the draft PER (EPBC 2021/8983). In particular the question of "Offsets" (Section 9 & Appendix O), and in relation to "Feasible Alternatives" (Section 3). Offsets The PER mentions (Section 1, pg. 47) that the maximum area of disturbance is 1,071 ha, and that an "offset management strategy" will protect 7,461 ha of forest (Fig 1.1 in Appendix O) spread over various locations within the overall Chalumbin Wind Farm project area of 31,225 ha (Section 1, pg. 47). It must be obvious from looking at Fig1.1 in Appendix O that this attempt at an "offset management strategy" is all smoke and mirrors. Let's just consider the following:- 1.The total environment covering the Chalumbin Wind Farm project area was doing fine before any wind farms were proposed. The flora & fauna of this area were in an equilibrium that has been evolving and in place since the end of the last ice age (approx. 10,000 years ago). 2.Once you destroy a viable ecosystem with a wind farm, the only credible "offset" would be the establishment of an equally diverse and long-term proven ecosystem. That is just not possible for a wind farm developer. 3.If wind farms are only viable for 20 -25 years, just how do you contrast this short time frame with the existing environment of thousands of years? You destroy a thriving ecosystem for short term financial gain – that is criminal! 4.It is the absurdity of a financial accounting mentality that can say a wind farm developer can claim not destroying a habitat as an "offset" for destroying an ecosystem. When the so called "offset" area was doing fine before being claimed as a book balancing item for wind farm accountants. 5.The philosophy behind a government "offset" policy framework seems to be totally bureaucratic in nature. The real environment, which has evolved dynamically over thousands of years, is treated as a mere ledger entry in a spreadsheet. The Chalumbin area is a multi-layered, complex, high altitude and diverse ecosystem – you can not just cut & paste areas and call them "offsets". In summary it is just not credible to claim an area which the developer has not destroyed as an "offset" against an area that has been demolished for wind turbines. This is a totally absurd concept and does not fit with the reality of ecosystem evolution and durability. Once the high-altitude biodiversity of the proposed Chalumbin wind farm footprint is destroyed it is gone forever – end of story! Nothing can bring it back.		No	The proponent can only be expected to work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
6b	.002	Project alternatives	Feasible Alternatives I must differ with the PER assertion (Section 3, page 63) that "There are few alternative locations for the Project within the Cairns to Townsville section of Northern QREZ where the wind resource to the west of the Great Dividing Range (away from high density populations to the east) is located close to an existing high voltage transmission line and outside of the Wet Tropics World Heritage Area." I mentioned in an earlier submission (PER_submission_1.docx, 22nd Nov.) that there are ample wind resources west of the Chalumbin area, in fact better wind resources than around Ravenshoe. I would like to mention one feasible alternative – put the wind farms out west in less sensitive areas and make use of the Copperstring 2.0 option for power transmission. There is more of a wind resource around the Hughenden area (refer my wind resource diagram in PER_submissio_1.docx) and a spur line off Copperstring 2.0 would give connection to the national grid. Of course this option would be denied as being not feasible because of the cost of building a spur line to the wind farm. If selecting an alternative site would put the whole economics of a wind farm into question, one has to look more closely at just what Ark Energy really want.		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project.
6b	.003	Transmission capacity	If the Chalumbin option for wind turbines relies on the existing 275Kv line then this existing transmission line will need "augmenting" (pg. 287, Section 5.6.1). Who bares the cost of this "augmenting"? Is it the government/taxpayer or is it the proposed developer? Is Ark Energy trying to socialise the real costs of the Chalumbin Wind Farm onto the Federal government/taxpayer instead of accepting the financial responsibility of building its own transmission line? This whole question of transmission line capacity should take into account the cumulative affect of all the wind farms proposed for the area between Mt. Emerald in the north and the Mt. Fox/Burdekin area in the south. All up 400 wind turbines are in the planning stage, and they will all require access to the existing 275Kv Powerlink line. If this line needs upgrading to take all this additional wind turbine development then it would make sense to create a new high capacity transmission line far to the west of the World Heritage Area and slot into the Copperstring 2.0 development. This avoids all issues of endangered species, water management, biodiversity concerns, etc. associated with the current proposal to develop a wind farm in the Chalumbin area.		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. The Project is proposed in 2 stages, either of which may or may not be developed in the future. It is not correct to state that the Project will only be viable if both stages are developed. Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
6b	.004	Project location	If Ark Energy is using the excuse of low density of population to support its siting of the wind farm at Chalumbin, then surely this argument would be more credible if the whole development were to be located further to the west of the Tablelands. Siting a wind farm on the southern Evelyn Tableland where there is a population of approximately 26,000 (Table 13-6, Section 13, pg. 621) would conflict enormously with local amenity, not to mention the visual dystopia of seeing 250m high industrial turbines against the skyline. Summary I contend that Ark Energy have produced a draft PER that:- a)Does not logically address the issue of suitable and meaningful "offsets". It is a sham accounting trick that does not deal with the real sustainability issues of an existing and vibrant ecosystem. b)There are "feasible alternatives" to siting a wind farm in the Chalumbin area. It seems that the developer wants to take the easy option – piggy back off existing infrastructure and if that is not possible then get the government to subsidise their project. I understand that the wind industry is already in receipt of substantial government largesse. I refer to Senate Select Committee on Wind Turbines final report 2015 where the sum of $500,000 per turbine, per year was aired. Really, when is enough enough with all these subsidies? https://www.aph.gov.au/parliamentary_business/committees/senate/wind_turbines/wind_turbines/final_report I enclose a screen shot detailing this information from this Senate Committee's report It does seem that the one thing that is "sustainable" about wind farm development in Australia at present is a sustainable flow of subsidies!		No	The landscape and visual impacts associated with the Project are investigated comprehensively in Appendix M (LVIA) of the PER. The proposed environmental offsets for the Project are identified and described within Appendix O of the PER - this demonstrates how the proposed offsets will satisfy the requirements of the EPBC Act. Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
40	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
41a	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
41b	.001	Project alternatives	I Do Not consent for the use of Wooroora and Glen Cordon properties in the Ravenshoe Area for power generation. I offer the alternative Of the CopperStream2 project (CS2). This is combined with the construction of a new power line. It will eliminate the need to Upgrade the Chalumbin-Ross powerline, either by construction of new towers and lines or A parallel line. The CS2 would allow access to better and more reliable resource of wind.		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project.
41b	.002	Survey effort	The list of threatened species is not complete and the study of species is in adequate. I find the amount of time and the timing of the study into these species is not adequate. As the forest is migrated to by fauna during the period of the wet build up in November and December and during the first storms in the area. December and during the first storms in the area. There is no study into the relationships between the threatened flora and the surrounding Flora and Fauna i.e., pollinators, insects and mammals. The water fauna is vulnerable to any change in water conditions. Desktop studies are an inadequate form of Flora and Fauna research.		No	The Project team agrees that desktop studies are an inadequate form of flora and fauna research. As outlined in Section 4.2.2 of the PER, a field assessment program has been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
41b	.003	Social impacts	The construction of Chalumbin wind Farm and ancillary equipment during construction and maintenance life Span, will impact the indigenous peoples current and future use and access to all of the of the properties area I do not consent to be assaulted by Electrical and Magnetic Frequency Emissions from wind turbines.		No	The Queensland Planning Act 2016 development approval requires the proponent to address the criteria of the State Code 23 for wind farm development. The process includes an assessment of the potential impacts from the Project on identified sensitive land uses, which includes a list of receptors as per the State Code 23 guideline. CWF received state approval under the Planning Act 2016 on 29 June 2022. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
42	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
43a	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
43b	.001	Opposition to project	As per Submission 41b.		No	See response to Submission 41b
44	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end, with the addition of: This pristine forest MUST be protected. It is wrong to destroy native wildlife habitat to supposedly protect the environment! It is all about corporate greed.		No	See response to Submission 21
45	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end, with the addition of: Very concerned about the damage to this pristine area and the damage to wildlife.		No	See response to Submission 21
46	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
47	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end, with the addition of: Worried about the endangered species.		No	See response to Submission 21
48a	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
48b	.001	Opposition to project	As per Submission 41b.		No	See response to Submission 41b
49a	.001	Opposition to project	As per Submission 41b.		No	See response to Submission 41b
49b	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
50a	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
50b	.001	Opposition to project	As per Submission 41b.		No	See response to Submission 41b

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
51a	.001	Opposition to project	As per submission 41b.		No	See response to Submission 41b
51b	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
52a	.001	Opposition to project	As per Submission 41b.		No	See response to Submission 41b
52b	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
53	.001	Support for project	My name is Edwin Lee and I am writing to you in support of the Chalumbin wind farm south of Ravenshoe. I believe the wind farm will bring more work and money to a town that is struggling financially by a large portion of the people residing in and around the town. As a local, part time fire fighter, and bus driver in the area of Ravenshoe and living down Wooroora Rd, I support the use of the Wooroora Rd as the main access to the Wind farm if this means fixing a few points in the road such as the water crossings. The water crossings that I would like to see corrected include Stony Batter cause way, span wick cause way, and the Vine creek Bridge. All water ways mentioned flood in heavy rains causing the roads to be cut off from town, not only is this a nuisance to many people but in an emergency situation can have a fatal outcome. To add to the Stony Batter Cause way, the road prior to the crossing is very narrow with little visibility around the bend and leads into a one way road on the crossing itself. This is also very dangers especially when large trucks or busses use the road. I can't see this problem being fixed in the near future and the Chalumbin wind farm may just be the opportunity to make the road safer. (if the road was to be approved for use) Many people in town support the wind farm but do not want to be part of the political side of things and opt out of coming forward. I believe green energy needs to start somewhere and with global warming being a threat to the environment, wind farms are the best stepping stones to a better future we have at this time.		No	The Project will generate benefits to the local, regional and State economies as discussed in the PER section 13.1.2. The benefits to the local community include direct and indirect employment opportunities in the construction of the Project. The main access to the Project is proposed off Wooroora Road, however ongoing consideration of alternatives are being undertaken in response to stakeholder feedback. Consideration will be given to safety and constructability of any required upgrades and outcomes of consultation with Tableland Regional Council. Appendix N of the PER provides the supporting report to the detailed flood modelling assessment undertaken across the Project site and the relevant surrounding areas considered for site access purposes. Where water crossings are required within the Project area and for access purposes, appropriate upgrades to infrastructure will be undertaken and the outcomes of the flood modelling assessment will be considered in the design of the crossings. As per the conditions of approval issued under Queensland's Planning Act 2016, a Transport Impact Assessment is to be prepared. The existing traffic and road use will be captured in this assessment. Relevant approvals and permits will be sought from the State and local government prior to road upgrades, including waterway crossings.
54a	.001	Biodiversity general	I would like to oppose the proposed wind farm at Chalumbin in far north Queensland. There are a number of reasons why I am opposed to this particular wind farm. First up I would say that I am not totally opposed to wind farms if located in areas that would have minimal impact on the local environment. Let us be open and honest about this wind farm proposal, the impact on the local environment will be enormous. Large swathes of native habitat will be destroyed forever, once gone they will take hundreds of years to reestablish, if ever! In a time when rain forrests around the world are being increasingly decimated, and always for some altruistic reason. We are being continually told that forrests store carbon, and that we in fact should be planting trees to offset the daily deforestation of this planet. It may well be called green energy, but to destroy vast areas of rain forrest in order to construct these large wind farms is really not an option, and is really counter productive!		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
54b	.001	Project proponent	1. Is Ark Energy a privately owned company, if so who are the benefactors of the income derived from this project?; 2. What other wind farms do Ark Energy operate?;		No	Ark Energy is a wholly owned Australian subsidiary of Korea Zinc. Ark Energy will not own or operate the Chalumbin Wind Farm. Following development approval, the project will be acquired by its investment partner for construction and operation. It will be owned and operated by the investment partner, which is a wholly renewables invested superannuation fund. Ark Energy owns a development portfolio of wind energy projects. Ark Energy does not currently operate any wind farms.
54b	.002	N/A to PER matters	3. Has a detailed cost benefit analysis been carried out by an 'independent' non aligned specialist?; 4. Have Ark Energy engaged an independent non aligned company to review this project? and made submissions?;		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
54b	.003	Hazard and risk	5. Given the propensity for cyclone activity in this region have Ark Energy carried out a detailed study on the impact on wind farm structures should a Category 5 cyclone impact this area? Wind gusts of 225 kn/h to 300km/h can be expected;		No	All Project Infrastructure will be designed to withstand the impacts of extreme weather events such as cyclones. The design of the turbine foundation and towers is based on Australian Standards and accounts for extreme wind speeds where the project will be located. The turbine itself has a range of classes to choose from depending on site conditions including extreme wind speeds and is selected accordingly.
54b	.004	N/A to PER matters	6. Does Ark Energy supply to the Federal government a 'Bond' for the duration of the project? AND if so how much is kept?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
54c	.001	Weeds and pests	1. Have there been any 'long term' studies on the environmental impacts of these large wind turbines on this particular environment?; 2. How is the site maintained?, is it regularly slashed, poisoned?; 3. How is it proposed to control invasive noxious weeds/trees etc once the area is cleared?		No	As far as the Project team is aware, there have not been any long-term studies on the environmental impacts of wind farms on this particular environment. Site management measures are outlined in Section 6.0 of the PER, it is worth noting that these measures are intended to be adaptive, and will be reviewed and updated in response to changes within the Project area. Control measures for weed species are outlined in the "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan" located in Appendix E & F of the PER respectively. These plans will be further developed by CWF and/or the Contractor prior to works commencing on site.
54c	.002	Contamination	4. How much hydraulic oil is used by each wind turbine on an annual basis? and what is the plan should there be a minor/major spill?;		No	The amount of hydraulic fluid used for the safe and efficient operation of each wind turbine is dependent on the wind turbine itself, the operational model of the Project owner, and the specifics of the hydraulic fluid used. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8.
54c	.003	Erosion and sedimentation	5. How is erosion/top soil degradation controlled to ensure downstream water ways are not silt impacted?;		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Soil management measures will be developed to minimise impacts to topsoil and progressive rehabilitation will be undertaken throughout construction.
54c	.004	Decomissioning impacts	6. Do the large blades degrade over time? How often are they replaced? How are the old blades disposed of, and where. Is it true that they are destined for landfill?		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
55	.001	Project alternatives	I have a number of concerns both with the proposal and with the draft PER. Consideration of alternatives The discussion of this topic is heavily precursed with two major provisos that should not be allowed: • away from settled areas – as this automatically precludes placement in land already cleared (in a Far North Queensland context at least); and • proximity to the high-voltage line. This is blatantly putting economics ahead of the environment.		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. It is not commonplace, nor is it reasonable, to propose the placement of wind farm projects in urbanised areas.
55	.002	Rehabilitation	Initial and final footprint With an initial imprint of 1071.1 ha (p16) and 675 ha to be rehabilitated (p23), how can it be that the final imprint will be only 107.2 ha (p16)? 1071.1 – 675 = 396.1. That's 3.7 times the final imprint you report. The implied notion that rehabilitation adequately negates parts of the initial imprint is fundamentally wrong. The planted trees won't reach very useful size in the life of the project, nor for a long time thereafter. And the understorey will most likely never recover, and quite likely become a source of weeds. Further, the imprint will inevitably be far from confined to areas actually cleared. Because the imprint consists of 122 km of road and 86 turbines dispersed over a wide area, edge effects (see Weeds below) will doubtless permeate over a very much larger area.		No	The maximum estimated temporary construction disturbance is 1071.1 ha and the area required for wind turbine footings, infrastructure and operational access tracks (Operational footprint) is 107.2ha. This leaves an area of 963.8 ha that is not required for operation and the Project has made a commitment to proactively rehabilitate at least 70% of that area, which is 675 ha. The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. Specific measures to improve outcomes are included in the Rehabilitation Principles section (3.1). Rehabilitation Management (Section 3.5) will include weed and pest control and monitoring and reporting (Section 4.0) will assist to ensure the final objectives are achieved (Section 4.1). The species and structure of the vegetation communities, including the understory will be managed to return the vegetation communities (where stated) to remnant status as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems.
55	.003	Weeds and pests	Weeds A major concern is that of weed invasion emanating from roads and turbine areas. • I note with concern that the draft PER provides no information on the quality of the understorey in footprint areas, nor of the weeds present there. • the weed management "Plan" (title of Appendix F) is full of fine platitudes, but what we need are concrete and sustained commitments of adequate skills and resources. Indeed, the "plan" isn't really a plan at all – it should be – and is contradictory in subsequently disavowing itself as a plan – "is not intended for implementation purposes" (App. F: 3); • as an example of its platitudinous nature, the list of weeds in Appendix F is all from secondary sources. Were weed surveys not conducted? The list contains many species of little or no relevance to the study area, and is missing a number of key invasives relevant to this area including: - Guinea Grass (Megathyrsus maximus); - Grader Grass (Themeda quadrivalvis); - Molasses Grass (Melinis minutiflora): - Red Natal Grass (Melinis repens); - Siratro (Macroptilium atropurpureum); and - Centro (Centrosema molle). Where is the assessment of relevance of and priorities for weed species?		No	Detailed habitat quality assessments have been underway since December 2022 and include information on the habitat quality of the understorey. The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intended that these "Preliminary" documents act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept. Fine-scale weed mapping will be undertaken by the Contractor when developing these plans further. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary.
55	.005	Offsets	Offsets How can conserving good habitat that isn't threatened compensate for the destruction of habitat elsewhere? Is management going to drastically improve the habitat quality of the offset areas, and if so, how? How can an offset be of quality when it has, embedded within it, the very same disturbances as more widely proposed, i.e. roads and turbines?		No	As discussed in the Preliminary Offsets Strategy (Appendix O to the PER), the intention is to improve the habitat quality within the offset management areas through actions such as the removal of weeds and pests, improved bushfire management, etc. This will ultimately be demonstrated through the application of the Federal Government's Environmental Offsets Guide (often referred to as "the calculator") as required by legislation.
55	.006	Mitigation and management measures	Monitoring What provision is there for independent monitoring of environmental standards? I see none, and there needs to be. At the very least, there needs to be an independent annual audit. Further, if the company is serious about is environmental standards as claimed, it should be proud to open up the area to public access and scrutiny after the construction phase, when I read in the PER that the intention is to preclude public access.		No	Independent monitoring will only be undertaken if DCCEEW include this as a condition of approval. There are many reasons for not opening up the Project area to unregulated public access once the Project is operational, not least the potential disruption to the existing landholders. To date, the proponent has been very open with offering guided tours of the Project area to interested stakeholders during the environment assessment phase and this will continue once the Project is operational.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
55	.007	Adequacy of the PER	Quality of draft PER I note general sloppiness such as missing references, spelling errors in scientific names, poor use of literature; trivial points I realise but they surely indicate a poor general standard of work. I note also an absence of key information, including: · whether the footprint areas (specifically and in some detail) have a history of grazing and logging, and if so how heavy have these been, with supporting data needed; · related, the quality of the vegetation in the footprint areas and especially information on the nature and quality of the understorey; and · what your field consultants actually found (surely this should be in detail in appendices) not just with regard to listed threatened communities and species. The draft PER is lengthy, hard to digest and contains so much material that can only be described as guff, and more that is merely platitudinous – and so little of substance – that it constitutes disinformation.		No	The PER has been authored by, and reviewed by, Certified Environmental Practitioners with the relevant qualifications and experience to produce a document of this nature. The document has undergone a lengthy quality assurance review process on behalf of the project team and the proponent. No specific changes to the PER can be made based on this comment as no specific errors are pinpointed in the submission. With respect to the project footprint's history of grazing and logging, Section 1.4 of the PER describes that the two host properties are used primarily for grazing (this is not something that is limited to the project footprint). Information on the nature and quality of the understorey vegetation within the Project footprint will be collected as part of the detailed habitat quality assessments undertaken for the offset calculations. Existing information on the understorey has been collected through the hundreds of quaternary vegetation community assessment sites described in Section 4.2.2.2 of the PER and shown in Figure 4-7. This information contributed to the determination of "Ground-truthed Regional Ecosystems" throughout the Project area. Raw data collected by the suitably qualified ecologists in the field supports the revised vegetation community mapping; however, is not necessary for inclusion in the PER. The PER is a large document, but this is necessary in order to appropriately respond to the requirements of the PER Guidelines.
55	.008	Opposition to project	Project summation The fundamental problems with the Chalumbin proposal are that: · it is an inappropriate use of native forest; and · in disturbing (in a substantial way) a relatively undisturbed area, this is another "cut" in the environment's "death of a thousand cuts".		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
56	.001	Opposition to project	As per Submission 21.		No	See response to Submission 21
57	.001	Support for project	Dear Sir, Madam Having been to several community meetings regarding the Chalumbin wind farm I have been impressed with the community consultation process as it gave one the opportunity to find out what is proposed and to ask questions. The proponents are willing to answer all questions and appear very transparent on all issues. Not only will this project be good for the environment in removing co2 from the environment it will also add an economic benefit to the community throughout its lifetime something sadly needed in the Ravenshoe district. I fully support the project and hope it gains approval.		No	Ark Energy is signatory to the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' and is committed to transparent and meaningful consultation to understand community members' views, feedback and concerns and provide informed responses to issues raised. Consultation has been undertaken in accordance with a comprehensive Stakeholder and Community Engagement Plan as outlined in Section 11.0 of the PER. The Project will generate benefits to the local, regional and State economies as discussed in the PER section 13.1.2.
58	.001	Support for project	I have attended the information session Tuesday 29th November. I am Very Happy to pledge my 100% support for the Chalumbin wind Farm green energy project. I'm completely satisfied that the PER demonstrates that the construction and ultimately the operation of the wind Farm will be done in a best practice way. My only question that unfortunately I forgot to ask is. I think it would be a good idea to have some public access to a suitable viewing area close enough to appreciate what marvellous of engineering the wind turbines are. When the project is operational.		No	Ark Energy is signatory to the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' and is committed to transparent and meaningful consultation to understand community members' views, feedback and concerns and provide informed responses to issues raised. Consultation has been undertaken in accordance with a comprehensive Stakeholder and Community Engagement Plan as outlined in Section 11.0 of the PER. A Landscape and Visual Amenity Impact Assessment was undertaken and provided at Appendix M of the PER. A number of visualisations have been generated to represent the view of the Project and wind turbines from publicly accessible locations.
59	.001	Support for project	After having been abroad for several months it was great to finally - I was worried that the development had come to a halt - receive another e-newsletter with updates and also seeing the Chalumbin Wind Farm office open twice this week, offering time and information to the local public. I do appreciate Epuron/now ARK Energy's effort of keeping the communication channels open in a very professional, friendly way. Thanks for talking to us in such a factual, science based manner ! The November information sheets clearly demonstrate that ARK Energy has listened carefully to criticism, concerns and proposals of the local community. Accordingly, many aspects of the initial plans have been modified, which means less turbines, less clearing, etc., are reducing the impact and overall footprint of the wind farm substantially, showing that we - as the community with various interests and concerns - are taken seriously. From the beginning I have supported this wind farm project because I think it is the right step in order to opt out of fossil fuel burning; globally we need to expand our green energy resources and as our Ravenshoe location offers very good conditions to do so, we are the lucky ones receiving a chance to rejuvenate our dying, old town that so urgently needs investment into its economy. The prospect of jobs and social benefits gives me hope that the once vibrant town will attract people who would want to live, learn and work in our community (not just to retire or aim for government support and handouts) . I believe that the rehabilitation of the environment after construction will happen and what's more: I am proud of being a member of a community that embraces Queensland's goal to reach NET ZERO by 2050 - or maybe even sooner!? GO Chalumbin Wind Farm, our planet needs you.		No	Ark Energy is signatory to the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' and is committed to transparent and meaningful consultation to understand community members' views, feedback and concerns and provide informed responses to issues raised. Consultation has been undertaken in accordance with a comprehensive Stakeholder and Community Engagement Plan as outlined in Section 11.0 of the PER. A number of Project changes and iterations have been produced in response to stakeholder feedback and concerns, most notable being a reduction of the number of proposed wind turbines within the Project area from 200 to 86 which in turn reduces the overall Project disturbance footprint and clearing required. The Project will generate benefits to the local, regional and State economies as discussed in the PER section 13.1.2. The Project has made an industry leading commitment to rehabilitate temporary construction disturbances and retain only the minimum footprint required for safe operations which is approximately 0.3% of the Project area.
60	.001	Support for project	Thank you for having the open honest and informative open day 28/11/2022 to 29/11/2022 at your town office. It was great to see a company being so open and honest with these findings and studies. Listening to all concerns and feedback. Even making great changes to original plans of 200+ turbine's to 86 only. After listening to local concerns and your studies identifying area's of concern. I was involved in the construction and maintenance of the original windy hill windfarm. Which has and is still providing benefits to our small community. For the first 12 years it kept 10 locals employed travelling Australia and the world with all their families in our community. Not forgetting the benefit to land holder and local businesses And still provides 2 full time and casual positions keeping people and family within community. I left the wind industry 13 yrs ago and took another job but still reside in Ravenshoe. I have heard talk of wind turbines affect health and well being. I have kept in contact with a lot of old staff and not one has a strange illness or mental health problem as claims being made by anti turbine groups. We all agree that was probably the best we felt working out doors and a climb to our work. I hope the community get behind this project look at factual information presented. Not just hearsay and lets face it if you ask and search google, Jeeves or whichever search engine you choose You can always find what you want NOT ALWAYS FACTUAL OR CORRECT . Benefits upgrading of local roads and bridges Two local graziers getting royalties Jobs and apprenticeships for local kids and adults Wind turbine technicians will become an official trade next year Ongoing benefits to local businesses and schools and community groups. And the list keeps going Wishing you the best of luck going forward,		No	Ark Energy is signatory to the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' and is committed to transparent and meaningful consultation to understand community members' views, feedback and concerns and provide informed responses to issues raised. Consultation has been undertaken in accordance with a comprehensive Stakeholder and Community Engagement Plan as outlined in Section 11.0 of the PER. The Project will generate benefits to the local, regional and State economies as discussed in the PER section 13.1.2. The construction of the Project will lead to long term benefits to the local community through direct and indirect employment. A requirement under Queensland's Planning Act 2016 wind farm application assessment process is the consideration of sensitive land uses to protect human health and address risks to human health, wellbeing and quality of life. The Project was approved under the Planning Act 2016 subject to conditions on 29 June 2022. The local, regional and national social and economic benefits of the Project are presented in section 13.0 of the PER and respond to the PER Guidelines issued by the DCCEEW.
61	.001	Adequacy of the PER	Note key submission points where a response is required have been extracted from this point onwards, due to length of submission. I am aware that despite the volume of tables produced on this topic, the actual surveys were very inadequate as is the assessment of cumulative impacts and the proposed "offsets." Much of the voluminous text is boiler plate in nature, designed to impress the reader. Topics are scattered throughout the document and hard to find. Some of the construction mitigation will be hard if not impossible for the construction contractor to implement and in some instances shows little understanding of the tropics. The PER would benefit greatly from consolidation and a red pen.		No	The surveys undertaken for the Project have been in accordance with Commonwealth and Queensland guidelines and requirements to the greatest practicable and safe extent. These surveys are listed in Table 4-3 of the PER. The assessment of cumulative impacts and the proposed offsets were considered by DCCEEW to respond appropriately to the PER Guidelines and therefore meet the adequacy requirement. The structure and content of the PER specifically responds to the PER Guidelines. It is noted that the construction environmental management measures identified within the Preliminary Construction Management Plan (Appendix I) and throughout various parts of the PER will require considerable thought and best practice approaches to respond to the prevailing climatic conditions at the Project area. These commitments will form part of any subsequent approval for the Project and will be necessary to implement in a way that is compliant with the primary approvals for the Project.
61	.002	Emissions	Queensland has set a series of renewable energy targets in order to reduce its emissions of Green House Gases (GHG) from the production of electricity in the State. The stated aim of the Chalumbin Wind Farm project is to construct and operate a facility that efficiently supplies renewable electricity. This infers that the project will be efficient in terms of the GHG savings, and the cost of the energy produced. The authors of the PER claim that: "the Project will offset its greenhouse costs within 1.5 years of commencing operations." This statement is far from true, particularly for stage 1 of the proposed project. Data and calculations are given in the attached document that show that the PER calculations contain some fundamental errors in the GHG cost of the project. Even the GHG cost of clearing forest is forgotten altogether. Indeed, unless the project performs at high capacity, unlike the nearby Mt Emerald Wind Farm, then this is a very costly project economically based on the lack of GHG savings alone.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG costs associated with vegetation clearing (i.e. the loss of the carbon sequestration potential associated with the vegetation to be cleared) are outlined in Section 13.2.1.3 of the PER. The GHG assessment was presented in the PER on the basis of the full Project being constructed and operational. It is reasonable to infer that there is a linear and proportional relationship between the GHG costs and GHG savings for the Project based on the number of WTGs constructed and operational.
61	.003	Emissions	Building Wind Farms in Forests is a Terrible Waste Forests are giant carbon and water storage batteries. Why discharge greenhouse gases to the atmosphere by land clearing and lose all the benefits forests provide in the mitigation of climate change? When they are gone, we lose all the carbon sequestration and cooling they do every day as well as dumping all the currently stored carbon into the atmosphere. It is far better economically and in GHG terms to save our current forests rather than create plantation forests. By clearing forest to build wind farms, we lose a very substantial proportion of the carbon savings we would make by siting them elsewhere. Much of what we gain in lower carbon emissions from wind power, we lose by destroying forest. We are also desecrating our irreplaceable biodiversity, Aboriginal cultural heritage, and tourist jobs in areas of high importance. High quality patches of remnant forest are rare and precious, and some of other windfarm project areas that are being planned were originally to be included in a future National Park. What a waste! We can fight climate change and protect our natural diversity at the same time. When our natural assets are gone, they are gone!		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG costs associated with vegetation clearing (i.e. the loss of the carbon sequestration potential associated with the vegetation to be cleared) are outlined in Section 13.2.1.3 of the PER. The PER demonstrates that the potential impacts of the Project on MNES are manageable. The PER concludes that the Project advances ESD - an object of the EPBC Act.
61	.004	Cumulative impacts	The PER starts but does not complete the task of assessing cumulative impacts. Loss of forest on mountain tops will disrupt the hydrological cycle and lessen rainfall and lead to more droughts and flooding by changing the pattern of cloud formation. This will impact on both our forests including our World Heritage listed Wet Tropical Forests and the Great Barrier Reef while drying our inland agricultural lands to the west. While one project may have almost negligible impact on weather, more and more wind farms are proposed along the whole of the Great Dividing Range in Queensland following the route of a transmission line. The wind farm projects change the land use from forest to major industrial, thus potentially permitting major extensions to each project with much less assessment.		No	Section 5.5 of the PER provides a cumulative impact assessment that considers the cumulative impacts of a number of proposed and committed wind farm projects in the broader region - as required by the PER Guidelines. Construction footprints for wind farm projects typically occupy 3-4% of the total host property - this allows ongoing coexistence of land uses (generally agriculture/grazing and wind farm operations) and the ongoing operation of the wind farm typically does not render the site a "major industrial" land use, but rather an efficient use of resources and example of land use complementarity. The wind farm projects considered in the cumulative impact assessment and those mentioned vaguely by the submitter will form part of a strong push to decarbonise the Queensland and Australian economy, which in turn will have a bearing on halting the effects of climate change and associated impacts to the rainforests and Great Barrier Reef.
61	.005	Offsets	The Project Proponent has proposed to mitigate and avoid impacts, but! No offsets have been described for this project. By definition offsets are measures that compensate for the residual impacts of an action on the environment, after avoidance and mitigation measures are taken. Suggesting that areas of forest avoided for clearing (many right next to the World Heritage Area) are offset areas is actually double counting. Offsets are to counter residual impacts after avoidance has been practiced. In addition, what happens at the end of the project? No long- term protection is even offered for the "avoided" areas.		No	The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.

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61	.006	Mitigation and management measures	Much of the mitigation suggested is boiler-plate text designed to kick the responsibility further down the road. Some of the mitigation is entirely impractical in the wet tropics. Little quantitative monitoring is planned. Continuous turbidity monitoring is essential. Who are the "Authorities" that may be notified in the event of environmental damage? Does no independent regulatory body audit the site? Are there any penalties if promises are broken? Will the public have access to the monitoring reports? The mitigation suggested is not enough to stop two fungal diseases spreading and causing the extinction of the Magnificent Brood Frog.		No	Quantitative monitoring will be outlined in the Construction Environmental Management Plan which will be developed by the Contractor, using the ESMP as a framework. The proponent has agreed to make monitoring reports available to the public although this is not typically a requirement of approval. Standard conditions of approval under the EPBC Act typically require the proponent to undertake monitoring and annual compliance audits, and to provide these reports to the Department within a defined timeframe. Compliance reports are also required to be published on the proponent's website. Independent audits may also be required if requested in writing by the Minister. The control measures for Chytrid fungus (which has not been definitively proven to be a threat to the magnificent brood frog, as confirmed by the species Working Group) outlined in the Preliminary Weed and Pest Management Plan (Appendix F of the PER) are considered best practice based on current knowledge, as referenced in that document.
61	.007	Opposition to project	The International Union for the Conservation of Nature (IUCN) has listed Our World Heritage Wet Tropics as the second most irreplaceable natural World Heritage site on earth. Even at the time of its listing, it was recognized that more of the entire ecosystem should be protected. Fauna and flora do not recognize lines on a map and use a variety of habitat types. The site proposed for the Chalumbin wind farm is part of this precious ecosystem. What worth do we put on the loss of biodiversity and ecosystems, stunning landscapes, natural carbon sequestration and storage. Forests cool the earth and make it rain. Forests soak up runoff like giant sponges and help prevent flooding, while recharging aquifers. They protect our river catchments so that the water going to the Great Barrier Reef is clean. Forest stabilises the soil so that turbid water does not kill frogs, fish, or corals. We are putting so much at risk by building wind farms where they should not be. I thought the goal was to fight climate change, not make it worse. Australia can do better than this!		No	Land use decisions in Australia are driven by, among other things, land tenure and land ownership. The WTQWHA is protected through the delineation and dedication of the world heritage area. It is acknowledged that edge effects from adjoining areas have the potential to impact within the WTQWHA. This is explored within Section 8.10.2 of the PER, which demonstrates that available peer reviewed literature identifies that some edge effects can be noticeable for a distance of up to 500m. At its closest point, the Project footprint is 600m from the edge of the WTQWHA. It is predominantly much further from the edge of the WTQWHA than this. Based on available peer reviewed literature, this minimum distance of 600m is sufficient to ensure that any edge effects associated with the Project do not extend into the WTQWHA. The Project will form part of a strong push to decarbonise the Queensland and Australian economy, which in turn will have a bearing on halting the effects of climate change and associated impacts to the rainforests and Great Barrier Reef.
61	.008	Biodiversity general	I have been disappointed that Epuron Pty Ltd have tried to infer that the project area for the Chalumbin Wind Farm in Far North Queensland consists of lower grade, open eucalypt forest. Even the latest advertisement in the local paper showed photographs suggesting that these photographs were taken within the main project area rather than in the more heavily grazed parts of the grazing properties in which the project area lies. While much of the Atherton Tablelands was heavily logged for a long time, much of the remaining forest is unbelievably valuable habitat and greatly treasured by a considerable proportion of the local population. Indeed, many locals are now re-vegetating their land or finding other ways to conserve local forest. Having spent a lot of their own money and time re-vegetating, they are mourning the rapid loss of high-grade ecosystem forest mostly because of poor planning for the siting of transmission lines. There is higher quality wind to the west of the proposed Chalumbin Wind Farm which has been made unattractive to developers because of its distance from the major transmission lines. The term, remnant forest, is an unfortunate one and is used in Australia to describe everything from excellent quality habitat to severely degraded forest. I have noted with distaste many of the photographs used in the PER as they imply that much of the project area is degraded. This is not so. The following table is taken from a fact sheet issued by the New South Wales National Parks and Wildlife Service. Under these definitions, the project area is mostly good habitat.		No	The Project area does consist primarily of open eucalypt forest, as demonstrated through vegetation surveys undertaken by eminent, Tablelands-based botanists. There are small areas of rainforest within the host properties but the Project has been specifically design to avoid these. Avoidance of wet sclerophyll forests has been undertaken to the extent practicable. The fact that the majority of vegetation proposed to be cleared is open eucalypt forest does not automatically translate to it being "degraded" as the extensive description of the site's ecological values in the PER would attest. All photographs in the PER were taken within the Project area. Many of the photos in Section 4 of the PER illustrate the ecological value of the site.
61	.009	Emissions	Epuron's main justification for the project is the need to replace carbon intensive energy production with lower carbon sources such as wind power. Appendix L Greenhouse Gas Assessment Calculations has been given as justification for their frequently made statement that the payback period in GHG terms is only a year or two. Unfortunately, Epuron has totally forgotten about the GHG lost to the atmosphere in the early part of each stage of the project due to clearing of over a thousand hectares. The forest cleared in stage I is dense and includes trees up to a metre in diameter. Water and carbon will be lost from the soil, and it will take many years before the new trees planted during rehabilitation works will replace what has been lost if ever. I include a simple evaluation below that I undertook in May 2022 to try and understand the implications of the project in carbon terms. Summary Loss through deforestation = 2.2 million T CO2 (Plus the other losses like diversity etc.) - The total loss of CO2 to the atmosphere is 2.5 million T and could be as high as 3 million T. Prevention of CO2 production by Chalumbin Wind farm = 12 million T assuming 30% efficiency. If Chalumbin performs like Mt Emerald, then the savings might only be about 6 million tonnes Thus, the project could dump 3 million T of CO2 into the atmosphere during construction only saving a net 3 T during its lifetime, but we lose vulnerable species and many other benefits! Comparisons with the PER Appendix L The first table in Appendix L calculates the amount of CO2 saved by the project. It assumes that the turbines will operate for 30 years and compares them to coal as the energy source for the entire period. The industry standard for wind turbines is usually quoted as 20 years which can sometimes be extended to 25 years with good maintenance and favourable environmental conditions. The CO2 savings are given as 17.9 million T. The CO2 savings for 20 years would be 11.9 million T. This can be easily compared to the data calculated above as it was 12 million T. There are other differences in the calculations, but they play a much smaller part such as the nameplate capacity and the efficiency (30% above and 34.9% in the PER). Mount Emerald Wind Farm is the best comparison for wind turbine efficiency in the Tablelands Council Area and it has only been operating at an efficiency of 15% for a number of years. The second table in Appendix L provides far better data on the GHG cost of building a wind farm: 839,000T of CO2 compared to my simple calculation above of only 330,000 T. This justifies my figure of 3 million T lost to the atmosphere. The third table in Appendix L provides more detailed calculation of the GHG cost of transportation of materials to the site: 16,000 T of CO2. The fourth table in Appendix L does an extremely poor job of calculating the carbon sequestration lost from clearing forest for the project. It does not calculate at all the loss of carbon already stored in the biomass above ground or below ground. It badly underestimates the lost sequestration by that forest until the rehabilitation works are substantial. It takes many years before the sequestration rates of the replanted trees equal those of tropical remnant forest. All of this suggests that the overall savings in CO2 could even be as low as 2-3 million T over 20 years! What an expensive exercise for little reward. The Project cannot be justified on such little return for so much cost to the environment and the taxpayer. Wind farms should not be built in forests. MIT has estimated over half (56%) of the CO2 we produce is absorbed by nature. The natural world is our best ally in the fight against climate change and we will need all the help we can get! The project proponent has used the savings of GHG as the justification for the project. Really! Comments on Section 13 relating to the tables in Appendix L are also provided and provide evidence of a fundamental error made in the proponent's calculations of the forest sequestration lost by		No	A 35% capacity factor is considered to be conservative in the case of this Project - for the purposes of the GHG calculations. The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 2t per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from that which was quoted by the submitter within the Peeters and Butler (2014) reference which was between 100t and 500t of carbon per hectare ("Wet sclerophyll forest: regrowth benefits management guideline"). The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
61	.010	Mitigation and management measures	There is a lot of redundancy in the PER text although the intention may have been to make each section and appendix standalone documents. This results in the reader skipping text and missing the contradictions between one section and another. It has also resulted in mitigation text that would be ridiculously hard to implement in Far North Queensland. Predicting rain events in the tropics, important to the fulfilment of some of the proposed mitigation for sediment control will be almost impossible. Rainfall predictions often change within days or even hours.		No	The structure of the PER is reflective of the PER Guideline requirements. There is appropriate cross-referencing where appropriate in instances where the required level of detail best sits in an appendix. The challenges of implementing some of the proposed mitigation measures are not underestimated by the proponent. With respect to ESC matters, the avoidance of ground-disturbing works during the highest risk months of January, February and March is a major commitment to minimise erosion and sedimentation risk.
61	.011	Cumulative impacts	Because of the route of the major transmission lines, a number of large projects are proposed in areas nominated as buffer zones for ecologically critical areas in Far North Queensland. The PER for Chalumbin does not deal adequately with the cumulative impacts from all these projects as is required by the instructions for the PER. This is a critical issue.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
61	.012	Erosion and sedimentation	Original statements by Epuron suggested that temporary tracks 75m wide would be needed. The PER suggest that the temporary road construction may extend from less than 25 m to over 100 m depending on the complexity of the terrain which may mean that tracks to infrastructure may only be 25 m wide while access tracks for the transport of wind turbine blades could be up to 100 m wide depending on a range of considerations such as the steepness of the terrain requiring a level of cut and fill to optimise the road layout and minimise slopes to15 % maximum. As little information has been given on the potential slopes, it is hard to assess the likely impact. Some of the tracks constructed for Kaban wind farm are very steep and this has a lot of implications for water and sediment control on the Chalumbin site.		No	An assessment of slopes and soil types are contained in the Preliminary Erosion and Sediment Control Plan (Section 4.4.2 Appendix I of the PER). The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site.
61	.013	Transmission capacity	It was doubtful that there was capacity for Chalumbin to be able to connect to the grid in one stage. By creating 2 stages, it is easier for the project to go ahead.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
61	.014	Waste management	As we already have old turbine blades just dumped in forest in the area, better commitment to and planning for waste management would be appreciated by the community. Is TRC supposed to manage all the waste? Is the owner promising to continue to pay staff on site to look after new areas of habitat replacement? Companies are loathe to spend money at project's end and rehabilitation and removal of turbine parts neglected. Legislation requiring wind farm operators to meet certain standards for decommissioning doesn't exist. Promises to pour money into communities sound great but if the community is left with the mess at the end, problems handing it can be extremely expensive.		No	From Section 11.1.2 of the PER: Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects', a voluntary commitment to engage respectfully with communities, be sensitive to environmental and cultural values, and make a positive contribution to the regions in which it operates. Two of the relevant Charter commitments are: - We will demonstrate responsible land stewardship over the life of the project and welcome opportunities to enhance the ecological, cultural and/or agricultural value of the land. - During the life of the project, we will recycle waste materials where feasible and commit to responsible decommissioning or refurbishment/repowering of the site at the end of the project's life.
61	.015	Project alternatives	3.1 The "No Action" Alternative The PER states that The "No Action" alternative would mean that the 602 MW of electricity associated with the Project would continue to be supplied by existing coal-fired power stations; the assumed direct displacement of carbon for the Project is equivalent to the emissions of 596,309 t CO2-e per annum. Firstly, carbon displacement figure assumes that other low carbon sources of energy won't be available in Qld over the next few years and that the capacity of the wind farm will be 34.9% throughout this period (Table 1 in Appendix L). Even gas fired power stations halve the GHG emissions. The figure given does not take into account Table 2 Greenhouse Gas Emissions Associated with Production of Materials or Table 3 Greenhouse Gas Emissions Associated with Transportation of Materials. It completely ignores the GHG lost to the atmosphere by clearing of fast-growing tropical forest or the loss of sequestration from the cleared areas for decades. The project proponent makes Chalumbin Wind Farm sound wonderful but the numbers just do not hold up and there certainly isn't justification for 6 significant figures. Heaven forbid, but even the construction of one small integrated combined cycle gas fired power station on an old coal station site would do a better job reducing GHG levels, would produce just as much electricity, (rampable and not intermittent,) would not destroy the natural environment, be just as cheap while using up less materials in its construction.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
61	.016	Biodiversity general	Ecosystems depend on more than their threatened species. Lots of smaller creatures have critical roles to play. Loss of connectivity affects them too. 75metres is a large distance over sun-drenched hot road surfaces for creatures used to living in soil level, moist forest debris.		No	Site rehabilitation (as outlined in Appendix K), including the installation of fauna crossing infrastructure, will naturally assist non-threatened species as well as MNES.
61	.017	Contamination	There is one hazardous substance that is likely to be used in copious quantities. Wind turbines need lubrication. Synthetic lubricants are slowly replacing basic oil lubricants but either of these are used in massive quantities, 200 litres in a single lubricant change per turbine is not unusual. It is important that no lubricant ever enters any waterway.		No	It is noted that controls are necessary to ensure that any spill of hydrocarbons is managed appropriately so as to avoid and minimise potential impacts to the environment. The amount of hydraulic fluid used for the safe and efficient operation of each wind turbine is dependent on the wind turbine itself, the operational model of the Project owner, and the specifics of the hydraulic fluid used. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8.
61	.018	Decomissioning impacts	Newer blades may be better performing but it is common for blades to need replacement after about 10 years. This would necessitate the transport of big blades again and 75m roads being available. Roads to be cleared again? Sediment and runoff implications again?		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) describes this in section 3.6: In very rare cases, it may be necessary for the Project to replace an existing turbine blade during the operational lifetime of the Project. Delivery of the new blade would require clearing of areas that had previously been rehabilitated, on specific access roads only. In this instance, new rehabilitation activities would be undertaken as soon as possible on completion of the works, following the principles described in this Plan. Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated.
61	.019	Hazard and risk	A 2020 article in Wind Power Engineering Magazine estimated that 1 in 2,000 wind turbines catch fire each year. With all the built and proposed wind turbines in Far North Qld there is quite a high cumulative risk that a turbine fire will occur. This is both a safety issue with almost a 50% chance of a bushfire from this source in the next 20 years. Just picture the burning lubricant spraying from a wind turbine on fire.		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
61	.020	Emissions	'... the GHG costs associated with the construction of the Project are expected to be fully offset within 1.5 years of operation." This is probably the most misleading and erroneous statement made in the PER. As indicated on page 2 of this submission, the calculations left out significant GHG costs of clearing and severely underestimated the carbon sequestration ability of the cleared forest.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 2t per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from that which was quoted by the submitter within the Peeters and Butler (2014) reference which was between 100t and 500t of carbon per hectare ("Wet sclerophyll forest: regrowth benefits management guideline"). The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
61	.021	Community consultation	Many of the Jirrbal people have not been consulted. Some of them have special cultural heritage sites within the project area. Please talk to them and find out about these sites. I have had some individuals crying their hearts out as they feel they are at risk of losing their own or their children's identity.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4. The proponent has made every effort to ensure community members are aware of the proposal and to provide them with convenient access to information and opportunities to provide feedback, including regular mailouts, online and printed feedback forms, a local shop front, local information sessions and inserts in local papers.
61	.022	Decomissioning impacts	It is doubtful that restoration will be complete during the life of the project. Who looks after the rehabilitation once the site is decommissioned? A lot of noise to dismantle the turbines and a lot of traffic to take it all away to? Are the turbine blades to become the responsibility of TRC?		No	The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
61	.023	Cumulative impacts	The consultant has undertaken a lot of work to describe each project, but the final cumulative impact is unclear. Another column in the tables relating to various species and ecosystems could be provided describing the actual cumulative impacts.		No	Most of the publicly available information on the other projects is so highly preliminary and likely outdated that an attempt to assess cumulative impacts quantitatively would be inaccurate.
61	.024	Rehabilitation	The PER is the first time, interested parties such as myself, have heard that the project will be undertaken in two stages. However, it is unclear as to the order that turbines will be built. The turbine numbers don't seem to relate to construction order. It is difficult to visualise how rehabilitation works can begin other than grass stabilisation works while turbine blades are still being hauled to their final position. This issue will impact the timing of any rehabilitation works. The temporal effects of clearing could last many decades before final habitat replacement planting occurs and restoration is successful. Planting and restoration are quite different outcome measures. This issue is far more important than the offsite routes used.		No	The PER includes a detailed description of the Project Area, Project Footprint and Staging in Section 2.1. The road network for turbine construction can be seen in Figure 2.1 and progressive rehabilitation will not be limited by turbine blade haulage in the majority of the project area. Section 2.3 of the PER outlines the Project Development Stages and Construction is expected to commence in mid-2023, subject to the timing of approvals, feasibility studies and FID. The construction phase is expected to last for a period of approximately 24-30 months (for both Project stages sequentially) with commissioning anticipated for Stage 1 in 2025 and Stage 2 in 2026, subject to FID. The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems.
61	.025	Traffic and transport	There will be an enormous increase in very heavy transport trips on the Tablelands. The wear and tear on our local roads will be considerable. Firstly, there is the transportation of imported turbine parts from Cairns. Items like cement in the quantities needed are not available in Ravenshoe as suggested in Appendix L and will come from Gladstone probably by train to Cairns. While there are some large quarries in the general area, over 1 million T of concreting materials will be hauled from Cairns or even further. That's a lot of truckloads and a lot of trips.		No	Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Much of the material required for earthworks within the Project area is expected to be sourced directly from the Project area, as part of the optimisation of cut and fill balance.
61	.026	Social impacts	Accommodation There is a major shortage of low-cost housing within the TRC region. Could housing be built so that it could have a long-term benefit to the area?		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
61	.027	Erosion and sedimentation	The PER presents little data on the steepness of some of the access roads. A great deal of work will be necessary to prevent erosion of the 75m wide roads. Most of the mitigation sounds very impractical and hard if not impossible to implement in the Tropics. I find it very hard to believe that a lot of silt laden water will not run into the numerous small waterways. Most of the particulate matter may drop out long before it becomes a problem to the GBR, but it will have a detrimental effect on creatures such as the Magnificent Brood Frog. There are no details about monitoring in most of the PER. One could meet their statements by a quick stroll around the site. At minimum, the turbidity of nearby streams should be measured and not on a periodic basis. Turbidity can carry a long way and impacts aquatic creatures of all types including the frogs. Continuous monitoring of turbidity should be undertaken. Indeed, all monitoring should be quantitative as much as possible.		No	Section 2.2 of the PER contains a description of the key project components and states that road slopes will not exceed 15% and that for a track width of 5.5m the temporary road construction may extend from less than 25 m to over 100 m depending on the complexity of the terrain and ability to safely construct the required earthworks. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. A significant impact assessment for the Magnificent Brood Frog has been undertaken (section 8.4.2 of the PER) which includes the potential for sediment runoff from the Project area. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Relevant standards will be used in the development of the monitoring program and a specific focus will be on the potential fine sediment transport that could impact on the GBR, aquatic fauna and the Magnificent Brood Frog habitat.
61	.028	Erosion and sedimentation	The drawings make it very plain that a lot of fill material will be generated and possibly quite a bit of blasting will occur. Where will this material be taken? Indeed, where will topsoil from the roadworks and the various site preparation be stored. Without careful handling and care the topsoil will lose its value (or even wash away).		No	A Preliminary Rehabilitation Plan (Appendix K of the PER) has been prepared for the project and outlines measures to rehabilitate temporary construction disturbances. Soil management, including the handling of topsoil will be contained in Construction Environmental Management Plans and site based ESCPs to be developed for the project. Any spoil (clean soil or rock) from the construction works will be reused on-site.
61	.029	Offsets	Offsets, by definition, are measures that compensate for the residual impacts of an action on the environment, after avoidance and mitigation measures are taken. In other words, an area where impact has been avoided, such as destruction of habitat or clearing, cannot also be used as offset. If the impact on the area involved had not been avoided, it would require additional offset measures itself. This critical part of the PER is full of inconsistencies. As a desktop and GIS exercise it has failed miserably even if the so-called offsets were actually offsets. There is some inconsistency from one section of the PER to the other on this issue.		No	The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. In the absence of any specific examples of inconsistencies, it is not possible to provide a more specific response.
61	.030	Offsets	I am sure that the proponent will argue that their offset policy is sound. It would be good to evaluate their calculations and see if they fully remove the construction area in their proposed "offset" areas and ensure that they have included the edge effects of the clearing which can extend as far as 500 m into tropical forest.		No	Indeed, the Project footprint has not been included in the area calculations of the offset management areas and a buffer area has been applied.
61	.031	Mitigation and management measures	The text gives no real guidance to the contractor or the company on their duty to report. Will reports be made public to the community? Who is the regulatory authority that will receive reports and ensure that the planned mitigation has been undertaken and is working? Stating that mitigation will meet certain standards usually applied in other parts of Australia can be entirely inadequate in the Tropics.		No	The Project owner will be required to demonstrate compliance with approval conditions. Some approval conditions under the EPBC Act are expected to require preparation of management plans for approval by DCCEEW prior to the construction/operation/decommissioning of the Project. Management Plans required within the Development Permit issued under the Planning Act 2016 require submission to various State Government authorities and other stakeholders.
61	.032	Erosion and sedimentation	Some of the roads on Chalumbin site will be very steep just as the works on the Kaban windfarm site has shown some tracks to be exceedingly steep. The terrain in this area of Qld is highly erodible and often steep. Harsh rainstorms from storm cells can be very isolated and can appear suddenly. These sorts of storms often occur during the so-called dry season such as happened this October and November in Atherton.		No	Appendix J of the PER is a Sediment and Erosion and Management Plan that assesses the soil erosion and sedimentation risks. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. The potential for high intensity storms to occur during the dry season are discussed in Section 2.2.2 of Appendix J.
61	.033	Weeds and pests	Rainforest Dieback: risks associated with roads and walking track access in the Wet Tropics World Heritage Area by Stuart Worboys and Paul Gadek of the School of Tropical Biology, James Cook University alerted us to the spread of the threat posed by Phytophthora species to native species and ecological communities. Recent outbreaks on the Tablelands suggest that the project proponent should take every effect to avoid bringing or spreading this soil and water borne fungal disease on the site. The cleanliness of all vehicle and human boots entering the site is critical. Once a week is not often enough. Appendix F Table 3.6 This table provides essential mitigation for Phytophthora within the construction site. However, it seems to have forgotten the 300 trips totalling over 100,000 km to bring the turbine parts to the site. Depending on where construction staff live, their vehicles will also travel on and off the site every day. It is not enough to inspect and clean tyres once a week. If studies to determine the current range of the fungus are to be undertaken, it needs to happen immediately the project starts and even that may be too late. Pockets of Yellow Crazy Ants present a challenge, and every effort must be made to identify their presence and prevent their spread.		No	The PER makes no mention of only ensuring the cleanliness of vehicles, boots, etc. only once a week. The Preliminary Weed and Pest Management Plan indicates that this would be done as required - which would be on every entry. The proponent is currently investigating options to house the majority of the workforce in an accommodation camp on site, within the Project area. This is the preferred solution for construction personnel housing for many reasons, if a suitable agreement can be reached with one of the landowners. This would greatly reduce the number of small vehicle movements on and off site. Control measures relating to yellow crazy ants have been added to the Preliminary Weed and Pest Management Plan, the updated version of which will be included in the final PER.
61	.034	Magnificent brood frog	The fungus has a free- swimming zoospore stage and can be carried from stream to stream in small quantities of water. For dust suppression, water will be brought in from other places. Can you guarantee that water from elsewhere will not enter the waters of the project area or even from one stream to another? Is it essential that Magnificent Brood Frogs be collected and put in containers? Why? Looking at the mitigation suggested, I know that this project will end in the extinction of at least one species!		No	The source of construction water has not yet been identified. The Weed and Pest Management Plan is not stating that magnificent brood frogs will be collected in stored, it is merely identifying that collecting and storing amphibians in general is a high-risk activity for spread of this fungus.
61	.035	Hazard and risk	Quote from PER; During periods of high fire danger: • Firebreaks should be created around each turbine site, OHTL tower site, substation site and facilities building Does this suggest that yet more clearing will be undertaken? It should be remembered that our fire fighting resources on the Tablelands are limited and operated by volunteers. By the time help arrived, fire could be well out of control. Sufficient resources to deal with fire on the site should be available on site such as some of the resources listed in the PER. But are they sufficient?	I suggest that the Jirrbal people be consulted on this one.	No	The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established. The clearing associated with the Project has accounted for firebreaks and no further clearing is required outside that which is described in the State permit and this PER. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act).

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61	.036	Spectacled flying fox	. One of the critical species for the pollination of the Wet Tropics fauna is the Spectacled Flying-fox. Of recent years, the number of these species has dropped considerably and those who are deeply knowledgeable in this field say that the numbers are now so low so that even though the species itself is endangered, the consequences of further losses are catastrophic since even now there may not be enough bats to pollinate the flora of the wet tropics. We cannot afford to lose more of these bats through collision with wind turbine blades. I note that this species is deemed to be more at collision risk than other species in the risk assessment in the PER. Every effort to mitigate this impact should be undertaken and hopefully new mitigation techniques will be found. Simply counting , investigating and reporting deaths is not enough.		No	Despite no spectacled flying-foxes being recorded on site, the species has still been considered in the design phase of the Project. A full range of mitigation measures for both the construction and operational phase of the project are outlined in Section 8.6.10 of the PER. The species has also been included in the Project's offset strategy. This data has been informed by the current species Conservation Advice.
61	.037	Fauna mortality	A lot of insects are killed by turbine blades. They are an important part of the food chain of the ecosystem.		No	Given the height of the turbine blades, they are unlikely to lead to a significant impact on insect populations.
61	.038	Koala	How do you plan to mitigate the effect of wind turbine noise on koala mating? What noise monitoring is to be undertaken? What standards will be used to evaluate results of the monitoring, and will it be undertaken over a range of frequencies?		No	The PER identifies that noise may have an impact on species occurring within the area and as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
61	.039	Hazard and risk	Does the project proponent need to have lights on any of the turbines at night due to aircraft safety requirements?		No	An Aeronautical Impact Assessment was undertaken for the Project by Landrum and Brown, the study concluded that the project is located far enough away from all aerodromes that obstacle lighting is not required for the turbines. This was assessment and approved as part of the State Code 23 approval (SARA ref: 2112/26517). All documentation associated with development application, including the development permit, is publicly available on the State Assessment and Referral Agency website (refer: https://planning.statedevelopment.qld.gov.au/planningframework/ state-assessment-and-referral-agency/sara-application-material, search 'Chalumbin Wind Farm').
61	.040	Decomissioning impacts	I assume that the wind turbine blades will be chopped up and hence wider tracks may not be needed. How will the turbine bodies themselves be removed? Will cranes be needed to remove the nacelle and other components on the horizontal shaft? It sounds like quite wide tracks will be needed. This suggests that site restoration will not be complete at this stage, and any habitat planting may have to be cleared yet again. Who will look after the restoration areas during and after this period? My experience with the rehabilitation of mining sites suggests that this can be a long stage and if not carefully looked after can fail miserably.		No	Aboveground infrastructure will be removed from site during decommissioning. Large pieces of infrastructure will be broken down at site and removed in smaller pieces to reduce and avoid the need to reclear vegetation and widen roads. Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment which cannot be removed in smaller pieces. This is to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated.
61	.041	Hazard and risk	Issues that have not been raised in the PER – cyclones In really high winds, blades are lost and even turbine towers toppled. Even if major damage is not incurred, it is known that wind turbines in cyclones zones have more wear and tear and consequently this reduces their lifetime of service. The PER's claim that the windfarm will operate for 30 years is possible but highly unlikely. In general, wind farms tend to last 20 years and maybe 25 years if they are very well maintained and the environmental conditions are favourable. The oldest wind farms still operating in the world do so by replacing the actual wind turbines over time.		No	All Project Infrastructure will be designed to withstand the impacts of extreme weather events such as cyclones.
61	.042	Community consultation	Most people in the Atherton area still do not know that wind farms are being built nearby. In Ravenshoe, most locals were uninformed until a local group started presenting information sessions. The first information session held in Ravenshoe by Epuron was arrogant, uninformative and questions went unanswered. Even the Queensland listening session for the QUEZ was by invitation only and attended mostly by those in the energy industry.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The proponent has made every effort to ensure community members are aware of the proposal and to provide them with convenient access to information and opportunities to provide feedback, including regular mailouts, online and printed feedback forms, a local shop front, local information sessions and inserts in local papers.
61	.043	Community consultation	Epuron is not the body that should receive comments on the PER. The comments should be received by a Federal Government agency who should ensure that Epuron answers all the comments and makes changes to the PER appropriately. How can we trust Epuron on their past history?		No	The process established under the EPBC Act (section 98) requires the proponent to invite comment on draft public environment report. In order to finalise the PER the proponent must take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. The proponent has made every effort to ensure community members are aware of the proposal and to provide them with convenient access to information and opportunities to provide feedback, including regular mailouts, online and printed feedback forms, a local shop front, local information sessions and inserts in local papers.
61	.044	Project location	Justification for the siting of the project totally hinges on the unfortunate route of the major transmission lines. The other factors such as population density and quality wind are met over a considerable area of the QREZ. I do have some understanding and sympathy for the placement of a number of existing and proposed wind farms. However, the mistake in placement of transmission lines should not be made worse by allowing superior quality forest to be cleared.		No	The proponent - like other renewable energy developers - must respond to the availability and characteristics of the market within which it operates. This includes consideration of the overhead transmission lines currently installed and those planned for the future. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP.
61	.045	Biodiversity general	Edge effects strongly affect forest microclimate, tree mortality, carbon storage and a diversity of fauna. The hydrological regimes of fragmented landscapes differ markedly from those of intact forest. Desiccating conditions may penetrate up to 100m into areas near the roads. Streams in fragmented landscapes experience greater temporal variation in flow rate than do those in intact forests. Cleared areas have less evapotranspiration and rainfall interception and absorption by vegetation. Rapid runoff promotes localized flooding in the wet season and stream failure in the dry season, with potentially important impacts on aquatic animals. Even narrow forest roads (20–30m) result in increased tree mortality and damage with wide-ranging alterations in the community composition of trees and undergrowth. Some insects and other fauna will not cross even narrow roads, yet hundreds of km of 70m roads are proposed.		No	Edge effects and fragmentation are discussed within the PER (section 5 at a high level and throughout Section 8 related to specific MNES). The Preliminary Rehabilitation Plan located in Appendix K of the PER provides a framework for the reestablishment of vegetation to cleared areas and to restore connectivity. The rehabilitation programme will include fauna crossing infrastructure to further facilitate movements across the site.
61	.046	Erosion and sedimentation	Projects like Chalumbin lie on the head waters of the river catchments of the Wet Tropics Area. Hundreds of kms of unsealed 70-metre-wide roads that cross waterways have the potential to dump turbid water and other pollutants down rivers through areas of World Heritage Rain Forest out to the Great Barrier Reef. Farmers fear they will be blamed for the impacts. We should remember that pollution accidents do happen on industrial sites.		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER).
61	.047	Loss of carbon stores	Forests are giant carbon and water storage batteries. Why discharge greenhouse gases to the atmosphere by land clearing and lose all the benefits forests provide in the mitigation of climate change? When they are gone, we lose all the carbon sequestration and cooling they do every day. Natural forests do this better than plantation forests. By clearing forest to build wind farms, we lose a very substantial proportion of the carbon savings we would make by siting them elsewhere. Much of what we gain in lower carbon emissions from wind power, we lose by destroying forest.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 2t per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from the 100t to 500t of carbon per hectare within the "Wet sclerophyll forest: regrowth benefits management guideline". The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
61	.048	Cumulative impacts	Loss of forest on mountain tops will lessen rainfall and lead to more droughts and flooding. While one project may have almost negligible impact on weather, many more wind farms are proposed. The wind farm projects change the land use from forest to major industrial, permitting major extensions to each project being possible with much less assessment. This will impact on both our World Heritage listed Wet Tropical Forests and Great Barrier Reef while drying our inland agricultural lands to the west. Good agricultural land is critical to our future. We are putting so much at risk by building wind farms where they should not be.		No	Construction footprints for wind farm projects typically occupy 3-4% of the total host property - this allows ongoing coexistence of land uses (generally agriculture/grazing and wind farm operations) and the ongoing operation of the wind farm typically does not render the site a "major industrial" land use, but rather an efficient use of resources and example of land use complementarity.
62	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because: Rainforest shouldn't be cleared		No	The submitter's concerns relating to rainforest are noted. The Project will not clear any rainforest habitat. As noted in Section 6.1.2 of the PER, avoidance of rainforest was one of the key drivers of the Project design.
63a	.001	Social impacts	Note submission has been summarized to extract key points requiring response. I reserve the right to make more than one submission. With reference to EPBC 2021/8983 Chalumbin Wind Farm as a community member of Ravenshoe and surrounds. I object and do not consent to the proposed Chalumbin wind farm going ahead. I object and do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and I say NO to Chalumbin Wind Farm. This particular submission will focus on Concerns of Electromagnetic Frequencies (EMF) Infrasound and Low Frequency Noise, and Concerns for Health. I live three kilometers from the nearest proposed wind turbine. I have serious concerns for my family's safety and my safety from being so close to the wind turbines. I am sensitive to electromagnetic radiation, and I do not consent to the assault on my health and my family's health if this development goes ahead. I also have concerns about infrasound from the proposed development. Being only three kilometers away from the 250 meter tall turbines, will, I believe expose my family and ,myself to potentially harmful infrasound and Low Frequency Noise. I do not consent to having my family's health and my health compromised by this development. I consider that any EMF frequencies to be emitted by the potential wind farm development, to be an assault my family and I. I consider any infrasound and Low Frequency Noise emitted by the potential wind farm development to be an assault on my family and I. There have also been clusters of cancers in people living in close proximity to local wind farms. This also gives me huge concerns. I do not consent to any potential health risks or damage from the proposed developments.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999. Multiple scientific peer-reviewed studies on wind farm noise have found that infrasound from wind farms does not cause impacts to human health. This includes the Victorian Department of Health which states that "...sound can only affect health at sound levels that are loud enough to be easily audible. This means that if you cannot hear a sound, there is no known way that it can affect health. This is true regardless of the sound.", and the South Australian EPA which states that "...the contribution of wind turbines to the measured infrasound levels is insignificant in comparison with the background level of infrasound in the environment".

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
63b	.001	Magnificent brood frog	Note submission has been summarized to extract key points requiring response. With reference to EPBC 2021/8983 Chalumbin Wind Farm as a community member of Ravenshoe and Millstream and their surrounds. I object and do not consent to the proposed Chalumbin wind farm going ahead. I object and do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and I say NO to Chalumbin Wind Farm. This particular submission will focus on The Magnificent Brood Frog (Pseudophryne covacevichae), Ecology and Habitat PER Response (4.5.2.1-4) One serious concern I have is that any development, such as the proposed wind farm, that brings pathogens and mycelium spores into the area, could potentially have a devastating effect on the population of Magnificent Brood Frogs and even cause their extinction. Due to the range restriction of the Magnificent Brood Frog, I believe that the proposed wind farm development is inappropriate because the industrialisation of its natural habitat will have serious consequences for the survival and the thriving of these Beautiful and very local species. Biodiversity of species in Australia is so important to our long-term health and wellness as a Nation; and Australia has had many of its species become extinct due to development of natural habitats and industrialisation. I believe that it is crucial to the survival of the Magnificent Brood Frog that its small area of habitat in the Ravenshoe and Millstream areas of Far North Queensland remain free from any new heavy industrial development. I believe that any change in land use for the Magnificent Brood Frogs habitat will have a very negative impact on their population and long term survival. Chalumbin could be a stronghold and safe place for this Beautiful and rare amphibian, if we protect the Chalumbin area and do not develop it. To conclude, I believe that the Magnificent Brood Frog (Pseudophryne covacevichae) is a very special and unique part of our local community. Brood Frog expert Michael Anthony, has concerns for the Magnificent Brood Frog population if the proposed wind farm development goes ahead. I feel in accord, that one important reason to not locate the proposed wind farm development in the Chalumbin and Millstream and Ravenshoe areas is because of the risk of extinction to this species or the severe depletion of its current numbers. From the 2000 Queensland State Government report from the Environmental Protection Agency and from the 2021 meeting of the 'Magnificent Broodfrog Working Group', it seems that we need to be looking at ways to build up the populations of this Wonderful local Frog and not destroy its habitat and make or widen roads in its habitat, which will affect its numbers, as will drilling and excavation in the area, The proposed wind farm development will make new roads in the Magnificent Brood Frog's habitat, and widen existing roads, and excavate, all of which could seriously damage the Magnificent Brood Frog numbers or cause extinction. Once a species is gone, it is gone: it is too late to ever bring it back, and planting compensatory areas will not help to bring back those creatures that a development has caused to become extinct. We are so blessed here in this area with our unique Biodiversity, including the Magnificent Brood Frog, that I truly believe that this proposed area for development is inappropriate.		No	Your concerns relating to the magnificent brood frog are noted. Section 8.4.2 of the PER evaluates the potential impacts to this species as a result of the Project and commits to a range of mitigation measures. Offsets are proposed in line with the mitigation hierarchy. In addition, the proponent has offered a voluntary contribution of $250,000 towards research into this species.
64	.001	Fauna mortality turbines	It is clear that if you decide to continue with your proposed windfarm in Chambulin, that your company is totally morally bankrupt, showing complete nonchalance towards the impacts on locals, including the indigenous population; and the wildlife, who will further lose age old habitat that cannot be "rehabilitated" or replaced, thus compressing our shrinking native heritage into an even smaller area, not to mention the danger of birds (some of which are endangered already, mainly from environment loss id est the Red Goshawk, which has been found in the region of the proposition) being hit by turbine blades and falling to their death.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. As described in Section 4.6.3.3 of the PER, the presence of red goshawk has not been confirmed within the Project area despite regular surveys since January 2021 and is considered unlikely to be a collision risk due to its habit of foraging within or just below the canopy, well below the height of the blades.
64	.002	Survey effort	All half-hearted attempts at surveying for endangered species have been done with minimal care and in a way to almost guarantee koalas and other concerning animals wouldn't be spotted- who would have thought that a loud vehicle, with spotlights attached, wouldn't sight koalas along a defined road (where they will least likely be spotted)?Not to mention that the hours spent on these "surveys" is what most people work in a few weeks- hardly enough to establish what may or may not be living in an ecosystem. These futile "research" and "survey" attempts seem more like Ark Energy wanting to do the bare minimum required, so as to avoid sighting species which could shut this development down if seen in the area.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
64	.003	Rehabilitation	Your points of "re-establishment" are moot-- you cannot replicate nor replace an ecosystem that has taken centuries to form, with trees pre-dating even the first European settlers.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems.
64	.004	Koala	Your giant machines have no place in a natural landscape, and the noise pollution will have detrimental effects on native animals in the area, for example the koala, already having a rapidly dwindling population.		No	The PER identifies that noise may have an impact on species occurring within the area and as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
64	.005	Opposition to project	This rape of our land, this environmental destruction under the "eco-friendly" facade, this pure and deliberate greed, will not stand in this country. Remove your proposal immediately, if you have any care left for the future.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
63c	.001	Koala	Note submission has been summarised to extract key points requiring response. This particular submission will focus on Koala Population, Ecology and Habitat PER Response (4.6.5.1) Chalumbin, the proposed area for this development, is a special and unique biodiversity that is an ideal location and habitat for the endangered Koalas. There have been recent Koalas sightings in the area in Ravenshoe 4888; and on the 3rd October 2022, a breeding pair of Koalas were recorded on video and photographic stills in the area between Mount Garnet and Ravenshoe. I strongly believe that this proposed location for the wind farm development is an inappropriate location in relation to the preservation and well-being of the local and national Koala population. Koalas thrive in the Wet & Dry Sclerophyll Forests and I very much believe that the Chalumbin area is home to Koalas and is also potentially an ideal habitat for Koalas. In addition, Koala experts have stated that the Chalumbin area is an ideal habitat for Northern Koalas, especially if local temperatures rise. In this case, the Chalumbin area will be their last stronghold. If the proposed development goes ahead, I strongly believe that it will damage this special vegetation and habitat; and therefore, will have a severe impact on the Koala population in the area and also damage potential ideal Koala habitat. To help save out national icon, the Koala, it is imperative, in my opinion, that the area of Chalumbin remains an area of natural beauty and habitat and is not developed or changed at all.		No	Potential impacts to the koala, including the potential loss of habitat, have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. Additionally, large areas of potential koala habitat throughout the Project area will be retained. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan.
65	.001	N/A to PER matters	I am writing to object to the proposed wind farms at Chalumbin, Mt Fox, Desailly, Kaban, High Road and the Upper Burdekin. This rush into renewables at the cost of our environment in these areas is exactly what was/is done in fossil fuel mining. How can jumping from one disastrous method of energy to another, that claims to be "green," but clearly is not when the entire process of development is considered, be a wise move? It is not. The habitat destruction, species loss, the negative impact of frequency output (to both animals, including humans and plants) from them, the fact they have a limited life span, and the massive mess the mining of their components makes, are all factors that make the cost so much greater than the benefit. I cannot understand why I am having to point this out to people that ought to know. These proposals should never have made it to this stage. The subsidies alone make this a bad idea economically. As far as I can ascertain the only thing that makes sense is the Carbon credit system. And all this system is, is a permit to pollute. Do not think the public are fooled by this. Just as the fossil fuel industry pricing is manipulated and benefits those few who control it, the renewables and the carbon credit system is setting up in exactly the same way. We all get to focus on our 'carbon footprint' while the destruction continues all around us because someone paid their 'carbon credit'. This idea is ridiculous. It solves nothing and changes nothing. We do not need more of the same rubbish, just because it is labelled "green." We are able to see it for what it is. There needs to be far more research into how to move to renewable energy without repeating the detrimental effects of the fossil fuel industry. All the money being outlayed to build and subsidise these wind farms would be far better spent in this manner. So I am asking you to add your voice to stop these wind farms.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. The Chalumbin project will be assessed on its merits and is no way connected to other projects in the locality.
66	.001	Project location	To MP'S,Senators and Associated Environment staff, Please keep the area of Kaban forest near Ravenshoe free from the development of the proposed Chalumbin Wind Farm. As seen in the previous history of QLD, why are we destroying existing forests which are intact, that are home to rare and threatened species?Especially the spotted quoll,yellow belly gliders,koalas, the list of animals and plants is many. Due to the fact that the area borders onto the World Heritage areas this proposed development is very concerning. Often the animals will enter into this forest to feed,mate and remain for a time.Also existing animals live there on a permanent basis. The existing forest level at present remains low of wind in comparison to forests that receive a high density of wind the natural trees are bent over. The bent over trees are seen in other parts of Qld where wind strength is high. The forest also is very thin as wild life struggles to live there with the high wind impact. This area proposed for the Chalumbin Wind Farm is not a high density wind area. Why disturb the forest for wind farms. Tearing up this forest floor will impact loose soil going into our river systems in the area which flows out to the reef. Rainfall is higher due to being in a tropical area. My understanding is that employment is offered to build the wind farm and then some ongoing employment remains with maintenance. Employment in this area is not a priority; the health and nature of the forested area is of the utmost importance. I can only hope you will consider Not Supporting the proposed Chalumbin Wind Farm and make use of better land in Qld that produces a high wind density and is already cleared.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
67	.001	Opposition to project	As per Submission 21.		No	See response to Submission 21
27b	.001	Traffic and transport	I have concern that proposed roadworks along Wooroora Road for the Chalumbin Wind Farm project would have devastating negative cumulative impact on the wildlife species in this area. I have lived on Greys Lane (off Wooroora Road) for 19 years. During this time I've had sightings of platypus, on my property, in Stoney Batter Creek which runs through my property. I believe these platypus seasonally travel up from the Millstream River, traversing Stoney Batter Causeway, to make burrows in the quiet place of Stoney Batter Creek before birthing their young there and later taking them back down to the Millstream River as the season gets drier. Please find attached photos of (1) a platypus burrow in Stoney Batter Creek bank, (2) Stoney Batter Creek in the dry season and (3) Stoney Batter Creek at full flow. I have regularly had sighting of Eastern Grey Kangaroos and occasional sightings of Lumholtz Tree Climbing Kangaroos, many sightings of Northern Bettongs, Brush-tail and Green Ring-tail Possums, occasional sightings of Sugar Gliders such as the Feather-tail Glider, Marsupial Mice, Forest Micro-bats - and the list goes on! Cutting down trees, reconstructing causeways and bridges, as proposed in the Transport Route Study, is not leaning toward a cleaner greener environment for forests here and would not be beneficial to the local wildlife. The Transport Route Study hasn't sufficiently researched potential negative ecological impacts which would eventuate from the large-scale roadworks proposed on Wooroora Road.		No	Any upgrade works (causeways/bridges) for either transportation route option (Wooroora Road or Innot Hot Springs) will be undertaken in accordance with the requirements of the Fisheries Act 1994, Vegetation Management Act 1999, Water Act 2000 and the EPBC Act. As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
27b	.002	Offsets	Proposed offsets can never compensate for the great losses which would be incurred by this development. Whether it is (for example) in consideration for platypus habitat loss near Stoney Batter Creek Causeway, or a one-off payment such as $250,000 toward research for the Magnificent Brood Frog after it's present habitat has been compromised and it's numbers reduced or decimated due to development. Please have consideration for the natural environment of Chalumbin and surrounding areas. This area is not suitable for a wind mill project.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The voluntary financial contribution towards research into the magnificent brood frog is over and above the direct offsets that are proposed for this species.
68	.001	MNES	The Chalumbin wind farm should not be approved because: a) It is home to many endangered species that need protection e.g. magnificent brood frog, red goshawk, northern quoll, koala, etc.		No	The red goshawk, northern quoll and koala have not been definitively recorded within the Project area. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their duration and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts.
68	.002	MNES	b) It sits on the headwaters of the Herbert River which drains into the Coral Sea and hence affects the Great Barrier Reef.		No	The project disturbance areas / earthworks and the protection of the Great Barrier Reef are key considerations of the project and are assessed in the PER including: - A Sediment and Erosion Management Plan for the project contained in Appendix J of the PER undertakes a detailed assessment of the soil erosion risk where the local climatic, soil and topography factors have been considered as informed by the Water Act 2000 and other state and federal guidelines. - A Preliminary Erosion and Sediment Control Plan contained in Appendix I of the PER establishes the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. - A Preliminary Rehabilitation Plan (Appendix K of the PER) has been prepared for the project. The purpose of this Preliminary Rehabilitation Plan is to facilitate the re-establishment of native ecosystems that are self-sustaining in the long-term and provide comparable habitat value to the pre-construction ecosystems. Requirements for baseline water quality and soil erosion monitoring are outlined in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Relevant standards will be used in the development of the monitoring program and a specific focus will be on the potential fine sediment transport that could impact on the GBR and associated aquatic values.
68	.003	Visual impacts	c) 86 250m high wind turbines plastered through this area would not only be an environmental disaster, it would be visually terrible for locals and visitors alike.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Views from six identified viewpoints are also considered to be potentially significantly impacted by the Chalumbin Wind Farm. These views include the accessible lookouts on Majors Mountain and Bally Knob, view from a small part of the Koolmoon Creek track, views from the Kennedy Highway as well as views from residential properties in Millstream and the few rural properties west of Site on Herbert River Road. It is noted that some of these views (particularly from Bally Knob, Majors Mountain and the localised affected part of the Koolmoon Creek track) would be experienced by very few receptors due to the strenuous nature of the hike to these locations. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible.
68	.004	Offsets	d) No offsets can rectify destruction of a thriving and viable long term ecosystem.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
68	.005	Traffic and transport	e) As Wooroora Rd. is the preferred access route to the site we would be severely impacted since I live on this road. Our beautiful tree lined road would be widened and bare the hallmarks of an industrial highway.		No	Any upgrade works (causeways/bridges) for either transportation route option (Wooroora Road or Innot Hot Springs) will be undertaken in accordance with the requirements of the Fisheries Act 1994, Vegetation Management Act 1999, Water Act 2000 and the EPBC Act. As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. The widening of the access roads will be largely limited to those areas shown in the swept path assessment in the Transport Route Study (Appendix R of the PER).
69a	.001	N/A to PER matters	Re November update 2022. The Chalumbin wind farm should not be approved because: Your November 2022 Update is nothing but lies and deceit to gullible people. The development of Kaban is testament of your development lies.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
69a	.002	Erosion and sedimentation	Complete lack of erosion control and ground rehabilitation re vegetation to stop erosion and soil run off.		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. The importance of cover is highlighted throughout the Sediment and Erosion Management Plan (Appendix J of the PER) and it includes a sensitivity analysis of % cover and the change in soil loss.
69a	.003	Weeds and pests	There are no wash down facilities for trucks and machinery prior to entering these sights for weed and feral control being transported in.		No	The implementation and use of weed washdown facilities and the requirement of all vehicles and machinery to be certified weed free before commencing work on site (Weed Hygiene Declarations), alongside a range of additional measures aimed at mitigating the introduction of weeds to site is outlined in the "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively.
69a	.004	Social impacts	The Wabubadda Aboriginal Corporation does not represent the real traditional owners being the Jirrbal people. Your money offer of jobs etc is not with the true custodians of this land who do not want this development destroying their country no matter how much bribery money you offer.		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Woorooora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent.
69a	.005	Transmission capacity	The current transmission lines cannot handle the power that might be produced and will have to be upgraded. More lies.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
69a	.006	Emissions	The carbon emission from the production,installation and maintenace of these turbines is far more than what you state		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
69a	.007	Social impacts	You quote community benefit of $500000 per year for life of windfarm?? You do not mention that each Turbine will receive $500,000 paid to Korean Zinc per life of windfarm from taxpayers' money.		No	The Project is not being funded by taxpayers.
69a	.008	Survey effort	Your wildlife impact studies ha ve been minimum and there is photographic and video evidence to show your studies are inadequate.		No	As outlined in Section 4.2.2 of the PER, a field assessment program has been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to survey effort. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
69a	.009	Waste management	Your reduction in Co2 gases is also a lie as you do not take into account emissions caused to put this here and the fact it is all unrecycled rubbish after 20 years and the destruction of environment that will no longer ingest carbon		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades. The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. This includes consideration of the loss of carbon sink associated with clearing of vegetation within the construction footprint.
69a	.010	N/A to PER matters	Once again, I will state your development of Kaban is proof how all you portray is lies.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
70	.001	N/A to PER matters	The Chalumbin wind farm should not be approved because: There is absolutely no concern from this government for anyone outside the south east corner palachuck doesn't give a damn other than percentages and her approval in brisbane There is no need or financial gain for anyone to build in this forest let alone anymore useless farms Look at the investors behind this and you will see the hypocrisy of them making millions of the new 'climate' business		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
71	.001	Survey effort	I refer to Section 8.6.3 of the Draft PER - the koala population. The area of Chalumbin is surrounded by National Parks, Forest Reserve and State Forest.The koala has been found on adjacent properties at Yourka Reserve, Kaban, Ravenshoe and Tumoulin. The Draft PER indicates an inadequate survey effort was conducted to find and map koalas on the subject site. Apart from the survey effort for the Koala being woeful to say the least, the koala is listed as an 'endangered species' and therefore protected by the Environment Protection and Biodiversity Conservation Act 1999.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
71	.002	MNES	For your information animals do not understand boundaries, being protected by a National Park doesn't mean the animal might not feel wandering to an adjacent tree that is now blasted by artificial wind, electric and magnetic fields. Below is a summary of species and community that is under the protection of the Environment Protection and Biodiversity Conservation Act 1999 (the Act is freely available online and applies to all corporations): Critically endangered species: Northern Greater Glider Endangered species: Yellow-bellied glider, Red Goshawk, Koala Vulnerable species: Magnificent Broodfrog, Red Goshawk, Northern Greater Glider Endangered communities: the Jirrbal custodians Migratory species: Sarus Cranes – globally threatened We need to look past the life span of a windmill that can be anywhere between 10-25 years, if things go well. Life on earth hopefully will still exist in 25 years and needs to be protected!		No	The northern greater glider is listed as Vulnerable (not critically endangered) and the sarus crane is not listed as migratory under the EPBC Act. Communities under the EPBC Act refer to vegetation communities, not people such as the Jirrbal custodians. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. In terms of Indigenous engagement the registered Native Title claimants have been supportive of the project and are involved in the process as outlined in Section 11.6 of the PER.
72	.001	Opposition to project	As per submission 21, but without the EMF sentence at the end.		No	See response to Submission 21
73	.001	Survey effort	I am concerned about the plan to build a wind farm in forests full of animals, including endangered ones. Namely, I am specifically worried about the endangered koala and red goshawk populations. Not enough has been done by your company to establish the population with thermal imagery drone systems and any progress without such must not go ahead.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
73	.002	Biodiversity general	I am also concerned about bat and bird population, including migratory species, who occupy the air space where you propose to build such huge wind mills. Destruction of habitat, construction activity, noise pollution, effects on rainfall waterways, potential for fires and effects on the flora, fauna and environments are all also huge threats to the nature of the area.		No	Impacts on birds and bats are intended to be management through the implementation of a Bird and Bat Management Plan, a preliminary draft of which was included as Appendix G of the PER.
73	.003	Survey effort	There are so many issues which your PER does not address, therefore, progress on this proposal must not be allowed. I must request that further surveys and assessments are to take place regarding the existence of endangered species, whether they are reptiles, mammals or avian.		No	As outlined in Section 4.2.2 of the PER, a field assessment program has been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to survey effort. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
74	.001	Opposition to project	The Chalumbin wind farm should not be approved because: The proposed wind farm is situated next to World Heritage Wet Tropic area and is home to threatened species including the Northern Greater Gliders, Magnificent Broodfrogs, Red Goshawks, Masked Owls and exceptional birdlife as well as possums and reptiles. It makes no sense to build a massive wind farm which will destroy the environment on which it is build to save the environment. We need to protect what is left of our wildlife and stop clearing remnant wilderness.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
75	.001	Support for project	This appears to be a very carefully planned and designed renewable energy source for Queensland and Australia. The contact with the traditional owners has been quite intense and the changes made in line with the significant places of the tadeonal owners of the area. This is a resource for the energy supply for the country for now and the future that should be promoted as much as possible by all. There have been some complaints about the wind resource of the area, which like any other site will have highly variable winds. There are more complaints about the effect on the native wildlife as well. From what I can gather from the ecological research on the site, the most common mammals on the site are feral pigs and feral cats. The site is to be found on 2 cattle grazing properties, which would appear to not have managed the feral animal incidence at all well, and the construction of roads; towers and turbines; and transmission lines will not affect these at all. The only criticism I have of this project is that there does not appear to be any move to install storage – batteries or, probably much more expensive, pumped storage to Koombabaloomba Dam to supply the Tully Gorge Hydo power station – which probably needs a major upgrade by now.		No	Ark Energy is signatory to the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' and is committed to transparent and meaningful consultation to understand community members' views, feedback and concerns and provide informed responses to issues raised. Consultation has been undertaken in accordance with a comprehensive Stakeholder and Community Engagement Plan as outlined in Section 11.0 of the PER. Ongoing engagement with Traditional Owners and their representatives is essential to implement the authorised Indigenous Land Use Agreement. Further detail on Indigenous engagement is discussed in section 11.6 of the PER. As referenced in section 1.5 of the PER, the State Government identified the Northern Queensland Renewable Energy Zone as a quality solar and wind resource. The Project site in particular is considered to have some of the best untapped wind resource in the country, which has been validated by wind monitoring across the site. Extensive ecological surveys have been undertaken to support the impact assessment presented in the PER. Surveys have been undertaken in accordance with government guidelines and best practice and have targeted species of concern specific to the values of the site. Appropriate mitigation and management measures have been developed to avoid, minimise and mitigate identified impacts. Further detail can be found in section 5.0 and section 6.0 of the PER. The management of pest and feral species is a key ongoing management measure during the construction and operation of the Project. A Preliminary Weed and Pest Management Plan is provided at Appendix F of the PER. The action (scope of the Project) includes the installation of two battery energy storage systems to store advanced battery technology linked to inverters and the wider Project. Pumped storage is not within the scope of the action proposed.
76	.001	Adequacy of the PER	Preamble The Public Environmental Report (PER), and the underlying Impact Assessment's, for the proposed Chalumbin Wind Farm (CWF) grossly underestimate and under-state the direct and cumulative impacts of this development on both the natural environment and the local community. I will address these concerns in more detail. Further, the PER grossly underestimates the true wholistic "cost" of the development in terms of greenhouse gas emissions and grossly overstates the contribution it will make to the global reduction in greenhouse gas emissions during the 30-year life of its commission. I am aware of other submissions that address this issue in detail, so I will not delve into this matter any further.		No	For specific responses to the cumulative impact assessment statement, please refer to the relevant part of the submissions report. Responses to other submissions demonstrate that the Project - even if conservative assumptions are made - will be carbon positive and the GHG emissions gains will be many times more than the GHG emissions costs.
76	.002	Cumulative impacts	Cumulative impacts The number of approved and currently proposed wind farms along the Great Eastern Ranges is unprecedented, unplanned and unsustainable. https://ger.org.au/ Not only do the suite of proposals directly impact on high-value old-growth and threatened moist eucalypt forest types, but they will also substantially contribute to the extinction crisis facing many of the animal species that are restricted to that narrow, vulnerable, nationally important geographic feature. I fully expect the burgeoning wind farm industry to be listed as an EPBC Threatening Process for a number of threatened wildlife species within the next 5 years, as science catches up with this juggernaut.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
76	.003	Project location	Location The proposed CWF is located within at least 2 Bioregional Corridors of State Significance. A Matter of State Environmental Significance (MSES), these bioregion corridors have been identified and mapped to 'publicise' their importance for wildlife movement and ecological processes at a landscape-scale, to inform land use and land management decisions, including assessment of development applications. The CWF poses a significant threatening process to the ecological function of these Bioregional Corridors to support landscape-scale wildlife movement, including species ability to move and adapt to the impacts of climate change. https://www.qld.gov.au/environment/plants-animals/biodiversity/planning Land over which the CWF is situated has been mapped and identified by the Qld environment department, in collaboration with several science and research institutions, as being amongst the highest ranked parts of the State for landscape resilience, most likely to support refugia for a broad suite of wildlife species under climate change modelling predictions. This high level of landscapescale resilience is particularly critical for threatened wildlife species most vulnerable to the predicted impacts of climate change, including the koala, northern bettong and the yellow-bellied glider. Habitat loss and fragmentation, expected expansion of ecosystem-changing weed species, altered fire regimes and the direct impacts of the associated infrastructure on wildlife movement, all associated with the CWF, will greatly diminish the critical importance of this land as a wildlife refugia under the expected impacts of climate change over the next 30-50 years. https://www.qld.gov.au/__data/assets/pdf_file/0022/87610/b-e-cap.pdf		No	The State Significant Biodiversity Corridors are schematic representations of existing and aspirational movement corridors for biodiversity. They are used to assist with land use planning processes for wind farms in Queensland, to the extent that they are triggered through consideration under State Code 23 and State Code 16 (in response to performance outcomes). These were considered in the decision by the Queensland Government to grant a development permit for the Project. The Project's commitments in terms of avoidance, minimisation, mitigation, rehabilitation and offsets highlight the opportunity that exists for the Project to strengthen the function of this area as a wildlife corridor.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
76	.004	Project location	Impacts on adjoining protected areas Some of the proposed development activities are within 600m of the Wet Tropics World Heritage Area (WTWHA). For mineral exploration and mining development purposes, a buffer of at least 1000m (1km) is applied to minimise the risks of impacting on this World Heritage listed area. Any development activity within 1km of the WTWHA, including loss of habitat, fragmentation of continuous habitat and infrastructure likely to interrupt wildlife movement or kill wildlife (like power transmission lines and wind turbines) will certainly directly impact on wildlife species, including Threatened Wildlife Species, that utilise or occupy the adjoining WTWHA. https://www.wettropics.gov.au/sclerophyll The south-east portion of Wooroora Station (Sheet 4 of Figure 2.1), an area of approximately 5,000ha, was identified by Bush Heritage Australia as an important acquisition target to support and enhance the significant conservation values of their adjoining Yourka Reserve. This area includes endangered vegetation types and supports habitat of several threatened plant and animal species and locally extinct species that are not well protected under existing (public or private) conservation reserves. 16 wind turbines, a satellite construction camp, and over 15km of cleared roads are proposed within this critical area. That area is also expected to be subject to severe disturbance, including further fragmentation, from any future power supply line upgrades (such as duplication) required to accommodate the fully-developed CWF.		No	Section 8.10.2.3 of the PER provides justification for the adherence to a 600m buffer between Project infrastructure and the WTQWHA - this includes reference to literature to demonstrate the sufficiency of this buffer. The proponent recognises the opportunity that exists with the potential to link the Yourka reserve and the WTQWHA through the south of Wooroora as an area for conservation. This is further explored in Appendix O (Preliminary Offset Strategy) of the PER.
76	.005	Erosion and sedimentation	Downstream impacts The proposed CWF will result in more than 120km of cleared and unsealed roads and substantial areas of cuttings and overburden (from road and tower site excavations), being constructed and maintained in a very high rainfall area within the Great Barrier Reef WHA catchment (GBR). As has been evidence from old logging roads, power line access roads and public roads through this part of the region, loss and migration of coarse and fine sediment into the GBR river systems contributes to water quality declines and impacts on the GBR itself. Particularly considering the extreme rainfall events being experienced, and predicted to increase, under climate change predictions, the CWF will significantly contribute to an increase in this threatening process.		No	Appendix J of the PER contains a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks including risks to the GBR. The project roads will be regularly inspected and maintained unlike some historic access roads in the area. The potential climate change impact on sediment runoff is presented in Section 2.3 of Appendix J.
76	.006	Hazard and risk	Onsite impacts Ecosystems and fire The threatened regional ecosystems through which the CWF is planned, are predominantly very restricted in overall extent or are threatened from altered fire regimes and vegetation thickening. These changes have been exacerbated by past disturbance from logging activities and the construction of the Ross-Chalumbin High Voltage power supply line. Broad fragmentation by power line clearings not only alter fire behaviour, they provide avenues for weed invasion by species including Lantana and invasion by native woody pioneer and understorey species that also severely impact on fire behaviour. The skeletal (many-branched) design of wind farms, including the CWF, greatly exacerbate this interruption in fire behaviour. The actual footprint of fire effected vegetation can be multiplied by at least 10-fold from the actual clearing footprint. The CWF will severely exacerbate the threat of altered fire regimes on these already threatened ecosystems.		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
76	.007	Weeds and pests	Ecosystems and weeds Linear clearings and the ongoing movement of vehicles, wind farm maintenance equipment and track maintenance equipment (including tractors, slashers, graders, bulldozers, excavators and backhoes) provide avenues and vectors for the introduction and spread of weeds through this vulnerable and highly biodiverse landscape. This has been evidenced by the spread of the highly invasive ecosystem-changing Candyleaf weed (Stevia ovata) and one of the worlds worst environmental weeds, Siam weed (Chromolaena odorata), along the Ross-Chalumbin Power line and its connecting tracks within the proposal location. https://www.business.qld.gov.au/industries/farms-fishingforestry/agriculture/biosecurity/plants/invasive/restricted/candyleaf; https://www.daf.qld.gov.au/__data/assets/pdf_file/0015/50028/siam-weed.pdf The CWF will, without doubt, aid in the rapid spread of these and other ecosystem-changing weeds already known from this immediate area, including Lantana (Lantana camara), Gamba grass (Andropogon gayanus), and thatch grass (Hyparrhenia rufa), through this vulnerable and highly biodiverse landscape. No promise of equipment sterilisation or a biosecurity control plan will stop this speared and the expected severe impact on adjoining protected areas. In cases like CWF, the power infrastructure sits on land leased from the grazier landholder. It is the landholders, not the developer or the owner of the wind farm, who have the ongoing legal and "duty of care" obligations associated with weeds, feral animals and fire management:- land management challenges that will be greatly exacerbated by the CWF. https://www.business.qld.gov.au/industries/farms-fishingforestry/agriculture/biosecurity/plants/invasive/restricted/gamba-grass https://keyserver.lucidcentral.org/weeds/data/media/Html/hyparrhenia_rufa_subsp._rufa.htm		No	Construction traffic will be prohibited from accessing the site via Tully Falls Road (south of the intersection with Wooroora Road) and approximately half of the north-south extent of the Project is separated from the WTQWHA by an existing transmission line easement. There is no explanation as to how the Project could contribute to worse weed incursion in the protected area than has already occurred. The Project team is aware of the existing presence of weeds throughout the Project area and has developed a Preliminary Weed and Pest Management Plan (Appendix F of the PER), which will be developed further by CWF and/or the Contractor (including the undertaking of detailed weed mapping across the Project footprint). The proponent has a Duty of Care in turn towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval.
76	.008	Biodiversity general	Wildlife species The suite of species identified through the impact assessment studies for the CWF, evidence the outstanding importance of the moist eucalypt forests of this location for the long-term preservation of a broad suite of wildlife species including many threatened and range-restricted species. The critical importance of these moist eucalypt forests for threatened species, including the northern greater glider (Petauroides minor), the yellow-bellied glider (Wet Tropics subspecies) (Petaurus australis) and the koala (Phascolarctos cinereus), is being investigated by scientists and community groups, in collaboration with CSIRO and other Scientific institutions. No major developments, including CWF should be approved in these critical landscapes until their importance for vulnerable and endangered species is better understood. https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=92008 https://www.csiro.au/en/research/indigenous-science/managing-country/koala-monitoring-program The locality also supports suitable habitat for recently locally-extinct species including the northern bettong (Bettongia tropica), and the spotted-tailed quoll (North Queensland), (Dasyurus maculatus gracilis). Reintroduction programs are accepted as a suitable method for recovering such endangered species from the threat of extinction. Reintroduction into areas of known past occupation is the preferred option. Ecological destruction from major developments such as the CWF will render this locality unsuited for reintroduction and recovery of these 2 species. http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=214 http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?showprofile=Y&taxon_id=64475 Many of the threatened species and range-restricted species recorded on and immediately adjoining the CWF development proposal, are locally or "at-best" regional endemic species. The magnificent brood frog (Pseudophryne covacevichae) is one example. Loss of their habitat and loss of local populations as a consequence of the CWF cannot be offset. There is nowhere else for those species that is not already occupied. There is no acceptable level of loss if we are to avoid extinction of these range-restricted species. https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64385		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
76	.009	Social impacts	Social Impacts The "Jirrbal People" are the Traditional Owners of the land on which the CWF is proposed. As evidenced by the nearby Kaban "Green Power Hub" Wind Farm development, the Jirrbal community has been torn apart by this rush to build wind farms around Ravenshoe, with conflict arising from a combination of direct impact and destruction of their cultural landscape, and promises, inducements and short-term employment, benefiting a few individuals and some of the Jirrbal families. It is tragic to see elders weeping from yet more scars on their cultural landscape: an area greatly impacted from de-population (removal of Traditional Owners), broad-scale land clearing, tenure alienation and associated development over the past 150 years. The younger generation who have benefited from short-term employment during the impact assessment and construction phases, are as equally challenged by their desperate need for housing and employment, juxtaposed against their traditional cultural beliefs and obligations. As evidenced by the nearby Mount Emerald Windfarm, local jobs, including indigenous employment opportunities, are non-existent post-construction. Technical expertise to keep the turbines and power grid functional are flown in from interstate and oversees. Land management contractors and monitoring scientists travel from outside of the region to perform the legal obligations associated with that wind farm.		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. The Project will seek to maximise the involvement of Traditional Owner knowledge in the rehabilitation, revegetation and offset management aspects of the Project.
76	.010	Decomissioning impacts	Decommissioning Australia is still to face the challenges of wind farm decommissioning. Challenging locations like the top of the great eastern ranges in regional and remote parts of Australia, like Chalumbin, are likely to make salvage and recycling an unappealing and uneconomic option for which ever company owns the resource at end-of-life. Typically, the companies that initially develop the facility are not the owners at end-of-life. In the absence of substantial decommissioning bonds and strong legislation to ensure redundant wind farms are decommissioned in a timely and environmentally sensitive manner, it is likely the public will ultimately meet those expenses. The degree of environmental harm necessary to construct a wind farm in remnant vegetation along the ranges and mountain tops at this location, cannot be restored and rehabilitated post-decommissioning. In reality, it will take several hundred years for those locations to recover to a condition close to their pre-development condition and this only after a prolonged period of erosion in this high-rainfall area.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
76	.011	N/A to PER matters	NQREZ The proposal development leans heavily on Qld's "Northern Renewable Energy Zone" (NQREZ), a concept in its infancy, yet to be fully integrated into State Planning Policy. The NQREZ is clearly mandated and limited by existing power grids, none of which were designed and constructed with regional energy generation envisaged as needing to be to be "plugged in" to the system, beyond the few minor hydro and sugar mill side-line generation plants. The Chalumbin proposal is a case in point, where you state that to fully develop the project (Stage 2), new high voltage transmission lines will need to be constructed. A more realistic and genuinely sustainable approach would be to design a national power grid that best serves the long-term needs of this developing nation and that identifies nodes and methods of power generation that genuinely address the short-term priorities for a rapid move away from coal and gas-fired power generation and a reduction in greenhouse gas emissions with minimal impact on the natural environment and maximum benefit to regional communities including our Traditional Owners. The evolving NQREZ falls very short of that vision, at this time.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
77	.001	Support for project	What comes to your mind when thinking of World Heritage Sites? (Great Wall of China, Machu Picchu, Stonehenge, Great Barrier Reef, Easter Island, Venice…) The town of Ravenshoe is the highest town in Queensland located in World Heritage, Wet Tropical Rainforest. The land area is 1,125 square km of rainforest, farming and five small named areas; Ravenshoe, Tumoulin, Kaban, Koomboloomba, and Evelyn. The population is approximately 1,800 which equates to 1.6 persons per square km. High density living is not an issue in this part of the world! Dozens of waterfalls large and small are close by and are fed by approximately three meters of rain per year, along with freezing temperatures in winter. Summer brings the hotter weather and some days the humidity is high but in a normal year due to the high ground the town is sheltered under clouds which keeps the temperature much more bearable than the folks on the coastal towns such as Innisfail and Cairns.The town consists of various people; some in their twilight retirement and the need of open space and fresh air 'calls them'. Those which want to be hidden and fight for camouflaged for various reasons and then the younger people with growing families. Those are the people I have concern for! Ravenshoe doesn't offer a variety of work in various stages and sadly the council doesn't do much for the town compared to others in the Tablelands. Ravenshoe appears to be the 'black sheep' of the family! Two major businesses, a crane company and a quarry/earthmoving company do employ people but like most in Australia the profits are for themselves not so much for the community at large. They do give but sadly Ravenshoe doesn't have many medium companies which can have a larger effect and benefit everyone.Ravenshoe lacks in many ways; some its a motivation to work and those that do start something find the distance is that little further than what tourist want to travel. I believe what Ravenshoe needs is a large inspirational project to bring the tourists that little further; this area has more to offer than what most realise. Which brings me to Chalumbin Wind Farm. Chalumbin Wind Farm brings out the environmentalists and those that follow the leader. Due to people not working they have too much time on their hands and choose to be involved in sabotage of projects, and to make the situation worse our Government pays them to do so. This is not going to go away unless major changes occur, which doesn't help you now. The people CWF is coming up against are a rebellious mob that love their rainforest and want to stop everything and anything. Which makes one think what could turn them around? To want this project! 1.The first question needs to be what does Ravenshoe need? 2.What could we feasibly do for long term and short term to meet both needs? 3.How to go about it? Ravenshoe lacks; jobs, tourism, community pool, retirement village, green golf course… … … endless list. What are we providing; New Technology Wind Farm People live in Rainforest area; What would motivate them? Lack of work; TOURISM One person brainstorm: Wind Farm, Rainforest, Tourism, Work. 1.Wind Farm - tick // 2.Rainforest / Wind Farm Tourism / Information = project We know some people will travel to see the wind farm but what can we do to bring more people and make this the BEST wind farm in the world and generate funds longer term? Wind farm / Rainforest Information / Tourism The wind farm will be built in one of the most remote uncharted areas of World Heritage, Wet Tropics Rainforest. Anther HUGE tick…	Consider the following: As one filters the internet for their travel, they come across; world heritage areas to visit, an opportunity to walk above an uncharted area of world heritage, oldest rainforest in the world. But no footprint on the ground by individuals. An information area which two times a year is open to the public as a major event. Once for the beginning of each season; the wet and the dry. Open daily but two times a year a major event! Tourist will travel on roads which are now safe. Thank you, to you, as they travel through the beautiful Woooroora Road, where children will be assured to aboard the school bus everyday and not stay home due to flooding. They park their vehicles in a designated area and are then commuted by train. Yes, Ravenshoe has a beautiful old steam train which sits on tracks and is not allow to move! The bridge and tracks need to be rebuilt. That train alone in the past would bring dozens of people each weekend from all areas! It was a big tourist attraction - when moving! Why not move the train to a new exciting location; to the 'Tree of Rainforest Wisdom' (not sure of name). A large (very large as a wind farm turbine) tree which holds water and has an information area inside. Manned by motivate people explaining the rainforest fora and flora. A restaurant, an area for children to play, swim and learn about the rainforest; all located within the tree and maybe slides coming out and going down into water… The tree alone would have levels and areas for people to sit and learn. A conference area for meetings where large companies and government can come and hire the area to which meets their needs. The tree could be made of copper so the colour changes with time and seasons. Each person can purchase a leaf or a branch for those who can afford it; to add to the tree so it is in a continuous growth (like the rainforest). Once a year at the beginning of the wet season the tree could allow the water to fall from its branches and people could gather and be part of the Rainforest. The lights on the tree could be long and have meaning to those which are part of the forest. Walk ways can be build in an area from the tree to a few wind turbines and back to the tree all moving in one direction. Explanations and information regarding the building of the turbines and the tree along the walk ways. The company is promoted, the environment is promoted, work is available while building and the long term. The tree has continuous growth room for expansion and people have something they are proud of ' In Their Rain Forest'. The project would bring together the old and young; train enthusiasts and the rainforest tribe who can hold their yearly get together and for the educated they can show their wisdom about this location. The children can play and learn. Everyone is included and everyone can benefit. The companies involved with the building, those that donate towards this great project and mainly Chalumbin Wind Farm. CWF will be known around the world as not only building great wind farms but thinking outside the box to educate the world how a company can include everyone… Yes, its a grand project and one that is just a lady sitting in her sunroom thinking she would like to see the Chalumbin Wind Farm project go ahead. Weather it is just the wind turbines or the grand idea above; it will bring work for those that want to work and it will bring some tourist to the area but it could be GREAT! What is your budget and vision? I do hope the project goes ahead regardless of my larger scale imagination and maybe I too will help. My back ground is compliance and safety manager for medium to large companies. I hope you are successful in this project.	No	The PER presents an assessment of the Project's potential social and economic impacts on a local, regional and national level in accordance with the Guidelines issued by the DCCEEW. In particular, the benefits of the Project on the local economy are estimated to contribute to annual direct and in-direct output, value-added, household income and jobs. Further detail on the social and economic impact assessment is found at section 13.0 of the PER. The Project will continue to engage with stakeholders to identify opportunities for long and short term benefits for local industry.
78	.001	Opposition to project	As per Submission 21.		No	See response to Submission 21
79	.001	Opposition to project	As per Submission 21.		No	See response to Submission 21
27c	.001	Cumulative impacts	The Draft PER for the proposed Chalumbin Wind Farm - EPBC 2021/8983 has not adequately addressed or researched the cumulative impact of this proposed project. Identification of the cumulative impacts of this proposed development (Chalumbin Wind Farm), required in the PER guidelines in Section 5.0 is lacking.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
27c	.002	Survey effort	With Ref. to: Preliminary Fauna Management Plan 5.2.1 Table 5.1. - this management Plan is inadequate. Short generalised observational surveys carried out by Eupron/Ark Energy, often within the least ideal times for observation of species, can not and do not portray wildlife activity within the proposed site, or inside and outside World Heritage areas nearby.		No	The Preliminary Fauna Management Plan (FMP) as provided in Appendix D of the PER is a preliminary document as the name would suggest. The purpose of this Plan is to establish a framework for managing impacts on native fauna during the construction and operation of the Project. Acting as a preliminary document, this FMP is also prepared to demonstrate partial compliance with Performance Outcome (PO) 5 of State Code 23: Wind farm development within the State Development Assessment Provisions (SDAP) this includes avoidance, minimisation and mitigation methods for all fauna occurring within the project area. As outlined in Section 6 of the Preliminary FMP, this document is under continuous amendment throughout the life of the Project to ensure that measures within this document remain effective.
27c	.003	Mitigation and management measures	There are no underpasses or overpasses gazetted to be installed, on roadways to construction sites, for continued connection with Wildlife Corridors which may be used by wildlife. As the construction site will be one long large continuous connecting area of roads and cleared woodland this will inevitably disrupt or completely cut off animals usual routine routes of travel in to, and out of, Wet Tropics World Heritage areas, into other areas nearby, and back again. I believe more research into this discrepancy in planning would be desirable. I perceive that in this report Ark Energy(Eupron) takes a dis-compassionate, hard-line and inconsiderate stance in regard to the welfare of fauna. I feel that this is unacceptable. According to information on already-established overseas wind farms - to have one blade on each windmill painted black does apparently helps to deter bird-strike. Perhaps proposed wind farm developers could take note of research and findings such as this.		No	Canopy connectivity will be maintained throughout construction to the extent practicable and fauna crossing infrastructure (rope bridge, culverts, etc.) will be installed at locations to be determined prior to construction commencing. Following construction, site rehabilitation will seek to revegetate the footprint of roads back to an approximate width of 5.5m and restore canopy connectivity whenever possible.
27c	.004	Opposition to project	Clean green alternative energy is good. However, clearing forested country and subsequently adversely affecting wildlife and their habitat to acquire it can not be seen to be clean or green or environmentally friendly		No	The Queensland Government identified the Northern Renewable Energy Zone which has been selected because of the suitability for renewable energy projects, including a high wind resource. The project has been sited to achieve optimal energy generation whilst avoiding and minimising impacts to flora and fauna.
80	.001	Opposition to project	Note that submission has been summarized to extract key points requiring response, due to length. The Public Environment Report (PER) for the Chalumbin Wind Farm has caused me great concern, and after considering the impacts, I don't believe that the impacts to Matters of National Environmental Significance are acceptable. Key points: -Irreversible adverse impacts to threatened species habitat which cannot be appropriately mitigated or offset -Fragmentation to cause increased impacts to Landscape Connectivity - Offset Area 2 -Poor siting and proximity to the Wet Tropics World Heritage Area -Amount of clearing of remnant forest is unacceptable -Desecration of culturally significant and sacred land areas -Feasible alternatives not adequately investigated and objectively assessed		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
80	.002	Project proponent	1.In order to provide transparency and certainty to the community that this project will affect, Ark Energy needs to provide more clarity about how the special purpose vehicle - The Chalumbin Wind Farm Pty - will be accountable to commitments made by Ark Energy.		No	Commitments made within the PER become requirements for the ultimate owner of the Project (and SPV). The SPV is the proponent of the Project and will be responsible for compliance with any EPBC Act approval for the Project.
80	.003	Project location	2.The proponent must provide more detailed information regarding the siting of this project, and why this wind resource is more strategic to develop in comparison to other resources, including biodiversity considerations.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
80	.004	MNES	3.The proponent must provide specific information on the current status of threatened species, and about how this proposal will either exacerbate or aggravate their extinction pathways and consider the broader threats to those species in that assessment.		No	Information on the current conservation status (at a State, Federal and global level) and information on threats to these threatened species is provided in Section 4 of the PER. The potential impact pathways as a result of the Project are discussed in Section 5 (general) and Section 8 (species-specific) of the PER.
80	.005	Alignment with government policy	4.The proponent must clearly indicate how the proposal aligns with Sustainable Development Goals, or the Triple Bottom Line of sustainability to demonstrate "overwhelming justification."		No	The phrase "overwhelming justification" was used in Section 3.0 the PER to describe the factors contributing to the pursuit of renewable energy developments in the broader region. The Triple Bottom Line is aligned with the concept of ecologically sustainable development (ESD) which is an object of the EPBC Act. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
80	.006	Project alternatives	5.The proponent must describe in detail how it did, or did not, consider citing alternatives to this proposal in terms of biodiversity conservation or loss.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER.
80	.007	Project alternatives	6.The Proponent must provide a detailed cost/benefit analysis of development in nearby bioregions, such as the Einasleigh Uplands, including an analysis on the cost to biodiversity associated with development, compared to development in the Wet Tropics bioregion.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. The proponent does not have data, nor should it be required to have the data, to undertake the detailed cost/benefit analysis proposed by the submitter.
80	.008	Project alternatives	7.The proponent must provide clear calculations to support the claim that "alternative location scenarios can be conservatively expected to have at least 30% greater impact on MNES."		No	Due to the absence of a feasible alternative, no specific alternative location to the west of the Project area was identified for the purposes of comparison in Section 3.2 of the PER. The suggested 30% increase in capital cost is associated with the conservative assessment that 30% more infrastructure would be required in an area to the west with less-ideal wind resource and a more difficult, lengthy and costly electrical connection.

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80	.009	MSES	8.Considering the commitments by State and Federal Governments to create consistent approaches to threatened species management in Queensland, the proponent should provide information about any impacts to threatened species listed under Queensland legislation.		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. The species protected under the Nature Conservation Act 1992 are not a consideration under the EPBC Act, unless they are also listed under the EPBC Act. The Project did assess potential impacts to State-listed species through the Development Application process under the Planning Act 2016.
80	.010	Cumulative impacts	9.The proponent needs to properly describe the cumulative clearing in regards to Threatened Species, including a clear description of the amount of threatened species habitat lost to clearing.		No	The PER includes a clear description of the proposed clearing of threatened species habitat, including maps, throughout Section 8. There is insufficient publicly available information on the potential impacts from other windfarm projects on threatened species for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
80	.011	Project alternatives	10.The proponent needs to provide a detailed summary of alternatives that were considered to avoid development activities that are listed threats to biodiversity, as recognised in the report published by the Queensland Government [2].		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER.
80	.012	Spectacled flying fox	11.The proponent must provide a detailed assessment of the impact to World Heritage Values associated with the loss of habitat for the Spectacled Flying Fox, Pteropus conspicillatus.		No	Despite no spectacled flying-foxes being recorded on site, the species has still been considered in the design phase of the Project. A full range of mitigation measures for both the construction and operational phase of the project are outlined in Section 8.6.10 of the PER. This includes the rehabilitation program (up to 70% of the cleared area will be rehabilitated with spectacled flying-fox forage species, which will be sufficiently established to be providing forage to the species in the medium term) and the proposed offsets.
80	.013	Spectacled flying fox	12.The proponent must consult with the Spectacled Flying Fox Recovery Team to gain an up to date understanding of threats to the species and the potential impacts of the Chalumbin Wind Farm.		No	The proponent has consulted with the spectacled flying-fox recovery team on a number of occasions during the preparation of the PER, and will continue to do so as the Project progresses.
80	.013	Magnificent brood frog	13.The proponent needs to establish a detailed plan for how impacts to the Magnificent Brood Frog will be mitigated or offset. Funding for research alone is an insufficient offset and $250,000 is unlikely to provide sufficient funds to improve understanding of the Magnificent Brood Frog.		No	As per Section 8.4.2.1 of the PER, a Species Management Plan will be developed for the magnificent brood frog in collaboration with the construction contractor, and will be review and approved by DCCEEW prior to works commencing. Direct offsets are proposed for the magnificent brood frog and are intended to meet 100% of the offset liability for the species under the EPBC Act Environmental Offsets Policy. The proponent has also made a voluntary commitment to provide funding for research which is in addition to the direct offsets.
80	.014	Cumulative impacts	14.The proponent must directly engage with other developers whose projects will create cumulative impacts in relation to the Chalumbin Wind Farm, and work together to properly assess cumulative impacts.		No	The Draft PER for the proposed Upper Burdekin Wind Farm has recently been released for public comment and this has been used to update the cumulative impacts section of the Chalumbin PER.
80	.014	Cumulative impacts	15.Of priority, cumulative impacts to Wet Sclerophyll must be assessed. 20.The proponent must properly describe potential impacts of losing Wet Sclerophyll Forest in relation to its role as an important ecotonal community for the species which are endemic to it.		No	Section 8.10.2 assesses the potential impacts of clearing wet sclerophyll forest in relation to the fauna species that are endemic to it (which are fully described in Appendix T).
80	.015	Adequacy of the PER	16.The proponent must provide all documentation and knowledge regarding the potential impacts of the Chalumbin Wind Farm in the PER.		No	The PER presents the full extent of the Project team's knowledge of the Project's potential impacts to environmental values (Section 5), and significant residual impacts to MNES (Section 8).
80	.016	Adequacy of the PER	17.A thorough investigation must be made into the discrepancies between the SARA approval documentation and the PER to understand why the differences exist and provide clear information about how they have been resolved.		No	The differences between the development permit issued for the Project under the Planning Act 2016 and the proposed Project presented in the PER are a natural result of design evolution and the realities of project development and refinement. It is a common approach for a wind farm project to seek minor changes to the development permit under the Planning Act when closer to the construction stage, to incorporate design changes and to ensure the development permit is current.
80	.017	MNES	19.The Lumholtz Tree Kangaroo is a part of the fauna of Outstanding Universal Value associated with the Wet Tropics World Heritage Area, and that must be considered in the assessment of this project.		No	Baseline information relating to the Lumholtz tree kangaroo is provided in Section 4.11.1.5 of the PER. Specific assessment of the potential for the Project to affect the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11 of the PER. Potential impacts related to the Lumholtz tree-kangaroo and relevant mitigation measures are discussed in Section 8.10.2 of the PER. The Project will not result in direct impacts to the species' core habitat type, rainforest. This combined with the mitigation measures described in Section 8.10.2 of the PER will ensure that the Project does not result in a significant residual impact to the species.
80	.018	Mitigation and management measures	21.The proponent must provide detail regarding how buffer zones were calculated or how they will be effective.		No	Buffer zones in relation to the WTQWHA are discussed in Section 8.11 of the PER, including how they were designed in response to the anticipated extent of edge effects.
80	.019	Offsets	22.The proponent should provide detailed field assessment and analysis with the use of the Environment Protection and Biodiversity Conservation offset calculator. 23.The proponent needs to reassess the validity of Offset Area 2 and provide clear evidence of how the offset actually provides landscape connectivity, given that it is likely to decrease landscape connectivity, not provide it. The proponent should secure clear commitments from landholders to enter into offset agreements that protect the land in perpetuity. 24.The proponent must provide detailed information to support the assumption that habitat improvements can be made within 20 years.		No	The information requested in this submission forms part of the next stage in the offset process, development of a detailed Offset Area Management Plan for each proposed offset site. Field assessments for this work have been underway since November 2022 and are ongoing. The analysis using the Environmental Offsets Guide (i.e. the calculator) will be included in the OAMP which will be submitted to DCCEEW for review and approval in due course. The landowners will be required to enter into legal agreements that protect the offset areas in perpetuity, an encumbrance on the property that is transferable to subsequent owners in the event of a sale.
80	.020	Visual impacts	25.The proponent must provide more detail about how the visual amenity concerns raised, regarding views from Rhyolite Pinnacle, could be mitigated. 26.The proponent must provide an assessment of visual impacts from Koomboolloomba Dam.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA concluded that the following for the locations raised in this submission: - Moderate (to no impact) - Not Significant impact on visitors undertaking boating or kayaking on Koomboolloomba Dam (Lake Koomboolloomba) (Viewpoint 15) - No impact, Not Significant, impact on visitors (campers) and park rangers at Koomboolloomba Camping and day use area (Viewpoint 5) and visitors and park rangers to Rhyolite Pinnacle accessed via the Koolmoon Creek track (Viewpoint 13)
80	.021	MNES	27.The proponent must provide an assessment of how impacts associated with development in areas that border the Wet Tropics World Heritage Area have the potential to interrupt the significant ecological and biological processes that it is listed for. 28.The proponent must provide an assessment of how impacts associated with development in areas that border the Wet Tropics World Heritage Area have the potential to impact threatened species landscapes and the significant natural habitat for biodiversity that it's listed for. 29.The proponent must provide a detailed fire management plan, including threats to natural resources, the Wet Tropics World Heritage Area, and the use of traditional burning regimes.		No	27. Specific assessment of the potential for the Project to affect the scenic amenity and the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11. 28. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. 29. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case. This Bushfire Management Plan will be developed by the proponent or Contractor prior to construction works commencing.
80	.022	Mitigation and management measures	30.The proponent should include plans that have been referenced in the PER that are not provided in the SARA approvals including; 1.Bushfire Management Plan (this is currently only a 7 sentence, 6 dot point summary bushfire risk mitigation) 2.Safety and Emergency Management Plan; 3.Construction Environmental Management Plan *1 4.Decommissioning Plan 5.Complaint Investigation and Response Plan; 6.Cleared Vegetation Plan;		No	As noted in the PER, the intention is for these plans to be developed by the Contractor so that precise methodologies, equipment, etc. can be committed to.
80	.023	Community consultation	31.The proponent should provide a clear description of the feedback provided by the Cairns and Far North Environment Centre regarding concerns with a lack of consideration of biodiversity in the citing of this project. 32.The proponent should keep a publicly available record of all submissions made on the PER.		No	The process established under the EPBC Act, requires the proponent to take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. These must be included in the finalised PER for submission to the Minister. All submissions to the PER that have been received by CWF within the comment period have been logged, summarised and addressed as part of finalising the PER.
80	.024	Social impacts	33.The proponent must provide a complete social impact assessment, including an assessment of; 1.The capacity and accessibility of public infrastructure, facilities and services, including education, health and emergency services and the increased pressure of an increased population and activity. 2.The existing housing and accommodation market, including availability, capacity and affordability. 3.The local and regional labour market, including an analysis of the likely availability of personnel with skills relevant to the project. 4.Other resource and infrastructure projects in the area, both planned and currently operating, based on publicly accessible information. 5.Changes to community values and/or the way the community functions. 6.The impacts on how people live, work, play and interact with one another on a day-to-day basis. 7.The impacts on culture, history, and ability to access cultural resources. 8.The impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources. 9.The impacts on communities' quality of life including liveability and aesthetics, as well as the condition of their environment. 10.The impacts on communities' physical and mental health and well-being, as well as their social, cultural and economic well-being. 11.Changes to livelihoods, for example, whether peoples' jobs, properties or businesses are affected, or whether they experience advantage/disadvantage. 34.The proponent should describe opportunities for upskilling locals to join the workforce associated with the development of the plan. 35.The proponent must provide a more detailed assessment of the impacts to housing and accommodation pressures that the development will create.		No	DCCEEW did not require a Social Impact Assessment as part of the PER Guidelines. The PER was assessed by DCCEEW as being adequate in its response to the PER Guidelines and fit for publication.
80	.025	Alignment with government policy	36.The proponent must provide a description of how the proposal hinders/helps the nation meet its goal to end deforestation by 2030.		No	Any clearing of remnant vegetation associated with the Project would be completed prior to 2030 and would be supported by environmental offsets under State and Commonwealth legislation (resulting in a net positive outcome for biodiversity). The goal to end deforestation by 2030 (as outlined in the Glasgow Leaders' Declaration on Forests and Land Use) is intended to address climate change; the Project will support the decarbonisation of the economy. Section 13.2 of the PER describes how the Project will result in a net reduction in greenhouse gas emissions (GHGs are the main driver of climate change).
80	.026	Decomissioning impacts	37.The proponent must prepare a detailed decommissioning plan that includes financial costs, environmental impacts and social impacts. 38.The proponent must clearly articulate how decommissioning would affect the rehabilitated areas of the site.		No	A Decommissioning and Rehabilitation Management Plan is likely to need to be prepared should the Project obtain a Development Permit under State Code 23 and State Code 16, for submission to DSDILGP and other stakeholders. Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects' which has a best practice charter and set of commitments to make a positive contribution to the regions. Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated,
80	.027	Offsets	39.The proponent must provide a clear articulation of its understanding of 'net positive' and how that has been achieved.		No	The aim of the offset management areas is to improve habitat quality for the relevant species and/or increase populations of the species by removing current threats (such as weeds and feral animals). A minimum ratio of 5:1 is currently proposed for the full clearance area, despite the fact that up to 70% of the clearing will be rehabilitated. This, along with a voluntary financial contribution towards research and improved bushfire management across the entire areas, will result in a net positive.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
80	.028	Social impacts	40.The proponent needs to do broader and deeper consultation with Jirrbal people to understand why so many in the community oppose the wind farm, despite the engagement they have had with North Queensland Land Council and Wabubadda Aboriginal Corporation Registered Native Title Body Corporation.		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. The Project will seek to maximise the involvement of Traditional Owner knowledge in the rehabilitation, revegetation and offset management aspects of the Project.
80	.029	Mitigation and management measures	-A single fauna spotter will be used to look for animals when clearing is taking place. This is manifestly inadequate.		No	The PER does not claim that only a single fauna spotter catcher will be used, it refers to the role in singular rather than the number of individuals who will fill that role (generally one per individual machine clearing vegetation). The team of fauna spotter catchers will be supervised by a suitably qualified ecologist.
80	.030	Rehabilitation	REHABILITATION OF LAND -$47 million to revegetate Chalumbin and maintain over 5 years. -How long will this take? -Is developer going to pay the money needed to do it properly? -At end of life the site will be 'rehabilitated to facilitate continuation of the current land use (agriculture) or an alternative land use.' That could be taken to mean cleared pastureland.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. Monitoring of rehabilitated areas will be undertaken annually for the first five years, with subsequent monitoring events being undertaken bi-annually until it can be demonstrated that the rehabilitated vegetation communities are self-sustaining.
80	.031	Traffic and transport	ALTERNATIVE SITE ACCESS -The developer has only stated they will 'investigate' and 'consider' an alternate route. -There is no commitment by them / nor any obligation on them under the PER, to use the alternate route. -Submissions could be made requesting that the use of the alternate route is a condition of approval.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River.
80	.032	Construction impacts	TEMPORARY CONCRETE BATCHING PLANTS -No information provided on where the water will come from. -68,800m3 of concrete required for turbine foundations alone. -Submissions could be made requesting an approval condition that Blunder Ck and local waterways are not to be used as water supply for batching plants.		No	Temporary Concrete Batching Plant The water supply for the construction of the Project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
80	.033	Social impacts	CONSTRUCTION WORKER ACCOMODATION -Homelessness and housing crisis. There is no capacity to house workers. -Only way to accommodate workers would be to displace locals by offering higher rents. -Submission: Make the construction of a dedicated accommodation compound (capable of housing all workers), a mandatory approval condition.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
80	.034	MNES	FEASIBLE ALTERNATIVES -The 'No action' alternative has not been objectively assessed. No cost-benefit analysis. -'No action' states: 'Lost opportunity to access the land and resultant loss of annual benefits to landholders in relation to commercial agreements to sub-lease the land for the proposed wind farm.' Landholders of just two properties will benefit in the claimed manner. By contrast, a considerable number or residents will be directly significantly impacted, on Wooroora Rd and surrounds, and their loss of amenity has not been listed. -'Avoidance of all Magnificent Brood Frog Habitat' – The catastrophic impacts Chalumbin poses to this species are such that all known habitats must be avoided. In the absence of this being 'practicable' as the developer claims, the development must not be allowed to proceed, and the development must be deemed manifestly unsuitable for this location. -Submission: assessment of feasible alternatives was not objective and was incomplete. -By not being 'objective' in the assessment, the developer has breached the Guidelines for the Content of a Draft PER – Chalumbin Wind Farm.		No	The "No Action" alternative has been assessed with findings presented in Section 3.1 of the PER. It has been determined that a "No Action" alternative would lead to sporadic clearing and ongoing selective timber logging practices within the Project area to support the existing and future agricultural pursuits, and hence result in a significant loss of benefits at the local, State and National level. More broadly, due to the unrelenting pressure for renewable energy projects, the "No Action" alternative would be reasonably expected to lead directly to the "Alternative Location" scenario described in Section 3.2. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines. A detailed Landscape and Visual Impact Assessment (LVIA) has been undertaken for this Project and is attached as Appendix M. Specific assessment of the potential for the Project to affect the scenic amenity and the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11.
80	.035	Erosion and sedimentation	WATER CATCHMENT -The Herbert River is a contributor of dissolved inorganic nitrogen and fine sediments being released into the Great Barrier Reef Marine Park. -Therefore sediment, siltation, pollutants, and other upstream impacts at Chalumbin potentially have a flow on effect downstream. -Water used for dust mitigation and other construction related purposes, in addition to concrete batching, must not be drawn from local waterways. This must be made a condition of approval.		No	Appendix J of the PER contains a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks including risks to the GBR. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Water used for construction will only be from approved sources and licensed where required.
80	.036	Survey effort	SURVEYS OF FLORA & FAUNA -Surveys insufficient in method, duration, and in some cases time of year. -Spotlighting carried out from a vehicle and confined to access tracks. Associated noise & light from vehicles will impact results. Density of fauna likely to be higher in secluded areas away from tracks. -Contradictions in the amount of survey hours undertaken. -Surveys conducted after significant rain when accurate results could not be determined (Nth QLD Lace). -If the developers ecologists can't even accurately state the hours of surveying, how can any credibility be put in the claimed survey results?		No	Surveys have been undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
80	.037	Survey effort	NORTH QUEENSLAND LACE ENDANGERED [EPBC Act] -Survey method, timing and duration manifestly inadequate. • Survey carried out Feb 2022 during the month that recorded heaviest rainfall previous year (293mm). Jan 2022 figure 289mm. -Species can generally not be seen when creek volumes are swollen. Higher flow = higher turbidity -Two people carried out survey in either 5/6/7 days – PER quotes all three figures! -Survey was from observations at creek bank. Insufficient method at any time – especially during swollen waterways. -Accurate surveying requires accessing creek and underwater viewing. -Survey needs to be re-performed, independently observed. -Survey manifestly inaccurate and cannot be used for MNES assessment purposes. -As survey does not meet EPBC Act impact assessment requirements, development approval cannot be given.		No	There are no formal survey guidelines for this species. Surveys were undertaken during the flowering season in order to maximise chances of positive identification. From the author's own experience, underwater viewing is not absolutely necessary for observation. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
80	.038	Magnificent brood frog	MAGNIFICENT BROOD FROG ENDANGERED (IUCN) / VULNERABLE (EPBC Act) -The Magnificent Brood Frog working group was denied access by the landowner to undertake repeat surveys. -The cumulative impact on loss of habitat at Kaban wind farm compounds the impact at Chalumbin. • MNES assessment seriously downplays the threat to the species. -By no reasonable assessment, can this grant offset the impacts this development will have on the species. • As the total population is likely to be very small, all of the known habitat is considered critical for survival.		No	To be clear, the landowner denying access to the magnificent brood frog working group is nothing to do with the project; in fact, the Project team has invited members of the working group to participate in Project field surveys and shared all survey data. The PER acknowledges that the project could have a significant residual impact on the species, which is why offsets have been proposed in line with the mitigation hierarchy. The proponent has made a voluntary financial contribution to research above and beyond the direct offsets.
80	.039	Red goshawk	RED GOSHAWK VULNERABLE (EPBC Act) ENDANGERED (NC Act) -Highly secretive – insufficient survey work carried out. The recommended survey effort guide is stated as 50 hours per 50ha area. The development site is 1071.1ha. Therefore, by that calculation 1071.1 hours of survey should have occurred. Instead, the developer states just 443 hours of surveying, in total was performed. -In Jan 2021 a nest was found stated in the EPBC Act referral as 'considered highly likely to belong' to the Red Goshawk. It was 'confirmed' as a Red Goshawk nest by an expert, a QPWS ranger. It was stated to "possibly' belong to the Red Goshawk by two other experts. -As the nest was confirmed to be a Red Goshawk nest by an expert, the precautionary principle must be applied, and the nest treated as belonging to the species. -This species is also present at the Upper Burdekin Wind Farm site with 884 ha of habitat to be destroyed. The cumulative effect of both developments on this species are of immense concern. -The Red Goshawk has not been accurately assessed for MNES under the PER, and as such approval for the Chalumbin Wind Farm development cannot be granted.		No	Additional nesting surveys were undertaken in December 2022. Additional BUS have also been undertaken since release of the PER for public comment. The survey guidelines indicate the preferred method is to search for nests, i.e. during the nesting period of October to January. To date, 382 person hours of survey (a combination of BUS and nest searches) has been undertaken during the 2021 and 2022 nesting seasons, for an area of potential nesting habitat of 265ha within the Project footprint. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
80	.040	Cumulative impacts	WHITE THOAT NEEDLETAIL (VULNERABLE & MIGRATORY EPBC Act) The cumulative effect of all current and planned wind farms needs to be considered when assessing this species.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
80	.041	Survey effort	KOALA ENDANGERED (EPBC Act) -103 hours of spotlighting undertaken from vehicle – manifestly inadequate. -Notoriously secretive and difficulty to spot -Known verified record of healthy male Koala Oct 2020 as the adjoining Yourka Reserve -Developer has misled the community stating this Koala sighting was a decade ago. -Koala expert Roger Martin is quoted as saying "It would be reasonable to suggest that koalas are all through the eucalypt country on the western edge of the Wet Tropics and that the only reason they haven't been seen on the Chalumbin site is that no one has looked very hard." [Source: email correspondence]		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
80	.042	Cumulative impacts	-Koalas are also present at Upper Burdekin wind farm and when combined with Chalumbin, the area of habitat to be cleared is more than doubled. The cumulative impact of this, must be assessed - particularly given this is elevated habitat - critical to the future survival of the species.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
80	.043	Northern greater glider	NORTHERN GREATER GLIDER VULNERABLE (EPBC Act) -The use of artificial nest boxes and ropes crossing cannot counteract the significant residual impact this development will have on this species. -The cumulative impact of the destruction of land at both Chalumbin & Upper Burdekin Wind Farm nearly double the total area of habitat loss. This is not sustainable for this species. -The habitat map and intersection with the development is shocking, and this development should not be approved.		No	Section 8.6.7 of the PER outlines a range of mitigation measures to minimise potential impacts on the northern greater glider, not limited to the use of artificial nest boxes and rope bridges. The PER acknowledges that the project has the potential to result in a significant residual impact on the northern greater glider and has proposed offsets for this species in accordance with the mitigation hierarchy.
80	.045	Spectacled flying fox	SPECTACLED FLYING FOX ENDANGERED (EPBC Act) -There is a colony 30km from the project area that has up to 9999 individuals. Will forage up to 50km from camp at night. -The development area is within their feeding zone and this habitat must be protected to ensure the survival of the species. -With this species in clear conflict in heavily built up urban areas, it is incomprehensible that a critical population such as this one, East of Ravenshoe - well outside of population centres would be put at threat.		No	Your concerns regarding the spectacled flying-fox are noted. A full range of mitigation measures for both the construction and operational phase of the project are outlined in Section 8.6.10 of the PER. This includes the rehabilitation program (up to 70% of the cleared area will be rehabilitated with spectacled flying-fox forage species, which will be sufficiently established to be providing forage to the species in the medium term) and the proposed offsets. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
80	.046	WTQWHA	-The destruction of Wet Sclerophyll Forest has been raised as a significant concern by the Wet Tropics Management Authority. -All areas of Wet Sclerophyll Forest should be avoided, with suitable buffers retained around these areas.		No	A total of 37 proposed WTGs would require removal from the Wooroora property in order to avoid the wet sclerophyll forest. This alternative would not constitute a viable Project. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
80	.047	Indigenous Cultural Heritage / Engagement	-Indigenous heritage values are formally recognised as part of the National Heritage Listing for the WTQ, acknowledging that rainforest Aboriginal heritage is unique to the Wet Tropics that represents a remarkable and continuous Indigenous connection with a tropical rainforest environment. -The Indigenous values of the WTQ National Heritage Place are not definitely mapped. -Insufficient work has been carried out on behalf of the developer to consult all Jirrbal people. A lot of areas of significant cultural heritage are not recognised. -The destruction of areas of Cultural Significance would impact on the National Heritage values of the WTQ.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
80	.048	Community consultation	CONSULTATION -There has been no proper, open community consultation at any stage of the process. -Sept 16th, 2021, meeting the community was treated with complete contempt. Jirrbal Elders were ignored and treated with absolute disdain. That set the stage for all future engagement. -Developer has sought one-on-one and small briefings instead of open meetings. • At no stage, throughout the process, has the developer held or attended a community meeting, despite being invited to one the community organised late last year. -Having Sacred Sites and areas of Cultural Heritage not acknowledged, and potentially desecrated would be like past horrors being repeated and amplified. -This development must not be allowed to occur without the consultation of all Jirrbal people with a connection to this area. -The developer has deliberately misled the community throughout the process. From publishing photo montages, and images designed to make it appear as though the development area is cleared pasture land, to describing it as grazing land. -Outright lying to the community by implying for example that Koalas had not been seen at Yourka for a decade. -The developer wilfully fabricated a story, of what occurred at the meeting on the 16th Sept 2022, in order to deceive the federal government approval authorities, and attempt to justify why open consultation had not occurred. -There were more people at the Stop Chalumbin Wind Farm protest outside the so-called 'info hub' then were at the briefing inside in Feb. this year. -The so-called 'independent' chair of the declared 'voluntary' Community Advisory Group is being paid by the developer. The chair is managing director of a company that provides services to renewable energy companies. One of those services is 'strategic advice to fast track approval project approvals'. By any definition there is a serious problem here! -The Community Advisory Group is not representative. -The Community Advisory Group is a sham – it was set up as a mechanism to tick the box on consultation. It must not be considered a part of the consultation process. -$500,000 annual grants are being used as leverage to gain approval. The focus is always on the grants and not the facts of the case. Grants are contingent on development approval. - The information hub is regularly closed during the limited state opening hours. -Emails sent to the developer are unanswered. -Developer is in breach of the Clean Energy Councils Best Practice Charter. -Developer has failed to meet the threshold for community consultation based on their own definition. -Developer by their own definition has no social license to operate in the community.		No	The suggestion that the community consultation has been improper for the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. The other grievances set out in this submission are not relevant to the PER or EPBC process.
80	.049	Adequacy of the PER	-The PER has failed to outline all MNES species. -What else has been left off the assessment process? -How can any confidence be placed in an ecological report that contradicts itself, omits key information, utilises manifestly inadequate survey methods, fabricates information and is incomplete? -The draft PER is fundamentally flawed, incomplete, inaccurate, misleading and deceptive, and breaches the guidelines therefore it fails to meet the standard required in order to be submitted to the federal dept DCCEEW and Minister.		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication.
80	.050	Community consultation	INDIGENOUS ENGAGEMENT The Guidelines for the Content of a Draft PER – Chalumbin Wind Farm state: "The department considers that best practice consultation, in accordance with the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016) includes: -identifying and acknowledging all relevant affected Indigenous peoples and communities; -committing to early engagement; -building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management; -setting appropriate timeframes for consultation; and -demonstrating cultural awareness -The developer has failed to comply with best practice as outlined above, and as is therefore in breach of the guidelines of the PER by: oRefusing to talk to, listen, acknowledge or accept the concerns regarding Sacred Sites and areas of significant Cultural Heritage value, that Jirrbal community members including Elders were trying to raise at the Sept 16th, 2021, community 'info session' meeting. oBy treating Elders with absolute contempt at that meeting and at no stage since, making any effort to apologise and rectify the situation through open dialogue. oFar from building trust the developer broke all trust at that first meeting, and the underhanded way they have acted since has only compounded the issue. oBy refusing the engage with all relevant affected Jirrbal people and instead electing to only consult with the PBC, the developer has discriminated against many in the community and denied them their rights to be heard, respected and to be a part of the consultation process.		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
81	.001	Vegetation clearing	The Chalumbin wind farm should not be approved because the amount of land cleared will be a determential loss of vegetation and habitat to wildlife. Since European colonisation, Australia has lost 39 mammals, 4 frogs, 22 birds and 1 reptile - plus those not known about before records were kept. Land clearing is one of the major causes of this loss. The most recent reports from the Intergovernmental Panel on Climate Change (IPCC) strongly advise that the answers to both climate change and biodiversity loss are linked. Saving species also means mitigating climate-change effects: to save species we need to maintain their habitat, which means not clearing. I totally agree with alternative energy sources but not when it requires massive clearing of the bush. Wind and solar farms need to be built on land that is already cleared or degraded - there is no shortage in Australia. More thought and investigation of options needs to occur before the Government signs off on permission simply to say it is meeting targets. Australia leads the world in wildlife extinction, and land clearing will only increase our lead.		No	The rationale behind the selection of site location (including the lack of alternative locations on cleared land) is addressed in Section 3 of the PER. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
82	.001	Opposition to project	As per Submission 21, with the addition of: To make wind & solar generators we use more energy to make them than they ever produce, which is BONKERS. 40% of the epoxy that is used in the laminated blades is made of a chemical called BISPHENOL A. Bisphenol A is extraordinarily toxic. It is banned in many countries in the world. We cannot recycle those turbine blades. We lose about 2.5g Bisphenol A every year from a blade. We only need 1g of Bisphenol A & we have destroyed 10 million litres of water. Over the life of a turbineblade, we destroyed half a trillion litres of water by contaminating it with this high toxin. Wind turbines destroy about 25ha per turbine.....They slice & dice birds & bats. Planting 3 trees for every one tree that is destroyed by building this wind farm will take decades to grow & is NOT the answer or solution, meanwhile you have destroyed the homes & habitats of our wildlife. WHY ARE WE GOING BACKWARDS??? WHY ARE YOU ALL FOR DESTROYING OUR NATIVE WILDLIFE, FORESTS, OCEANS & WORLD HERITAGE? THIS IS WHERE THE TOURISTS WANT TO COME & SEE OUR BEAUTIFUL COUNTRY. THE WAY YOU ARE GOING, THE ONLY WAY TO SEE OUR BEAUTIFUL COUNTRY WILL BE IN A MUSEUM BEHIND GLASS WHERE NO DOUBT YOU WILL BE CHARGING US TO GO & SEE IT!!!		No	See response to Submission 21
83	.001	Opposition to project	As per Submission 82.		No	See response to Submission 82
27d	.001	Traffic and transport	The Draft PER for the proposed Chalumbin Wind Farm - EPBC 2021/8983 - has not adequately addressed the cumulative impact of this proposed project. With Ref. to: Appendix R - Transport Route Study 4.6.1 to 4.6.1.8 As a resident on Greys Lane (which runs off Wooroora Road) I am concerned that there will be negative impacts on people's lives from roadworks proposed on Wooroora Road by Ark Energy to service the Chalumbin Wind Farm. Wooroora Road is the only access road in to the nearest town of Ravenshoe for residents of Greys Lane, Wooroora Road (South Millstream area) and connecting roads. With inevitable traffic delays and traffic disruption due to the large-scale roadwork activity proposed in this Draft Public Environment Report - EPBC 2021/8983 - Chalumbin Wind Farm I am concerned that the health and well-being of residents will be affected and compromised by the disruptions these roadworks would cause on Wooroora Road. For example: potential delays for emergency services in response to accidents or emergencies or bush/house fires, inconvenience and disruption for locals who travel in to town to medical appointments – local clinics – hospitals - shopping facilities – school – work - recreational activities - care-providers who service disabled and aged care clients. I am concerned that the proposed roadworks on this only access road will create great hardship for the residents of Wooroora Road and connecting roads. Please respect our forests, wildlife and residents. Chalumbin is not a suitable site for this wind mill proposal. Thank you.		No	Any upgrade works (causeways/bridges) for either transportation route option (Wooroora Road or Innot Hot Springs) will be undertaken in accordance with the requirements of the Fisheries Act 1994, Vegetation Management Act 1999, Water Act 2000 and the EPBC Act. As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
84	.001	Koala	Note submission has been summarised to extract key points requiring response. A substantive work by Briscoe et al. (2016), suggests that these upland areas will be the main refugia for koalas in the hotter future climate predicted for this region. I refer particularly to the insert in Fig 4 (d) of the Briscoe publication which shows that the 'refugia' for these north-eastern populations in all the modelling of future climate scenarios are typically the high elevation sites. Their modelling also implies that none of the lowland populations will survive in higher temperature scenarios. It is at these higher elevation sites where all the wind farms developments planned for far north Queensland are to be constructed. Any impact of the wind farms on the viability of these resident koala populations has huge significance for their long-term viability and these proposals need to be very carefully evaluated for any potential threats or unforeseen consequences they pose to the resident koala population. So how does the Chalumbin Wind Farm PER justify putting 86 wind turbines in the middle of a probable koala refuge site? Well, it doesn't. The proponents are either unaware of Briscoe, Carney, Taylor and Wintle's 2016 publication or chose to ignore it. This is surprising given its relevance to the siting of their wind farm and its prominence in all the recent DAWE documents about actions needed for the conservation of the koala.		No	The referenced figure 4 in Briscoe et al 2016 presents habitat suitability modelling for koala based on a number of different models, which present differing results for the 2070 scenario. Image 4c shows the habitat suitability for all models in 2070 which naturally shows a much larger area of suitable area along the eastern coast of Australia than image 4d which presents the "minimum habitat suitability across all models". The corresponding text in the article confirms that the location of refugia in image 4d (i.e. high elevation sites) was driven by assumptions of low foliage water content and represents the most pessimistic circumstances. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan and would be sufficiently established to provide habitat suitable for koala by 2070. it is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting the type of climate change effects modelled in studies such as Briscoe et al 2016.
84	.002	Survey effort	Despite this PER acknowledging that koala populations are often in low density across different bioregions in Queensland (Section 4.7.3.1, p166) and that it is a cryptic species for which it is often difficult to establish a true absence (Not detecting koalas is not regarded as evidence of their absence) their final statement on the matter is that 'The Project area is not a stronghold for any koala population and if koalas are present within the project area, it is likely to be on a very sporadic basis and in low numbers.' Once again, I would emphasise that we are dealing with a very low abundance population of an extremely cryptic animal which is mainly nocturnal. Most recent sightings of koalas on the Atherton Tablelands have been of animals crossing roads in the early hours of the morning. Koalas are only rarely seen during daylight hours so there it is nothing significant in the fact that they have rarely been seen in this Project area. The fourth proposition deals with the results from the proponent's recent surveys of the project area. They make much of their efforts to detect koalas and report 103 hours of spotlighting (p 111 and Sec 4.7.3.3) and 3 months of camera trapping (p 109) - but I don't see how they can claim 24 months of field surveys. Are they suggesting that looking for koalas out the vehicle window when travelling between field sites (p 107) constitutes a survey? From long experience I can say that spotlighting from a vehicle is a crude way of surveying for arboreal mammals in a forest. You need to do it on foot, but walking is not a time efficient technique. The area that can be covered per hour depends on terrain, tree height and canopy density - often you can only search a few hectares in an hour. Considering that the resident koala population is in low abundance and the project area is around 318 km2, 103 hours of spotlighting is a rather paltry effort. The total area searched would probably amount to only a few km2 so it is not surprising that no koalas were detected. To digress briefly, the authors of this PER do not seem to have any understanding what a low abundance koala population actually looks like. Let me enlighten them. Reviewing the methods used by these investigators to locate their study animals underlines how difficult koalas are to find in a low abundance situation. We have comparable data to these studies for a single young adult male in the Bluff Forest (about 15 k from the Chalumbin site). This animal was relocated from suburban Atherton and released into suitable koala habitat in the Bluff Forest in February 2022. He was fitted with a radio collar and has now been tracked for over 9 months. In that time, he has ranged between Spring Creek and Silver Valley and the total area of his current range (MCP) is now just over 3000 ha. The span of his range is 13 km. The maximum overnight distance he has moved is 1575 m. The extraordinary ranging behaviour and mobility of this animal is even more impressive when looked at over a shorter timescale. In the last month, beginning on the 26th October 2022, we located him on 13 occasions. The MCP containing these 13 locations circumscribes an area of 370 ha. The cumulative distance between these locations indicates that he has moved a minimum total distance of 13.5 km in the month. This may be related to breeding season activity, but these figures do indicate the remarkable mobility of an arboreal 7.5 kg North Queensland koala. This ranging behaviour, which appears to be a feature of animals in low-abundance populations, suggests that the detectability of koalas in the 318 km2 area of the Chalumbin Wind Farm development would be so low that spotlighting would be		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights (11 months), no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
84	.003	Koala	What are the likely impacts of this wind farm on this resident koala population? The 843 ha forest to be cleared for wind towers and roads is not an insignificant amount of habitat to lose but there is a potentially a far more severe impact and this is wind turbine noise. In Sec 5.2.5 the potential impact of noise associated with the operation of the Project is discussed. The noise they acknowledge is trivial compared with the 'noise' that is increasingly being recognized as having the most significant impact on wildlife and that is the noise made by the huge blades on wind turbines moving through turbulent air. The low frequency bellows produced enable oestrous females to locate and mate with males they detect, even if they were kilometres away. They are the key to understanding how low abundance koala populations remain viable. Payne referred to them as a 'dispersed network of acoustically connected individuals' (Yong 2022). I think a koala society living in a low abundance situation, at least during the breeding season, could be described in similar terms. Potential impact of WTN on viability of koala population at Chalumbin So, what impact will the low frequency noise made by wind turbines have on koala communications and breeding success? No one has asked this question, so we don't know. But there is a prima facie case that low frequency noise will mask the contact calls of the males and make it harder for females to locate them and thereby reduce reproductive success and threaten the viability of the population. It is a question that should have been asked - and answered - BEFORE a windfarm was contemplated for this place. The possible impact of this low frequency noise on all the wildlife in the forests surrounding the Chalumbin site is terrifying. Accepting that WTN is omnidirectional and can be sometimes heard 3.5 km from the wind turbine implies that it can sometimes be heard throughout the 38.5 km2 area surrounding each wind turbine. This proposal is to build 86 turbines within a 318 km2 site – that's one wind turbine every 3.6 km2 - so the area the WTN will impact is potentially the whole site as well as parts of the adjoining Wet Tropics World Heritage Area. Will the noise from the multiple turbines be compounded? I don't know the answer to that question but it is a very important question that needs to be answered. It is appalling that none of these questions have been addressed in the impact assessment section of this PER of the Chalumbin proposal. Whether it proceeds from this point should depend on satisfactory answers to such questions. This is not a trivial matter as noise from this wind farm has the potential to extirpate koalas in what is postulated to be their major refuge in far north Queensland.		No	The PER identifies that noise may have an impact on species occurring within the area and, as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
85	.001	Opposition to project	The Chalumbin wind farm should not be approved because it will have a major economic impact in the Northern Qld/Rainforest/Great Barrier reef zone, which I'm not surprised to see in one survey is rated the number one tourist attraction in Australia with 2 million visitors every year. If word gets out that our iconic animals are threatened or dying and our beautiful rainforests are being turned into the equivalent of 'open air factories' by these ugly constructions, it is going to hurt this lucrative business immeasurably. This has happened consistently in other countries where people will decide to stay at some other destination. I have been a frequent visitor over the years and had planned to do a farm stay holiday next year, but after I have seen photos of what has already happened I will be going elsewhere. Also don't imagine a conspiracy to keep this private will succeed, as in today's world news can travel very fast and all you really need to do is show one completed project with a before and after photo (and maybe some of our threatened flora and fauna). That's all it will take to leave a lasting impression. A lemming-like rush to ruin our treasured countryside, our National Heritage, will bring nothing but misery all round. There's no use using glossy publications with pretty photos to show 'you care'; you really don't care about anything but money. We already know how wind projects have gone overseas. They are nothing like the advertising hype of 'Clean', 'Reliable' and 'Cheap'.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
86	.001	Opposition to project	I would like to state my objection to the Chalumbin Wind Farm project near Ravenshoe. The project will have severe consequences on the environment that far outweigh any perceived benefits. The lifespan of the project is much shorter than the lifespan of the current forest. The power supplied will also be unreliable. The project will have serious negative effects on the local community. The land needs to be protected for future generations and the risk to the environment is far too high. Please dont allow this project to go ahead.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
87	.001	Erosion and sedimentation	The Chalumbin wind farm should not be approved because under the current mode of construction of these wind farms that are being built in this area, they are a environmental catastrophe !! 70m wide (minimum) winding dirt roads up steep mountain sides in a very high monsoonal rainfall area in the multiple eastern flowing rivers catchment area will silt up all of the eastern flowing streams & rivers.. These pristine clean pure water systems will become dead muddy rivers that will also silt up and kill the remaining fringing reefs & coastal Island reefs within the adjacent Great barrier Reef World Heritage Marine Parks.		No	Section 2.2 of the PER contains a description of the key project components and states that road slopes will not exceed 15% and that for a track width of 5.5m the temporary road construction may extend from less than 25 m to over 100 m depending on the complexity of the terrain and ability to safely construct the required earthworks. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. The Great Barrier Reef and World Heritage areas have been a key consideration in the assessment of the project and are discussed in various sections through the PER.
87	.002	N/A to PER matters	This is madness ! Irreversible environmental sabotage of a rare pristine region ! Further the 'Environmental Impact Assessments' submitted by the windfarm developers are fraudulent ! The 'Environmental scientists' who write these reports are paid by the developers to write reports that tick all the boxes in their developments favor.. absolutely immoral & corrupt hypo crites!. Are you ok with this?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
87	.003	WTQWHA	This pristine region & all of the pristine world heritage & national park areas on the coast below will be destroyed! These wind farms have a 20 yr life expectancy !		No	Your concerns are noted, however the PER has determined that the Project will not have a significant residual impact on the world heritage area.
87	.003	Hazard and risk	I doubt they can withstand cyclones!		No	All Project Infrastructure will be designed to withstand the impacts of extreme weather events such as cyclones.
87	.004	Traffic and transport	If the roads weren't pushed in to get these giant wind turbines on site.... IF they were lowered in with helicopters they would be far less of an environmental disaster! dirt highways are cheaper for the developers but are an irreversible environmental catastrophe!		No	Wind turbine components cannot be airlifted by helicopters for construction purposes, as the components are too heavy to transport in this manner.
87	.005	Opposition to project	I was born in this area in 1961... I know the Chalumbin Wind Farm and others currently being built in this region will destroy vast areas of still pristine forests, habitats & the pristine waterways of the entire Eastern side of The Great Diving Range ..muddying all of the still clean east flowing rivers in these world heritage regions.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
72b	.001	Project design	In Table 6.1 and publicly on ABC Radio and Cairns Post, reports from representatives of Ark Energy have mislead the public in describing the current configuration of the project being reduced in size by half. This is deceptive and misleading. The project was never and has never consisted of 200 turbines. The project was first published in the referral as 95 turbines. This is like a real estate developer wanting to build a high-rise building and ideally wants 200 floors to maximise profits, but engineering and planning constraints limit the height to 95 floors. The 200 floors were never going to be approved nor work engineeringly. This is deceptive behaviour on behalf of the developer to publish on public radio and Cairns Post newspaper that the development has been halved. This is indicative of the sly behaviour of this developer from the start.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations.

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72b	.002	Traffic and transport	I also do not consent and strongly object to Wooroora Road and surrounding roads to be used for Heavy Haulage Trucks carrying wind turbine parts or Heavy Vehicle Trucks carrying industrial quarrying materials, cement, wind turbine parts, substation parts or any heavy vehicles associated with Chalumbin Wind Farm to be using local rural residential roads as heavy industrial roads, causing dust, noise and diesel pollution. I object and do not consent to the proposed Chalumbin wind farm going ahead. I object and do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and I say NO to Chalumbin Wind Farm.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
6c	.001	Biodiversity general	The total Chalumbin Project Area covers 31,225 ha (Section 2, pg. 47) and Ark Energy state that only 1,071 ha will be impacted directly by this wind farm development (pg. 47). This is nowhere near a credible claim to make. All flora and fauna within a huge enveloping zone surrounding this "maximum area of disturbance" will be impacted with this project. Animals are totally mobile and plant vegetation is interconnected by underground bacteria and a sub soil web of micro-organisms well beyond just the crown footprint. This subterranean ecosystem of a forest is called the "mycorrhizal network" and can be referenced in the biological literature (e.g. https://www.nationalforests.org/blog/underground-mycorrhizal-network) https://sitn.hms.harvard.edu/flash/2019/exploring-the-underground-network-of-trees-the-nervous-system-of-the-forest/ I contend therefore that you just can not say this proposed Chalumbin Wind Farm project will only impact on 1,071 ha of country. It will impact on the biodiversity of a HUGE area surrounding the immediate zone that is directly destroyed in the construction and operational phases of this proposed development. The Chalumbin environment will be fragmented and ecologically disrupted. Ecosystems are dynamic and evolving macro environments. They certainly do not recognise "desktop" arbitrary drawn polygons of containment.		No	The PER Guidelines do not require an assessment of the mycorrhizal network. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
6c	.002	Adequacy of the PER	Animal Impacts I note that in Section 4 there are listed just 4 plant species, 1 bat species (ghost bat), 10 bird species, 3 frog species and 6 mammal species that are threatened. But the real count of plants, bats, amphibians and mammals would have to take into account the mobility of all animal species that reside in the nearby Wet Tropics World Heritage Area and the Yourka Nature Refuge areas. In short, all animal species are mobile so their territories and habitats of collision with the Chalumbin Project would be over an area far in excess of the 1,071 ha listed in the PER. For example, we know that the Lumholtz Tree Kangaroo moves out along waterways in the wet season and can be found out in what is considered dry sclerophyll terrain. All of us living around Ravenshoe have seen this mammal over the years in "dry" country – why is this animal not included amongst the species of concern? I also note that the PER has excluded the Australian Saurus Crane from the list of migratory birds. I refer Ark Energy to: https://www.researchgate.net/publication/342823057_Numbers_distribution_and_behaviour_of_Australian_Sarus_Cranes_Antigone_antigone_gillae_and_Brolgas_A_rubicunda_at_wintering_roosts_on_the_Atherton_Tablelands_far_north_Queensland_Australia The cumulative impacts of over 400 proposed and existing wind turbines in the area between Mt. Emerald and Mt. Fox/Burdekin would have significant impact upon this species.		No	Lumholtz tree-kangaroo is not listed as threatened under the EPBC Act and is therefore not considered a MNES in its own right. However, it is endemic to the WTQWHA and is therefore discussed in the PER (Section 4.12 and Section 8.11) as a value of the WTQWHA. Australian sarus crane is not listed as migratory or threatened under the EPBC Act and is therefore not required to be assessed in the PER.
6c	.003	Survey effort	This brings up another important issue – that of the methodology. I note that in Section 8 mention is often made of "ecological assessments" that were carried out between Oct. 2020 and Jan. 2022 (pgs. 354 ff). Well really, are 16 months enough time to assess the complex diversity and interaction of this high altitude, highly diverse ecosystem? The whole pattern of animals interacting with their environments is determined by a multitude of factors. Some of these determinants would be the type of season, the flowering of trees, whether it is a dry or wet year, the prevalence or otherwise of bushfires, etc. All nature goes in seasonal and long term cycles of its own resolution and to just devote 16 months to a highly complex ecosystem that has been evolving since at least the end of the last ice age (circa 10,000 years ago) is to severely under value its significance. In short, NOT enough time has been given to ecological assessment and NOT enough consideration has been given to being more comprehensive in the number of animal species included in the surveys.		No	Surveys commenced in October 2020 and in some cases are ongoing (as at February 2023). Surveys have undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
6c	.004	Vegetation clearing	Vegetation Impacts I note that in Section 4, Table 4-1 (pg. 77 ff) there is a list of 68 Regional Ecosystems (RE) – that is excellent ground truthing of the vegetative diversity of the entire 31,225 ha of the Chalumbin Project Area. It is claimed by Ark Energy that only 1,071 ha of this entire project will be directly impacted. I contend that the actual footprint of this project will be orders of magnitude greater than a mere 3.4%. One has to take into account the underground web of the "mycorrhizal network". A fully functioning forested ecosystem, like Chalumbin, has an interconnected dependency many times greater than an individual tree. I refer to the biological literature previously mentioned. In Section 2, Fig 2.2 there is a total of 7,461 ha to be set aside for an "Offset Management Strategy", this is an entirely bogus claim. Once the vegetation and animal corridors are destroyed no amount of "desktop" calculations can offset a collapsing ecosystem.		No	The PER Guidelines do not require an assessment of the mycorrhizal network. The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
6c	.005	Vegetation clearing	Summary My main point for this submission is that the total area of disturbance for the proposed Chalumbin Wind Farm – the total "significant impact" – is of magnitude far in excess of the mere 1,071 ha mentioned in Section 2.0 of the PER. Nearly all the animals mentioned in the impact species table in Section 4 are mobile, and depending on seasonal factors will range over lesser or more territory depending on local conditions. We just can not destroy this high altitude, high biodiversity environment for a wind farm.		No	It is standard practice in environmental impact assessments to provide a quantitative assessment of habitat loss for threatened species as the primary, long-term impact. Displacement from habitat (e.g. due to disturbance from noise, lighting, etc.) is a temporary impact that is much more difficult to quantify with any accuracy and hence is typically assessed in a more qualitative manner. This is the approach that has been taken in the PER.
6c	.006	Opposition to project	I would contend that the entirety of the Ark Energy Project Area is an area of maximum impact for animals and vegetation – it is a uniquely distinct, functioning, biodiverse ecosystem. You just can not cut and paste bits & pieces to satisfy academic categorisation for things like "offsets" or likely habitat corridors. You have to accept that Chalumbin is a unique area of Far North Queensland Forest country; and as such it is highlighted in the "Threatened Species Action Plan 2022-2032" delivered by Tanya Plibersek at Taronga Zoo on October 4th this year. https://www.dcceew.gov.au/sites/default/files/documents/threatened-species-action-plan-2022-2032.pdf Under the "14 priority mainland places" mentioned in this document, the first listed place is (A) "Eastern forests of Far North Queensland". We just have to preserve what we have left of this region – the animals and trees urgently require our agency. Chalumbin is the WRONG PLACE for a wind farm!		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
88a	.001	Opposition to project	As per Submission 6b		No	See response to Submission 6b
87	.001	Opposition to project	The Chalumbin wind farm should not be approved because: a) I don't believe in man made global warming b) I don't believe renewables will be cost effective until an "All In" win-win system is developed to include fossil, renewables and nuclear		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. Nuclear energy projects are not permitted under the EPBC Act (s140A).
28b	.001	Survey effort	Note submission has been summarised to extract key points requiring response. The consequences if Chalumbin Wind Farm is approved, will be irreversible, too many to mention in the limited time constraints of responding to the PER. The threats to the Southern Cassowary would be catastrophic. The Draft Public Environment Report (PER) could not be more removed from the Ravenshoe community, the cultural heritage, and the region in which we live. The PER has detailed some of the habitats and distribution. The proponent states that "The Project area does not align with any of the above areas and therefore is not considered to constitute an important population" (highlight is mine). This statement is patently incorrect. The short periods of surveys that may have been conducted by the proponent does not give a license to destroy any further Cassowary habitats, on top of what has already been cleared in the Wet Tropics. The ecological surveys contracted by Ark Energy are inadequate, including the inadequate time frames compared to what real ecological surveys would look like. There are claims in the Public Environmental Report about wildlife that conveniently does not exist, from just 130 hours of monitoring, perhaps from a car? Wildlife are very difficult to spot. I can attest to even having trouble finding a Cassowary that is in our care, let alone the vast landscapes of varying eco-systems of Chalumbin.		No	A small number of vegetation patches that are potentially critical habitat for the southern cassowary (as they correspond with essential habitat REs within 1.5km of water) have been mapped within Wooroora Station. The project has been designed to avoid clearing any of these patches, and will not result in any further fragmentation of these patches (which are already fragmented from much larger areas of habitat within the WTQWHA by existing road and powerline infrastructure). No cassowaries have been observed within the project area although they have been observed while travelling to and from the site, alongside Tully Falls Road where it travels through rainforest. Surveys undertaken within the project area have been undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
28b	.002	Southern cassowary	The proposed Chalumbin wind industry poses an irreversible threat to our big birds. The proponent has listed the main threats to Cassowaries (and this is what this proposal will do): • habitat loss from clearing, • fragmentation, • habitat degradation, • roads & traffic, • dog attacks, • hand feeding, • diseases. There are more direct threats to Cassowaries if this proposal goes ahead. This includes the drying out effects to the weather and the land by the wind turbines, reduction in insects and bio diversity that Cassowaries need and depend on. To conclude - if the Chalumbin industrial wind proposal is approved it will send a very dangerous message to the Cassowary. Chalumbin Wind Farm Pty Ltd will then have 'a license to kill' – the project will have the capacity to increase their threat levels and displace and injure our Cassowaries.		No	As addressed in Section 8.5.4 of the PER, the Project has been designed to avoid clearing of any habitat critical to the survival of the southern cassowary (that is, patches of RE that are listed as essential habitat in the Recovery Plan for the Southern Cassowary). Potential impacts are also discussed in this section, along with a suite of mitigation measures which will ensure the Project does not result in a significant residual impact to the species.
28b	.002	Mitigation and management measures	The Mitigation Tables above are disconnected weasel words that underestimates the true cost of what is at stake for our region, who cherish and respect the largest flightless vulnerable bird in Australia. The mitigation tables, are insensitive to the conservationists who have worked so hard to recover this species. As outlined, Cassowaries have many threats. Should Chalumbin Wind Farm be approved, the proposed wind industrialisation of critical habitats and waterways of Chalumbin poses a far greater threat than any mitigation promises. The potential death of Cassowary chicks, their food sources, the damage by haulage trucks during construction is unacceptable. The Chalumbin highland forests, including other habitats, are a very necessary Cassowary refugia. This refugia may be required in case of cyclones, storms, and a home for chicks and sub-adults that may become displaced when they're kicked out by the father.		No	As addressed in Section 8.5.4 of the PER, the Project has been designed to avoid clearing of any habitat critical to the survival of the southern cassowary (that is, patches of RE that are listed as essential habitat in the Recovery Plan for the Southern Cassowary). Potential impacts are also discussed in this section, along with a suite of mitigation measures which will ensure the Project does not result in a significant residual impact to the species.
28b	.004	Community consultation	This proposal should never have gone this far. There are thousands of petitions, objections, and community backlash. There has been no public consultation.		No	The suggestion that there has been no public consultation in the Chalumbin Wind Farm project is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
90	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Wind turbines are expensive, offensive visual pollution, a great danger to our bird life, are virtually non recyclable, unreliable and not necessary. They require track clearance for power interconnection and access roads for maintenance and fire prevention, meaning more habitat destruction. This is like destroying our environment in order to allegedly save it. Hypocrisy stands taller than the ugly turbines themselves. The Tableland is a special place in North Queensland and many tourists love to visit to see the undisturbed natural environment in our area. This proposal would be a blow to tourism and locals alike and cannot ever be allowed to proceed.		No	The viability of the project is supported by assessment of the wind resource of the site which has been measured over the course of multiple years in order to obtain a reliable understanding of the wind characteristics and potential yield of the Project. As well as the assessment presented in the PER, the proponent prepared a development application under the State's Planning Act 2016. The application requires a Landscape and Visual Impact Assessment and the completion of bird and bat surveys. The conditions of approval require a bat and bird management plan to be developed. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
91	.001	Opposition to project	The Chalumbin wind farm should not be approved because: The footprint on the surrounds are far more sensitive and fragile than promoted. The windfarms do make noise and it is heard from quite a distance. The reason we moved to millstream was for the pristine quiet … not for background humming 24/7.		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
92	.001	Opposition to project	The Chalumbin wind farm should not be approved because: it will destroy the natural habitat it will create a frequency wave not suited for any living beings in the area it will leave behind a vast waste land of concrete that will never grow back ravenshoe will be in the middle of many windmills that will affect the town, view, scenery as well as disturb the natural physic of those living around it it does not produce enough electricity for our area and will not be used on our community, it is going overseas there are natural alternatives which are not been used ie water power as well as frequency waves once the use of the windmills is over, there is no recycling as such, they just get put into the ground not viable, user friendly or a sound way of using air to produce energy, not enough already feeling closed in with what is around us there are other areas to use that have no nature surrounding them but desert we do not want this in our area, please find another place or even better find another alternative		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
93	.001	Opposition to project	The Chalumbin wind farm should not be approved because:it is ludicrous to destroy forest and its flora and fauna, there are alternative sites of already cleared land and plenty of desert in Australia.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
94	.001	Vegetation clearing	I stand against the proposed Chalumbin wind farm because: The proposed site is in an area of great environmental importance. Rainforest margin Sclerophyl forest is very rare and is a unique habitat for flora and fauna. From 1974–1989 I lived in the Ravenshoe area, working as a migraory beekeeper. The sites I used ranged from Innisfail on the coast to Mt Surprise over 250Km inland. In all of this area Chalumbin iis unique Its particular flora provoded honey flows at times of general scarcity. I now live in Northen NSW and support renewable energy. Tthe solar panels on our roof send more than twice the electricity to the greid than we take back. However renewable energy development should protect the environment. To clear over 1,000 ha of this rare remnabt forest is criminal.		No	The location of the project has been selected and refined to avoid areas of highest quality habitat and refuge for listed species. A full impact assessment is outlined in Section 5.0 of the PER, this has be used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. Specifically, impacts to wet sclerophyll forests have been minimised to the extent practicable and the majority of these forests will be rehabilitated on completion of construction. The proposed offset areas have also been chosen to include significant areas of wet sclerophyll forest.
95	001	Indigenous Cultural Heritage / Engagement	As a long time family of Ravenshoe my ancestors and myself have been taken in to local indigenous culture and told of the many traditions and cultural sites both men and women's site, as well as massacre sites some of which are in the proposed development area. As a government and a nation we say that we honor or first nations people but only after we desecrate a site. Remember what happened in Western Australia not too long ago. Everyone was sorry but still happy to do it again to some other first nations. It's a disgrace and as a nation we should be ashamed.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
95	002	Opposition to project	The Chalumbin wind farm should not be approved because: As a 6th generation Ravenshoe local I think it's disgusting to think that as a government you are allowing foreign companies to desecrate some of the most important and beautiful high altitude forests, streams, creeks and surrounds. I live on Gordan earl drive and already have the view from my house polluted by the monstrosities that are the Kaban wind farm. I hope that some level of sense can prevail and development approval isn't granted for any further wind farms along the top of the great divide. There's already plenty of cleared land in Queensland and Australia and these places should be used for such projects. Not ancient high altitude forests. The development in Kaban has silted up the Wild river and I haven't seen it flow with clear water since development started. This will happen to Blunder Creek and further add sediment and run off to the Great Barrier reef adding to the struggles that the reef faces. There is certainly better site locations and better development options that will benefit the whole community and not just a select few. As climate change takes effect on the rare wildlife that we are fortunate to have In Australia and Queensland. Not to mention many of the rare, endangered and critically endangered species that I have seen in and around the proposed development area. I have personally seen koalas, Red Goshawks, Masked Owls, micro bats, bats, flying foxes, Hawks, Wedgetailed eagles, Sea Eagles, Eel tailed catfish, Sooty Grunter, sleepy cod, as well as the Northern Greater Glider (one of the reasons the Tully Millstream Hydro Electricity scheme was abandoned) I am not against development and as an employee of the electricity supply industry I'm aware of the fact that we need to both increase our energy production and find alternative energy production options. But this proposal is not a sensible option. The above mentioned Hydro Electricity scheme was comparative in energy production, took up a smaller impact area that would add both recreational and economic opportunity to a lot more people in the local area. Most of the workers needed to construct such a development will not be locals. Most of the workers needed to maintain the development when operational will not be locals. Simply because the skills aren't in the community, which will drive up the cost of living in an already low socioeconomic population. I understand that the development site is in extremely close proximity to the Transmission network needed to carry the electricity produced by this development, to have the electricity exported to communities outside of the immediate communities. The town mostly affected by this development won't even see one electron as the local area is supplied by lines originating in Atherton. The federal environment minister said that she was going to see that developments in environmentally sensitive areas wouldn't go ahead. Well it's time to let your actions talk. Approving this development and similar developments is how you will be judged by future generations. Are you going to do what's right by them? Or are you going to sell out to foreign money? If these developments are such a great idea why aren't they Australian owned so that Australia sees the economic advantage and not some multinationals?		No	Section 1.5 of the PER describes the macro-scale drivers for renewable energy in Australia, Queensland and the Northern QREZ. Section 3.0 describes the site selection requirements and identifies the lack of feasible alternatives to the development of the Project. The site is optimally located from a wind, land access and grid connection perspective. As described in Section 4.0 of the PER, the Project area is not in pristine condition but subject to grazing pressures and pest and weed incursion. The proponent is committed to designing out the potential impacts associated with erosion and sedimentation of waterways through commitment to best practice ESC measures, and avoiding ground-disturbing construction activities during the highest-risk months of January, February and March. Section 13.1 of the PER presents a socio-economic assessment of the Project and this determines that there will be significant economic benefits to the local economies of Ravenshoe, Atherton and the broader Tablelands. There is considerable potential for upskilling of locals for construction and operational employment. The Community Benefit Program will provide a significant boost to the local socio-economic environment.
96	001	Opposition to project	The Chalumbin wind farm should not be approved because: It's far more damaging to the environment and area, stop devastating the very land Australian is know for. Protection should the top priority not money, greed and power.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
63f	001	Mareeba Rock Wallaby	Summarised from 9 page submission I believe the Mareeba Rock Wallaby fits into a special and unique environmental niche in the Chalumbin area. I believe that any proposed development in this area will have a negative effect on the local Mareeba Rock Wallaby population. The Mareeba Rock Wallaby only lives in a small area in Far North Queensland. I believe that the Mareeba Rock Wallaby is a vulnerable species and needs to be protected. There has not been much research carried out on the Mareeba Rock Wallaby and it was only named as an individual species 30 years ago. It was only recently, in 1992, that the Mareeba Rock Wallaby was classified as genetically distinct from its relatives. While the Allied Rock Wallabies are known to be parapatric, which is that they keep to a distinctly defined area, the Mareeba Rock Wallaby possesses a different number of chromosomes than other allied members. I feel that more research is needed on this small, but important, marsupial who lives in the Millstream and Ravenshoe areas. If the Mareeba Rock Wallaby's habitat is damaged by the proposed development, then I believe that this could potentially severely reduce numbers or even cause them to disappear from the area. For the well-being of this little known Macropod, I am opposed to the proposed wind farm development.		No	The Mareeba rock wallaby is listed as Near Threatened on the IUCN Red List and as Least Concern under the Queensland Nature Conservation Act 1992. It is not listed on the Commonwealth Environment Protection and Biodiversity Conservation Act 1999; nonetheless the Mareeba rock wallaby has been assessed in the PER as a regionally endemic species. Information on the species' ecology, habitat, distribution, population, threats and presence within the Project area is all included in Appendix T of the PER. Potential impacts to this species and proposed mitigation measures are discussed in Section 8.10.2 of the PER.
27f	001	Cumulative impacts	The Draft PER for the proposed Chalumbin Wind Farm has not adequately addressed the cumulative impact of this proposed project. Identification of cumulative impacts of Chalumbin Wind Farm proposed, required in PER guidelines in Section 5.0, is lacking. With Ref. to: EPBC Act MNES Assessment Report Pt 3 section 11. pages 152 & 153 it is stated that the wind mill construction site will be "outside" the Wet Tropics World Heritage area, "500 metres" from the boundary at closest point. This seems to imply that as it (the wind farm) will be 'outside' the Wet Tropics World Heritage area that the native animal inhabitants 'inside' shall not be affected. It is a fact that fauna does not recognise human-designated boundaries; they roam or fly wherever they need to for food, water, mating or nesting and according to season. They move around and don't stay 'inside' or 'outside' a particular place such as a Wet Tropics World Heritage area, even if they do inhabit this area at times. The Wet Tropics World Heritage area is the same to native creatures as any other place. Cumulative impacts on native species which cohabit the surrounding areas of World Heritage as well as in World Heritage areas have not been adequately researched. As forests play a major role in maintaining balance and atmospheric stability on this planet, clearing forested country will be destructive to both the climate and the ecosystems of forests and certainly destroy precious habitat of many species which are already threatened and endangered. Cutting down trees will only increase global warming. Please leave already established forests completely as they are - no manner of "offsets" can ever replace or compensate for the removal of our precious trees and bush-land even if they are supposedly classified so-called "regrowth vegetation".		No	Section 5.5 of the PER provides a cumulative impact assessment that considers the cumulative impacts of a number of proposed and committed wind farm projects in the broader region - as required by the PER Guidelines. Construction footprints for wind farm projects typically occupy 3-4% of the total host property - this allows ongoing coexistence of land uses (generally agriculture/grazing and wind farm operations) and the ongoing operation of the wind farm typically does not render the site a "major industrial" land use, but rather an efficient use of resources and example of land use complementarity. The wind farm projects considered in the cumulative impact assessment will form part of a strong push to decarbonise the Queensland and Australian economy, which in turn will have a bearing on halting the effects of climate change and associated impacts to the rainforests and Great Barrier Reef. Land use decisions in Australia are driven by, among other things, land tenure and land ownership. The WTQWHA is protected through the delineation and dedication of the world heritage area. It is acknowledged that edge effects from adjoining areas have the potential to impact within the WTQWHA. This is explored within Section 8.10.2 of the PER, which demonstrates that available peer reviewed literature identifies that some edge effects can be noticeable for a distance of up to 500m. At its closest point, the Project footprint is 600m from the edge of the WTQWHA. It is predominantly much further from the edge of the WTQWHA than this. Based on available peer reviewed literature, this minimum distance of 600m is sufficient to ensure that any edge effects associated with the Project do not extend into the WTQWHA.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
97a	001	Opposition to project	The Chalumbin wind farm should not be approved because: this location, adjacent to the Wet Tropics World Heritage Area, is home to 18 listed vulnerable and/or endangered species. The construction, operation, and ultimate destruction of the wind farm will profoundly impact these precious creatures, some of which may become extinct. There are grassland areas north of Bowen and outside of Gladstone and Rockhampton population areas. Some locations have monthly wind speed averages double that of Ravenshoe. And these sites would not impact threatened species.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
98	001	Vegetation clearing	The Chalumbin wind farm should not be approved because: Queensland wilderness is being cleared at an unprecedented rate, and the wilderness of Chalumbin is a critical haven to wildlife. Chalumbin should not be destroyed for a wind farm.		No	The Project is not located in the Chalumbin Wilderness, which is located further to the east within the WTQWHA.
99	001	Opposition to project	The Chalumbin wind farm should not be approved because: the clearing of all of the pristine vegetation and rainforest areas, national parks and the subsequent ongoing killing of native wildlife by these monstrosities and thier construction / ongoing maintenance is unforgivable. Where are the environmental studies? Where is the power going? If it's to the cities build this infrastructure there. Those areas are already established		No	The drivers supporting the development of the Project are described in Section 1.5 of the PER. A discussion of the alternatives to the Project is provided in Section 3.0 of the PER. Section 14.0 of the PER brings together the pertinent aspects of the assessment to conclude that the Project achieves a balance between the environmental, economic and social imperatives that define ecologically sustainable development and the object of the EPBC Act. The power generated by the Project will be added to the National Electricity Grid and the ultimate destination of this power is subject to ongoing and future commercial negotiations. This may be through some combination of power purchase agreement/s and spot price speculation within the National Electricity Market. This is ultimately driven by demand (load) and the optimal generation, transmission and distribution of the electricity.
97b	001	Biodiversity general	This submission is to express concern at the damage to bio-diversity and to some endangered species, represented by the proposed Chalumbin Wind Farm. My source for ecological and technical information is the document "SUMMARY OF DRAFT PUBLIC ENVIRONMENT REPORT – CHALUMBIN WIND FARM". The thoughts expressed here are my personal reactions as a 77 year-old outdoors-loving Queenslander to the proposed wind farm. My concern is based on the natural values threatened by this proposal. Threatened ecological communities are Mabi forest and Broad leaf tea-tree forest. There are 18 listed threatened species. Some examples are North Queensland lace , Magnificent brood frog , Mountain mistfrog, Masked owl , Red goshawk and Ghost bat. All contribute to the unique and irreplaceable North Queensland Wet Tropics. Apart from their intrinsic value in the ecology of the region, including the adjacent Wet Tropics World Heritage Area, the entire ecosystem forms part of a nature tourism economy which will be jeopardised by the imposition of this ugly and destructive project.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
97b	002	Project alternatives	The need for wind farms like this one, is to provide electricity with zero CO2 emissions, although that statement can be questioned if we include the entire life cycle of the wind farm. Nonetheless, a solution exists that fits the engineering need to provide baseload power with no CO2 emissions, and can be placed on the existing grid. This saves grid extension with associated environmental damage and high costs. This solution is modular nuclear power. Given our political environment, this logical solution may not be available. An option vastly preferable to Chalumbin Wind Farm, is to locate a wind farm somewhere in the extensive grassland areas north of Bowen and outside of Gladstone & Rockhampton population areas. These areas avoid impacting Matters of National Environmental Significance. They would have little impact on tourism which relies on environmental values. And they would benefit from average wind speed on a month-to-month basis up to double that of Ravenshoe.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. It is contended that there are numerous proposed projects in the vicinity of the area described by the submitter; however, these areas are not characterised by extensive grassland communities as suggested.
72c	001	Koala	Section 8.6.3 refers to the koalas. The Draft PER indicates an inadequate survey effort was conducted to find and map koalas on the subject site. The survey effort for the Koalas was woeful. The koalas have been found on adjacent properties at Yourka Reserve, Kaban, Ravenshoe and Tumoulin. As a mandatory pre-requisite, latest technology such as thermal imagery drones should be used to identify koala density and populations. For this project to proceed without conducting baseline surveys using latest technology is unprofessional. On another note, the western edge of the Wet Tropics World Heritage Area is identified as being a corridor for the koala. Any fragmentation, altered fire regimes and weed incursions will be another blow for a species already facing extinction. I object and do not consent to the proposed Chalumbin wind farm going ahead. I object and do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and I say NO to Chalumbin Wind Farm.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, in a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
100	001	Opposition to project	The Chalumbin wind farm should not be approved because: It is a hazard to ecosystems. Its a Hazard to hard-working Aussies who don't wish to pay for government errors, we'd prefer nuclear energy instead of wind farms. Waste is shocking overtime of the parts disposed, and not recyclable.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. Nuclear energy projects are not permitted under the EPBC Act (s140A).
101	.001	Opposition to project	As per Submission 21, with the addition of: I do not consent for Wooroora Road and surrounding roads to be used for Heavy Haulage Trucks carrying wind turbine parts or Heavy Vehicle Trucks carrying industrial quarrying materials, cement, wind turbine parts, substation parts or any heavy vehicles associated with Chalumbin Wind Farm to be using local rural residential roads as heavy industrial roads, causing dust, noise and diesel pollution.		No	See response to Submission 21
102	.001	Opposition to project	As per Submission 21, with the addition of: I do not consent for Wooroora Road and surrounding roads to be used for Heavy Haulage Trucks carrying wind turbine parts or Heavy Vehicle Trucks carrying industrial quarrying materials, cement, wind turbine parts, substation parts or any heavy vehicles associated with Chalumbin Wind Farm to be using local rural residential roads as heavy industrial roads, causing dust, noise and diesel pollution.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
103	001	Rehabilitation	Rehabilitation of land • Eucalyptus tree hollows used by the Northern Greater Glider are trees that are 150 years plus old. • Areas can be revegetated but not rehabilitated.		No	There are detailed rehabilitation principles within norther greater glider habitat outlined in Table 3-2 of the Preliminary Rehabilitation Plan (Appendix K of the PER). These include the use of artificial nest boxes and relocated hollow-bearing stages combined should provide a minimum density of 4 per every 2ha. The project rehabilitation program has a key focus for rehabilitating habitat as documented in the Preliminary Rehabilitation Plan.
103	002	Traffic and transport	Alternate Site Access • There is no commitment by the developer to use an alternative route. • The use of an alternative route should be a condition of approval.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River.
103	003	Construction impacts	Temporary Concrete Batching Plant • The approval condition should state that Blunder Creek and local water ways are not to be used as a water supply for batching plants. Construction Worker Accommodation • The construction of a dedicated accommodation compound must be a mandatory approval condition due to the housing crisis in the area. Water Catchment • Water should not be used for any construction purposes drawn from Blunder Creek as this may impact the fauna and flora during drier periods. This must be a condition of approval.		No	Temporary Concrete Batching Plant The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER. Construction Worker Accommodation At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES. Water Catchment The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
103	004	Project alternatives	Feasible Alternatives • Alternatives like solar, nuclear, and existing cleared land have not been assessed.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. It is contended that there are numerous proposed projects in the vicinity of the area described by the submitter; however, these areas are not characterised by extensive grassland communities as suggested. Nuclear energy projects are not permitted under the EPBC Act (s140A).

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
103	005	MNES	Surveys of Flora and Fauna • The surveys conducted were insufficient in method and duration. North Queensland Lace Endangered (EPBC Act) • Survey inaccurate and does not meet EPBC Act impact assessment requirements. Brood Frog Endangered (UCN) / Vulnerable (EPOBC Act) • Chalumbin Wind Farm will result in clearing of 120ha of critical brood frog habitat considered critical for its survival. Masked Owl Vulnerable (EPBC Act) • Clearing of over a 1000ha of nesting and foraging habitat will likely significantly impact the species. Red Goshawk Vulnerable (EPBC Act) Endangered (NC Act) • Nest confirmed by an expert, and the precautionary principle must be applied. The red Goshawk has not been accurately assessed for MNES under the PER, and thus approval for Chalumbin Wind Farm development cannot be granted. Koala Endangered (EPBC Act) • Spotlighting surveys from vehicle of only 103 hours is totally inadequate to say this species is not in the area. Spectacled Flying Fox Endangered (EPBC Act) • A large colony 30km from project and well within its foraging range of 50km. • Clearing of 976 ha of spectacled flying fox habitat is likely to have a significant impact on the species. Wet Tropics of Queensland • The Wet tropics World Heritage Area borders the Chalumbin Wind Farm project with the closest turbine only 600m from the boundary National Heritage Values • Insufficient consultation with the Jirrbal people by the developer means that a lot of areas of significant cultural heritage have not been recognised. MNES Listed Species • The Per has failed to outline all MNES species. • The PER is incomplete, inaccurate, and misleading.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER.The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.All MNES species considered likely to be impacted by the Project have been assessed with a full impact assessment as outlined in Section 5.0 (general) and Section 8 (species-specific) of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. The Project has sought to work closely with the Jirrbal People #4 (as the registered Native Title claimants) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). Section 4.11.2.2 of the PER lists the Indigenous Values.
103	006	Community consultation	Consultation • There has been no proper, open community consultation at any stage of the process. • All Jirrbal people with a connection to the site must be properly consulted. • The developer has mislead the community with inaccurate photo montages depicting the site as cleared pastures.		No	The suggestion that there has been no public consultation in the Chalumbin Wind Farm project is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. The visualisations presented in the LVIA (Appendix M to the PER) have been selected as representative viewpoints from key vistas within the areas surrounding the Project.
103	007	Indigenous Cultural Heritage / Engagement	Indigenous Engagement • The developer has not consulted with all relevant affected Jirrbal people and has not acknowledged concerns regarding Sacred Sites and areas of significant Cultural Heritage.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
88b	001	Opposition to project	As per Submission 6c.		No	See response to Submission 6c
63g	001	MSES	This particular submission will focus specifically on Local Lumholtz's Tree Kangaroos (Dendrolagus lumholtzi) Populations. PER Response Ecology and Habitat PER Response (4.5) Species Associated With The Values of The WTQ in Proximity to the Project Area (4.10.1.5) Criterion x (8.9.2.4). Appendix A: (6.5.1) Impacts on the World Heritage Values: Local Lumholtz's Tree Kangaroos (Dendrolagus lumholtzi) Summarised issues from 15 page document: Because it is so difficult to spot, I have concerns that this species may not have been able to be recorded in the wildlife surveys carried out by the developer. PER Response (4.10.1.5) (8.9.2.4) There have been sightings and recorded spotting of Lumholtz's Tree Kangaroo in the proposed development area. [7] I believe that the developers did not carry out an adequate assessment, both in terms of hours of field reports and the duration, over seasons, of the field reports. This could have led to inaccurate figures of the number of Lumholtz's Tree Kangaroo in the proposed development area. I cannot understand why the Lumholtz's Tree Kangaroo was not included more extensively in the PER Report, I believe that this is a serious omission. Especially, because there have been sightings of these animals in Tully Falls Road on the 17th October 2022. [9] I am very concerned that the proposed industrial wind farm development will affect the habitat of this shy and beautiful Far North Queensland native species. I believe that it is, long-term, both inappropriate and ineffective that such an area be approved for 'Heavy Industrial Use' I believe that any further clearing of the Lumholtz's Tree Kangaroo's habitat, as would be caused by the proposed development, will cause a decrease in numbers of this species and a reduction of its potential habitat. I have very serious concerns that this species' population numbers could be severely affected by any heavy industrial development in this local area that they are endemic to. Further road developments and also the moving of heavy, often wide load, industrial infrastructure along existing roads for the proposed development, will, I believe, put the Lumholtz's Tree Kangaroo at further risk of dying on the roads. Also, of great importance, I believe is the fact that the Queensland Government have stated that because of the reduction of the Lumholtz's Tree Kangaroo's original coastal lowland rainforest; it is now more common at higher altitudes above 300m due to clearing of lowland habitat. [5] So, to me, it is crucial to preserve the current higher altitude current habitat of this special species.		No	The species was recorded in the Project area via camera trap. The Project undertook an 11-month camera trap campaign that recorded in excess of 9,000 camera trap nights; this cannot be considered insufficient survey effort by any standards. Section 4.11.1 of the PER describes how habitat for Lumholtz tree-kangaroo has been mapped across the Project area (see Figure 4.46), including riparian habitat associated with Blunder Creek and other waterways. The record by camera trap of an adult and a juvenile is also discussed and included on Figure 4.46. Potential impacts on the Lumholtz tree-kangaroo and relevant mitigation measures are discussed in Section 8.10.2 of the PER. The Project will not result in direct impacts to the species' core habitat type, rainforest. This combined with the mitigation measures described in Section 8.10.2 of the PER will ensure that the Project does not result in a significant residual impact to the species.
104	001	Project location	More suitable sites than Chalumbin Johnstone Ecological Society believes this high bio-diverse region is not the place for any wind farms. Australia is fortunate that it has an abundance of more suitable land for wind turbines.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
104	002	Visual impacts	Loss of aesthetic elements in wilderness area Finally, the proposed destruction of the natural environment will have an impact on the beauty of the adjacent mountainous region. Most of the site covers previously logged and now regrowth forested ridge tops adjacent to the Wet Tropics Heritage Area. The wind turbines will aesthetically as well as biologically impact the Wet Tropics Heritage area.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Whilst there will be some significant impacts for individual views obtained from selected locations within the WTQWHA, these locations are infrequent and typically difficult to reach. The dense foliage of the rainforest vegetation that is typical of the WTQWHA contributes to the fact that there are few publicly accessible vantage points providing views towards the Project from the WTQWHA.
104	003	Biodiversity general	Our credentials Johnstone Ecological Society (previously Innisfail Branch of Qld Wildlife Protection Society) was established in 1981 and has since been involved in various environmental issues including the successful campaign for the wet tropical rainforests to be declared a World Heritage Site. The proposed Chalumbin Wind Farm site borders those wet tropical rainforests. Loss of vegetation The biggest threat to wildlife in Queensland is habitat destruction, and the Qld government is presently providing grants for restoring soils and native vegetation in essential habitats. The Queensland Vegetation Management Act 1999 states that 'the retention or maintenance of vegetation [is] to (ii) maintain or increase biodiversity" (VMA 1999, Part 2 Div 1, 9). The installation of these turbines will necessitate the clearing of many hectares of natural habitat. Reduced biodiversity The site is part of a larger area of high biodiversity which includes vulnerable, rare and critically endangered species of wildlife which will be impacted by the proposed wind turbines. Species such as the Northern Glider and Magnificent Brood Frog will also be at risk during the construction and operation of the wind farm. Studies conducted in the USA, UK, and Europe have exposed the appalling slaughter of birds and bats by wind turbines. It is not even known what the insect mortality of these structures is, except that it is large. Need to upgrade transmission lines will also be bad (flow-on problems) Another concern is the increase in power generation from this proposal, together with the already existing wind farms and others being planned near the current transmission line, will lead to the need for the existing high voltage transmission line to be upgraded. This transmission line also goes through the Wet Tropics World Heritage Rainforests. Any proposed widening and clearing of rainforest to accommodate a higher transmission line would also contribute to the loss of habitat, biodiversity, and increase weed and feral pest incursions. Damage to the integrity of these beautiful and important forests, which members of this society had the pleasure of showing Senator Richardson before the World Heritage Listing was declared, would be deplorable. It must also be mentioned the cost of a high voltage transmission line upgrade would be a cost for taxpayers and not the proponents of the wind farm.		No	The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. Powerlink has confirmed that the transmission network has sufficient thermal capacity to accommodate the full Project development scenario without the need for duplication of the lines.
104	004	Weeds and pests	Incursion of plant pests & diseases, and feral pests The construction of a network of 145 km of roads that would be 75 m wide bordering the World Heritage mountainous region will inevitably lead to higher sediment loads in the catchment's creeks and rivers, which then feed into the Great Barrier Reef Lagoon. The proposed road network will also increase the incursion of weed and plant diseases, as well as opportunities for feral pests such as pigs, foxes, toads and cats.		No	The implementation and use of weed washdown facilities and the requirement of all vehicles and machinery to be certified weed free before commencing work on site (Weed Hygiene Declarations), alongside a range of additional measures aimed at mitigating the introduction of weeds to site is outlined in the "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively. There are already established populations of feral pests (pigs, cane toads and cats) throughout the Project area.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
105	001	Opposition to project	Chalumbin is not the correct location for a wind farm! I do not consent to a wind farm being located in Chalumbin forest. It makes no sense to destroy a forest for renewable energy…you do NOT destroy a forest and say that is good for the environment!! There is no way you can rehabilitate a forest to its former condition when there are centuries old bogs from underground springs. These bogs are a habitat to many critters. No man can replicate a centuries old bog and bring back to life extinct species!!! As an avid bird lover and watcher, there is no way that no birds live in this forest. It is obvious that wind farms must be located on already cleared lands. Why not put the wind farm in or around blowin Bowen, which is also closer to the export wharves. Destroying forests is NEVER going to be sustainable		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
106a	001	Opposition to project	No clear comments on PER. Opposes project.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
107a	001	Erosion and sedimentation	PER Response: Section 1.0 to 12.0 I object and do not consent to the proposed building of any Wind Farms in the Chalumbin area. Ravenshoe region is an important rainfall catchment area and the destruction of forest to make way for the enormous Chalumbin Wind Farm will cause environmental erosion and pollution. Construction waste will flow down to the coast and the reef and contaminate the local river systems all along the way. The damaging effects from Chalumbin Wind Farm will be far reaching and long lasting, while the wind farm itself will only function for 25 years and likely produce very little in usable electricity. The costs of this project far outweigh the benefits.		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. As per Section 10.12 of the PER, the Waste Reduction and Recycling Act 2011 will be applicable to the construction and operation of the Project; the respective Construction Environmental Management Plan and Operation Environmental Management Plan will require compliance with the Waste Act.
107a	002	Cumulative impacts	The destruction caused by forest clearing to make way for the Chalumbin Wind Farm will displace native flora and fauna species many of which have nowhere else to go. Concerning Cumulative Impacts - Other Wind Farms PER Response (5.5) Koala; a cursory questioning of locals reveals several who have recently sighted Koalas in the region.		No	The PER acknowledges that koala are probably present within the Project area at least occasionally. Impacts from the Project on koala are assessed in Section 8.6.3 of the PER. There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
107a	003	Vegetation clearing	The region proposed is an area where Heritage Wet Tropics Rain Forest meets and merges with Wet/Dry Sclerophyll forests that have never been disturbed. The damaging effects from clear felling tracts of land through forests or on the edges of forests is well recognised. (Harper, Macdonald, Burton,Chen2005; https://www.researchgate.net/publication/227618416_Edge_Influence_on_Forest_Structure_and_Composition_in_Fragmented_Landscapes) The artificial forest edges created to make way for Chalumbin Wind Farm will expose the forest species as well as the surrounding regions to increased damage and soil erosion by wind, monsoon rains, storms and tropical cyclones. Damage will also be introduced deeper into forests along these clear-felled edges affecting tree growth, increased temperatures and reduction of moisture in soil and leaf litter. (Didham, Raphael K. Lawton, John Hartley; Edge structure determines the magnitude of changes in microclimate and vegetation structure in tropical forest fragments. https://repositorio.inpa.gov.br/handle/1/19258)		No	The Project area is not a pristine environment that has never been disturbed. There are existing easements for roads (Tully Falls Road, Koombooloomba Forest Road) and powerlines already intersecting wet sclerophyll forests in this area. Impacts to wet sclerophyll forests are assessed in Section 8.11 of the PER, which concludes that significant residual impacts are not anticipated. Nonetheless, the proposed offset areas have been selected to include large areas of wet sclerophyll forests which will be protected in perpetuity as a result.
107a	001	Decommissioning impacts	PER End of life – decommissioning – Land Use Ravenshoe already has discarded wind turbine blades dumped in the bush, seemingly hidden away from prying eyes. These Windy Hill Wind farm blades are just a fraction of the size of the ones that are to be installed at Chalumbin Wind Farm which are also likely to be dumped about the region once they become dysfunctional. The inability to recycle most wind turbine structural materials will mean dysfunctional turbine blades and other materials will never leave the area. Where will the degraded blades (hundreds of them) be discarded or 'stored'? It is also known that wind turbine blades disintegrate from sun, rain and wind erosion, spreading toxic particulates that contaminate the air and soil surrounding wind farm sites. https://bergensia.com/bisphenol-a-in-wind-turbines-damages-human-fertility/# Who will be responsible for the deleterious impacts on human and environmental health caused by this 'invisible' pollution. How will Epuron address the inevitable toxic pollutants from discarded turbine blade erosion entering soil and waterways? I do not consent to being slowly poisened by toxic releases from discarded Chalumbin Wind Farm Turbines.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
108	001	Opposition to project	When I discovered that a wind farm was planned for the land at Chalumbin I was deeply concerned for the native flora and fauna of the area. I am a photographer and have a very deep love for nature. It would be devastating if this project were to go ahead and I urge for your company to reconsider immediately.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
108	002	Koala	I refer to Section 8.6.3 of the Draft PER - the koala population. The area of Chalumbin is surrounded by National Parks, Forest Reserve and State Forest. The koala has been found on adjacent properties at Yourka Reserve, Kaban, Ravenshoe and Tumoulin. The Draft PER indicates an inadequate survey effort was conducted to find and map koalas on the subject site. Apart from the survey effort for the Koala being woeful to say the least, the koala is listed as an 'endangered species' and therefore protected by the Environment Protection and Biodiversity Conservation Act 1999. For your information animals do not understand boundaries, being protected by a National Park doesn't mean the animal might not feel wandering to an adjacent tree that is now blasted by artificial wind, electric and magnetic fields.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
108	003	MNES	Below is a summary of species and community that is under the protection of the Environment Protection and Biodiversity Conservation Act 1999 (the Act is freely available online and applies to all corporations): • Critically endangered species: Northern Greater Glider • Endangered species: Yellow-bellied glider, Red Goshawk, Koala • Vulnerable species: Magnificent Broodfrog, Red Goshawk, Northern Greater Glider • Endangered communities: the Jirrbal custodians • Migratory species: Sarus Cranes – globally threatened We need to look past the life span of a windmill that can be anywhere between 10-25 years,		No	The northern greater glider is listed as Vulnerable (not critically endangered) and the sarus crane is not listed as migratory under the EPBC Act. Communities under the EPBC Act refer to vegetation communities, not people such as the Jirrbal custodians. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. In terms of Indigenous engagement the registered Native Title claimants have been supportive of the project and are involved in the process as outlined in Section 11.6 of the PER.
107c	001	Social impacts	With reference to EPBC 2021/8983 Chalumbin Wind Farm as a community member of Ravenshoe and surrounds I do not consent to the proposed Chalumbin Wind Farm. PER response to visual and lifestyle disruption. My husband and I moved to the Ravenshoe region 10 years ago because of its natural beauty, clean environment and small-town appeal. Previously we lived in a small town in South Australia, Kanmantoo, which experienced the resurrection of a copper mine a mere few kilometres from the town and it's small rural community. There was a great deal of noise, dust, explosive earth shaking and increased truck traffic along our small roads. Lots of talk of environmental remediation which may or may not have been effective. I don't want to experience this same disruption again after seeking out another quiet, rural town to live in. The Ravenshoe community will not benefit from the purported future power harvested by the Chalumbin Wind Farm. It will go off shore via undersea cables and the only electrical experience Ravenshoe will get is that of electromagnetic frequency and sound pollution. The Chalumbin Wind Farm is an elaborate attempt at creating carbon offset credits for corporations which have no relationship to the region. Ravenshoe has suffered pendulum swings of boom and bust over the decades due to external political whims that later flip flop. The Chalumbin Wind Farm presents itself as another of these periods. There has been very little true public consultation prior to work beginning in the area. Why has work begun before final project approval has been granted? During initial building of Kaban substation Ravenshoe experienced reduced rental housing availability as external companies outbid locals for rentals to house their imported workers. I personally know of two families who were forced out of secure housing due to this. At the moment with preliminary work underway for Chalumbin Wind Farm there is a considerable increase in flow through traffic along roads in the area as wind farm workers billeted in other regional towns drive tens of kilometres back and forth to work each day expending fuel and creating dust on outback roads. I do not want to see further scarring of the landscape when great swaths of forest and land are gauged of vegetation and ugly wind tubine towers are put in place. I do not want to live near a Wind Farm or the huge electrical substations required to store and send the electrical energy. I am aware of the dangers of Electro Magnetic Frequencies and dirty power that is emitted from these structures and their cumulative effects on human health and I do not consent to being exposed to these harmful energies. The Chalumbin Wind Farm project is a physical and emotional assault on the people and natural environment of the Ravenshoe region.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
109	001	Opposition to project	The Chalumbin wind farm should not be approved because it's expensive, not efficient and unsustainable as well as destroying the environment in the process.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
110	001	Opposition to project	The Chalumbin wind farm should not be approved because: it's doing untold damage to a pristine environment.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
111	001	Opposition to project	The Chalumbin wind farm should not be approved because: they are not good to the environment. Use are lot energy and resources to make while polluting the environment, endangering the wildlife and will be toxic once there life span is near. Not to mention the cheap labour trade and the poor Australian will pay more for their energy while the polices get rich		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
112	001	Opposition to project	The Chalumbin wind farm should not be approved because: Yes, I do strongly agree.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
113	001	Opposition to project	The Chalumbin wind farm should not be approved because the impact on natural environment far exceeds the benefits that this project would provide. The wind farm loses sight of the vitality of natural landscape, native fauna and future healthy natural environments. I am disgusted at the short-sighted, irresponsible and ignorant idea that this 'farm' would benefit planet Earth.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
114	001	Opposition to project	The Chalumbin wind farm should not be approved because this is quite simply in direct opposition to what is supposed to be the preservation of the environment and the planet. The destruction of this wilderness for the installation of these monstrous turbines is criminal.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
115	001	Opposition to project	The Chalumbin wind farm should not be approved because: Wind farms only work when there is wind. Besides that they kill wildlife stop it now.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
116	001	Opposition to project	The Chalumbin wind farm should not be approved because.... we know they do not provide the best renewable advantage. There are better ways. AND!!!!!!!!!!..... they are destroying animal habitats and killing animals directly and indirectly. PLEASE STOP THIS BLOODY (literally) MADNESS!		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
117	001	Opposition to project	The Chalumbin wind farm should not be approved because: Of the devastating destruction of the 1000s of trees,our lungs of the world, the natural habitat of many animals in a world where animals have less habitat than ever before!! How many wind turbines does far north Queensland really need? Why are we destroying our rainforest, rivers,creeks,habitats, top soils etc & adding nothing but ugliness to feed the southern electricity grids?		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
118	001		The Chalumbin wind farm should not be approved because: it is destroying natuve animal habitat. Not sure how you think clearing trees is the answer. We need to be smarter than this and look at the bigger picture.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
119	001	Opposition to project	The Chalumbin wind farm should not be approved because: Climate change and renewable energy is all bs		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
120	001	Biodiversity general	The Chalumbin wind farm should not be approved because: the massive loss of flora and fauna and the absolute destruction of the landscape.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
121	001	Biodiversity general	The Chalumbin wind farm should not be approved because:it will endanger the lives of many native animals the clearing of forests and natural bush land to accommodate these monstrosities is unforgivable and very destructive They are also an eyesore in our beautiful landscape		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
122	001	Opposition to project	The Chalumbin wind farm should not be approved because: landfill with no end of life plan. Made in CCP China - a blight on landscapes and devastating to wildlife. And they are absolute CRAP		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
123	001	Opposition to project	The Chalumbin wind farm should not be approved because: Can't destroy forest. We need forest to save the climate.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
124	001	Biodiversity general	The Chalumbin wind farm should not be approved because of the environmental damage it will create through land clearing. We must protect Australia's biodiversity.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
125	001	Biodiversity general	The Chalumbin wind farm should not be approved because: The destruction and devastation to the natural environment is not justified or warranted. Put the wind turbines on the coastal strip where there is already transmission lines and no natural environment.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
126	001	Biodiversity general	The destruction of untouched nature bears no relation to what is to be achieved. It's about biodiversity, nature conservation, that is, the basis of life for all of us.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
127	001	Biodiversity general	The Chalumbin wind farm should not be approved because it is total destruction of pristine and ancient forests, animal habitat and scenic beauty. I have had firsthand tours of China based wind farms in Urumuqi in NW China and many other parts, and it is total mindless destruction. Australia is going in this direction and is so reminiscent of the "Selection" process of clearing land to make farms during Australia's early days, that has left the country with only a small percentage of its natural forests. This country will become hotter, drier and prone to drought, by clearing of such large swaths of virgin forest! There is no denying this - and the "science" is against you!		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
128	001	Biodiversity general	The Chalumbin wind farm should not be approved because: It is clearly causing more harm to the environment and the local natural wildlife.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
129	001	Biodiversity general	The Chalumbin wind farm should not be approved because, it is damaging the environment and our natural habitats. This needs to be stopped and reviewed as the current options put in play are definitely not what is actually going to work and causing more harm than good.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
130	001	Opposition to project	The Chalumbin wind farm should not be approved because: Destroying the environment, natural habitat and further endangering native animals just for wind farms makes no sense at all. I am not in support of wind farms which damage our environment, the production of the materials support child slavery and once the wind turbines reach their lifespan, they are not recyclable. Not to mention the destruction of the land itself just to install these wind farms.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
131	001	Biodiversity general	The Chalumbin wind farm should not be approved because: This complete disregard for the environmental impact this monstrosity will reap on flora & fauna goes completely against what a climate agenda should strive for and I am totally against this development.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
132	001	Opposition to project	The Chalumbin wind farm should not be approved because: This is irreversible damage inflicted on our pristine forests all in the name of the climate change hoax. Environmental vandalism will not change the climate one bit. Why don't you follow the science properly instead of the touchy feely lefty BS that has pervaded our society for too long. Please stop before it is too late.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
133	001	Opposition to project	The Chalumbin wind farm should not be approved because: The process in making and installing these monstrosities is enough, let alone the actual impact on the environment they are destroying. Anyone with half a brain can see this!		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
134	001	Biodiversity general	The Chalumbin wind farm should not be approved because: Wind turbine deforestation for a wind turbine. This fast track approval bypassed environmental, public and cultural scrutiny. This is a crime against our Greater Gliders, our Koalas and nature. Kaban Wind Farm has not installed the raptor and bat mitigation technology. This is the very least they should be made to do. This is a national disgrace.		No	The intention of the Public Environmental Report (PER) is to act as an opportunity for public scrutiny. There has been nothing fast-tracked about this approval process. Kaban Wind Farm is owned but a different company and we cannot make any comments on that project.
135	001	Biodiversity general	The Chalumbin wind farm should not be approved because: It is destructive to the environment and this undermines it's purpose.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
136	001	Opposition to project	The Chalumbin wind farm should not be approved because: shear distruction of the area. the hipocrisy of this hole thing		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
137	001	Biodiversity general	The Chalumbin wind farm should not be approved because: Apart from the obvious that wind farms are unecconical and poor value for money, the deforestation of our natural environment and impacts on flora and fauna in a pristine wilderness are unacceptable colateral damage. Coal fired electricity that is cheap to run and causes far less damage to the environment from mining is the best choice for Australian interests. These climate fake change conspiracy theorists back their reccomendations with manipulate data and don't bother to fact check the data they are given or worse they know the lies they are spreading. Stop this madness or the natural world will become a museum piece.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
138	001	Opposition to project	The Chalumbin wind farm should not be approved because: They are a waste of money, time, resources and effort. They are unreliable, look despicable and require destruction of too much otherwise perfectly good land and waterways. They also have poorly acknowledged health effects on the people and animals who live around them. On my last visit to the tablelands I stopped to have a look at these relics around Evelyn. What utter junk. Half of them in disrepair with yet more cost still attached to them to either remove or repair.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
139	001	N/A to PER matters	My name is Roger Kelly. I used to own Glen Gordon Station. I mustered all that country for cattle and used to muster Wooroora Station where Chalumbin is, all by horse back. I am 73 years old and I spent 54 years in that country. They stopped the Tully Millstream Hydro Scheme there years ago. The dams would have been better than wind mills.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
139	002	Indigenous Cultural Heritage / Engagement	I am not against wind mills but I think they can build them somewhere else. Karer is the home of the Indigenous Pygmie Tribes which is in the Chalumbin area. There is two borer grounds - one at Karer and one at Limestone. You could pick up stone axes there years ago and see where they took the bark off trees for their camps.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
139	003	Non-indigenous cultural heritage	There is Trig Station in that area. Survey markers from the second world war. One tree hill, Mount Pandanus, Black Mountain, Arthurs seat and Indigenous paintings.		No	Survey markers will be avoided during detailed design and construction, or relocated if these cannot be avoided. Cultural heritage values have been considered during the design of the Project, as described in Section 6.1.3 of the PER. Other cultural heritage values will be managed in accordance with the Project's Cultural Heritage Management Plan and the requirements of the Aboriginal Cultural Heritage Act 2003.
139	004	WTQWHA	You have world heritage right beside Chalumbin. Some of the biggest timber in north Queensland in this area and some of the wettest country in Australia.		No	Potential impacts on the WTQWHA are addressed in Section 8.10 of the PER, which concludes that the Project is not likely to have a significant residual impact on the WTQWHA.
139	005	Biodiversity general	There is an Orchid that grows in the Chalumbin are the King Orchid. Only orchid that has scent. It flowers in Sugues and September and the scent goes all through the bush. There is a lot of other orchids and ferns in that area.		No	Assessments of both desktop sources and the methodology followed for field assessments are outlined in Section 4.2 of the PER. The king orchid (Dendrobium speciosum) was recorded during field surveys within the Project area but is not specifically discussed in the PER as it is not listed under the EPBC Act.
139	005	MNES	In the Chalumbin Wooroora Glen Gordon Area huge big timber and wild life and bird life and plant life. Wild life - pythons 6-8 metres long. Platypus in the Blunder Creek. Possum and gliders - yellow belly glider and other gliders. Parrots - King parrots and other parrots. Frog - magnificant brood frog. Pigeon - wombue and others. Tree kangaroo. Emu, cassowary and brolga. Quoll, kangaroo rat, tiger cat. Eastern grey kangaroo, whip tail kangaroo or prity face. Koalas.		No	Section 4 of the PER describes the desktop and field assessments that have been undertaken and the results of these studies as they relate to matters protected under the EPBC Act only. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species. A full impact assessment has been carried out and is outlined in Section 5.0 of the PER, this assessment takes into consideration the current conservation advice provide by DCCEEW and has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna and flora. When these are unavoidable significant offsets are to be provided to mitigate these impacts.
140	.001	Yellow bellied glider	Yellow-Bellied Glider We raise the following concerns with respect to the identification of suitable habitat: 1. With respect to land west of Wooroora (within the area of figure 4.3 in section 4.1.4 Vegetation), regional ecosystem mapping published by the Queensland State Government prepared by the Queensland Herbarium identifies most of the land within that area as remnant vegetation with RE 7.12.22 and 7.12.27 (which are REs identified as essential habitat for the yellow-belled glider). The national recovery plan for the yellow-bellied glider notes that REs 7.12.21 and 7.12.22 comprise 82% of the mapped extent of potential habitat. 2. The National recovery plan for the yellow-bellied glider shows that one of the three important populations of yellow-bellied glider is located in close proximity to the project site. 3. As part of the vegetation assessment carried out for the PER, the proponent purports to have carried out "ground truthing" of the regional ecosystems in the project area. 4. While the PER does not specifically state that as a result of "ground-truthing", the REs have been modified throughout the project area in comparison to State mapping, and this is the assumed consequence of "ground-truthing". 5. "Ground-truthed" vegetation mapping in figure 4.3 purports that the REs within the area west of Wooroora are REs 7.12.34 and RE7.12.52 rather than RE 7.12.22 and 7.12.27 as shown on State mapping. 6. In section 4.2.2 of the PER, the proponent describes field assessments that have occurred. Figure 4.7 shows the location of vegetation community surveys. Within land west of Wooroora (in the location of turbines 62-69), no vegetation community surveys are identified as having being carried out in that location. 7. The PER provides no explanation to justify why the proponent says the REs in this location ought to be changed, in circumstances where vegetation surveys have not been carried out in that location. 8. No fauna surveys were carried out in this location (see figure 4.9). 9. If the REs in this location are more in keeping with State mapping, this suggests a significantly greater proportion of REs that support the yellow-bellied glider will be impacted, however, there has been no consideration of this. 10. Section 4.7.12.4 states that one yellow-bellied glider was observed during spotlighting in March 2021 in RE 7.12.16a surrounded by RE 7.12.21 in the very north of the Wooroora property. Despite this, RE 7.12.16a was not considered in the PER as essential habitat for either foraging or denning (Section 4.7.12.4). 11. Other areas within the project footprint may have purported changes to the regional ecosystems, despite no vegetation surveys being carried out in these locations. The PER does not specifically identify areas where REs have been changed in comparison to State mapping, but does not specifically identify where field surveys have not been carried out to "ground truth" the change. 12. We are instructed that on 15 November 2022 and 18 November 2022, our client Ms Sharon Trezise undertook a field survey with a wildlife photographer and carried out spotlighting within the area of turbines 65, 66, 67, 70, 68, 71, 72, 74, 75 & 76. During that time, we are instructed that our client observed: a. 12 greater gliders; b. 3 yellow-bellied gliders; c. Approximately 3-4 sugar gliders 13. This indicates that the yellow-bellied glider uses habitat located within the project area. 14. In addition, there has been no consideration of noise, vibration or dust impacts on the yellow-bellied glider or its broader habitat as a consequence of the project.	We raise the following concerns with respect to the adequacy of surveys for the yellow-bellied glider: 1. The conservation advice for the yellow-bellied glider, published by the Commonwealth Department of Agriculture, Water and the Environment, states that the yellow-bellied glider is nocturnal. It also states that the home range for the species is necessarily large, because trees used as foraging substrates are dispersed and use of trees can vary through time and space. 2. The Survey guidelines for Australia's threatened mammals states that for the yellow-bellied glider, for an area of 5ha, survey techniques should include investigation of the presence of key eucalypt species, daytime searches for den sites, daytime searches for signs of activity, call playback surveys and spotlighting surveys. In relation to spotlighting surveys, the guideline states that it is strongly recommended that spotlighting surveys are not conducted from a vehicle (since the species is difficult to detect using spotlighting and that listening for vocalization is a primary technique for detection). 3. In section 4.2.2.3 of the PER, under the heading "Fauna Survey Limitations" on page 115, the proponent states: "Night-time survey work was targeted towards vegetated areas that were safely accessible. Due to the terrain and the target species, most of the spotlighting surveys were undertaken from a vehicle on existing access tracks that were considered safe to drive at night." This is contrary to the recommendations for surveys for this species. 4. Fauna survey sites were limited to those areas shown in figure 4.9. There are substantial areas within the project footprint that have not been surveyed, particularly the more southern reaches of the project area. 5. Surveys for the yellow-bellied glider have not been carried out in accordance with the Survey guidelines for Australia's threatened mammals', raising concerns with respect to the reliability of any assessment of their habitat, occupation and impacts. For the reasons described above, we are concerned that there is inadequate and unreliable information to enable a proper assessment of impacts on the yellow-bellied glider. There is inadequate information to properly consider the way in which the species might use the land within the project footprint, and how it might be affected by the proposed action.	No	The National Recovery Plan (DERM 2010) indicates the Cardwell Range - Herberton Range sub-population is the nearest important population of yellow-bellied glider to the office; this is to the east of the Project area, within the WTQWHA. Ground-truthing has resulted in changes to the REs in certain areas, which is a common occurrence when the State Government mapping is undertaken at such a coarse scale compared to field assessments. The Project botanists followed a procedure for ground-truthing the REs that is accepted by the Queensland Herbarium. Field surveys cannot possibly cover every square inch of a property; instead results are extrapolated from multiple survey points across the remainder of the property. As described in Section 4.2.2.2 of the PER, subsequent to the field surveys, vegetation mapping was undertaken based on the results of the vegetation surveys AND stereoscopic interpretation of high-resolution orthophotos. Section 4.7.12.3 quite clearly states that spotlighting within areas mapped as potential habitat for yellow-bellied glider were undertaken on foot rather than by vehicle. Essential habitat has been defined and mapped in the National Recovery Plan (DERM 2010) and does not include the REs listed in this submission which were ground-truthed on site. Potential impacts on the yellow-bellied glider as a result of construction noise, vibration and dust are assessed in Section 8.6.12 of the PER.
140	.002	Magnificent brood frog	Magnificent Brood Frog Section 4.5.2 of the PER deals with the Magnificent Brood Frog. It states that the frog appears to be restricted to specific habitats and that habitat loss and degradation appear to be the greatest threats. Magnificent brood frogs were recorded within the project area. The PER states that 120.5 ha of magnificent brood frog habitat will be cleared. The National recovery plan for the magnificent brood frog states that the species is restricted to a small area near Ravenshoe and has been found at 22 discrete sites with 36 populations over an area of 27km by 9km. Habitat loss and degradation is listed as the greatest threat to the species. One of the specific objectives of the National recovery plan is to identify and protect the known sites at greatest risk of degradation. The criteria include that frog sites are protected from habitat damage. The proponent has identified that the 120.5 ha of habitat will be cleared. This includes in areas where the species has been recorded during field surveys. The proponent has also identified that potential sedimentation run-off from the projects might reduce water quality and degrade the habitat for the frog. While erosion and sediment control measures are proposed, there is no consideration of the consequential impacts if those measures fail, to facilitate a risk-based assessment for the species. The proponent states that noise, lighting and reduced air quality potential impacts are considered negligible risks for the frog. It is unclear how the proponent has come to that conclusion, in circumstances where no information about the noise, dust and lighting levels has been provided and where there do not appear to have been studies that can be pointed to that consider the impacts of noise and other disturbances on the magnificent brood frog, including impacts to breeding. We are concerned that the impacts to the frog as a result of the project cannot be identified in a reliable way. Given that the magnificent brood frog only occurs in a small area near Ravenshoe and the National recovery plan seeks to very clearly protect its habitat, any loss of habitat should be viewed as significant in this context. Our clients do not agree that a $250,000 contribution to a research fund is a suitable offset, particularly in circumstances where the impact to the magnificent brood frog in this location is unknown and where the relationship between frogs in this location and frogs in other areas is unknown (i.e. will impacts to the magnificent brood frog in the project area have consequential impacts to other populations in the local area?). From our clients' perspective, further studies are required to properly assess consequential impacts from the project on the magnificent brood frog. Our clients are also concerned that there is a lack of scientific certainty around impacts and are concerned that the project will contribute towards the decline of the species. The lack of scientific certainty on this issue should not justify approval of the project, particularly where the consequences to the species may be significant.		No	The national recovery plan is now over 20 years old and is out of date in relation to the number of known populations and geographic range of the species (for example, a population has been identified at Mount Spec and it is believed that additional undiscovered populations probably exist). The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
140	.003	Spotted tailed quoll (northern)	Spotted-tailed quoll – northern subspecies Figure 4.35 in the PER shows that there are 3 threatened fauna records for the spotted-tailed quoll within the study area. Interestingly, each of these records for outside of areas mapped by the proponent as preferred or marginal potential habitat. Four additional records are noted on figure 4.35 but outside of the study area. The Survey guidelines for Australia's threatened mammals suggests the following survey methods with sampling units of 100 ha: 1. Daytime searches for potentially suitable habitat resources, such as areas associated with a gully or a ridge and potential den sites (caves, hollow logs or even dense understorey vegetation such as Lantana species that provides suitable cover – see Ecovision Environmental Consultants 1996). A description of the survey technique and recommended effort is outlined in Section 3.1. 2. Daytime searches for signs of activity, including community consultation, tracks, scats and latrines (description of the survey technique and recommended effort is outlined in Section 3.2). However, where the spotted-tail quoll (north Queensland) occurs in sympatry with the northern quoll Dasyurus hallucatus species presence may need to be confirmed through the application of direct detection survey techniques. Hair samples may be present in scats as a result of grooming, and species identification may be possible from an analysis of such hairs if they occur. 3. Consultation with local people, particularly investigating potential Indigenous knowledge of this species' presence in an area. 4. Hair sampling device (hair funnels) surveys, following the description of the technique and recommended effort provided in Section 3.3.7, and using a mixture of sardines, tuna oil and flour for bait. The spotted-tail quoll (north Queensland) is included among those known to be distinguishable from hair samples (see Table 2, Section 3.3.7) 5. Baited camera traps using 'chuditch' bait (consisting of meat meal, sardines, fish oil, chicken oil and rolled oats) are a more cost effective survey method and also allow for concurrent data (M Schulz pers. obs.; Nelson 2008). With respect to these methods, having regard to the assessment methodology described in Section 4.2 of the PER, we note that: 1. Fauna survey sites appear to correspond with more easily accessible areas. A number of areas, particularly within the more southern parts of stage 1, with proposed infrastructure were not surveyed; 2. There is no evidence that there has been consultation with local people to investigate the potential Indigenous knowledge of the species presence in the area; 3. There is no evidence that hair sampling device surveys were used; and 4. While camera trap surveys were carried out using baits, there are areas of the project site that were not surveyed. Section 5 of the PER suggests that 124.7ha habitat will be impacted but that there is 3,452.4ha of habitat within the project area. It seems to us as though the consideration of impacted areas has not taken into account noise, vibration and dust. It is also unclear as to how the proponent has identified habitat areas and assessed the significance of loss, given that the current state of knowledge with respect to the spotted-tailed quoll is so largely unknown. This is exacerbated when having regard to the limits of the fauna survey carried out for the PER. We note that the habitat description for the spotted-tailed quoll in Section 5 of the PER appears inconsistent with the habitat description used in the National Recovery Plan. There should be further consideration of this issue, including whether the project area contains a larger area of habitat for the spotted-tailed quoll.		No	The four historic records presented in Figure 4.29 of the PER (not Figure 4.35 as indicated in the submission) are primarily alongside Tully Falls Road, which is where the species would more readily be observed by members of the public. The species is known to have a relatively large home range with males generally roaming further than females. Preferred habitat for spotted-tailed quoll has been described in the PER as "all notophyll, mesophyll and wet sclerophyll forest at or above 900m elevation" with these forest types at lower elevation mapped as marginal potential habitat; this is in accordance with the information provided in the Australian Government's SPRAT database (https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64475), the National Recovery Plan (referenced in this submission) and the species' listing on the IUCN Red List (https://www.iucnredlist.org/species/6300/21946847). Figure 4.9 indicates the location of the camera trap sites, including more than 10 cameras in the southern part of the Project area, overlapping with proposed infrastructure locations. Given how far quolls roam during the breeding season, the spread of cameras would have recorded their presence. Hair tubes were not used; the Queensland Fauna Survey Guidelines indicate "camera trapping has been demonstrated to be a far more successful method that many trapping techniques for many cryptic or wary vertebrate species including quolls…" Consultation with Indigenous people during preparation of the PER indicated that they have not had access to the Project area for many decades and did not have any recent information relating to the potential presence of quolls on the site. Section 8.6.11 of the PER states that approximately 7.1ha of preferred potential habitat and approximately 117.6ha of marginal potential habitat will be cleared as a result of the Project. Potential indirect impacts are assessed qualitatively in Section 8.6.11 of the PER.
140	.004	MNES	The PER Guidelines require the proponent to provide an assessment of impacts including but not limited to noise, vibration and dust. Consideration of the impacts from noise, vibration and dust is limited to four paragraphs across sections 5.2.4 and 5.2.5. The management of noise, light, vibration and dust is purported to be addressed in Sections 2.3.3 and 2.3.4 of the Environmental Management Plan. It is also addressed broadly in the construction management plan. The PER does not include any noise, dust, vibration or light spill modelling to enable an assessment of the extent and significance of these impacts. There is no information about the duration and frequency of these impacts. This is particularly important given that blasting is proposed during construction. There is no information to determine whether noise, vibration and dust impacts will emanate into the Wet Tropics areas given its proximity to the project area. This modelling would be required to determine the impact of edge effects adjacent to construction areas and the overall area of impact (rather than just the clearing footprint). Page 14 The PER makes no reference to assessment standards or criteria for noise, dust and vibration impacts to provide objective criteria against which to assess the development impacts against. There does not appear to be any input into the PER by a noise, dust or vibration consultant. There is inadequate information to facilitate an assessment of noise, dust, vibration and light impacts on MNES, including from blasting. There is no consideration as to whether certain species are particularly sensitive to noise, dust and vibration. The PER states "Individuals that occur within the Project area may leave the area of impact". There is no identification of what the "area of impact" is, but reference to modelling data. We anticipate that it will be much broader than the area of vegetation clearing. There is no consideration of what the consequence of leaving the area will be to individual species and whether they would return. There is no consideration of which species might leave the area. Without an appropriate understanding of these impacts, there is no ability to properly determine residual impacts and there is no basis to rely on the corrective measures identified in the Environmental Management Plan, which may be inadequate to manage impacts. For example, there is no identification of target noise limits to minimise disturbance to MNES and how those noise limits will be monitored and met. No information is provided in relation to the practical implementation of the Environmental Management Plan. The project area is remote and constrained in terms of accessibility and is likely to be within steep terrain. Further thought is required to determine the sources of dust, light, vibration and light impacts, the extent of those impacts and the practical management of those impacts (including monitoring) to determine residual impacts.		No	Mitigation measures will be employed during the construction phase of the Project to avoid and minimise impacts associated with dust emissions, noise and vibration, and light emissions as described in Section 6.2 of the PER. An Environmental Management Plan Outline (See Appendix H of the PER) has been prepared for both State and Commonwealth approval processes in support of the Project's environmental management framework. These plans are generally preliminary, however, they provide important principles for the management of potential impacts during future design, construction and operational phases of the Project. These plans are the foundations upon which the more detailed plans will be based. The Contractor will develop the more detailed plans prior to construction commencing. The PER identifies that noise may have an impact upon species occurring within the area and as a result construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy. Dust emissions and overall air quality will be managed in accordance with the requirements of the Subordinate Legislation No. 153 Environmental Protection (Air) Policy 2019 (EPP Air) made under the Environmental Protection Act 1994 (EP Act). Construction will largely occur during daylight hours, with exceptions being where specific activities such as turbine lifts, etc. must occur after hours during favourable weather conditions. Construction lighting will only be utilised during low-light daytime conditions and during these infrequent out-of-hours events. Where construction lighting is utilised, it will be directed away from retained vegetation.
140	.006	groundwater	Groundwater The PER Guideline requires a groundwater management plan to be provided if dewatering is required for turbine foundation installation. Section 5.9 of the PER indicates that the deepest turbine excavation will be about 40m below natural ground level. The PER provides no indication that groundwater modelling has been carried out in the project area, either within Section 5.9 or Section 4.1.7. It is therefore unknown how the proponent has concluded that: It is considered unlikely that the foundation excavations for the Project's wind turbines would intercept a homogenous groundwater aquifer, due to these areas being on high elevations and generally with the Glen Gordon Volcanics underlying them. If some of the deeper wind turbine excavations (e.g. WTG 02), pockets of localised water within fracture rock may be encountered requiring localised dewatering. These pockets are likely to be heterogenous with limited interaction during foundation construction and subsequent backfilling within one month of excavation. We raise a concern about the ability to assess potential groundwater impacts and the consequential impact on MNES, in circumstances where there is no evidence of groundwater modelling and a consideration of interactions with surface water.		No	Section 4.1.7 of the PER states "depth to groundwater (water table) contours generally follow the topography in unconfined fractured volcanic rock aquifers as a "muted" (lower relief) expression of the land surface. The piezometric surface typically approaches ground level in valleys and topographical low points and falls away (deepens) beneath hills and high points in the landscape. Groundwater flow is therefore largely controlled by topography, with flow driven along piezometric gradients from high to lower elevation areas. Groundwater in volcanic rock aquifers is typically hosted within "secondary permeability" structures such as fractures, cooling joints and flow surfaces, particularly in extrusive volcanic lava rocks such as basalt and rhyolite. The volcanic rock matrix is typically impermeable unless highly vesicular. The yields of fractured volcanic rock aquifers are therefore dependent on the presence and nature of these secondary permeability structures, including fracture aperture widths, spacing (fracture frequency) and orientation." Section 5.9 describes the low risk of potential dewatering for the Project: "It is considered unlikely that the foundation excavations for the Project's wind turbines would intercept a homogenous groundwater aquifer, due to these areas being on high elevations and generally with the Glen Gordon Volcanics underlying them. If some of the deeper wind turbine excavations (e.g. WTG 02), pockets of localised water within fracture rock may be encountered requiring localised dewatering. These pockets are likely to be heterogenous with limited interaction during foundation construction and subsequent backfilling within one month of excavation." For these reasons, no groundwater monitoring or modelling was considered warranted. The PER was assessed as adequately meeting the PER Guidelines by DCCEEW and subsequently the Direction to Publish was issued.
140	.007	Water resources	Hydrology The PER does not appear to contain baseline information regarding stream water quality. Samples ought to be taken during different creek flows, within season, between seasons and over a number of years to characterise stream water quality. Without proper baseline data, there is no way of determining the current state of the hydraulic environment and assessing whether proposed management measures in the draft Erosion and Sediment Control plan are working. The Erosion and Sediment Control plan ought to include monitoring obligations including water quality sampling throughout construction, operation, decommissioning and final rehabilitation and provide for corrective actions where baseline levels are exceeded.		No	Potential impacts to water quality are considered as part of the Construction Environmental Management Plan and Erosion and Sediment Control Management Plan, developed as part of the development application under the State's Planning Act 2016. Water quality is to be assessed in accordance with the water quality guidelines and the prescribed water quality objectives for the Herbert River Basin as per the State's Environmental Protection (Water and Wetland Biodiversity) Policy 2019. The As per the management plan, the ESCs will be regularly monitored and modified as required to achieve water quality objectives.
140	.008	Contamination	Arsenic and Other Contaminants Our clients are aware of instances in the local area where activities, such as activities at the Baal Gammon Mine, have resulted in the leaching of minerals such as arsenic into the river systems. Our clients are concerned that the rocks and soils in the project area have high levels of minerals such as arsenic. The PER does not include any geotechnical information or soil samples to determine the prevalence of minerals that may be harmful if released into the environment following blasting and other ground disturbance activities. Our clients are concerned that there has been no consideration of this issue in the PER, and no consideration for management to minimise impacts on MNES if harmful minerals are released into the waterways.		Yes	A geochemical risk assessment has been undertaken for the project and a summary has been included below. The high risk of AMD posed by the geology of the Baal Gammon Mine is due to the intrusion of metal- and sulfide-rich hydrothermal fluids associated with the UNA Porphyry. As the UNA Porphyry slowly cooled underground, major rock forming elements such as calcium (Ca), sodium (Na), potassium (K), and silica (Si) were incorporated into the minerals of the porphyry, enriching the surrounding heated hydrothermal fluids in elements such as arsenic (As), antimony (Sb), copper (Cu), and sulfur (S). The cooling of these hydrothermal fluids then led to the precipitation and concentration of metal sulfide minerals, including the arsenic-bearing mineral arsenopyrite (FeAsS), found at Baal Gammon. The subsequent excavation and oxidation of these minerals at Baal Gammon has then lead to the generation of AMD (specifically acidic and arsenic laden drainage) at the site. This contrasts with the underlying geology of the Project area which is predominantly the Glen Gordon Volcanics and the rocks excavated for the wind turbine foundations are expected to be ignimbrites. An ignimbrite is a type of rock formed when a volcano erupts and the ash and pumice solidify while still in the air and fall to the ground as a thick deposit, or from a pyroclastic flow. Ignimbrites are made up of a mixture of ash, pumice, and other volcanic fragments. They are typically characterised by a fine-grained, glassy texture and a uniform, layered structure. The mineralogy of the ignimbrite is described as rhyodacitic to rhyolitic. This means that in an unaltered state the rocks are expected to be sulfide-poor. The primary mineralogy is expected to be plagioclase, feldspar, and quartz with lesser amounts of biotite, mica, and hornblende which are considered environmentally benign from an AMD perspective. Three foundations are proposed to be placed outside the Glen Gordon Volcanics in the Cp-7962 granite. It is important to note that while the granite is described as a porphyritic granite, this is a description of the relative sizes of the mineral phenocrysts in the granite and shouldn't be confused with the porphyry derived mineralisation described at Baal Gammon. The granite is also expected to be sulfide-poor, with the major minerals present being quartz, plagioclase, feldspar, and biotite. It should be noted that granitic intrusions may also alter the host rock where the intrusion contacts the host rock, potentially leading to sulfide mineralisation. As nearly all the proposed foundation locations are away from the intrusion margins it is considered unlikely that if sulfides were generated by the intrusions of the Ingham Granite Complex and the Cp-7962 granite that these mineralised areas would be encountered during the excavation of the wind turbine foundations. Acid sulfate soils (ASS) are soils, sediments, or other materials containing iron sulfides. Based on data retrieved from the Atlas of Acid Sulfate Soils (Fitzpatrick, et al., 2011) the occurrence of ASS in the project area is considered unlikely. Given the differences in geology and mineralogy of the Project area and the Baal Gammon Mine, coupled with the relatively shallow excavation depths likely for most wind turbine foundations the risk of AMD generation from the excavation of foundations at the Project is considered to be low. Similarly, due to the likely absence of ASS and the shallow depth of disturbance the risk of AMD generation from the clearing and construction of tracks and infrastructure areas at the Project is considered to be low. Due to the low risk of AMD generation at the Project, the potential for the leaching of arsenic or other metal(loid)s is also considered low.
140	.009	Significant impact assessment	Significant Impact Assessment and Suitability of Proposed Offsets To determine impacts, residual significant impacts and the identification of proposed offsets, there must first be a robust and reliable understanding of the baseline data/ status quo, a clear understanding of impacts and proposed avoidance/ mitigation measures. The proponent has not provided adequate baseline data with respect to the current state of the environment. The proponent has provided no reliable information regarding impacts from noise, dust, vibration and lighting. Without this information, significant residual impacts cannot be identified and assessed. For these reasons, we consider the significant impact assessment submitted with the PER to be unreliable. It is therefore premature to comment on that component of the PER.		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. Section 4.0 of the PER provides a comprehensive assessment of the existing environmental values within the Project area, as required by the PER Guidelines. General noise, dust, vibration and lighting conditions are not factors that are specifically governed by the EPBC Act, nor are they listed in the PER Guidelines as information requirements for a baseline assessment of the Project area. The potential impacts from increased noise, dust, vibration and lighting are explored in Sections 5.2 and 5.3 of the PER.
140	.010	Adequacy of the PER	Conclusion The proposed development site is a complex and diverse area, which adjoins the Wet Tropics World Heritage area. 14 December 2022 Page 16 The project area will impact a large area of habitat. The edge effects have been largely unassessed. From our clients' perspective, the proponent has not provided all information required under the PER Guideline to properly identify the existing state of the environment, to identify impacts and to enable the Minister to properly assess the application in accordance with its obligations under the EPBC Act. The proponent ought to be required to relodge a draft PER to address the matters raised in this submission, along with issues raised by others. The PER ought to then be re-published for public comment, so that the public can again scrutinize the baseline assessment and properly consider and comment on the significant impact assessment. If that approach is not adopted, then unless the final PER adequately addresses the matters covered in this Submission, in our clients' submission, there is insufficient factual information to enable an assessment of impacts arising from this project. The Minister ought to apply the precautionary principle and refuse to approve the taking of the proposed action..		No	Land use decisions in Australia are driven by, among other things, land tenure and land ownership. The WTQWHA is protected through the delineation and dedication of the world heritage area. It is acknowledged that edge effects from adjoining areas have the potential to impact within the WTQWHA. This is explored within Section 8.10.2 of the PER, which demonstrates that available peer reviewed literature identifies that some edge effects can be noticeable for a distance of up to 500m. At its closest point, the Project footprint is 600m from the edge of the WTQWHA. It is predominantly much further from the edge of the WTQWHA than this. Based on available peer reviewed literature, this minimum distance of 600m is sufficient to ensure that any edge effects associated with the Project do not extend into the WTQWHA. The Project will form part of a strong push to decarbonise the Queensland and Australian economy, which in turn will have a bearing on halting the effects of climate change and associated impacts to the rainforests and Great Barrier Reef. The Final PER will be released for public review, in accordance with the assessment process under the EPBC Act. The Significant Impact Assessment presented in the PER is undertaken in accordance with DCCEEW guidelines and presents a scientific assessment of the residual impacts reasonably expected to result from the Project on MNES, once avoidance, minimisation and mitigation measures are factored into the potential impacts of the Project on these MNES.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
141	.001	Fauna mortality turbines	The Chalumbin wind farm should not be approved because: Critical habitat will be destroyed! Chalumban should not be destroyed for a wind farm. Wind farms can kill threatened and critically threatened birds. You will need to protect birds from the blades and perhaps bats. Noise pollution from the turbines will cause creatures to migrate. The cost of maintenance is known to be very high.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
142	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
143	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
144	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
145	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
146	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
147	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
148	.001	Opposition to project	As per Submission 21, with the addition of: I travelled from Port Augusta to Melbourne in 2018 passing multiple wind farms along the way. I found them unattractive and imposing. Many of the turbines were stationary and obviously not producing power.		No	See response to Submission 21
149	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
150	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
151	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
152	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
153	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
154	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
155	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
156	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
157	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
158	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
159	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
160	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
161	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
162	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
163	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
164	.001	Vegetation clearing	The Chalumbin wind farm should not be approved because: It will destroy too much forrestry		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
165	.001	Opposition to project	The Chalumbin wind farm should not be approved because: is it anti life, anti nature, anti environment, destructive on all levels and will achieve the very opposite of what is promised to the people by these anti life and misguided promoters.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
166	.001	Survey effort	The Chalumbin wind farm should not be approved because: The destruction of natural forest is counterproductive to the claim of 'saving the planet'. No environmental studies have been done and local fauna and flora is being destroyed in the process. Bypassing the very environmental safeguards put in place by both federal and state governments is a breech of trust to the electorate.		No	Significant environmental studies have been undertaken and are outlined in Section 4.2.1 "Desktop assessment" and 4.2.2 "Field assessment" of the PER. Surveys have been conducted in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
167	.001	Opposition to project	The Chalumbin wind farm should not be approved because: - There is a Victorian business that has developed a way to use coal power and have virtually no negative repercussions. So our pathetic corporate leaders need to help businesses like this one. - The environmental and economic factors are far more important than the pathetic virtue signaling of some sectors of society. - Green energy needs a coal fire power station to be operating anyway because the green energy is not sufficient and unreliable. So what's the point of using green energy if a coal power station is operating anyway, it's hypercritical.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
168	.001	Vegetation clearing	I support the development of renewable energy in the form of wind and solar generation to reduce our reliance on coal fired power generation in Queensland. However, the removal of requirements for proper assessment of impacts under the Queensland Vegetation Management Act 1999 has serious consequences for the biodiversity on the site of the Chalumbin Wind Farm. There is no requirement for the proponent to avoid destruction of any of the very long list of Queensland State listed threatened species and regional ecosystems, many of which are restricted to this area. This is because the Queensland Government has fast-tracked renewable energy applications by introducing State Planning Code 23. This Code was used by the State Assessment and Referral Agency (SARA) to assess the Chalumbin Wind project, and it was approved. Approval under this Code means that it bypasses the Queensland Vegetation Management Act which was designed to regulate clearing of native vegetation and prevent destruction of threatened ecosystems and taxa.		No	Your concerns are noted. The PER has been developed to specifically address the requirements of the EPBC Act, which protects Matters of National Environmental Significance. Concerns regarding the State assessment process are best addressed directly to the State Government.
168	.002	Project location	It is now up to the assessment officers administering the EBPC Act to recommend refusal of this project in its current form. Wind farms should be built on cleared land, not on biodiverse, rugged, landscapes which have many listed threatened species. One of the stated objectives of the EPBC Act are to "provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance". The word "especially" infers that the aspects are not confined to listed matters of national environmental significance. Two of the EPBC Act's Principles of Ecological Sustainable Development are that: "(c) The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations." and "(d) The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making." Surely this means that destruction of State Critically Endangered, Endangered, Of Concern (etc.) vegetation, animals and plants that will cause irreversible damage and loss must be considered in this PER. A presentation from the proponent specifically states that site selection is based on: •wind resource •grid connection •land tenure Therefore, biodiversity considerations were not included in the initial selection. The site selection is likely motivated to avoid existing cleared agricultural land and to move the wind farm away from existing settlements and up into the hills. It is a fallacy that the wind resource exists only on these remote rugged slopes it is just that there will be less opposition if placed away from towns and existing useable agricultural land. Wind farms are built elsewhere at sea or on open flat land so there is no absolute necessity that a wind farm be developed in the Einasleigh Uplands Bioregion. There is also no necessity that a wind farm be placed close to the high voltage transmission line, it may just cost more if further away from it. This cost could be justified if it prevents the destruction of a long list of State and Federally listed threatened species and ecosystems. I trust you will take these issues into consideration and refuse the proposal in its current form.		No	Intergenerational equity is aligned with the concept of ecologically sustainable development (ESD) which is an object of the EPBC Act. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. The proponent does not have data, nor should it be required to have the data, to undertake the detailed cost/benefit analysis proposed by the submitter. Due to the absence of a feasible alternative, no specific alternative location to the west of the Project area was identified for the purposes of comparison in Section 3.2 of the PER. The suggested 30% increase in capital cost is associated with the conservative assessment that 30% more infrastructure would be required in an area to the west with less-ideal wind resource and a more difficult, lengthy and costly electrical connection. The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. The species protected under the Nature Conservation Act 1992 are not a consideration under the EPBC Act, unless they are also listed under the EPBC Act. The Project did assess potential impacts to State-listed species through the Development Application process under the Planning Act 2016.
169	.001	Vegetation clearing	The Chalumbin wind farm should not be approved because: There should be no clearing of native vegetation to put an industrial sized windfarm, what areas of forest we have left are only a fraction of what has existed in the past, we need to protect what little we have left, there is plenty of already cleared farmland which could be used without clearing any native forests, there is no such thing as offsetting or revegetating after construction because the disconnection for the existing wild life will already have happened, mature forest habitat can never be replaced.		No	The rationale behind the selection of site location (including the lack of alternative locations on cleared land) is addressed in Section 3 of the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
169	.002	Community consultation	The second point I would like to make is the areas cultural heritage value to the local Aboriginal people, have we not caused them enough harm with our poor record of treatment since Europeans entered their country and failed to recognize their rights and culture, they too oppose this project on cultural and spiritual grounds, let's take a step forward and start walking with them and giving the respect that they deserve.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
169	.003	Project alternatives	instead of an industrial windfarm the area could be used as a bridge between the existing Tully Falls National Park and the Koomboolloomba national Parks and would assist in increasing Queensland's protected area which is still well behind the proposed 18 percent by 2030 in doing so we would ensure the habitat protection of 3 species of possum whose habitat is already fragmented, the northern koala population is already stressed because of land clearing and unsuitable fire practices.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The Offsets proposed in Appendix O of the PER provide a mechanism for the future strengthening of connectivity east-west through the site - as described by the submitter.
169	.004	Erosion and sedimentation	The massive scale of road works required by the project is unbelievable when we consider the amount of rainfall the area receives and taking into account that any sediments from soil disturbance and vegetation clearing would all runoff onto the Great Barrier Reef already under stress from man made threats, agricultural runoff, and global warming, what is the point of trying to stop runoff from existing farming practices if we just add to the sediment runoff.		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Appendix J of the PER contains a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site.
169	.005	Social impacts	We are being hoodwinked by the proposed massive employment prospects which only happen during construction phase of the project, afterwards it will only provide between 10/15 permanent employees maximum for a 25-year lifespan of the turbines at which point their maintenance increases and they become less efficient.		No	At this stage in the project development, details of the employment opportunities are to be determined. CWF will prioritise local and regional employment and export jobs where skills are not available. Section 13.1.2.1 of the PER details the expected economic impact of the construction workforce on the local and regional economy, indicating the capacity and benefits CWF will provide through employment on a local and regional scale. The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project.
169	.006	Visual impacts	The visual amenity of the area would also be severely impacted with 89,250 meter heigh towers with 90-meter blades replacing what is a very pleasant landscape of natural vegetation and a complete ecosystem which has had thousands of years to evolve, we set an alarming precedent if we allow this project to see the light of day, while renewables are a very important part of our future energy needs, we should never allow this to happen at the expense of our existing environment.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Views from six identified viewpoints are also considered to be potentially significantly impacted by the Chalumbin Wind Farm. These views include the accessible lookouts on Majors Mountain and Bally Knob, view from a small part of the Koolmoon Creek track, views from the Kennedy Highway as well as views from residential properties in Millstream and the few rural properties west of Site on Herbert River Road. It is noted that some of these views (particularly from Bally Knob, Majors Mountain and the localised affected part of the Koolmoon Creek track) would be experienced by very few receptors due to the strenuous nature of the hike to these locations. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible.
170	.001	Fauna mortality turbines	The Chalumbin wind farm should not be approved because it will destroy native fauna in the area. Not only do wind farms cause terrible damage to birds they are visually unattractive which is detrimental to an incredibly beautiful area. Many areas in Tasmania have been made ugly by wind farms, don't let in happen to Chalumbin!		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. A detailed Landscape and Visual Impact Assessment (LVIA) has been undertaken for this Project and is attached as Appendix M. Specific assessment of the potential for the Project to affect the scenic amenity and the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11.
171	.001	Decomissioning impacts	I have attended meetings in regard to the Chalumbin wind farm proposal and don't like what I am hearing. As much as I am for renewable energy I am not a fan of wind energy at least in this country. Wind farms are an energy intensive and consume an incredible amount of resources alone in just the construction of the wind farm, that's not including the installation of them on site.once they have reached there use by date as far as I am aware they can't be re used or re cycled and are buried in place.		No	The Queensland Government identified the Northern Renewable Energy Zone which has been selected because of the suitability for renewable energy projects, including a high wind resource. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
171	.002	Project location	I also can't understand why forests (lungs of the earth) have to be destroyed in order for this renewable energy to go ahead when we have so much available cleared land.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
171	.003	Survey effort	Some of my main issues are as follows; 1- only one bird species was seen in the two years of intensive observations, which ultimately totalled up to less than 5 days. Hard to believe only one species of bird was seen, seems like a very favourable conclusion for the developer.		No	Bird surveys undertaken to date amount to a total effort to date (as at January 2023) of 530 person-hours and are still ongoing. As stated in Appendix Q of the PER, 140 bird species have been recorded across the project area.
171	.004	Community consultation	2- cultural and native negotiations with the traditional aboriginal tribe didn't seem to go as well as what the developers proposed as the local aboriginal elders where insulted and in tears.		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community.
171	.005	N/A to PER matters	3- it seems this wind farm is to be used to make green hydrogen for export to South Korea???		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. The proposed development is not related to producing hydrogen.
171	.006	Community consultation	4- also information meetings with concerned citizens didn't go as well as planned or we could say it went as planned as no questions were answered and people were treated with no respect.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The processes which have been followed for consultation are not always with outcomes as expected by community or proponent.
171	.007	Rehabilitation	5- removal of existing forests for a project with a limited life span compared to the life span of the forest, which will probably never be the same as a result.		No	The project provides a significant commit to the rehabilitation of disturbed areas and a Preliminary Rehabilitation Plan is included in Appendix K of the PER. Key objectives of the rehabilitation is to restore ecological functions and rehabilitation various vegetation communities to their remnant status.
171	.008	Biodiversity general	6- destruction of habitats for animals, the fish and marine life that exist in the creeks and rivers of the area.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
171	.009	Visual impacts	7- it will be an eyesore for everyone and anyone who enjoys the area but that won't bother the developer as I gather they won't live in the area or even care anyway.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
172	.001	Opposition to project	The Chalumbin wind farm should not be approved because: It is destroying environment in its production, it's operation and it's inevitable requirement of replacement of the non recyclable turbine blades. It is also not providing cheap baseload power. It will require more carbon sequestrating trees to be chopped down and carbon intensive materials in its production than it will save in its operation. It will also leave Australia dependant on foreign nations for the technology and materials required.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). Section 13.2.1.1 of the PER calculates the GHG costs associated with the dominant construction materials for the Project (steel, concrete and composite materials). It should be noted that a GHG calculation for material composition within a WTG is not a linear relationship with the WTG nameplate generation capacity. The GHG costs associated with transportation of materials and components (including via sea from China) are outlined in Section 13.2.1.2 of the PER. The GHG costs associated with vegetation clearing (i.e. the loss of the carbon sequestration potential associated with the vegetation to be cleared) are outlined in Section 13.2.1.3 of the PER.
173	.001	Support for project	As a local resident of Ravenshoe since 1940, I now follow the progress reports on developments of Chalumbin wind farm with interest. The studies and planning done on this project is a credit to the company and the staff involved. They have made many design changes since first proposed, and now have some of the best environmental and practical decisions possible. In my opinion, wind turbines are a good alternative to gas or coal powered energy. To me, they indicate progress. When "windy hill" was first started, the "knockers" claimed the cattle would be terrorized - they now rest happily in the shade or use them as wind breaks, bird and bats were predicted to collide with the sails and be slaughtered (fortunately they do not have "human" brains) they fly around the turbines instead of into them. The operation of these turbines will be a benefit to power supply, and many residents and districts. When all installations are completed, with time and help, nature will return most earth disturbance etc. to normal. My wife and I are both in favour of the Chalumbin wind farm, and we wish the project all success. We look forward to future updates via mail, please put us on your list.		No	The assessment presented in the PER has been completed in accordance with the EPBC Act and the PER Guidelines. Extensive studies undertaken support the conclusions of the report and refine the Project design to achieve ecologically sustainable development. Feasible alternatives to the Project have been considered and presented in section 3.0 of the PER, including a fossil fuel alternative. Extensive bat and bird utilisation surveys across the Project site have been undertaken to confirm species presence and the potential for bat and bird strike from the wind turbines. For those species that have the potential to be impacted by the Project, an assessment has been undertaken and mitigation measures have been proposed to minimise the identified impacts. The implementation of the mitigation measures is supported by a Preliminary Bird and Bat Management Plan at Appendix G of the PER. The operational Project of up to 86 wind turbines will generate approximately 602MW of nameplate generation capacity, equivalent to powering around 320,000 homes in Queensland. The Project has made an industry leading commitment to rehabilitate temporary construction disturbances and retain only the minimum footprint required for safe operations which is approximately 0.3% of the Project area.
174	.001	Fauna mortality turbines	The Chalumbin wind farm should not be approved because: These are ruining the the landscape of North QLD, Killing native birds which have flight paths in these areas and not to mention the impact of construction on the area for which they will be built.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. A detailed Landscape and Visual Impact Assessment (LVIA) has been undertaken for this Project and is attached as Appendix M. Specific assessment of the potential for the Project to affect the scenic amenity and the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11.
175	.001	Community consultation	We have to be in here for the long run Ark Energy Consultation Criticism to the Queensland State Government for having the proponent consult with the public. Obvious conflict of interest at every point, especially since the site is leased public land.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The criticism of the Queensland State Government is outside the remit of the current EPBC Act processes.
175	.002	Adequacy of the PER	Climate Change 4.1.9 The consultation by contractors was narrow, self seeking and hopelessly out of date. One of its biggest downfalls is that it does not make an adequate assessment of climate change (4.1.9). It does not adequately address the immediate or even the midterm 2030 threats and impacts that climate change will have on the pre-development Chalumbin and North Queensland region. It is widely known in scientific, insurance and professional planning circles that real climate change impacts predicted in 2000 are now hitting the ground with very disruptive frightening consequences. The federal government's own BOM website predicts continued major changes to north Queensland's natural environment. The wind farm, under the banner of renewables owes its very existence to combating climate change / greenhouse emissions,. And then, in great contradiction would absolutely make an negative contribution to the Wet Tropics environment.		No	Section 4.1.9.2 of the PER refers to recent and relevant papers on the climate change projections for the Project area. The conclusions that the FNQ region is predicted to experience higher temperatures, greater frequency and duration of extreme temperatures, more intense and variable rainfall, and more intense (but less frequent) cyclones remain valid. It is not disputed that the current climate in FNQ may be the manifestation of some climate change predictions made in the early 2000s. The variability of the climate is something that has been factored into the impact assessment within the PER and the risk profiles for various potential impacts - such as erosion and sedimentation during construction.
175	.003	Project location	The very simple proof of Chalumbin's environmental value is its common border with the Wet Tropics World Heritage Area. There are continuous largely unbroken ecosystems on the WTWHA boundary and a good case could be made to include Chalumbin within the WTWHA. Allowing an industrial scale development of any type along the boundary will degrade Chalumbin's world heritage class values and impact on the WTWHA itself. It will also degrade private high level conservation efforts at Yorka Station undertaken by an Australian tax deductible organisation, Bush Heritage Australia. The Wet Tropics Management Agency holds 10,000s of pages of scientific evidence supporting it values, threats and fragility. Its ALL there. The wind farm project has to prove its making an overall benefit to carbon budgets, biodiversity, regional ecosystems within the site itself, the WTWMA, the region AND the whole nation. The site sits atop arguably the most valuable biological assets in the country. Why would any responsible authority risk such an important asset? A good number of people are asking that question and are baffled as to why the state government has even considered the site in the first place. It's a very big fall for the state's record of environmental management. Ark Energy should walk away from this project. There are multiple better sites.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
176	.001	Project location	The Chalumbin wind farm should not be approved because: It's remote location ensures native wildlife and vegetation are protected from much human interference. Chalumbin borders the World Heritage Wet Tropics Area on one side, as well as Bush Heritage's Yourka Station. It contains a transition of landscapes ranging from tropical to woodland and tall open forest. Chalumbin is so remote that there are likely species of flora and fauna here yet to be scientifically described. Queensland wilderness is being cleared at an unprecedented rate, and the wilderness of Chalumbin is a critical haven to wildlife. Chalumbin should not be destroyed for a wind farm.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
177	.001	Project location	As per Submission 176		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
178	.001	Vegetation clearing	The Chalumbin wind farm should not be approved because it is situated in an area which will require massive land clearing, once again, of native bushland and forest. QLD's natural environment has suffered hugely since clearing began in the mid 20th century and has only recently been controlled. It seems utter commonsense to have these things on agricultural land where clearing of hundreds thousands of trees will not be required! The loss of countless homes for our native animals and plants is immeasurable. Please did deep QLD Gov and opt for areas which don't require massive clearing of forest and bush please. It will take a long time for us to replant that amount of trees.. remember all scientists expert in Climate Change say trees are one the answers to solving it. Let's strive for nett tree gain - not loss!!!		No	The rationale behind the selection of site location (including the lack of alternative locations on cleared land) is addressed in Section 3 of the PER. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
179	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
180a	.001	Red goshawk	Note submission has been summarised to extract key points requiring response. I wish to highlight that the cumulative impacts on this project is inadequate. The cumulative impacts that this project with have on flora, fauna biodiversity is underestimated. Species extinction will result if this project is allowed to go ahead. We are risking entire species by clearing habitat for this project. The guidelines for the PER required the proponent to identify the cumulative impacts of this development in Section 5.0 The cumulative impact on endangered species is unknown, one which includes the red goshawk. Red goshawks are known to return to their nests. A nest was considered highly likely to belong to the red goshawk was observed in the Glen Gordon property in January 2021. (Page 93 of MNES Report) A photograph of the nest was sent to a number of recognised red goshawk experts, one a QPWS ranger, who confirmed the nest as belonging to the red goshawk. This nest has miraculously disappeared. Has the nest been removed. Would vested interests go to any length that would harm our endangered and vulnerable wildlife. This species needs vast ranges if it is to be prevented from regional extinction. In Table 5.5.2 the proponent states that the project will not result in residual impact. The clearing 1,031 ha of habitat is not only highly destructive for an endangered species, but the likely collision of the red goshawk will have a dramatic cumulative impact.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. There is insufficient publicly available information on the potential impacts from other windfarm projects on the red goshawk for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
180a	.002	Magnificent brood frog	PROPOSED TRANSMISSION LINE The proposed transmission line that connects the proposed High Road Wind Farm to the 275kV transmission line through The Bluff State Forest will be another impact to the Magnificent Brood frog's survival.		No	A transmission connection for the High Road Wind Farm is not currently determined and therefore cannot be included in the cumulative impact assessment presented in Section 5.5 of the PER.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
180a	.003	Transmission capacity	It is of concern that the proponent announced on the day the PER was released that the Chalumbin Wind Farm will be broken into two Stages. This was never revealed or published before the release of the PER. I note that Stage One will use existing transmission availability. Stage Two will be difficult for commencement until there are upgrades to the line. This may likely require a new parallel transmission line next to the present one. Another vast amount of vegetation clearing would be required and therefore should be included in the cumulative impact of the entire project. I would also like to add that the latest ten-year energy plan announced by the state government does not include transmission upgrades north of Ross. The proponent uses the AEMO REZ expansion guide for planning which is contradictory to state planning forecasting.		No	The AEMO ISP referenced in Section 1.5 of the PER is an important document that outlines the likely future direction of energy generation, transmission and consumption within the NEM. Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
180a	.004	Erosion and sedimentation	The proposal WILL create or enable soil and sediment movement, similar to the Kaban site and damage the local environment. The failure to declare the correct flora assemblage, it's importance in being a margin to the Rainforest and the effect of further removal of the rainforest assemblage. This failure will reduce the stability of the World Heritage Wet Rainforest.		No	It is true that the project will involve clearing and soil disturbance that increases the risk of soil erosion and sediment movement, however it is not the Kaban site. The project has made a significant commitment to shut down construction activities during the highest risk period Jan - March and the project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks.
181	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
182	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
182	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
183	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
184	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
185	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
186	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
187	.001	Opposition to project	As per submission 21		No	See response to Submission 21
188	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
189	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
190	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
191	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
192	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
193	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
194	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
195	.001	Project alternatives	The Chalumbin wind farm should not be approved because: There are a great number of reasons why it should not be approved and there are citizens far more learned than myself who do not agree with its approval. My personal point of view is that it should not be approved because Australia is a country of sun surely we should utlise that and optimise this through more solar energy sources. Wind farms kill animals and destroy plants and trees the very environment we wish to protect. I do not agree and as a hard working, honest, tax-paying Australian citizen I hope you can take my point of view into consideration.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. The wind profile of the site is complementary to the diurnal solar generation profile.
196	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
197	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
198	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
199	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
200	.001	Opposition to project	As per Submission 200		No	See response to Submission 21
201	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
202	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
203	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
204	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
205	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
206	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
207	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
208	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
209	.001	Opposition to project	As per submission 21		No	See response to Submission 21
210	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
211	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
212	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
213	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
214	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
215	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
216	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
217	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
218	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
219	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
220	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
221	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
222	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
223	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
224	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
225	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
226	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
227	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
228	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
229	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
230	.001	Opposition to project	As per Submission 21		No	See response to Submission 21

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
231	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
232	.001	Biodiversity general	Note submission has been summarised to extract key points requiring response. Many millennia of critical ecological balance has already been destroyed by the Kaban Wind Farm and Chalumbin will fare much worse. Clearing and fragmentation aside, birds and bats will be ripped from the skies by the blades. Air pressure will maim and kill and infra-sound will drive animals away, hamper their communication and halt their breeding. There is evidence that animal stress levels will increase and predator – prey dynamics will change. Moreover that the morphology of species will change in response to altered fauna diversity and densities. Haven't we already put our environment though enough? Our planet is at breaking point and yet here we are prising the crack open yet more.. in the name of climate control... The irony is so blatant to be utterly insulting. Not only will our landscape suffer immensely, humanity will also suffer from the destruction of these ecosystems as it renders our water and air foul and places the balance of all of nature dangerously out of kilter.		No	Your submission has been noted. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
232	.002	Indigenous Cultural Heritage / Engagement	The turbines are destroying the spiritual integrity of our landscape, to say nothing of indigenous people who's cultural sanctity has been wrenched from them.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
232	.003	Social impacts	When the PER looks to impacts, why is the mental health of the residents and visitors to Ravenshoe and the culturally connected of no concern? Finding solace in a landscape isn't solely the right of our First Nation's People. Myself and my children walk in the Ravenshoe and Tomoulin State forests regularly. It is a mental health tonic. Only yesterday a radio program talked of the impact of nature on our mental health with proven positive effects, even on someone with a brain injury (Radio National 11/12/22).		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans.
232	.004	Fauna mortality turbines	These birds in all of their unique and internationally recongised glory, shall now be required to navigate (or die) 75m serrated blades travelling at considerable speeds – from 140km/h to almost 300km/h. (Wikipedia – wind turbine design). The closest of these is just 500m from the World Heritage border.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
232	.005	WTQWHA	This proximity to a World Heritage area should be sufficient to STOP any industrial development. If morals don't take us there, we are legally obliged to consider the Chalumbin development very very seriously: "Under the EPBC Act, any action that has, will have or is likely to have a significant impact on the World Heritage values of a World Heritage property must be referred to the responsible Minister for consideration. The EPBC Act applies whether the activity is inside or outside of the boundaries of a World Heritage property. " Impacts WILL transcend into the Wet Tropics boundary.		No	Section 8.10 of the PER assesses potential impacts to the WTQWHA and has concluded that the Project will not result in a significant residual impact to the Wet Tropics.
232	.006	Fauna mortality turbines	Electromagnetic interference will affect frogs and bats behaviours. Blades will alter raptor behaviour and kill rates. Blades will alter prey abundance.		No	Electromagnetic interference is not recognised in the literature as a threat to either frogs or bats. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
232	.007	Koala	Infrasound will limit koala communication and breeding.		No	Infrasound is not listed as a key threatening process for the koala in the National Recovery Plan 2022.
232	.008	Erosion and sedimentation	Sedimentation will affect the Great Barrier Reef and local waterways		No	Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. It is due to the increased seasonal risk of high intensity rainfall that the project will stop works between January and March. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard.
232	.009	Project location	3. NOMINATION OF LOCATION It is abundantly clear that Epuron did not allow the presence of ecological values to influence it's site selection. If it had, Chalumbin would not have been proposed. According to the PER the Chalumbin wind farm location has been justified based on three factors: "ready grid access", a "certainty of wind resources" and location in regard to human settlement. YET: • the PER acknowledges that the existing transmission line requires "augmentations". (the upgrade to the transmission lines will require a massive amount of additional clearing (not included in current clearing figures) which should be added to the cumulative impact of the project). • Data showing average wind speeds in North Queensland places Ravenshoe with significantly lower average wind speeds than other northern localities including, Cairns, Cooktown and Hughenden (The Express 30.11.22) • Ravenshoe residents will be faced with turbines within a couple of kilometres of their homes. This represents the beginning of the contradictions, the untruths and poor research. The insufficient or non-existent cultural considerations and community consultation and a total disregard for environmental and human/social values.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network. Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life. The landscape and visual impacts potentially associated with the Project are described and represented in Appendix M of the PER.
232	.010	Adequacy of the PER	4.1 HABITAT In circumstances where Chalumbin does not share a boundary or is not in close proximity to the Wet Tropics area nor in proximity to a special wildlife reserve (Yourka Station, as managed by Bush Heritage) the protection of this site should NOT be considered any less desirable. The Chalumbin wind farm proposes the clearning of nearly 3000 acres of which 95% is remnant forest. This area will increase with thousands of kilometres of proposed upgrades to transmission lines in the second stage of the project. The map clearly demonstrates that the proposed 78, 000 acre site contains a fascinating diversity of vegetation types, from rainforest and wet and dry sclerophyll forest to shrub-lands. It suggests a complex system of transitioning vegetation types and therefore also fauna diversity. A large proportion of the map indicates either actual or potential greater glider habitat (classified as vulnerable). There is a substantial area classified as potential goshawk (endangered) habitat (the PER confirms a nest found on site was identified as a Red Goshawk nest) and also Magnificent Broodfrog (vulnerable) habitat was identified in 4 specific sites in the proposed project area. Despite the fact that the map conveniently fails to acknowledge the site's border with the Yourka Wildlife Reserve (managed by Bush Heritage) and likely, intentionally, fails to include the terminology of World Heritage Area in it's description of the lands which share it's eastern border, this map doesn't suggest constraints, it gives, even in its simplistic state, many reasons to reject the project outright. It is quite literally self-condemning. The turbines and access roads transect these 'constraints' as thought they were of no significance at all. The precautionary principle must be put into play. The footprint, as the map suggests isn't a bunch of yellow squiggles (roads) and white dots (turbines). The entire 78,000 acres will be affected and beyond. We cannot apply subjective views to landscapes. A landscape isn't more valuable		No	There are no proposed upgrades to transmission lines in the second stage of the project. There are numerous figures in the PER that show the location of Yourka Nature Reserve and the WTQWHA.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
232	.011	Vegetation clearing	4.2 HABITAT CLEARNING AUSTRALIAN STYLE The PER does not and can not justify the destruction of native forest in the face of Australia's own admission of it's dismal environmental protection history and the following facts: Ecologists list land clearing as a top cause of wildlife losses and the State of the Environment report said between 2000 and 2017, there were 7.7 million hectares of land cleared across Australia and 93 per cent of the vegetation was felled without federal approvals for threatened species habitats." These statistics and so so many more are easily obtainable. Again and again our government is urged to do better and promises to do better... "Labor pledged during the federal election to overhaul environmental protection laws and issue a full response to the scathing findings of the Samuel Review of the Environment Protection and Biodiversity Conservation (EPBC) Act as well as establish new nature watchdogs with an Environmental Protection Agency and a National Water Commission". And yet Epuron's plan to clear critical native habitat is on the table for consideration. "Thirty-four major threats have been previously identified that impact on Queensland threatened flora. The threats affecting the most species are 'inappropriate fire regimes', 'weeds' and 'clearing of vegetation'. The impacts associated with climate change has also been identified as a major factor in the risk of extinction of flora species in Queensland.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
232	.012	Vegetation clearing	4.3 HABITAT FRAGMENTATION The clearing and fragmentation of habitat at the Chaulumbin site will put into play some of the most significant threats facing our flora and fauna. Fragmentation creates an edge effect – whereby exotic species are able to penetrate, with much greater efficiency into native landscapes. Moreover fragmentation causes a drying effect thus enhancing the ability of fire to take hold and also pass through the environment. The project's proposed access tracks will be an average of 70m wide. This is known to exceed the limit of which animals and plants are able/willing to cross, creating a fragmentation which is permanent. This defies all current scientific principles of sound environmental management, that of minimising fragmentation to facilitate safe and natural animal movement and moreover to minimise the introduction of invasive flora and fauna species. This fragmentation will also have an impact on genetic diversity and thus ecological integrity across a much much wider area. The impact of fragmentation must be considered equally devastating as clearing. The proposed clearing of almost 3000 acres of habitat is the tip of the iceberg when it comes to the impact the flora and fauna would experience as a result of this proposal.		No	Edge effects and fragmentation are discussed within the PER (section 5 at a high level and throughout Section 8 related to specific MNES). The Preliminary Rehabilitation Plan located in Appendix K of the PER provides a framework for the reestablishment of vegetation to cleared areas and to restore connectivity. The rehabilitation programme will include fauna crossing infrastructure to further facilitate movements across the site.
232	.013	Rehabilitation	5. REHABILITATION The term rehabilitation is really a misnomer in the context of a project of this scale proposed on a landscape of ancient origins. The PER contradicts the proponents intentions several times when it comes to appeasing opponents. The PER talks of rehabilitation as a solution to the extensive clearing. Within several lines, the PER then states that the site will be 'rehabilitated to facilitate continuation of the current land use (agriculture) or an alternative land use.' The implication here is that they can simply bulldoze or rip the site, throw around some grass seed to the satisfaction of the graziers and walk away. Perhaps they could plough the landscape in readiness for cropping or horticulture or perhaps they could just point the mining companies in the right direction. There must be clarification of their responsibility and the funds must be available upfront. Too often have companies wheedled their way out of multimillion dollar revegetation obligations on the basis of bankruptcy, contractual cessations or other inventive avoidance strategies. The PER considers rehabilitation an option. Rehabilitation is by definition 'to restore to the former condition'. The Great Dividing Range is an ancient landscape. The ancient nature of this particular area is part of the reason for it's World Heritage listing. It is downright deceptive to suggest that rehabilitation is an option. Millennia of evolution cannot be 'planted'. It takes over 200 years for a Eucalyptus tree to age sufficiently to form hollows which wildlife, including the Greater Glider, could utilise. The only solution is to reject this proposal and all others like it. Moreover there is no acknowledgement in the PER of how rehabilitation will play out. The roads and turbine sites will need to remain accessible for he duration of the project. Presumably the site must remain accessible to massive trucks until the end of the life of the wind farm in order to remove (further assumptions that they even intend to remove the derelict turbines). This implies (but clear statements are needed, not implications) that Epuron would not undertake any 'rehabilitiation' until the end		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. The decommissioning of the project is presented in Section 2.3.3 of the PER and states that the site will be 'rehabilitated to facilitate continuation of the current land use (agriculture) or an alternative land use.' Rehabilitation of temporary disturbance areas will be undertaken progressively in accordance with the Rehabilitation Plan and includes the rehabilitation of vegetation communities. The rehabilitation plan meets the required rehabilitation requirements for the project as presented in Section 1.1 of the Preliminary Rehabilitation Plan (Appendix K of the PER). The purpose of this Preliminary Rehabilitation Plan is to facilitate the re-establishment of native ecosystems that are self-sustaining in the long-term and provide comparable habitat value to the pre-construction ecosystems. The timing of site-specific rehabilitation actions will be developed further during the post approvals stage and will be consistent with the rehabilitation framework presented in the Preliminary Rehabilitation Plan. Section 2.3 of the PER outlines the Project Development Stages and Construction is expected to commence in mid-2023, subject to the timing of approvals, feasibility studies and FID.
232	.014	Survey effort	6. FAUNA AND FLORA Based on PER content, environmental studies carried out on site appear to have lacked any stringency or application of standard ecological survey methodology. There were no floral transects undertaken – a standard survey methodology. Nor was there consideration of other elements, such as fire, rainfall variation, which contribute to the nature of this landscape. Whilst the PER offered 'years of experience' of the environmental team, they did not suggest in what fields the employees/contractors were experienced in nor in what ecosystems. The PER fails to give a base line species list of flora and fauna within the project area. A comprehensive identification of flora and fauna would also form the basis of 'rehabilitation'....		No	Surveys have been conducted in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Specifically, vegetation surveys were undertaken in accordance with the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland version 5.1 (Neldner et al 2020) which is an accepted approach. The experience of the two lead botanists is provided in Section 4.2.2.2 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
232	.015	Survey effort	Koalas Koala spotting occurred from a vehicle... This is as ludicrous as a Woodside strategy to 'avoid whales' in gas exploration by having an individual on deck 'spotting'. I have walked though our subtropical bush with koala expert, Roger Martin, searching for a koala with a radio collar. Even a radio collar this koala eluded us. Koalas are inclined to move around a tree to avoid being seen, in much the same manner in which goannas avoid being seen. How on earth can they suggest there are no koalas on the proposed site after only 103 hours of spotlighting from a vehicle? Moreover how could they have identified koala scratch marks on trees or searched for scats from a vehicle?		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
232	.016	Koala	In a presentation by Roger Martin at the Tree Kangaroo and Mammal Group in 2022. Roger's research demonstrated that within 70 years the high altitude eucalyptus forests in the Ravenshoe region would indeed be a final refuge for Australia's koala population.		No	Briscoe et al 2016 presents habitat suitability modelling for koala based on a number of different models, which present differing results for the 2070 scenario. Image 4c shows the habitat suitability for all models in 2070 which naturally shows a much larger area of suitable area along the eastern coast of Australia than image 4d which presents the "minimum habitat suitability across all models". The corresponding text in the article confirms that the location of refugia in image 4d (i.e. high elevation sites) was driven by assumptions of low foliage water content and represents the most pessimistic circumstances. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan and would be sufficiently established to provide habitat suitable for koala by 2070. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting the type of climate change effects modelled in studies such as Briscoe et al 2016.
232	.017	Magnificent brood frog	Magnificent Brood Frog Surveys for the Magnificent Brood frog (endemic, very limited range and vulnerable) were carried out at the end of the wet season following a particularly heavy rain event, according the the PER. At this point the saturated landscape offers this frog the ability to disperse considerably making identification of the species much much harder. Attempts by an independent group to undertake further surveys were denied. The suggestion of a $250, 000 research offset is insulting. The destruction of habitat of a species poorly understood and occupying a minute area being offset by dollars is unacceptable. The PER states that all known habitat is considered critical for survival. And yet, the proposal plans to clear over 297 acres of brood frog habitat and acknowledges a significant impact.		No	To be clear, the landowner denying access to the magnificent brood frog working group is nothing to do with the project; in fact, the Project team has invited members of the working group to participate in Project field surveys and shared all survey data. These surveys have been ongoing and the results will be incorporated into the final PER. The PER does not state that surveys undertaken in March 2021 were after a particularly heavy rain event, it states that surveys were undertaken in March at the end of the wet season because January that year was too wet. The PER acknowledges that the project could have a significant residual impact on the species, which is why offsets have been proposed in line with the mitigation hierarchy. The proponent has made a voluntary financial contribution to research above and beyond the direct offsets.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
232	.018	Survey effort	These examples should be sufficient to demonstrate a total lack of transparency and professionalism in the environmental surveying and reporting. Again and again the PER demonstrates surveys lacking in duration, lacking in scope, lacking in consideration of seasonality, and lacking in scientific technique. How can we have any faith in their processes given these examples?		No	The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
232	.019	MNES	The masked owl, the Red Goshawk, the White Throated Needletail, the Greater Glider and the Spectacled Flying Fox are all facing immense environmental pressure and key threats listed in the PER include loss of habitat and fragmentation. The PER clearly states the threat faced by the flora and fauna and acknowledges that the same threats will be generated by this proposed wind farm. The proponent repeatedly self-incriminates.		No	It is not self-incriminating to be honest about the potential impacts of the project and then to commit to the full mitigation hierarchy in order to minimise these potential impacts to the extent practicable.
232	.020	Community consultation	I want to talk of Epuron's failure to undertake genuine transparent consultation among the indigenous and white communities. The insults placed upon the Jirribal people with Epuron waving money in their faces without a true explanation of Epuron's intended actions and level of destruction and the mighty task ahead of those few who understand the facts to teach their communities the truth. I want to highlight the lies they have published in our newspapers and the lies they have told in their own reporting.		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
232	.021	Adequacy of the PER	I want to talk about the Great Barrier Reef, the Millstream residents, impact on the local catchment area aquatic heath and human water supply, the failure of Mt Emerald wind farm to reach expectations, the decommissioning process, the management of disposed blades… all of which the PER FAILS TO ADDRESS….		No	Responses to each of these items (GBR, local community, water quality, decommissioning, recycling of components and blades) are all provided in the relevant parts of the submissions report. The PER does not explore criticisms of other projects such as Mt Emerald; however, lessons from this and other wind farm projects in the region are valuable inputs to the impact assessment presented in the PER.
232	.022	Emissions	There is endless data available on the energy required to build these turbines and the disgusting failure of industrialists to plan for 'green' disposal and the failure of turbines to generate sufficient energy to offset the energy used in their own creation. I am ashamed of this worldwide farce. There are no solutions here, just lies, manipulation of facts and backroom deals designed to tick boxes and line pockets.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
233	.001	MNES	On my recent travels to the Atherton Tablelands I came across your proposal to erect a wind park – with utter disgust I may say straight away. It poses several questions: Are you not aware of the many vulnerable and endangered species living in the area of Chalumbin that is surrounded by National Parks, Forest Reserve and State Forest?! The closest turbine is proposed to be 600m from the Wet Tropics World Heritage area. • Critically endangered species (Northern Greater Glider) • Endangered species (Yellow-bellied glider, Red Goshawk, Koala) • Vulnerable species (Magnificent Broodfrog, Red Goshawk, Northern Greater Glider) • Endangered communities (the Jirrbal custodians) • Migratory species (Sarus Cranes – globally threatened) Your proposal is devastating for the flora and fauna and people of the Atherton Tablelands and I'm sure looking at the Environmental Protection Act 1994 it will have no leg to stand on. Best of luck!		No	The northern greater glider is listed as Vulnerable (not critically endangered) and the sarus crane is not listed as migratory under the EPBC Act. Communities under the EPBC Act refer to vegetation communities, not people such as the Jirrbal custodians. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. In terms of Indigenous engagement the registered Native Title claimants have been supportive of the project and are involved in the process as outlined in Section 11.6 of the PER. The Queensland Environmental Protection Act 1994 (EP Act) provides for the protection of Queensland's environment while allowing for development in accordance with principles of ecologically sustainable development. The provisions of the EP Act that may be relevant to the Project are listed in Section 10.5 of the PER. The Project has already received development approval under State legislation.
234	.001	Vegetation clearing	Note submission has been summarised to extract key points requiring response. The areas in which they are being constructed are usually amongst a narrow belt of restricted ecosystems, and they are often some of the last intact natural vegetation in our landscape. The proposed Chalumbin windfarm is one of the worst of such proposals. WPSQFNB demands to know why we are clearing intact, high biodiversity forest for renewables?		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
234	.002	Adequacy of the PER	The statement that "surrounding properties are also used for grazing" is misleading. More than half of adjacent land is used for conservation purposes (a combination of National Park, Forest Reserve and the privately owned Yourka Wildlife Reserve which is not grazed). In fact, the southern quarter to third of the project area is literally bounded by land used for conservation purposes. The whole eastern boundary is also designated Wet Tropics World Heritage area. The remaining adjacent properties are divided into many holdings, and it is unlikely that all are used for grazing. The report states that the current land use is "agriculture". As far as we understand "agriculture" is not correct. The current land use is "grazing of native vegetation", which was recently amended by the Queensland Government to include "renewable energy purposes". Nonetheless this does not yet appear to be reflected in Queensland's official land use maps: https://www.qld.gov.au/environment/land/management/mapping/statewide-monitoring/qlump/qlump-map Either way, agriculture or wind farm, it means that at the end of its life, the wind farm footprint could be left unvegetated to suit the next development (e.g. upgraded windfarm) or used as the infrastructure (upgraded roads, sheds, accommodation etc.) from which to develop and clear potentially the entire of Wooroora and Glen Gordon Stations for a solar farm. At this stage we have no way of knowing whether State Code 23 for Wind Farms will be extended to solar farms. If this happens, like wind farms, it would be exempt from restrictions under the Vegetation Management Act (which regulates clearing). Will the Federal Government be prepared to approve a project which will pave the way for the future clearing and destruction of whole properties within some of our last intact mountainous forests? Worse, the cumulative impact of many such projects will be devastating to the environment. Has this been considered? This single point is the major reason why the project must not go ahead at this site or on any property consisting mostly of intact forests.		No	Section 1.4 of the PER states that "surrounding properties are used for grazing and conservation purposes, with National Parks and Timber Reserve abutting the northern and eastern boundaries of Wooroora Station". The grazing of native vegetation is a form of agriculture. The current land use remains agricultural-based, despite the 2022 development permit being issued for the Project under the Planning Act 2016. The approvals process under the EPBC Act - for which the PER is a necessary element - is a fundamental pre-requisite for the land use to become a combination of the existing agricultural/grazing activities and the renewable energy purposes associated with the Project. State Code 23 under the State Development Assessment Provisions (SDAP) is designed only for onshore wind farms. The site is not ideal for solar farm development as it is rugged and topographically highly variable. Wind farms and solar farms are not exempt from assessment under, or the influence of, the Vegetation Management Act 1999; these processes are simply brought into the assessment of a wind farm (State Code 23) or a solar farm (local government planning scheme) under the Planning Act. Cumulative impacts are assessed within the PER in Section 5.5.
234	.003	Adequacy of the PER	The statement "Some 80% of vegetation that requires clearing for the proposed action, within the two grazing properties, is 'least concern' under the Queensland Vegetation Management Act 1999. T This type of vegetation commonly occurs throughout the two biogeographical regions of the Wet Tropics and the Einasleigh Uplands in North Queensland" is very misleading. The Least Concern category encompasses many different vegetation types, and in fact most of the vegetation types occurring in the Chalumbin footprint are restricted to a narrow altitudinal zone in this region. Several of these (clearly the remaining 20 % of the quote) are listed as either "Endangered" or "Of Concern" in Queensland State legislation.		No	The statement referenced from the PER was made to demonstrate that the Least Concern RE status of the majority of vegetation within the Project area is a reflection that over 30% of its pre-clearing extent remains intact across the bioregion, and the remnant area is greater than 10,000ha. This is taken directly from the Queensland Government's definitions of RE classification.
234	.004	Project location	Added to this, there is no overview in the introduction as to the reasons the site was chosen compared to other sites with lower biodiversity impact. This would be the first thing we would be looking for as a member of the public who wants to ensure that this rapid roll-out of new developments is happening in a responsible fashion. More to the point, there should be a requirement at the Federal level, that each project be clearly described within the context of a broader analysis of impact to biodiversity across Australia, or at least within the State.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
234	.005	Rehabilitation	Either way, agriculture or renewables, it means that at the end of its life, the wind farm footprint could be left unvegetated to suit the next development (e.g. upgraded windfarm, tourism ventures,) or used as the infrastructure (upgraded roads, sheds, accommodation etc.) from which to develop and clear potentially the entire of Wooroora and Glen Gordon Stations for a solar farm. At this stage we have no way of knowing whether State Code 23 for Wind Farms will be extended to solar farms. If this happens, like wind farms, it would be exempt from restrictions under the Vegetation Management Act (which regulates clearing). Will the Federal Government be prepared to approve a project which will pave the way for the future clearing and destruction of whole properties within some of our last intact mountainous forests? Worse, the cumulative impact of many such projects will be devastating to the environment. Has this been considered? This single point is the major reason why the project must not go ahead at this site or on any property consisting mostly of intact forests.		No	Yes, at this stage there is no way of knowing whether State Code 23 for Wind Farms will be extended to solar farms.
234	.006	Rehabilitation	The statement "The Project has made an industry-leading commitment to rehabilitate temporary construction disturbances…." is misleading. Rehabilitation of fully functioning intact ecosystems is extremely unlikely. Once cleared, these areas will quickly succumb to irreversible weed invasion. Only "priority" weeds will be targeted for weed control, meaning all the other lower profile (yet just as invasive weeds) will proliferate and prevent full recovery of native vegetation. This is a typical, yet rarely recognised result of clearing native vegetation. Rehabilitating temporary disturbances will not overcome the major effect of fragmentation on the ecosystem and the dependent fauna.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. Therefore, not only "priority" weeds will be targeted for control. Habitat fragmentation has been assessed by the PER for each of the MNES values and measures to be implemented to mitigate and manage impacts of fragmentation as much as practicable during the construction phase are presented in Section 6.2.2 of the PER. Management of fire and weeds / pests are outlined in the various sections of the PER. The potential project impacts on the fragmentation of habitat, movement of fauna genetic diversity and ecological integrity are assessed in Section 8.10.2.3 of the PER.
234	.007	Project location	A presentation we have seen from Epuron specifically states that site selection is based on: • wind resource • grid connection • land tenure Therefore, biodiversity considerations were not included in the initial selection. There is no absolute necessity that a wind farm be developed in the Einasleigh Uplands Bioregion. There is also no necessity that a wind farm be placed close to the high voltage transmission line, it may just cost more if further away from it. This cost could be justified if it prevents the destruction of a long list of State and Federally listed threatened species and ecosystems.		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
234	.008	Biodiversity general	There is no requirement for Epuron to avoid destruction of any of the very long list of Queensland State listed threatened species and regional ecosystems, many of which are restricted to this area. One of the stated objectives of the EPBC Act are to "provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance". The word "especially" infers that the aspects are not confined to listed matters of national environmental significance. Two of the EPBC Act's Principles of Ecological Sustainable Development are that: "(c) The principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations." and "(d) The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making." Surely this means that destruction of State Critically Endangered, Endangered, Of Concern (etc.) vegetation, animals and plants that will cause irreversible damage and loss must be considered in this PER.		No	State listed threatened species and REs were assessed in the Ecological Assessment Report that was submitted to SARA as part of the DA application. The DA was awarded in mid 2022. DCCEEW has no jurisdiction over State listed species and REs that are not also listed under the EPBC Act.
234	.009	Survey effort	Koalas are almost certainly present on the host properties, and the term "sporadic basis" is most likely incorrect.		No	The assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
234	.010	Offsets	The "indicative offsets" on the host properties are absurd because they simply consist of areas of land which won't be cleared on the same two properties. We have demonstrated later in this response that it is more likely that these proposed offsets will become more degraded as a result of being designated an offset (rather than improved as claimed by this draft PER).		No	There will indeed be restrictions on cattle grazing in the offset management areas, with the fencing intended to keep cattle OUT (not in, as stated in this submission).
234	.011	Magnificent brood frog	The allocation of $250 000 research in Magnificent Brood Frog is pointless and is a placatory measure. No amount of studying the frog will protect its habitat from destruction.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. The proponent is confident that the scientists benefiting from the research funding will not consider it pointless.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	.012	Community consultation	Executive Summary, Consultation Response Claims of consultation does not seem to reflect the consultation that has taken place, the nature of that consultation, and the willingness of the developer to actively engage in consultation. The proponent has refused to facilitate or attend open community consultation meetings, and when attending "information sessions" they have been reported as rude and disrespectful, including to Jirrbal Elders. The information provided via photos and in press releases, has not given a clear picture of the impact of the proposal. The Chalumbin "Local Information Hub" has very limited opening hours. The so called "Community Advisory Group" is supposed to be voluntary but has a chair who is being paid, and who has a conflict of interest (being managing director of a company that provides 'tailored services' to renewable energy clients including 'Strategic advice to fast-track project approvals'). Finally, people who are not from the local area but who care about the environment are unlikely to hear about this development. Given that the development impacts many matters of National and State significance that are relevant to all Australians it should have been advertised far more widely. Therefore, the proponent has not adhered to the principles of the framework they claim to rely on in the consultation process.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
234	.013	Cumulative impacts	We would argue that all other renewable projects in the Wet Tropics and Einasleigh Uplands are "related actions". This is because the destruction of threatened vegetation and taxa at this scale and time frame cannot be considered on a project-by-project basis due to the cumulative impact on these entities in a short space of time. Therefore, we propose a combined Federal and State detailed review of all proposed renewable sites, and their likely overall impact on Federally and State-listed ecosystems and species. This should be set up as a repeatable set of processes, so that as each new project is proposed, the figures can be revised. This would provide key information to both the Federal and State Government of the broader impacts of this development boom on threatened species and communities.		No	This is a recommendation targeted at the Regulator rather than the proponent.
234	.014	Project alternatives	The Atherton Tablelands presents a very large area of cleared and elevated land which could be used for wind farming. Each wind farm would require several land holders to agree, however with financial incentives it is unlikely this would be an issue. The added tourist potential for a series of spectacularly visible wind farms in this location would be considerable, therefore likely to be backed by the local community. In addition, the sizeable area of the cleared and elevated Palmerston Valley is also likely to be highly suitable. It is most likely that many other areas could be found, including offshore. The Federal Government should not be prepared to accept these poorly presented "alternatives" (see Responses to Section 2). Consequences of Not Proceeding with the action should include: • Release from imminent threat of clearing or modification of the habitat of potentially occurring, likely occurring or known to occur Federally (EPBC) listed Endangered or Vulnerable species (16 animals and 10 plants) including the Endangered Koala, Northern Greater Gilder and Yellow-bellied Glider (Wet Tropics), and Vulnerable Magnificent Brooding Frog, and the Vulnerable plant Triplarina nitchiga. (Source MNES Assessment Report, Chalumbin).• Release from imminent threat of clearing or modification of the habitat of an additional 23 species listed only at the State level (6 animals and 17 plants) including the Vulnerable Tube-nosed Insectivorous Bat and the Critically Endangered Ford's Stinkbush . (Source https://www.qld.gov.au/environment/management/environmental/environmental-reports-online) 12 • Release from imminent threat of clearing or modification of the habitat of 13 potentially occurring, likely occurring or known to occur fauna listed as migratory under the EPBC Act including the Fork-tailed Swift. (Source MNES Assessment Report, Chalumbin). • Release from imminent threat of clearing or modification of the habitat of eleven Endangered or Of Concern Regional Ecosystems which would be otherwise impacted by clearing, soil erosion and accelerated weed invasion. (Source https://www.qld.gov.au/environment/management/environmental/environmental-reports-online). However, it should be possible to find alternative sites, and any additional cost due to distance from a suitable power source should be an acceptable trade-off for the prevention of a considerable loss of biodiversity and integrity of ecosystems of which the bare minimum is listed above.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
234	.015	Rehabilitation	Unfortunately, complete clearing coupled with soil removal or major soil disturbance renders rehabilitation to original simply impossible. A large proportion of species in the vegetation communities there are ground layer plants; fungi, lichen etc., and revegetation works are never able to successfully include all of these in their scope. Furthermore, machines will unavoidably be dragging weed infestations from the existing transmission line into the newly cleared and disturbed areas. Does the proponent realise that to attempt to restore even the tree and shrub layers would require seed collection from the site over a period of at least 12 months (to get all the seed), then a growing period of 1-2 years before they can be planted? If seed is not collected from the site, plants will either be the wrong species or will be sourced from the wrong region and will likely have very different genetics and therefore will not constitute "rehabilitation". Worse, these incorrect species or this incorrect genetic stock will spread into the surrounding forest, compromising the ecosystems. In fact, the best method is to collect as many of the actual plants that are being removed as possible (including ground layer plants), keep them in pots in a nursery, and then replant them afterwards. This would require a considerable operation but is strongly recommended.		No	A preliminary Rehabilitation Plan has been prepared for the project (Appendix K of the PER). It should be noted that as part of the construction works topsoil will not always be stripped. Where it is required to be removed for construction it will be stockpiled and respread before revegetation and therefore will contain many viable seeds and spores. Recycle cleared vegetation for reuse on site also increases the revegetation effectiveness. The project is committed to the use of native species, of local provenance as far as practicable (Section 3.1 Appendix K). It has been noted that seed collection times vary for different species and a twelve-month period prior to rehabilitation activities will be allowed for the collection of seeds from areas of adjacent, undisturbed vegetation. The Tablelands Regional Council-run revegetation nursery may also be used. To prevent the spread of weeds a preliminary Weed and Pest Management Plan (Appendix F for the PER) has been prepared for the project. Where appropriate biosecurity measures such as weed washdowns will be used to prevent the introduction of and spread of weeds.
234	.016	Weeds and pests	Unfortunately weed invasion is an unavoidable consequence of massive soil disturbance, especially when vehicles are working from a disturbed area such as the transmission line, into the new areas. There is simply nothing that can be done to avoid this. Most weed control programs focus on a few high-profile species (usually species known to impact agriculture). Lesser profile species often have just as much impact on the natural environment but are left untreated and their impact undocumented. The project will result in an intricate maze of linear weed sources fragmenting the forest, and these will spread into the surrounding forest, including into the World Heritage Area.		No	Construction traffic will be prohibited from accessing the site via Tully Falls Road (south of the intersection with Wooroora Road) and approximately half of the north-south extent of the Project is separated from the WTQWHA by an existing transmission line easement. There is no explanation as to how the Project could contribute to worse weed incursion in the protected area than has already occurred. The Project team is aware of the existing presence of weeds throughout the Project area and has developed a Preliminary Weed and Pest Management Plan (Appendix F of the PER), which will be developed further by CWF and/or the Contractor (including the undertaking of detailed weed mapping across the Project footprint). The proponent has a Duty of Care towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval.
234	.017	Vegetation clearing	There is mention of fencing - will the entire footprint area be fenced off? Do the clearing calculations include the roads either side of the fence necessary to protect it from tree falls and fire, and to allow for regular checking of its integrity. Dose the proposed rehabilitation programme include these fenced areas? Does the weed control plan include these fencelines? Putting in new fences and tracks for fences will further open up the country and could facilitate intensified cattle production. The fine details of the fence cannot be left for later (as per "the final details of which will be discussed and agreed with Tablelands Regional Council") because this will potentially add at least 92 km of roads and require complex earth-works. Creek crossings will create erosion even if expensive concrete culverts are installed. The Federal Government must demand to see a fully finalised plans for fencing and associated road construction and maintenance.		No	The entire footprint will not be fenced. Areas to be fenced will be negotiated with the landholders on an individual basis. The clearing areas listed in the PER are the maximum areas that will be cleared, it is expected that these areas would form part of approval conditions.
234	.018	Erosion and sedimentation	Is the Federal Government aware of the considerable volume of water that can fall in a short time during high rain events and cyclones, and the rate at which water rushes down these gullies? In this region, these high rainfall events can fall outside January-March (when construction is apparently going to cease). For example, the Draft PER report itself states that "The majority of rain (approximately 73 % to 82 %) falls within the months December to April." (Section 4.1.9.1 page 96). Regardless, by January 2024 most of the clearing and disturbance will have been created for Stage 1, leaving a disastrously exposed soil profile including on steep hillsides and gullies. Even after completion there is a high likelihood of regular irreversible soil loss and damage to the environment (and the windfarm roads).		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site.
234	.019	Construction impacts	There appears to be a suggestion that the possible alternative accommodation option may be situated on the project site (hence the mention of "Any accommodation facility would be subject to its own approvals and would be located in such a way that it does not have a significant impact on Matters of National Environmental Significance"). This would need to be a large complex, requiring considerable clearing, plumbing etc. to make the area suitable for habitation. The accommodation issue must be 100 % resolved before this project is approved by the Federal Government, and if the proponent wants to build it on the project site, it needs to be included in full (including detailed plans, clearance envelope, rehabilitation etc) in this Draft PER and be available for public comment with the revised PER.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, the Project is committed to ensuring that the establishment of the facility will not have an impact on MNES. The Project will be required to obtain the relevant State and Council approvals and permits if an alternative accommodation facility is selected.
234	.020	Construction impacts	The water supply issue is very serious, and likely to cause long-term environmental harm. A huge volume of water will be required for "construction" (especially for concrete construction) and this is not covered here apart from the mention of "bores" or "dams". Bores and dams in themselves create very substantial environmental impact. Detailed site plans and their inclusion in all clearing and rehabilitation plans must be included in the Draft PER. The loss of water from surrounding streams must be considered. The likely substantial weed invasion around bores and dams must be considered. It essentially means that a far greater area than the project footprint will be damaged. All of this must be included in the Draft PER, and is a major reason why the whole project cannot not go ahead in this location.		No	The water supply for the construction of the Project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER. All activities carried out will require the implementation of the Weed and Pest Management Plan (see Appendix F of the PER) which outlines the controls to mitigate the spread and reduce adverse impacts of weeds and pests which includes ongoing monitoring and reporting through all Project stages. The actions/outcomes of the management plan must meet the regulatory obligations and associated biosecurity management plans.
234	.021	Offsets	The "indicative" offsets proposed are ludicrous. How do the offsets which are described and illustrated by the proponent "counterbalance" a significant residual impact? The areas they outline have in fact already recently been placed at severe risk of future clearing and degradation directly due to the wind farm proposal, and by their material change of use to include the new Queensland State land use "renewable energy purposes" (as described in section 2.3.3). This recent change puts the entire properties (including the offsets) at risk of future development. Even before the likely event of future renewable expansion, the actions proposed to "secure" the offsets will in fact cause their degradation. Building of fences to control cattle and building of fence access roads will simply encourage more intensive cattle management and bring in more weeds. Despite words about cattle management, there will be no restrictions on cattle in these offsets (see our response to Appendix O Offset Management Strategy 8.2 Interim Milestones). How will the Federal Government ensure that these areas do not become far more intensively managed for cattle in the near future, or cleared at the end of the wind farm life?		No	There will be restrictions on cattle grazing in the offset management areas, with the fencing intended to keep cattle OUT (not in, as stated in this submission).
234	.022	Project alternatives	Plate 3-1 is unclear and very misleading. The fact that a large part of both properties are still currently mapped by the Queensland Government as "regulated vegetation" (which is poorly labelled on Plate 3-1) is now irrelevant. At the Queensland State level, windfarms are assessed by the State Assessment and Referral Agency (SARA) under the newly created State Code 23. This means that the Tree Clearing Regulations can be over-ridden, and therefore clearing can take place. Thus the map of regulated vegetation poses no restriction whatsoever to the location of wind farms. Examination of Plate 3-1 reveals a large area of non-remnant vegetation on the Atherton Tablelands, including land situated close to a transmission line. Each wind farm would require several land holders to agree, however with financial incentives it is unlikely this would be an issue. The added tourist potential for a series of spectacularly visible wind farms in this location would be considerable, therefore likely to be backed by many in the local community. In addition, the sizeable area of the cleared and elevated Palmerston Valley is also likely to be highly suitable. This area is not mapped as windspeed > 7 m/s. This is surprising given the elevation of the site and it warrants investigation. It is most likely that many other areas could be found, including offshore (outside the Great Barrier Reef World Heritage Area). Efficient offshore wind farms have been established in many parts of the world, and these are not elevated areas. Is a wind speed of > 7 m /s therefore really a major constraint? A thorough examination of this issue is not possible in the time required to respond to this draft PER, however many on-line sources indicate that windfarms can be placed wherever annual average wind speed is > 5.8 m/s for utility scale turbines. In fact, when wind speeds reach 50 - 60 km an hour (13.8 -16.7 m/s), the turbines must be stopped to avoid damage, so clearly high wind areas also produce some inefficiencies. The Federal Government must demand a comprehensive analysis of "alternatives" to be presented in this PER, that clearly compares many other possible sites with functioning wind farms all over the world.		No	Regulated vegetation is shown in Plate 3-1 and Plate 3-2 of the PER to demonstrate the lack of viable alternatives that exist for commercial wind farm developments in the broader region that have less impact on regulated vegetation. Regulated vegetation is applicable to wind farm developments in Queensland, as any clearing for wind farm development requires an operational works development permit and this is generally required in parallel with the material change of use development permit for a wind farm. The clearing of regulated vegetation for wind farm purposes constitutes assessable development under the Planning Act 2016. Furthermore, the regulated vegetation is used as a proxy for MNES values (e.g. vegetation communities and fauna habitat) to demonstrate that impacts to MNES values would be likely for any wind farm development in these areas. Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
234	.023	Adequacy of the PER	there are many extremely serious environmental impacts which would not occur with a "No Action" alternative, and which are not described in Section 5 simply because they are listed as Matters of State Significance instead of Matters of National Significance. This includes a very long list of matters, including habitat for an additional 23 Queensland State listed species, and eleven Endangered or Of Concern State-listed Regional Ecosystems. Incredibly, none of these impacts are subject to public consultation in the State of Queensland because Windfarms are Code Assessable under State Code 23. There are numerous very serious impacts listed in Section 5 which receive no further specific mention.		No	The focus of the PER - and the PER Guidelines that specify the required content of the PER - is necessarily on MNES, as this is what is protected and managed under the EPBC Act and the assessment process for which the PER is prepared. The Project was assessed under State Code 16 - Native Vegetation - which required assessment of the Project against the provisions of the Vegetation Management Act 1999 and Planning Act 2016 and the associated significant residual impact guidelines. Performance Outcome 5 of State Code 23 required assessment of the Project against the ecological values of the site, and required demonstration that impacts are avoided, minimised and mitigated to the extent practicable and to a level that is acceptable to the Queensland Government.
234	.024	Biodiversity general	Table 4-1 is missing the "Biodiversity Status" of each Regional Ecosystem. The biodiversity status is based on an assessment of the condition of remnant vegetation in addition to the criteria used to determine the class under the Vegetation Management Act 1999 (the Act). Biodiversity Status provides a more accurate assessment of the overall conservation status of each ecosystem. Many Regional Ecosystems have a higher Biodiversity Status than Vegetation Management Status.	An additional Figure to 4.3 should be provided which shows Biodiversity Status.	No	The biodiversity status of REs is not relevant to matters protected under the EPBC Act, which is the purpose of the PER. The biodiversity status of REs was included in the Ecological Assessment Report which was submitted to SARA as part of the DA application in 2022.
234	.025	Erosion and sedimentation	"The Far North Queensland region is predicted to experience higher temperatures, greater frequency and duration of extreme temperatures (heatwave), more intense rainfall but with increased variability, and more intense tropical cyclones but at a lower frequency (DES 2019a)." The above prediction does not augur well for a complex network of new wide dirt roads which have been cut deeply into rugged and steep mountain slopes and through sharp gullies. The development is proposed for the very top of several catchments. Put simply, a down-pour in a tropical cyclone or unusual rain event will likely result in considerable erosion including the loss of whole sections of road. This will result in considerable sedimentation of the many creeks and rivers which are fed from the top of the catchment (which is where the wind farm is placed). Despite the measures explained in Appendix I (Construction Management Plan), Appendix J (Sedimentation and Erosion Plan) and Appendix K (Preliminary Rehabilitation Plan) the newly cleared development will be extremely vulnerable for the first few years whilst the soil is still loose. Even once stabilised, the likelihood of considerable sedimentation and erosion is very high due to the proposed number of creek crossings and cuttings across hillslopes. This would lead to increased sediment loads on the World Heritage listed Great Barrier Reef.		No	Potential climate change impacts on erosion and sedimentation have been discussed in Section 2.3 of Appendix J in the PER. A Preliminary Rehabilitation Plan (Appendix K of the PER) has been prepared for the project and outlines measures to rehabilitate temporary construction disturbances as well as timeframes to restore cover based on risk. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Any non-conformances identified during construction and operation of the project will be rectified.
234	.026	Adequacy of the PER	The very long lists of Matters of both State and National Significance presented in Appendix B. These 140 pages of significant species and ecosystems are reason enough that this wind farm should not go ahead. Despite the presentation of Queensland State data in this section, none of the State data is discussed in detail anywhere further in the Draft PER report. Examples of State data ignored in the Draft PER Report include the 29 species which are not listed at the National level, but which are threatened or "special least concern" at the State level. This includes a Critically Endangered plant Ford's Stink Bush, the Vulnerable Tapping Green-eyed Frog, and the Vulnerable Tube-nosed Insectivorous Bat. Ford's Stinkbush occurs in no other State, and therefore the only reason it is not also listed as Critically Endangered at the Federal level is that the assessments for Federal listings have not yet caught up with State changes. This is one of many reasons that State level matters must be considered in this Draft PER. Other important State values occurring in the area of interest and presented in Appendix B include both riverine and non-riverine wetlands with very high conservation significance (for example page 5 of the Biodiversity and Conservation Values section of Appendix B), and substantial area designated as State Biodiversity significance (for example page 8 of the Biodiversity and Conservation Values section of Appendix B).		No	The purpose of the PER is to seek approval for the project under the EPBC Act. The PER Guidelines clearly list the items to be addressed in the PER and this does not include State matters that are not also MNES. State matters were addressed in the Ecological Assessment Report that was submitted to SARA as part of the DA application in mid-2022. This was published on SARA's website for stakeholders to review at that time.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	0.27	Survey effort	• Protected plant surveys should not have been limited to the high-risk trigger areas. These trigger areas exist due to random plant collections housed in the Queensland Herbarium or observations in Queensland's Wildnet database. By no means are they any sort of indication of the distribution of these protected species. • Protected plant surveys were conducted in only a tiny proportion of the clearance envelope. These surveys should have been carried out over the entire clearing and disturbance footprint including a buffer. • Therefore, we still do not know whether plants of National and/or State Significance will be destroyed by the clearance envelope (or affected within a buffer of the clearance envelope). These surveys are totally inadequate. Will the Federal Government demand complete floristic surveys of the clearance envelope for State and Federally listed species?		No	Protected plant surveys are conducted in areas of suitable habitat as directed by the Queensland Herbarium. Additional pre-clearance surveys will undertaken by a suitably qualified ecologist to identify any protected plants under the EPBC Act & NC Act as stated in Section 6.1.8 of the PER.
234	.028	Survey effort	• Unfortunately, most likely due to access difficulties, large sections of the proposed clearance envelope were not surveyed (See Figure 4.9). • Surveying the actual clearance envelope is extremely important for more sedentary species such as Northern Greater Glider, Yellow-bellied Glider (Wet Tropics) and the Magnificent Brood Frog. • These surveys are therefore inadequate. Extra time and money should be allowed to survey the full extent of the clearance envelope which will require ecologists to walk in some distance from the roads. • Anabat and spotlighting surveys in particular were vastly inadequate in the number of hours surveyed, and they only covered a tiny proportion of the clearance envelope. • Nocturnal active searches were vastly inadequate, with little likelihood of detecting Magnificent Brood Frog. • Diurnal bird counts conducted at 28 fixed-point 2 ha sites (repeated twice) is vastly inadequate. At the bare minimum, Ha counts should have been down at each tower site and repeated several times in different seasons. • Survey results of Red Goshawk nests has been reported inconsistently throughout the PER. At least one expert said a located nest was a Red Goshawk nest. This should be enough to instigate a far more intensive effort at a suitable time of year to attempt to detect the species. • The recommended survey effort guide is stated as 50 hours per 50ha area. The development site is 1071.1ha. Therefore, by that calculation 1071.1 hours of survey should have occurred. Instead, the developer states just 443 hours of surveying, in total was performed.		No	The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird/Bat utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their duration and timing. Bird utilisation surveys have been undertaken at 21 locations in representative habitats on 6 different occasions, with counts undertaken at different times of the day on each survey occasion (as noted in Section 4.2.2.3 of the PER). This is in line with industry practice and draft guidelines issued by the Federal Department of Environment. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
234	.029	Adequacy of the PER	Clarification is required as to whether "alongside and mostly occurring outside the property" accurately corresponds to "no broad leaf tea-tree woodland TEC within the Project area". Since known threats include clearing and fragmentation and weed invasion, the afore-mentioned patch of broad-leaf tea-tree may well be threatened by the wind farm development.		No	The patch of RE 7.3.8a in question that was not surveyed (and hence has not been confirmed to be the TEC) is a minimum of 2km from any project infrastructure. It will not be cleared or fragmented, and is far enough away from any Project activity to not be at risk of edge effects such as weed invasion.
234	.030	Survey effort	• Surveys were conducted after periods of high rainfall, therefore this species would have been deeply submerged and difficult to detect. A repeat of all these survey sites at a more suitable period is required. • Impact on this species is most likely to occur due to massive sedimentation following erosion during unusually heavy rainfall events which may cause failure of erosion control structures along the newly formed roads and road creek-crossings. There are several suitable streams within the Project Area which were not surveyed (See Figure 4.1.3). Completion of surveys of all these creeks is essential for this component of the PER to be adequate. • The statement "The species was observed near the Herbert River bridge, which may require upgrading if the Innot Hot Springs alternative route to site is established. Impacts to the species are not expected to occur (refer to Section 5.6.2.2)" is puzzling and requires clarification without having to refer to section 5.6.2.2. • The fact that only the areas under the footprint will be undergo a "pre-clearance survey" is not good enough. Sedimentation will affect plants well downstream of the footprint.		No	There are no formal survey guidelines for this species. Surveys were undertaken during the flowering season in order to maximise chances of positive identification. From the author's own experience, underwater viewing is not absolutely necessary for observation. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
234	.031	Survey effort	• The fact that this species was recorded 30 times within the project area despite only a tiny proportion of the actual clearance envelope being surveyed is extremely alarming. This alone should have triggered a comprehensive survey of the entire clearance envelope. • Figure 4.14 is very poorly presented because the clearance envelope obscures the smaller polygons of mapped Homoranthus porteri, and the colour of the polygons is difficult to separate from the background map. Several of these habitat patches appear to occur within the clearance envelope. • Vegetation mapping (and all mapping) is by nature only an estimation of presence of vegetation type and has scale limitations. Therefore, Homoranthus porteri may not be restricted to mapped areas of 7.12.65. This is why the entire clearance envelope must be surveyed for this species. The clearance envelope by nature occurs along ridgelines and elevated knolls which is precisely where this kind of habitat occurs, therefore there is a very high chance that many more individuals of this species occur within the envelope. • The statement that "Project infrastructure has been realigned to avoid all known populations of Homoranthus porteri." whilst possibly true is misleading because it does not qualify that only a tiny portion of the clearance footprint was surveyed. • The Significant Residual Impact Assessment for this species (Table 8-15) states that it is "Unlikely" that the project will lead to a long-term decrease in the size of an important population of a species. However, firstly we don't know for sure how many individuals will be lost be clearing in comparison to the full population size, and secondly, we don't know what the cumulative impact is when other new windfarms in the same sort of country (e.g. Upper Burdekin, Mt. Fox and Kaban) within the restricted range of this species will have. • A comprehensive survey of the entire clearance envelope for threatened plants (including Homoranthus porteri) must be undertaken. The whole of suitable habitat within the Project Footprint was definitely not surveyed. There wasn't even a survey of the clearance envelope. It is highly likely that this species occurs within the envelope "Unlikely must be corrected to "Likely".		No	The Project footprint has been specifically designed to avoid all known populations of the listed threatened plant species. Pre-clearance surveys in areas of potential habitat will be undertaken prior to construction to confirm absence from the Project footprint. In the unlikely event that individuals are observed within the Project footprint, micrositing and redesign actions will be explored in preference to impacting the species.
234	.032	Weeds and pests	• Despite the inclusion of a 23-page preliminary weed and pest management plan in Appendix F of the Draft PER, including a long list of potential weeds in the area, it remains unclear how exactly weeds will be managed, and which weeds will be a focus of management efforts. Their list of weeds in Table 3-1 of this plan doesn't include several weeds which threaten Homoranthus porteri in this area including Melinis minutilorus (Molasses Grass), Melinis repens (Red natal Grass) and Stylosanthes species (Shrubby Stylo and other species of Stylo). A description of an actual strategy of weed control is lacking here (apart from brief mention of control burning, weed removal and herbicide application). Control of specific species is not mentioned.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan" are intended to be frameworks only at this stage, and will be developed further (including the allocation of sufficient budget and resources, descriptions of specific procedures, etc.) by CWF and/or the Contractor prior to works commencing on site.
234	.033	Survey effort	• The fact that this species was recorded nine times within the project area despite only a tiny proportion of the actual clearance envelope being surveyed is of great concern. This alone should have triggered a comprehensive survey of the entire clearance envelope. • Figure 4.15 is very poorly presented because the clearance envelope obscures the smaller polygons of mapped Prostanthera clotteniana, and the colour of the polygons is difficult to separate from the background map. Several of these habitat patches appear to occur within the clearance envelope. • The statement that "Project infrastructure has been realigned to avoid both known populations of Prostanthera clotteniana." whilst true is misleading because it does not qualify that only a tiny portion of the clearance footprint was surveyed. • The clearance envelope by nature occurs along ridgelines and elevated knolls which is precisely where this kind of habitat occurs, therefore there is a very high chance that many more individuals of this species occur within the envelope. • The Significant Residual Impact Assessment for this species (Table 8-18) states that it is "Unlikely" that the project will lead to a long-term decrease in the size of an important population of the species. However, firstly we don't know for sure how many individuals will be lost be clearing in comparison to the full population size, and secondly, we don't know what the cumulative impact is when other new windfarms in the same sort of country (e.g. Upper Burdekin, Mt. Fox and Kaban) within the restricted range of this species will have: • A comprehensive survey of the entire clearance envelope for threatened plants (including Prostanthera clotteniana) must be undertaken. The mention of "pre-clearance surveys" in section 8.3.3 shows that the proponent is not serious about surveying for this or any of these rocky outcrop specialist species. It is very unlikely that a road or turbine pad would be shifted at that late stage of the development. More likely, there may be an attempt to translocate plants, however as mentioned above, this is likely to be "challenging". Almost certainly the plants will die. "Unlikely" must be corrected to "Likely".		No	The Project footprint has been specifically designed to avoid all known populations of the listed threatened plant species. Pre-clearance surveys in areas of potential habitat will be undertaken prior to construction to confirm absence from the Project footprint. In the unlikely event that individuals are observed within the Project footprint, micrositing and redesign actions will be explored in preference to impacting the species.
234	.034	Weeds and pests	• Despite the inclusion of a 23-page preliminary weed and pest management plan in Appendix F of the Draft PER, including a long list of potential weeds in the area, it remains unclear how exactly weeds will be managed, and which weeds will be a focus of management efforts. Their list of weeds in Table 3-1 of this plan doesn't include several weeds which threaten Prostanthera clotteniana in this area including Melinis minutilorus (Molasses Grass), Melinis repens (Red natal Grass) and Stylosanthes species (Shrubby Stylo and other species of Stylo). A description of an actual strategy of weed control is lacking here (apart from brief mention of control burning, weed removal and herbicide application). Control of specific species is not mentioned.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan" are intended to be frameworks only at this stage, and will be developed further (including the allocation of sufficient budget and resources, descriptions of specific procedures, etc.) by CWF and/or the Contractor prior to works commencing on site.
234	.035	Survey effort	• The fact that this species was recorded within the project area despite only a tiny proportion of the actual clearance envelope being surveyed is of considerable concern. This alone should have triggered a comprehensive survey of the entire clearance envelope. • Figure 4.16 is very poorly presented because the clearance envelope obscures the smaller polygons of mapped Triplarina nitchaga, and the colour of the polygons is difficult to separate from the background map. Several of these habitat patches appear to occur within the clearance envelope. • The clearance envelope by nature occurs along ridgelines and elevated knolls which is precisely where this kind of habitat occurs, therefore there is a very high chance that many more individuals of this species occur within the envelope. • A comprehensive survey of the entire clearance envelope for threatened plants (including Triplarina nitchaga) must be undertaken. • The Significant Residual Impact Assessment for this species (Table 8–21) states that it is "Unlikely" that the project will lead to a long-term decrease in the size of an important population of the species. However, firstly we don't know for sure how many individuals will be lost be clearing in comparison to the full population size, and secondly, we don't know what the cumulative impact is when other new windfarms in the same sort of country (e.g. Upper Burdekin, Mt. Fox and Kaban) within the restricted range of this species will have. 29 • A comprehensive survey of the entire clearance envelope for threatened plants (including Triplarina nitchaga) must be undertaken. The mention of "pre-clearance surveys" in section 8.3.4 shows that the proponent is not serious about surveying for this or any of these rocky outcrop specialist species. It is very unlikely that a road or turbine pad would be shifted at that late stage of the development. More likely, there may be an attempt to translocate plants, however as mentioned above, this is likely to be "challenging". Almost certainly the plants will die. "Unlikely must be corrected to "Likely".		No	The Project footprint has been specifically designed to avoid all known populations of the listed threatened plant species. Pre-clearance surveys in areas of potential habitat will be undertaken prior to construction to confirm absence from the Project footprint. In the unlikely event that individuals are observed within the Project footprint, micrositing and redesign actions will be explored in preference to impacting the species.
234	.036	Weeds and pests	• Despite the inclusion of a 23-page preliminary weed and pest management plan in Appendix F of the Draft PER, including a long list of potential weeds in the area, it remains unclear how exactly weeds will be managed, and which weeds will be a focus of management efforts. Their list of weeds in Table 3-1 of this plan doesn't include several weeds which threaten Triplarina nitchaga in this area including Melinis minutilorus (Molasses Grass), Melinis repens (Red natal Grass) and Stylosanthes species (Shrubby Stylo and other species of Stylo). A description of an actual strategy of weed control is lacking here (apart from brief mention of control burning, weed removal and herbicide application). Control of specific species is not mentioned.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan" are intended to be frameworks only at this stage, and will be developed further (including the allocation of sufficient budget and resources, descriptions of specific procedures, etc.) by CWF and/or the Contractor prior to works commencing on site.
234	.037	Survey effort	• The search effort for this elusive species was grossly inadequate. The actual survey technique and areas and habitat surveyed needs to be made much clearer in this section. Survey hours seem to include general spotlighting of streams which are not necessarily habitat for this frog. From personal experience, this frog occurs along very minor gentle drainage depressions (not "streams").		No	Surveys have been undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER and have included members of the Magnificent Brood Frog Working Group. Potential habitat has been mapped as described in Section 4.5.2 of the PER and not simply as "streams". Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
234	.038	Magnificent brood frog	• However, the results of the habitat mapping are damning. Not only does the clearance envelope intersect abundant examples of habitat, but it is also upstream of most occurrences of the habitat, meaning that a vast percentage of the Magnificent Brooding Frog could be affected. • According to the EPBC Act website https://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=64385#:~:text=Habitat%20loss%20and%20degradation%20appear,freehold%20lands%20and%20road%20reserves. activities which may impact the frog's habitat include "grazing, logging, road works, clearing and development" It also states that "Similarly, erosion and subsequent siltation may cover seepage areas if future logging or clearing occurs. Roads and cuttings can alter the water quality and hydrology and may affect seepage areas and first order streams. "Grazing already occurs in the Project area. The added impact of massive soil disturbance in the upper catchments of many of these streams could be catastrophic for this species. • The mention of "micrositing of access tracks" during construction to "to avoid seepage areas" is extremely unlikely to happen in the middle of construction. Furthermore the suggestion that damaged or cleared habitat will be "rehabilitated" is also very unrealistic given the very specific micro-habitat preferences of this frog. • This project must not go ahead if we take the National (EPBC) listed status of this species, and the Conservation Advice provided, seriously.		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species, which tends to undergo "boom and bust" population cycles from year to year (MBF Working Group, pers. comm.) Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on in the final PER. A GIS analysis has been undertaken to identify where areas of potential habitat are downslope of project infrastructure; particular attention will be paid to the design of erosion and sediment control measures in these areas. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	.039	Erosion and sedimentation	• Soil loss calculations in Appendix J appear to be flawed. The most noticeable possible flaw being the assumption that a major rainfall event is unlikely to occur outside of January - March. Tropical cyclones are common in April and even occur in May. Heavy rainfall events can occur any time throughout the year. What is also missing from this report is a worst-case scenario involving several major rainfall events in the middle of construction that causes multiple erosion mitigation measures to fail. Also neglected are calculations for sedimentation during deconstruction is 30 years' time. During this phase, the roads will need to be cleared and widened again, and massive amounts of disturbance will take place. Furthermore, in 30 years-time the prediction is that due to climate change, unusual rainfall events may be more intense. • Incredibly in the conclusion of the Sediment and Erosion Management Plan, it states that the soil loss modelling found that the "Project footprint under operational conditions has a sediment yield 0.45 kt/year less than current conditions." It seems ludicrous to claim that when the project is operational there will be LESS sedimentation! This seems to be based on a claim that there will be 70% ground cover in the project footprint (which includes gravel, concrete, bitumen etc) which is apparently the same as the ground cover in the forest! Then apparently their erosion mitigation measures makes it better than the forest! • Gravel is not the same as hard soil bound together by a complex ecosystem of microbes and vegetation that has evolved in place over hundreds of thousands of years. Therefore, the assumptions used in this modelling seem flawed.		No	The potential for high intensity storms to occur during the dry season (or at any time of the year) are discussed in Section 2.2.2 of Appendix J. A 'worst-case' scenario has been discussed in this section and presented in Table 2-11 comparing the net sediment loss during the highest daily dry season rainfall event during the last 10 years compared to the net sediment loss over a 2 month construction period. It is important to note that the project will plan the construction activities based on risk and will be undertaking progressive rehabilitation during construction to limit the total disturbed area at any one time. Road maintenance has been included in the discussion, but erosion has not specifically been calculated for this activity due to unknown variables. Climate change has been discussed in Section 2.3 of Appendix J. The project area is currently grazing land and the assumptions at a landscape scale are appropriate. The way in which gravel and forest provide erosion protection are not exactly the same but both are effective at reducing erosion. The modelling has been through a peer / technical review process.
234	.040	Mitigation and management measures	• A fauna spotter catcher will certainly not "significantly mitigate any potential impacts associated with clearing operations ensuring magnificent brood frogs are detected". These tiny frogs are almost impossible to detect unless calling (which is very infrequent). Even if the spotter catcher were surrounded by many silent Magnificent Brood Frogs, they would be unlikely to find one. Even when calling, 2-3 people are required to triangulate the call and search under leaves to find the tiny sheltered pocket from which the animal is calling.		No	The term "fauna spotter catcher" is used to denote a role, not an individual person; there will be a whole team of fauna spotter catchers working with each crew during the site clearing stage. We acknowledge that finding MBF is challenging but that doesn't mean it should not be attempted.
234	.041	Masked owl	• Given the paucity of research into bird collisions with industrial size wind turbines, the likelihood of eventual death by collision with turbine blades of each of these long-lived (approximately 10 years) nocturnal birds living at the site could be very likely. • In the Preliminary Bird and Bat Management Plan (Appendix G) the "risk rating" of the wind farm is considered to be negligible. The risk rating is a rating that results from the use of the "Risk Evaluation Matrix Model" (Appendix G) however it is very unclear what evidence or expert knowledge was used to feed into this matrix. It seems to hinge on the statement " Collision with Project infrastructure is unlikely given this species' propensity to hunt at or below the canopy layer (below RSA height). It does not tend to undergo migrations, with most movements attributable to juveniles dispersing". Can we be sure that dispersing juveniles won't be hit by turbines? Has anyone done any research on the impact of wind turbines on masked owls? • This project must not go ahead if we take the National (EPBC) listed status of this species, and the Conservation Advice provided, seriously.		No	To date, no research has been undertaken regarding the impact of wind turbines on masked owls. Similarly, little research appears to have been undertaken on the effect of wind turbines on other species of owl that could be used as a proxy for the masked owl. The risk evaluation matrix model in Appendix G of the PER defines "unlikely" as having a probability of occurrence between 5% and 50% in any year. The consequence ranking of "low" that was applied to the masked owl in the BBMP is defined as "repeated loss of small numbers of individuals but no reduction in local or regional population viability". The risk assessment was prepared by an ecologist with over 25 years of experience in undertaking ecological baseline and impact assessment studies, and it was reviewed by two other, equally experienced ecologists. It is the project team's view that these likelihood and consequence criteria are appropriate to define the level of risk of a dispersing juvenile masked owl colliding with a turbine in any one year.
234	.042	Mitigation and management measures	• The sheer amount of habitat clearing and the apparently pointless "Proposed Mitigation Measures" make it difficult to comprehend how the proponent can really say that the impacts on this bird will not be significant. For instance, one of the mitigation measures is "Large areas of masked owl habitat throughout the Project area will be retained." This is not a mitigation measure. And "Vegetation clearing will be minimised as much as practicable through micrositing within the proposed Project footprint" makes little sense.		No	The PER acknowledges that the Project could have a significant residual impact on the masked owl, and offsets have been proposed in accordance with the EPBC Act Environmental Offsets Policy.
234	.043	Survey effort	• The nest known from Yourka Reserve suggests there is a high probability that this species still occurs in the area. • The description of the nest identification is irritating and inconsistent throughout the document. If an expert considers it a Red Goshawk nest that should be enough to justify a great deal more survey effort at a more productive time of the year. We should not get blasé about this extremely rare bird. The birds are known to occur in the area (with a nest) at the adjacent property Yourka, and one expert thought the nest on the project site was a Red Goshawk nest. A single bird flying back and forth around the wind farm area for a few months is quite likely to eventually succumb to turbine strike. This probably equates to "Likely".		No	The historic nest at Yourka Reserve has not been used in over a decade (Bush Heritage Australia, pers comm). Given the site fidelity this species has to its nesting territories, this suggests it no longer nests in the area which is consistent with advice provided by Dr Richard Seaton of the Australian Wildlife Conservancy). As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
234	.044	Red goshawk	• Given the paucity of research into bird collisions with industrial size wind turbines, the likelihood of eventual death by collision with turbine blades of any of these very rare birds occupying the site could be very likely. • In the Preliminary Bird and Bat Management Plan (Appendix G) the "risk rating" of the wind farm in the context of "Collision with turbines, towers and powerlines" is considered to be "low". The risk rating is a rating that results from the use of the "Risk Evaluation Matirx Model" (Appendix G). Why is the Risk Rating "Low" given there is the following statement in the very same table?: "The species primarily hunts within or just above the canopy however it is known to occasionally soar over woodlands and waterways, particularly during mating displays (SPRAT). Soaring individuals could therefore be at risk of colliding with Project infrastructure. The loss of individuals from a small population (est. 1,000) could be significant." 35 • The potential clearing of habitat (785.9 Ha) of this highly endangered, high profile species is of concern.. • The statement "If the Project does result in death to individual red goshawks due to collision with a turbine during operation, offsets may be required" is very lame. The likelihood of someone finding and reporting such an incident is extremely low.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. The consequence criteria for low is defined as "repeated loss of small numbers of individuals but no reduction in local or regional population viability". Given the species has not been confirmed within the Project area despite two years' of survey work, this rating is considered appropriate.
234	.045	Southern cassowary	• Small areas of critical habitat are mapped within the project area, so its occurrence is possible. This is yet another example among a very long list of threatened species affected or possibly affected by this project.		No	A small number of vegetation patches that are potentially critical habitat for the southern cassowary (as they correspond with essential habitat REs within 1.5km of water) have been mapped within Wooroora Station. The project has been designed to avoid clearing any of these patches, and will not result in any further fragmentation of these patches (which are already fragmented from much larger areas of habitat within the WTQWHA by existing road and powerline infrastructure). No cassowaries have been observed within the project area although they have been observed while travelling to and from the site, alongside Tully Falls Road where it travels through rainforest.
234	.046	Survey effort	• These birds tend to appear very sporadically in large flocks, so they are difficult to survey without considerable survey effort, hence the lack of records during the allocated surveys.		No	Bird surveys undertaken to date amount to a total effort to date (as at January 2023) of 390 person-hours and are still ongoing. Surveys undertaken within the project area have been undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
234	.047	Cumulative impacts	• This is definitely one of the species which would benefit from a cumulative impact assessment (across all proposed windfarms) and research on their collisions with turbines. The lifespan and reproductive success of these birds appears to be poorly known. Over numerous windfarms, the deaths could amount to several hundred per year. It's possible that this will slowly reduce population numbers.		No	This is a recommendation targeted at the Regulator rather than the proponent.
234	.048	White throated needletail	• Research must be funded to find out the death rate of these birds by turbine strike. • In the Preliminary Bird and Bat Management Plan (Appendix G) the "risk rating" of the wind farm in the context of "Collision with turbines, towers and powerlines" is considered to be "low". The risk rating is a rating that results from the use of the "Risk Evaluation Matirx Model" (Appendix G). The reason for the risk rating "Low" is mainly hinges on the statement "This species typically flies at and above RSA height, and individuals could therefore collide with Project infrastructure. The loss of a small number of individuals each year is not considered to be of significance as it is still numerous in Australia. This species is unlikely to be displaced by the active turbines and/or infrastructure." This could be true in one area, but given the vast number of windfarms being erected across Australia, is there any research underway as to the cumulative impact of many windfarms in operation for at least 30 years on this species?		No	As noted in Section 5.5 of the PER, there is insufficient information available in the public domain to quantitatively assess the cumulative impacts of the proposed Chalumbin Wind Farm with the other wind farms proposed for the Tablelands or the broader east coast region. Collision monitoring reports for the currently operational wind farms (Windy Hill and Mount Emerald) are not publicly available either. It is therefore not possible for an individual developer to accurately assess cumulative impacts to the white-throated needletail from potential collision with wind farms, this would need to be coordinated by the Regulator.
234	.049	Survey effort	• For such a high-profile species that has confirmed records on adjacent properties at Yourka Reserve, Kaban, Ravenshoe and Tumoulin, the spotlighting effort was grossly inadequate. The person hours are misleading as usually there are at least two people per spotlighting team, meaning the actual number of hours spent spotlighting is much less. At the bare minimum, the entire clearance envelope should have been surveyed on foot several times. • In addition, thermal imagery drones should have been used for this high-profile species. • The western edge of the Wet Tropics World Heritage Area is identified as being a corridor for the koala. Fragmentation, altered fire regimes and weed incursions could be another set-back for a species which is facing extinction in other states. • Map 4-27 shows a large proportion of the property mapped as containing locally important koala trees. • The Yourka koala record does not indicate this species is "rare" in the area, and it would be against the financial interests of the landholders to report their occurrence. Not only will they receive financial gain from the wind farm but the country will also be opened up with all-weather roads so that they will be able to intensify grazing activities. • We would say from personal experience of this general area that koalas are very likely to be present on the project area.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
234	.050	Koala	• This area is within the northern known limit of their range. The guidelines for the conservation of this species outlined in the draft PER state that for conservation of the listed koala, it will be imperative to maintain populations that are geographical or environmental outliers within the species range. This means that any impacts to this species could be significant. • This is yet another stand-alone example of why this project should not go ahead in this location.		No	The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
234	.051	Northern bettong	• The Northern Bettong is in critical decline, with very recent evidence suggesting that yet another of the few remaining populations (Mt. Spurgeon) may be headed for extinction. Hopes are that the reason for this decline may be determined, and that the Northern Bettong may one day expand again across its former range. Whilst these surveys did not confirm their absence, either way, Northern Bettong Habitat (of which this site is a perfect example because it is very similar to the habitat of remaining populations and lies within its former range) is precious and must be conserved. A last-ditch effort to save this species from extinction is being attempted by the Australian Wildlife Conservancy at Mount Zero-Taravale some 130 km south of Chalumbin, where a large, fenced enclosure has recently been built to protect re-introduced Northern Bettongs from predation. This area was also part of the animals' former range. It is hoped that reintroduction to former parts of its range will be possible in the future using this protected population as a source. The Chalumbin area could potentially be would of these reintroduction areas. • This is another reason why these restricted habitats on the western edge of the Wet Tropics must remain in as undisturbed condition as possible.		No	As per Section 8.6.6 of the PER, the Project area contains approximately 1,952ha of suitable habitat for the northern bettong. The Project will require clearing of 81.2ha of this potential habitat but there is no reason why undisturbed areas of potential northern bettong habitat within the Project area could not be used for reintroduction of the species in the future. This applies equally to the Project's proposed offset management areas.
234	.052	Northern greater glider	• Most of the project area is mapped in Figure 4.3.1 as denning habitat or foraging habitat for the Greater Glider. • The fact that 64 gliders were observed is hard evidence of the likelihood of den trees being destroyed and animals directly dying during the clearing process if they are missed by spotter catchers or if the fall of the tree injures them before they are rescued. • Populations such as these on the western edge of the rainforest massive are likely to become more important with climate change as those populations further west may die out due to increased temperatures. • As the Project area represents a large contiguous area of eucalypt forest which contains mature hollow bearing trees and a diverse range of the species' preferred food species particular to that region, it can be considered as habitat critical to the survival of the northern greater glider. • Habitat fragmentation of Greater Glider habitat on a regional scale is a significant contributing factor to population decline. The Project area is part of this process towards the gliders decline. • This is yet another stand-alone example of why this project should not go ahead in this location.		No	The PER acknowledges the issues raised in this submission and identifies that the project could result in a significant residual impact to the northern greater glider. A range of mitigation measures have been proposed to minimise these impacts, including offsets in accordance with the mitigation hierarchy.
234	.053	Survey effort	• The fact that the survey figures did not result in a population considered to be "large" may be as a result of surveys being carried out by vehicles on ridgelines where there are fewer suitable trees. Despite this (large or not) there are clearly considerable numbers of animals at this site.		No	The PER has confirmed the presence of northern greater glider across the Project area and has fully assessed impacts in Section 8.6.7. As significant residual impacts have been predicted, offsets have been proposed, in line with the EPBC Act Environmental Offsets Policy.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	.054	Spectacled flying fox	• Given the information provided, Spectacled Flying Foxes are highly likely to forage within the project area during certain times of the year. This would make them highly vulnerable to turbine strike. • Not only this, but according to information above and Figure 4.3.4 a considerable area (976 Ha) of suitable foraging habitat will be destroyed. • Page 264 contains the following comment not made in this section: 'There is potential for the Project to have a significant residual impact on the spectacled flying-fox through turbine collision and/or barotrauma'. Barotrauma causes death in bats by rapid air-pressure reduction near turbine blades causing tissue and lung damage due to the expansion of air in the lungs that cannot be expelled. A study found that 90% of bat fatalities involved internal haemorrhaging consistent with barotrauma, and that direct contact with turbine blades only accounted for about half of the fatalities. (Baerwald et al. (2008) Current Biology 18, 16 R696.) • The fatality of the Spectacled Flying Fox around turbines would attract birds of prey, potentially compounding the issue with raptor turbine strike. In addition, it will attract ground dwelling scavengers to the site, notably including feral species such as cats and wild dogs, which is likely to increase their presence in the area. • Although the term is notably omitted from the draft PER document, the Spectacled Flying Fox is in fact a Keystone Species. Keystone species play a critical role in defining their entire ecosystem. They disperse seeds when feeding and through their droppings. It is estimated that larger seeds may be dispersed over a range of 80km. The dispersal of seeds carried out by this species may be unique in terms of dispersal distance, deposition mode and quantity dispersed. • They also play a role in the pollination of tropical rainforest and savanna plants/ Spectacled flying foxes regularly cross and feed in modified habitats means that they may have an important role in seed dispersal in isolated and/or small rainforest fragments. Foraging records suggest that the species feeds on fruits of 14 rainforest plants for which no other disperser is currently known. [Source: National Recovery Plan for The Spectacled Flying Fox https://www.dcceew.gov.au]. • In the Preliminary Bird and Bat Management Plan (Appendix G) the "risk rating" of the wind farm is considered to be "Moderate". The risk rating is mainly based on the following statement in the same table (and the fact that they occur in camps nearby): "The species is likely to fly within RSA height when travelling between camps and foraging areas. It could therefore be at risk of collision with Project infrastructure. Given the recent population decline experienced by this species, any loss of individuals could lead to a localised decline in population viability for this species." • Will the Federal Government risk further population decline of this high-profile Endangered species by allowing this wind farm to go ahead?		No	The presence of spectacled flying-fox has not been definitively confirmed within the Project area however potential foraging habitat is widespread across the Project area as there is a known camp within approximately 30 km of the site. The species has therefore been given due consideration as outlined in Section 8.6.10 of the PER. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required.
234	.055	WTQWHA	• Wet Sclerophyll forests are actually endangered. They are endangered by the process of tree thickening most likely caused by changes in fire regimes since European settlement (Stanton et al. 2014 Australian Forestry 77, 1 51-57; Harrington and Sanderson 1994 Pacific Conservation Biology 1, 319-327) but also possibly due to the effects of increasing Carbon dioxide (Bond and Midgely 2012 Philosophical Transactions of the Royal Society B, 367, 1588). Their Endangered Status of Wet Sclerophyll Regional Ecosystems is also reflected in the Queensland Governments Biodiversity status classification which is based on an assessment of the condition of remnant vegetation in addition to the criteria used to determine the class under the Vegetation Management Act 1999 (the Act). • This Draft PER has presented other State information, but has omitted Biodiversity Status which is a much truer measure of threatened status than Vegetation Management Status. This classification is readily available as an attribute with the RE mapping available on-line and so could be easily included in the report. • Wet Sclerophyll Regional Ecosystems occurring within the Project Area can be presented thus: See attached image • Sections of Wet Sclerophyll forest amounting to 117.4 Ha (see page 301 - Avoidance Mitigation section) will be cleared by this development. Even more concerning though is the fact that the two properties (Wooroora and Glen Gordon) have had "renewable energy purposes" added to their land use description. It is conceivable therefore that in the future, the wind farm could be significantly expanded and enlarged, and currently there is no requirement for wind farms to be assessed under the Queensland Vegetation Management Act which regulates tree clearing (due to the new State Code 23). The other scenario is that very large areas could be cleared for a solar farm. This would become a very extensive source of invasive species into the western Wet Tropics World Heritage Area. There will be many individuals of protected fauna considered to be WTWH high value which have home ranges overlapping the Wet Tropics World Heritage area and the wind farm clearance envelope. This would include the Tube-nosed Insectivorous Bat and Rufous Owl. This means that high value fauna populations within the WTWA will be affected.		No	The fact remains that wet sclerophyll vegetation communities are not listed as Threatened Ecological Communities under the EPBC Act, nor are they listed as Endangered under their vegetation management status per the VM Act. A comprehensive assessment of fauna species endemic to the WTQWHA has been included in the PER, despite the majority of these not being listed as threatened under the EPBC Act. The PER has assessed that no significant residual impact will occur to these species as a result of the Project. Any future development within the Project area would be required to seek approval under the EPBC Act. This is outside the control of the proponent.
234	.056	Erosion and sedimentation	• Outstanding universal values listed as part of the Wet Tropics World Heritage Area include Magnificent Brood Frog Habitat and Tube-nosed insectivorous Bat habitat (among others). In particular, the Magnificent Brood Frog will be substantially impacted by this development due to the massive earthworks involved, and large permanent roads which will be a continual source of disturbance and soil loss into minor streams (sedimentation is listed as a key threat to the Magnificent Brood Frog). Reconstruction of roads following this damage will further add to sedimentation.		No	A significant impact assessment for the Magnificent Brood Frog has been undertaken (section 8.4.2 of the PER) which includes the potential for sediment runoff from the Project area. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Relevant standards will be used in the development of the monitoring program and a specific focus will be on the potential fine sediment transport that could impact on the GBR, aquatic values and the Magnificent Brood Frog habitat.
234	.057	Weeds and pests	• This project will create yet another heavily disturbed and fragmented boundary to the Wet Tropics World Heritage area, this time on its western flank. There will be continuous opportunity for invasive plants to enter the World Heritage area from vehicles and machinery accessing the site (especially during times of road repair after heavy rains). This will not just occur in the construction phases but will continue forever.		No	Construction vehicles will be prohibited from using Tully Falls Road (south of the intersection with Wooroora Road) to access the Project area. Tully Falls Road will also not be used during Project operations, limiting the opportunity for invasive plants to enter the World Heritage Area.
234	.058	Vegetation clearing	Not only does the Federal DCCEEW not regulate Queensland's mapped Regional Ecosystems (REs), but the Queensland Government does not regulate its own REs due to the creation of State Code 23 for Wind Farms which exempts native vegetation (and all the State-only listed threatened species) from being rigorously assessed under the Vegetation Management Act. At no point is there any requirement for Queenslanders to be notified or to be able to comment on the destruction of any Regional Ecosystems (even Endangered ones). Reports generated on 27 Nov 2022 for each of the two properties (Wooroora and Glen Gordon) reveals that combined there are sixteen Regional Ecosystems with Endangered Biodiversity Status, and 26 Regional Ecosystems with Of Concern Biodiversity Status. Why does Table 5-2 not contain a column containing the full extent of that Regional Ecosystem in Queensland, and therefore the percentage of total area of that ecosystem which would be cleared? Many regional ecosystems in this narrow altitudinal zone between the rainforest and the lower drier country are highly restricted. For example, an analysis done for this submission has revealed that around 5% of the entire extent of RE 7.12.27c will be cleared. If a 200 m buffer is included (which would be a reasonable buffer that would undergo impact from weed invasion, sedimentation, and dust in the short term (even wider in the long term)) puts this figure at 26% of the entire extent of this RE! Similarly, over 2 % of the entire extent of 7.12.52 will be cleared, and with a 200 m buffer this amounts to 10%.	Table 5-1 must be rearranged so that each of Vegetation Management Status and Biodiversity Status have their own column so that both are shown.	No	As noted in your submission, DCCEEW does not regulate Queensland REs and there is no requirement to present the information requested within the PER.
234	.059	Cumulative impacts	In addition - cumulative impacts by the rapid roll out of windfarms along the Great Divide in similar habitats on Queensland Regional Ecosystems MUST be included in this section. For example, the combined clearance footprint of RE 7.12.57a by the Chalumbin wind farm and the High Road wind farm is also over 2% and 7% with a 200 m buffer. In addition, 26 "rare" Regional Ecosystems (each < 1000 Ha in total) are likely to be impacted by windfarm proposals. There are many State-only listed plant and animal species associated with these restricted ecosystems that have not been mentioned in this report. There is an extremely high probability that due to the cumulative threat of windfarms, many State-only listed species will be upgraded to a higher threat status, and many will become listed Federally. Many unlisted species are also likely to become listed species - such as Comesperma anemosmaragdinum. Caldesia reniformis, Compespera rhyoliticum, Hibbertia concinna, Hibbertia malacophylla, Pterostylis borealis, Schoenus thedae and Zieria whitei. This has already started to happen - one of the reasons for listing both Zieria fordii and Melaleuca uxorum was the Mount Emerald Windfarm. Readers must be made aware of the full impact of these windfarm to restricted Regional Ecosystems and restricted and threatened fauna and flora in Queensland.		No	The PER is intended to assess the proposed impacts of the Project under the EPBC Act. DCCEEW have no jurisdiction over matters that are not MNES, including REs and flora and fauna species that are only listed at the State level. Potential impacts on matters of state environmental significance have been assessed in the Ecological Assessment Report that was submitted as part of the DA application to SARA. The Project received State approval in mid 2022.
234	.058	Weeds and pests	There should be mention in this section that habitat fragmentation creates weed invasion -and there is no doubt that the massive amount of disturbance required by this project will result in new weeds arriving to the area, and weeds already present along the transmission line being spread throughout the clearance envelope and fence-lines.		No	Section 5.2.9 of the PER discusses weeds and pests. There is also a reference to edge effects (specifically including weed encroachment) in the section nominated in this submission (Section 5.2.2).
234	.059	Rehabilitation	In addition, 20 years is not enough for the creation of hollows, especially those favoured by the Northern Greater Glider (8 m above the ground).		No	The operational lifetime of the project is 30 years. There are detailed rehabilitation principles within norther greater glider habitat outlined in Table 3-2 of the Preliminary Rehabilitation Plan (Appendix K of the PER). These include the use of artificial nest boxes and relocated hollow-bearing stages combined should provide a minimum density of 4 per every 2ha.
234	.058	Contamination	The accidental release of pollutants is something we had not even thought of. Clearly this could be very damaging, especially when the roads occur at the top of the catchment of a large number of streams.		No	It is noted that controls are necessary to ensure that any spill of hydrocarbons is managed appropriately so as to avoid and minimise potential impacts to the environment. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8.
234	.059	Weeds and pests	"Project activities have the potential to increase the abundance of pest flora in the Project area and facilitate dispersal of species to previously unaffected areas. Movement of vehicles, equipment and personnel throughout the Project area is the key vector of transmission, in particular vehicles and equipment sourced from regions beyond the Project area which may introduce new species. Many weed species thrive on disturbed ground and will rapidly colonise disturbed areas in advance of native species recolonisation"	More detail should be added to the above - including "Continuous re-construction of damaged roads after heavy rainfall are likely to add significant risk of new weeds becoming established".	Yes	Sections 3.1 and 3.2 of the Preliminary Weed and Pest Management Plan (Appendix F of the PER) have been updated to reflect this suggestion.
234	.060	Decomissioning impacts	This is a grossly inadequate section. Where will the bond money come from for "decommissioning" and "rehabilitation"? Who will own this wind farm by then? Is there legislation in place and money put aside to pay for this? To remove the wind turbine, sections of the clearing footprint will need to be re-cleared. It's also possible (as per page 21 of Appendix K Preliminary Revegetation Plan) the clearing footprint might be cleared more than twice if wind turbines need to be replaced during the operational lifetime of the project. A much more likely scenario is that the land will not be revegetated at all. As the current land use title for Wooroora and Glen Gordon now includes both "grazing of native vegetation" and "renewable energy purposes" (with no demarcation of areas for each), most likely the area will be left cleared for future expansion of wind or solar energy. Readers must be given a full break-down of processes and costs associated with "decommissioning" and "rehabilitation". Detail as to the source of funds to do this (and reassurance that it will be available) must be provided. If the land is to be left cleared afterwards then this must be crystal clear. In which case it means that all the "rehabilitation" attempted 30 years prior will be largely pointless. The decommissioning process must also include the process for disposal or recycling of materials. Although this process might be very different in 30 years time there should be some prediction of how this will be done and what is involved.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) describes this in section 3.6: In very rare cases, it may be necessary for the Project to replace an existing turbine blade during the operational lifetime of the Project. Delivery of the new blade would require clearing of areas that had previously been rehabilitated, on specific access roads only. In this instance, new rehabilitation activities would be undertaken as soon as possible on completion of the works, following the principles described in this Plan. Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated. The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	.061	Cumulative impacts	This section is very poorly presented and barely explored. To estimate cumulative impacts they need to be presented as such - ie the cumulative Ha of habitat for each species to be cleared and/or a list of species which are restricted to these zones. In addition, the section has completely ignored the cumulative impacts on Regional Ecosystems (discussed in other sections) and on State-only listed species of significance. State listed species and ecosystems could be included. Furthermore, cumulative impacts are likely to lead to upgrading of the status of many species including new listings at the National level, so some State listed species today may become Nationally listed species after all these wind farms have been installed. To 53 ensure the "health, diversity and productivity of the environment is maintained or enhanced" and "the conservation of biological diversity and ecological integrity should be a fundamental consideration" the naturally restricted ecosystems and species occurring in this particular zone of unique restricted ecosystems must be conserved. The only way to ensure this is to do a thorough assessment of all the latest renewable footprints versus the State regional ecosystem mapping and both State and Federal species distributions and their habitat mapping (if it is available). Below is the bare minimum of the sort of cumulative impact information which should be presented. All the source information for this data is available on-line. Interrogating Australian Virtual Herbarium records can be used to develop lists of very rare and restricted plant species and their habitats and locations. Similarly, the Atlas of Living Australia can be used for fauna. Note that the following cumulative assessment information is presented by submitter, but not included here: 1. All of Queensland analysis by Vegetation Management Act Class 2. All of Queensland analysis by Biodiversity Status 3. All of Queensland analysis by Regional Ecosystem 4. Plant species of Federal, State and Local Significance that will be affected 5. Animal species of Federal, State and Local Significance that will be affected - Unfortunately, there was not enough time to complete this section, however it is well known by ecologists of the area that there is a similar long list of fauna which will be impacted. Renewables in far North Queensland (the Chalumbin area - Mt Emerald to Mt Fox) appear to have the greatest impact (Table 3). This may be because they involve more clearing of Remnant vegetation than renewables in other parts of the State. However, it is likely to also to reflect the scale of mapping. The North Queensland Regional Ecosystems (the Wet Tropics in particular) have been mapped at a finer scale than most of the rest of Queensland, therefore there are more sub-units or vegetation types (a,b,c's) defined. This makes it more likely that a large proportion of some sub-units (since they are often restricted to specific ecological zones) may be affected by renewable projects. Therefore, it is highly likely that, if the rest of the State were to be mapped at a finer scale, it would also show that there are many more finer scale vegetation sub-units in other parts of Queensland that will be substantially affected by renewables.	The cumulative impact on our environment by this rapid roll-out of renewable energy projects being fast-tracked Australia-wide is being deliberately over-looked. Both State and Federal Governments should be analyzing these cumulative data for their assessments, and all applicants must be required to state the full impact in a cumulative sense, and account for it.	No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
234	.062	Cumulative impacts	Of note, one of the threats to (and reasons for listing) of two newly described and listed species Zieria fordii and Melaleuca uxorum was the Mount Emerald Windfarm (Z. fordii only occurs at Mount Emerald and most of the population of M. uxorum occurs on Mt. Emerald). In addition, Prostanthera clotteniana, Triplarina nitchaga and Homoranthus porteri were subjected to dedicated surveys as reported in the Attexo MNES Assessment Report for the Chalumbin Windfarm Project (Attexo 2021) and found to occur in multiple locations there. The proposed infrastructure footprint was reportedly shifted to avoid these plants, however there is no mention of potential weed spread from the disturbance and machinery which may compromise their habitat. Although Coleus amoenus was reported as detected in the Chalumbin Assessment Report, there were no dedicated surveys done, therefore it is possible that the footprint will impact some of these plants. There are around eight North Queensland plant species that could now be considered for listing as a threatened species given their very restricted occurrence, and possible occurrence within the proposed windfarm footprints: Comesperma anemosmaragdinum Caldesia reniformis Comesperma rhyoliticum Hibbertia concinna Hibbertia malacophylla Pterostylis borealis Schoenus thedae Zieria whitei There are at least three plant species which are significant outliers from southern populations (and may be genetically significant) which may occur in the proposed windfarm footprints: Lindsaea incisa Boronia bipinnata Zieria cytisoides There are at least 18 restricted plant species for which their core habitat lies overlaps with the North Queensland windfarm proposals, and which will result in substantial habitat fragmentation for these species. Acacia capillosa Arthrochilus oreophilus Coronidium fulvidum Corymbia abergiana	The cumulative impact on our environment by this rapid roll-out of renewable energy projects being fast-tracked Australia-wide is being deliberately over-looked. Both State and Federal Governments should be analyzing these cumulative data for their assessments, and all applicants must be required to state the full impact in a cumulative sense, and account for it.	No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
234	.063	Construction impacts	"Facilitated impacts are those which result from actions (including actions by third parties) that are enabled by development of the Project"	This section should include any proposed fencing of the site.	No	The installation of fencing and associated impacts are captured in the scope of the Project footprint and assessed as part of the controlled action in the PER. Fencing is listed as a Project components listed in section 2.2. The potential impacts of fencing on MNES and specific mitigation measures are assessed in section 6.0 of the PER.
234	.064	Mitigation and management measures	In the CMP (Appendix I Prepared by Attexo Group Pty Ltd) under Purpose and Scope there is a statement "This CMP is intended to demonstrate that the Performance Outcome (PO) identified for construction management within the Queensland State Code 23: Wind Farm Development (PO13) can be met by the Project and to establish the baseline requirements for Project construction environmental management." So, this appendix can possibly demonstrate that it can be met but not that it will be met. Furthermore, the "Performance Outcomes" in the very brief State Code 23 document available online, are inadequate - i.e. they are briefly described, and could be interpreted in any way. For example, the only references to environmental matters in the Performance Indicators of State Code 23 are "PO5 Development is designed, sited and operated to ensure that flora, fauna and associated ecological processes are protected from adverse impacts." and "Development maintains the natural drainage patterns on the site by protecting: 1. bank stability by limiting bank erosion; 2. water quality objectives by filtering sediments, nutrients and other pollutants; 3. aquatic habitats; 4. terrestrial habitats". There is reference to 64 "sensitive land uses" but none of these relate to the natural environment. Therefore, the construction plan does not appear to be tied to any specific environmental limitations.		No	The Preliminary CMP (Appendix I of the PER) was provided within the PER as it was a relevant document prepared for the Project to support the development application for the Project under the Planning Act 2016. The document was prepared for the purposes of addressing State Code 23 and State Code 16 requirements. In Section 10.15 of the PER, it is noted that a Construction Environmental Management Plan is required to be prepared and submitted to various stakeholders to comply with the conditions of the Project's Development Permit issued under the Planning Act. This CEMP will build on the principles outlined in the Preliminary CMP.
234	.065	Construction impacts	Not covered in the CMP is where water will come from: "Water supply for construction will be required for various uses including dust suppression, bushfire response (contingency), earthworks, watering of revegetated areas, staff amenities and drinking. Securing a water supply for these purposes will be the responsibility of the construction contractor, options include: the construction of bores and dams, installation of rainwater tanks and purchase of water from council or surrounding landholders". There is no mention of water for the purposes of constructing concrete, nor can we find any mention of this anywhere in the entire Draft PER application. According to the draft PER Section 2 page 57, there will be 68,800m3 of concrete required to make the foundations for the turbines alone. This is in addition to the considerable amount required for the other infrastructure. Where will the water for these batching plants come from? This is not disclosed in the draft PER, nor has it been detailed in any previous state or federal development submission. Without doubt, the developer plans to extract water from the Herbert River catchment – most likely Blunder Creek. This cannot be allowed to occur. A report on all the MNES listed species that live in this and other waterways within the development area has been omitted from the draft PER. Endangered species of flora and fauna are found in this creek, and the removal of water from this catchment will have a catastrophic impact that has not been assessed. Similarly, water for other construction related purposes should not be taken from local waterways.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
234	.066	Mitigation and management measures	The section on Biosecurity in the CMP (Section 4.2.6) is inadequate, with only Lantana mentioned, and with the statements: • "Zero introduction weeds, pests, pathogens or disease resulting from Project construction. • Prevent additional spread of pre-existing weeds identified within the Project area" Unfortunately, the above two statements regarding weeds are unachievable. Even a tiny project could not claim this. A two-year construction involving massive soil works, large numbers of machines and vehicles, and the requirement to constantly move soil back and forth across a transmission line clearing which already has weeds will ensure that weeds (including species new to the local area) will be spread all over the clearing footprint. Furthermore, since the vast majority of environmental weeds are not considered to be significant to agriculture or the grazing industry (but often significant to the natural environment), these will be completely ignored by any weed control program. As for the management measures for weeds, there is no mention of how "detection" of weeds will occur. And will "Vehicles and equipment departing weed infested areas must be washed down and confirmed as clean down prior to entering weed free areas" really be washed down every time they cross the transmission line clearing? Of course not, that would be impractical so the claim should not be made. There is also mention that a "A comprehensive biosecurity management plan is to be developed prior to construction by the construction contractor prior to commencement" There is just no guarantee this will happen, and no way to control its thoroughness. Put bluntly, it is likely to be token. Therefore, it seems that Appendix C bears little relevance to actual sedimentation and control measures likely to be undertaken and it is not considered further in this response.		No	The "Preliminary vegetation and pest Management plan" & "Preliminary weed and pest Management plan" located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area including weed surveys and reporting tools. It is the intention of these "Preliminary" documents are not intended for implementation purposes however are intended to act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept as stipulated under the . The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary.
234	.067	Mitigation and management measures	Just because this detailed plan is included within the PER, it does not guarantee that any of the information within it will be used for construction of the windfarm. The plan clearly shows that the project lies within the great Barrier Reef Catchment Area. This fact is highly significant as the entire windfarm project could be halted due to potential impacts on the Great Barrier Reef. Table 2-2 Management for Primary Pollutants of Concern claims that surface-disturbing construction works will not be carried out during the wet season months January, February, March. Construction could therefore begin as early as April 2023. Since construction time is 24 - 30 months, and rehabilitation cannot possibly be advanced enough to protect the soil for many years, the site will be at great risk from erosion caused by rainfall events, especially heavy falls and cyclonic events. The constant references to "revegetate" and "regeneration" in Table 2-2 is not relevant. Planting of tube stock on a very large steep slope will not actually provide any erosion control for many years. Actual physical erosion structures put in place may instead have some effect, however this will still not prevent soil movement. In addition, the insertion of "revegetate using assisted natural regeneration methods where conditions allow" is probably not going to happen. For this to be possible, the actual soil would need to be exposed in order for seed to naturally germinate. To stop the soil from washing away at a grand scale there will need to be complete soil covering of durable mesh or similar product. This will not allow natural regeneration.		No	Erosion in active construction areas cannot be eliminated but can be controlled. As part of the construction planning a certified Erosion and Sediment Control Plan (ESCP) will be prepared prior to construction and implemented during on-site activities. Sediment and erosion control measures to prevent soil loss will be developed consistent with the International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control (BPESC) document. The ESCP will form part of the overall CEMP. Particular focus will be given to managing runoff in the vicinity of watercourses. In reference to stabilisation depending on specific conditions across the project area (i.e. slope and soil characteristics), the following stabilisation and rehabilitation methods may be required in accordance with the Best Practice Erosion and Sediment Control (IECA 2009): • Geotextiles (i.e. erosion control blankets, turf reinforcement mats, bonded fibre matrix). As a general guide, covering the soil surface with a 30 % cover of non-erodible material will reduce soil loss by approximately 80 % (US Soil Conservation Service 1983); • Mulching (i.e. rock, gravel, compost, woodchips, sugarcane); • Revegetation via hydroseeding and hydro-mulching (see Section 3.4); and • Suppressants or soil binders (chemical surface stabilisers). Standards for rehabilitation will be developed to include criteria for landform stability and erosion control across the Project area; a general rule of thumb is that at least 60 % of the surface area should be protected by some form of physical cover (either matting or vegetation) (WTMA 1998). However, this depends on the soil characteristics, slope and likely rainfall intensity. Standards will also be developed to address the issue of directing the flow of existing waters and the direction of new discharges from disturbed soils. Again, the rule of thumb for much of the Wet Tropics region is that any flow velocity greater than 2 m/s should be stabilised with some material other than vegetation (WTMA 1998). However, for any grade above 1 % and any flow velocity greater than 1 m/s, stabilisation requirements should be determined on a site-by-site basis.
234	.068	Weeds and pests	The proponent needs to state exactly how they are going to "implement weed hygiene protocols to prevent the introduction of weeds in the first place". As mentioned previously, even with a ludicrously strict protocols (e.g. wash every machine and vehicle every time it moves from the transmission line to the newly cleared areas) this is unlikely to work. The claim is unachievable, so should not be made.		No	This is addressed in Appendix F, Preliminary Weed and Pest Management Plan. It is a goal, which is worth striving for. If it is not possible to prevent the introduction of weeds, the proponent will be required to control and eradicate new weeds. This is a condition of the Project approval.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	.068	Mitigation and management measures	The Reef 2050 Water Quality Improvement Plan (WQIP) target for grazing land at the end of the dry season cover target is 70%. This figure is apparently used for grazing lands as well as cover under native vegetation (according to Appendix J, 2.1.2.1). Table 2-3 seems to claim in several entries that the proportion of grazing land which won't be cleared will contribute to achieving the "management" targets. This is inexplicable since that land would be doing that if the windfarm were not going ahead. The explanation of how the first management target is met is unclear and needs to be better explained. For the second management target, bizarrely "tracks, hardstand and gravel surfaces" are included within their 70%. How can tracks and gravel be considered to be ground cover? They are bare earth which can be eroded and washed away. Therefore, the second management target in Table 2-3 will not be met.		No	From a soil erosion perspective gravel on tracks and hardstands provides cover (raindrop protection and a particle size more resistant to erosion). In addition these gravel areas are often of a lesser slope than the original landform and at less risk of erosion based on slope risk. Refer to Attachment A in Appendix J for the cover factors used for the various soil loss modelling scenarios. The IECA guideline have rehabilitation requirements for different levels of erosion risk – refer to Table 4-6 in Appendix I of the PER for minimum cover targets. For anything more than a moderate erosion risk there is a requirement to have a minimum 70% groundcover within 20 days of completion of works within any are of a work site.
234	.069	Mitigation and management measures	The third management target "increase riparian vegetation" will not be met. The project will result in a net loss of riparian vegetation where roads cross creek lines.		No	The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact Assessment is outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets are to be provided to mitigate these impacts. These offsets are also supported by a range Preliminary Rehabilitation Plan located in Appendix K of the PER to reduce the long term impact of the project. Furthermore, Creek crossing locations will seek to take advantage of existing gaps in the riparian corridors as far as practicable. Work in creek crossings will be carried out in periods of no flow where practicable and waterway crossings will be designed in accordance with accepted development requirements for waterway barrier works wherever practicable to ensure fish passage is not impeded.
234	.070	Mitigation and management measures	The response to the fifth management target "Improved management of urban, industrial and public land uses" is incomprehensible and needs to be better explained.		No	In the context that the Project is an industrial land use the quality of surface water runoff discharged for the project will be managed in line with the IECA 2008 BPESC Standard and site-specific Environmental Management Plans (EMPs).
234	.071	Erosion and sedimentation	Section 2.1.2 "Estimated Project Runoff" explains that the reason they have included "Construction with no ESC" (this includes year-round construction). Presumably this is included to make the figures look better - ie you can compare the dry season construction works to this. However, this is very misleading. Construction would almost certainly be halted for long periods during the wet season regardless due to vehicles getting bogged and slipping down the hillside and wrecking their works. So, a year-round construction would never have been seriously considered. The rest of the sedimentation and control plan is explains that every run-off threat is supposedly mitigated by some action. The feeding of data into a sedimentation model looks impressive but is underlain by at least one flaw - the most noticeable being the assumption that a major rainfall event is unlikely to occur outside of January - March. Tropical cyclones are common in April and even occur in May. Heavy rainfall events can occur any time throughout the year. What is missing from this report is a worst-case scenario involving several major rainfall events in the middle of construction that causes multiple erosion mitigation measures to fail. What is also missing are calculations for sedimentation during deconstruction is 30 years' time. During this phase, the roads will need to be cleared and widened again, and massive amounts of disturbance will take place. Furthermore, in 30 years-time the prediction is that due to climate change, unusual rainfall events may be more intense. Incredibly in the conclusion of the Sediment and Erosion Management Plan, it states that the soil loss modelling found that the "Project footprint under operational conditions has a sediment yield 0.45 kt/year less than current conditions." It seems strange to claim that when the project is operational there will be LESS sedimentation. This seems to be based on a claim that there will be 70% ground cover in the project footprint (which includes gravel, concrete, bitumen etc) which is apparently the same as the ground cover in the forest. Apparently their erosion mitigation measures will then make it better than the forest! Gravel is not the same as hard soil bound together by a complex ecosystem of microbes and vegetation that has evolved in place over hundreds of thousands of years. Therefore, the assumptions used in this modelling appears to be flawed.		No	Year round construction is standard practice, however the project has committed to shutting down for January - March which historically has the highest potential for large high intensity rainfall events. The potential for high intensity storms to occur during the dry season (or at any time of the year) are discussed in Section 2.2.2 of Appendix J. A 'worst-case' scenario has been discussed in this section and presented in Table 2-11 comparing the net sediment loss during the highest daily dry season rainfall event during the last 10 years compared to the net sediment loss over a 2 month construction period. It is important to note that the project will plan the construction activities based on risk and will be undertaking progressive rehabilitation during construction to limit the total disturbed area at any one time. Road maintenance has been included in the discussion, but erosion has not specifically been calculated for this activity due to unknown variables such as frequency of maintenance. Climate change has been discussed in Section 2.3 of Appendix J. The project area is currently grazing land and the assumptions at a landscape scale are appropriate. The way in which gravel and forest provide erosion protection are not exactly the same but both are effective at reducing erosion. The modelling has been through a peer / technical review process.
234	.072	groundwater	It is possible that ground water may be affected in the instance where there are perched water tables and seeps. These are actually quite likely to be present in the area, and are in fact often important for the occurrence of Magnificent Brood Frog habitat. This section therefore must include a much more detailed analysis of ground water to ensure the project does not impact Magnificent Brood Frog Habitat.		No	Section 4.1.7 of the PER describes the existing groundwater characteristics of the Project area, to the extent that this is known and can be inferred from available data. Section 5.9 of the PER describes potential impacts of the Project on the groundwater within the Project area, with specific impact assessment regarding the magnificent brood frog provided in Section 8.4.2 of the PER, based on the detailed habitat assessment presented in Section 4.5.2 for the species (which includes consideration of seepages and zero order streams).
234	.073	Project design	Several claims regarding public consultation in Table 6-1 appear to be untrue. The claim that the impact to Magnificent Brood Frog habitat has been reduced from 300 ha to 120.5 ha (based on an original project plan of 200 turbines) is very misleading as there is no record that this many turbines were ever proposed.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations.
234	.074	Offsets	The Biodiversity Offsets proposed are ludicrous. How do the offsets which are described and illustrated by the proponent "counterbalance" a significant residual impact? The areas they outline have in fact already recently been placed at severe risk of future clearing and degradation directly due to the wind farm proposal, by their material change of use to include the new Queensland State land use "renewable energy purposes" (as described in section 2.3.3). This recent change puts the entire properties (including the offsets) at risk of future development. Even before the likely event of future renewable expansion, the actions proposed to "secure" the offsets will in fact cause their degradation. Building of fences to control cattle and building of fence access roads will simply encourage more intensive cattle management and bring in more weeds. Despite crafted words about cattle management, there will be no restrictions on cattle in these offsets (see our response to Appendix O Offset Management Strategy 8.2 Interim Milestones).		No	There will indeed be restrictions on cattle grazing in the offset management areas, with the fencing intended to keep cattle OUT (not in, as stated in this submission). Offset areas will be secured through an encumbrance on title which restricts future development (for renewables or any other purpose).
234	.075	WTQWHA	The presence of a large complex maze of wide roads, infrastructure and continual traffic will ensure that the WTWHA will be more likely to suffer indirect impacts than if this project had not gone ahead. A comparison to very old projects such as Windy Hill is irrelevant given that environmental protection measures were less stringent when this windfarm was built. "This has resulted in the complete avoidance of impacts to the populations of these MNES flora species and their habitat through appropriate and considerate Project design." The above statement is not realistic. Only a tiny proportion of the actual project clearance envelope itself was surveyed for flora. This includes patches of the mentioned "rocky pavement shrub complex habitat". Furthermore, vegetation maps have a scale limit and are imperfect. Without a complete on-ground survey of the clearance envelope it is completely unknown as to whether (and how many) these threatened plants will be impacted.		No	The Project footprint has been specifically designed to avoid all known populations of the listed threatened plant species. Pre-clearance surveys in areas of potential habitat will be undertaken prior to construction to confirm absence from the Project footprint. In the unlikely event that individuals are observed within the Project footprint, micrositing and redesign actions will be explored in preference to impacting the species.
234	.076	Red goshawk	Avoiding the Red Goshawk nest will not protect the Red Goshawks themselves which may fly through the wind turbines hundreds of times during a nesting period. The chicks will not survive with dead parents.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
234	.077	WTQWHA	"It should be noted that the wet sclerophyll forest vegetation within the Project area could not be entirely avoided by the CWF." In other words, this project will impact wet sclerophyll vegetation which is considered by WTMA to be reflective of many of the Outstanding Values of the WTQWHA. There are strong interrelationships between patches inside and outside the WTQWHA and it provides an important ecological function in the broader landscape.		No	A total of 37 proposed WTGs would require removal from the Wooroora property in order to avoid the wet sclerophyll forest. This alternative would not constitute a viable Project. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
234	.078	Project design	The developer has continually stated that the development has been reduced from 200 turbines due to community input. The number of turbines submitted in the earliest documentation submitted to both state and federal authorities is 95. Late 2021 it was reduced from 95 to 94 turbines. On the 5th Nov 2022, one day before the draft PER was released it was announced it had been further reduced to 86. This is a reduction of just nine in total not the 114 claimed. Evidence (including minutes) of a meeting with WTMA or the public where 200 turbines were considered have not been provided. More likely an original un-tested plan of 200 turbines may have originally been tossed about as an idea before all the physical and cost constraints were considered.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations.
234	.079	Vegetation clearing	As mentioned in previous sections, rehabilitation of fully functioning intact ecosystems is extremely unlikely. Once cleared, these areas will quickly succumb to irreversible weed invasion. Only "priority" weeds will be targeted for weed control, meaning all the other lower profile (yet just as invasive weeds) will proliferate and prevent full recovery of native vegetation. This is a typical, yet rarely recognised result of clearing native vegetation. Removal of protected plants will not be avoided. The location of protected plants along the entire clearance envelope is unknown because the clearance envelope was not fully surveyed. Avoidance of State-only listed protected plants will not happen as these have not even been considered by this PER, nor is it required by the Queensland State Government due to exemptions under Code 23 for Wind Farms. This is an example of ways in which laws put in place to protect exactly this sort of thing from happening can be over-ridden. How will the discovery of threatened plants be handled during a pre-clearance survey? (There is no mention of this other than to GPS and mark the plants). How much time and money will be allowed for this survey? Why was this survey not carried out before this PER was written?		No	Pre-clearance surveys for protected plants will be undertaken by a suitably qualified ecologist following the Queensland Projected Plants Survey Guidelines to identify individual protected plants within the footprint prior to clearing. In the event that any are found, micro-siting to avoid clearing these plants will be the preferred response.
234	.080	Weeds and pests	Which species will be included in this management plan? How can the Federal Government be sure that weed hygiene control practices will be implemented. Also, we need to see a more detailed plan (including weed species that will be managed) up front in the Draft PER.		No	As mentioned in the PER, Appendix F is a preliminary plan which will be further developed by CWF and/or the Contractor after undertaking detailed weed mapping across the entire Project footprint (to establish a baseline).
234	.081	Rehabilitation	Rehabilitation of fully functioning intact ecosystems is extremely unlikely. Once cleared, these areas will quickly succumb to irreversible weed invasion. Only "priority" weeds will be targeted for weed control, meaning all the other lower profile (yet just as invasive weeds) will proliferate and prevent full recovery of native vegetation. This is a typical, yet rarely recognised result of clearing native vegetation. After the 30 years a proportion of the vegetation will be re-cleared again to enable removal of all the wind turbine parts. So just when some vegetation components are starting to become a little more mature it will all be set back to zero again, and with further opportunity for weed invasion. It is even possible that some areas will be cleared again during the operational lifespan of the project for replacement of wind turbine components (as mentioned on Page 21 of Appendix K). The potential use of plant species not local to the area for rehabilitation (due to limited availability) is a key issue. Therefore, it is highly recommended that plants on site (including large numbers of grasses, smaller plants, and seedlings and saplings of larger trees) be removed during clearing, kept alive off-site, then be re-planted during the rehabilitation phase.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. Therefore, not only "priority" weeds will be targeted for control. The translocation of vegetation will be considered as part of the revegetation work, however it is extremely labour intensive and expensive and so is only likely to be used where other rehabilitation options, such as seeding, for native species (with local provenance where practicable) is not possible.
234	.082	Rehabilitation	The goal to "with a goal to rehabilitate 70 % of all other areas" is a rather odd statement. It presumably comes from the concept that 70% ground cover is required for acceptable run-off to the Great Barrier Reef? The meaning of this statement needs to be clarified. How much of the area will be rehabilitated? Furthermore the land cannot be fully "rehabilitated" if they are only focussing on "koala, magnificent brood frog, masked owl, northern greater glider and spectacled flyingfox" What's more rehabilitation of cleared Magnificent Brooding Frog habitat is extremely unlikely. These frogs shelter in pockets of moist clayey soil amongst sedge and grass tussocks and leaf litter in a very specific set of environmental conditions. It is very unlikely that this could be re-created. Rehabilitation of Northern Greater Glider habitat is extremely unlikely given it will take a lot longer than 30 years for trees to reach useful height and to bear hollow, after which they will be cleared again for deconstruction. It must be noted that this rehabilitation plan is preliminary and is not necessarily the plan that will be followed for the wind farm development. There is too much use of acronyms in the PER Report. We were unable to easily find the meaning of "SRI" in Table 1-1 but can only assume it means the area of habitat to be cleared or impacted.		No	The goal to "with a goal to rehabilitate 70 % of all other areas" is not the same as the ground cover targets used for the stabilisation of project disturbance areas or as part of final rehabilitation objectives. The Preliminary Rehabilitation Plan (Appendix K of the PER) sets out the framework for how rehabilitation will be undertaken. There is additional information on site stabilisation and revegetation during the construction phase of the project in Appendix I (Preliminary Construction Management Plan and Preliminary ESCP) and Appendix J (Sediment and Erosion Management Plan) of the PER. The key focus of the rehabilitation will be on the MNES species with a residual significant impact, but the broader rehabilitation commitments address the broader environmental impacts such as habitat fragmentation, self-sustaining communities and restoration of ecological functions. Specific rehabilitation measures for the Magnificent Brooding Frog and Northern Greater Glider are presented in Table 3.2 of the Preliminary Rehabilitation Plan. SRI refers to the Significant Residual Impact and it has been included in the Acronyms and Abbreviations table of the PER.
234	.083	Rehabilitation	"The following four regional ecosystems (REs) account for the majority (approximately 74 %) of the proposed clearing associated with the Project" The above four regional ecosystems are not the only regional ecosystems that must be considered. For true rehabilitation, each ecosystem (even those which are minor in area) must be able to regenerate to the state that it was before. Furthermore, Technical descriptions generated by the Queensland Herbarium are not specific to the local area, so should always be accompanied by local on-ground assessment.		No	Rehabilitation of disturbance areas as outlined in the Preliminary Rehabilitation Plan (appendix K of the PER) will be to the remnant regional ecosystem that existed prior to disturbance. There are 24 regional ecosystems that occur over the project footprint and each regional ecosystem will have a benchmark site most of which will need to be specifically developed for the project. Adjacent vegetation is also used to inform local revegetation works.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
234	.084	Rehabilitation	"Disturbed areas will be rehabilitated to reflect the species composition and density of pre-existing vegetation." "The use of native species, of local provenance as far as practicable, will minimise the requirement for ongoing maintenance. As seed collection times vary for different species, a twelve-month period prior to rehabilitation activities will be allowed for the collection of seeds from areas of adjacent, undisturbed vegetation. The Tablelands Regional Council-run revegetation nursery may also be used." To achieve the above, consultant botanists would be required to document the full species range present along the entire clearance footprint before clearing. They would also need to collect seed well in advance of rehabilitation works so that the same species and genetic stock are grown. Furthermore, to maximise the result, the existing plants should be carefully dug out and removed during the clearing phase, and kept alive off-site so they can be re-planted. None of this though will prevent an explosion of weeds along the full length of the clearance envelope, therefore this will still not constitute "rehabilitation to reflect the species composition of pre-existing vegetation". The statement "The use of native species of local provenance as far as practicable" essentially means that if none are available, then none will be used. Allowing only 12 months to attain local plant species from seed from the site prior to rehabilitation activities is inadequate. Does this mean this work has already started? It would take at least 12 months to obtain all the seed required, let alone grow the plants to a suitable size for them to be planted. Three to five years might be more realistic. Table 3-2 mentions imported topsoil. It is difficult to find out what "weed free" certification actually is. Most likely it will refer only to particular agricultural weeds, and will not include many high impact environmental weeds. Imported topsoil must not be used. Table 3-2 mentions the "Access Track within Magnificent Brood frog habitat". The idea that this habitat, once destroyed can be re-created is misleading. These frogs shelter in pockets of moist clayey soil amongst sedge and grass tussocks and leaf litter in a very specific set of environmental conditions. It is very unlikely that this could be re-created. The statement that "Natural revegetation from the seed bank is preferred, in order to minimise the risk of importing potential pathogens (particularly the chytrid fungus). The exception to this is to undertake planting of appropriate cover vegetation (such as Themada triandra and sedges) around the entrance of culverts to encourage their use by the magnificent brood frog" is very worrying. Where will they get the Themeda triandra and sedges from? Themeda triandra is an example of a grass with a huge range of highly variable genetics to the point where the same species from different areas can have a completely different growth habit and lifespan. Any grasses and sedges that are replanted at the site must come from the genetic stock of that area. This would require several years-worth of seed-collecting and growing, or much more logically - the plants existing at the site should be removed, kept alive off-site and then replanted during the rehabilitation phase.		No	Ecological surveys will have been undertaken over the entire clearance footprint prior to construction. A twelve-month period prior to rehabilitation activities will be allowed for the collection of seeds is not to say that addition time for seed collection won't be needed to rehabilitate the vegetation communities. Adjacent vegetation will also be used as a source of seed and reference to the vegetation species present. Weed management measures will be required at all Project sites before, during and after revegetation activities, generally in accordance with the Preliminary Weed and Pest Management Plan prepared as Appendix F to the PER. Imported topsoil will only be used as a 'last resort' where there is insufficient local topsoil to stabilise a high risk erosion area and is unlikely to be needed. The translocation of vegetation will be considered as part of the revegetation work, however it is extremely labour intensive and expensive and so is only likely to be used where other rehabilitation options, such as seeding, for native species (with local provenance where practicable) is not possible.
234	.085	Offsets	Since this background is supposed to be relevant to the entire Offset Management Strategy, why does Table 1-1 "Offset Package" not include State Significant offsets?		No	The entire purpose of the PER is to address the requirements of the EPBC Act. DCCEEW has no jurisdiction over offsets for MSES that are not also MNES.
234	.086	Offsets	This sections states that "Offsets must be provided where there is an unavoidable residual impact on Matters of State Environmental Significance (MSES). Offsets must be provided in accordance with the Environmental Offsets Act 2014". Also, in Section 2.2.2 it specifically states that "offsets are required when a prescribed activity causes significant residual impacts on prescribed matters of national, state or local significance despite all reasonable avoidance and mitigation measures. This framework provides structure for delivering, monitoring and assessing environmental offsets and is comprised of the Environmental Offsets Act 2014, Environmental Offsets Regulation 2014 and Queensland Environmental Offsets Policy (v.1.10)." The above sections therefore appear to indicate that Matters of State and Local Significance must be included in offsets. So where is the detailed analysis of individual species that comprise Matters of State and Local Significance? This has not been covered.		No	This information is provided in the PER as background but DCCEEW has no jurisdiction over offsets for MSES that are not also MNES and do not wish for this unnecessary information to be included in the PER (as evidenced by its absence from the PER Guidelines).
234	.087	Offsets	It seems that this particular section may be the reason that in following sections, Matters of State and Local Significance are barely considered for in selection of offsets. However offset conditions imposed for Matters of National Environmental Significance in this location are quite separate to matters to Matters of State and Local Environmental Significance. Therefore, Matters of State and Local Significance must be considered separately and in detail.		No	This information is provided in the PER as background but DCCEEW has no jurisdiction over offsets for MSES/MLES that are not also MNES and do not wish for this unnecessary information to be included in the PER (as evidenced by its absence from the PER Guidelines).
234	.088	Offsets	Table 3-1: Why are offsets not required for Homoranthus porteri, Prostanthera clotteniana, and Triplarina nitchaga? This must be re-assessed once a thorough survey of the actual clearance footprint has been done by a suitably qualified botanist.		No	The PER has determined that the Project is unlikely to result in a significant residual impact to these species as the footprint has avoided all known populations. The PER includes a commitment to undertake pre-clearance surveys in areas of potential habitat prior to construction to confirm the absence of these species. In the event that additional populations are observed within the clearing footprint, micrositing and redesign actions will be explored in preference to impacting the species.
234	.089	Offsets	Table 3-2: This table should include the full area of each regional ecosystem in total so that readers can understand what proportion of each RE will be impacted. The only way an offset for these REs could possibly be satisfactory is if an example of that RE were to be protected from future clearing and degradation by legislation. The impacts listed in this table are considerable, and this is only on ecosystems listed under the Vegetation Management Act. A column indicating Biodiversity Significance (which takes into account threatening processes) would show that there are even more threatened communities that would be impacted. Table 3-2 also appears to include all State-only listed threatened species in "Essential habitat". It is unclear what this means. Is this habitat contained withing the flora survey trigger map? If so what about all the State listed threatened fauna? If it is not from the flora trigger map - where is the data from the flora survey trigger map? If it refers to both flora and fauna - where is the detailed information for these?		No	The purpose of the PER is to seek approval for the project under the EPBC Act. The EPBC Act is not relevant to Regional Ecosystems nor State-only listed threatened species. The PER Guidelines clearly list the items to be addressed in the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
234	.090	Offsets	Where are the offsets for State and locally significant matters as are required (see Section 2.2 State Approval).		No	DCCEEW has no jurisdiction over offsets for MSES/MLES that are not also MNES and do not wish for this unnecessary information to be included in the PER (as evidenced by its absence from the PER Guidelines).
234	.091	Offsets	This section presents an "offset availability analysis" of possible geographical locations containing matters of National Significance that could be used as offsets. What appears to be missing is an assessment of Matters of State and Local Significance that should be incorporated into offsets (see Section 2.2 State Approval).		No	DCCEEW has no jurisdiction over offsets for MSES/MLES that are not also MNES and do not wish for this unnecessary information to be included in the PER (as evidenced by its absence from the PER Guidelines).
234	.092	Offsets	All of the offsets proposed are located on Wooroora or Glen Gordon and these are proposed as "direct land-based offsets. If this is to be accepted by the Federal Government, it makes a mockery of the entire Offset process. Wooroora and Glen Gordon are the two properties on which the wind farm is proposed to be situated. The wind farm does not afford any protection to these "offset" areas, on the contrary it threatens them. There is no suggestion that there will be any legislative protection of these areas to prevent their future clearing and degradation. In fact to the contrary, the Queensland State has already (recently) granted an additional land use to Wooroora and Glen Gordon "renewable energy purposes" which means that any part of those properties could be cleared and utilised for future windfarm expansion or even solar farms. Note that the Queensland Environmental Offset Policy v 1.10 (in section 2.2.2.3 of Appendix O Preliminary Offset Strategy) states that: • Offsets must provide additional protection to environmental values at risk, or additional management actions to improve environmental values; and • Where legal security is required, offsets must be legally secured for the duration of the impact on the prescribed environmental matter. Not only are the offsets on the two Project Area properties, but they abut the clearance envelope of the wind farm meaning they will be directly impacted by weed invasion and sedimentation, and their fauna will be impacted by many of the threats previously outlined in the PER and this submission. We could not find any mention of the many State-only listed threatened species which occur in the area, or the many Locally significant species. The prescribed environmental matter will have an ongoing effect far beyond the end of the wind farm project if not forever. This is because the newly fragmented landscape will remain that way and will remain a conduit for the passage of weeds. Furthermore, beyond the life of this specific wind farm, it is most likely that the next project (which could be another wind farm owned by a different company or perhaps a renewable energy farm) will continue to cause the same problems or far worse, since further clearing and disturbance id likely.		No	DCCEEW has no jurisdiction over offsets for MSES/MLES that are not also MNES and do not wish for this unnecessary information to be included in the PER (as evidenced by its absence from the PER Guidelines). The landowners will be required to enter into legal agreements that protect the offset areas in perpetuity, an encumbrance on the property that is transferable to subsequent owners in the event of a sale.
234	.091	Offsets	This section (and section 9) is the crux of whether the "Offsets" actually mean anything. To break it down (refer also to above statements): • Extent of weed cover. This area is already likely to have < 5 % weed cover therefore nothing will need to be done, therefore no improvements will be made in this area. • Stock exclusion fences. The instalment of stock exclusion fences does not mean stock will be (or need to be) excluded. It is more likely the land-owner will use it as a paddock, conveniently paid for by the proponent. Only permit grazing for the purposes of bushfire hazard reduction, to extent required to meet habitat quality improvement milestones… This is non-sensical. Grazing does tend to reduce bushfire hazard, so the land-owner could graze all the time. The habitat quality improvement milestones do not relate to grazing or bushfire hazard reduction, they relate to regeneration from clearing. In this type of country, grazing does not generally affect woody recruitment, tree canopy height or tree canopy cover. Furthermore, the proposed offset areas have never been cleared, so these habitat quality improvement milestones are not applicable. • Ensure all livestock are excluded from the offset management area for a minimum of 5 years, or until a suitably qualified independent expert…… This doesn't make sense. The trees in the offset area are in Remnant Vegetation - that is they have never been cleared, therefore it is likely that many koala and grey-headed flying-fox feed trees are a sufficient size to withstand grazing by sheep and cattle. There will always be small cohorts…so does that mean you wait for ever, or you put the cattle on straight away? (there are no sheep in this country either). Basically, it means the land-owner will be able to fully stock the offset areas with cattle. In fact, they may decide to put more cattle in the offset areas than previously, especially since the wind farm project will result in far better, year-round access to this country, and good fencing for cattle management. • Cattle will be permanently excluded from the portion of the offset management areas intended for the magnificent brood frog. So how will this be achieved? Magnificent Brood Frog habitat is intricately mapped throughout the offset areas. Putting large numbers of fences around all the drainage lines would be impractical and environmentally damaging. Therefore, the only way to do this is to keep cattle out of almost the entirety of the offset zones. Alternatively, if the intention is to really put fencing through parts of these zones, this must be included in negative impacts to the offsets because fencing requires roads, and the machinery, vehicles, and new access lanes for cattle result in further spread of weeds. • Ensure any grazing is managed so as to prevent the risk of injury or mortality of koalas, by the end of year 1 This is barely worth comment - grazing of remnant vegetation in this country does generally not cause any risk of injury or mortality to koalas. So, to conclude, the offsets will not result in any improvement to the country, and in fact are likely to result in degradation to the offset areas due to the likelihood that cattle numbers will be increased within the offset areas (facilitated by the availability of better access to this remote country, and convenient new fencing). Will the Federal Government reject these highly inappropriate offsets due to the likelihood that they will be degraded instead of improved?		No	The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. There will be restrictions on cattle grazing in the offset management areas, with the fencing intended to keep cattle OUT (not in, as stated in this submission).
234	.092	Offsets	If there are any patches of non-remnant vegetation in the proposed offset areas it must be tiny and therefore of little consequence (is there a map which shows them and have they been quantified?). Therefore, any monitoring (with the Milestones from Section 8.2 as goals) could be minimal and/or would be largely pointless. There is mention of pest exclusion fencing - what is this? Any new fencing will cause further degradation to the offset area. There is mention of "mosaic fire regimes" but no reference to any specific methodology, therefore this could be interpreted in any way. As management plans only need to be relevant for 20 years, there is a time limit for the offset anyway. After this time, they will be unregulated.		No	The level of detail requested in this submission forms part of the next stage in the offset process, development of a detailed Offset Area Management Plan for each proposed offset site. Field assessments for this work have been underway since November 2022 and are ongoing. The analysis using the Environmental Offsets Guide (i.e. the calculator) will be included in the OAMP which will be submitted to DCCEEW for review and approval in due course.
234	.093	Offsets	"Once the final offset package has been agreed, offset sites would be legally secured for offset purposes following Section 29 of the Offsets Act, through either of: • An environmental offset protection area under Section 30 of the Environmental Offsets Act 2014; or • An area declared as an area of high nature conservation value under Section 19F of the Vegetation Management Act 1999 where it is secured for the purposes of an environmental offset." Although it is unclear how these legal mechanisms work, nonetheless, as stated in the response to Sections 8.2 and 9.1, the land within these offsets will not improve in environmental condition and in fact are likely to become more degraded. Legal protection in this context is therefore ineffective.		No	These concerns are noted; however, the condition of the offset management areas will need to improve over time in accordance with the (future approved) Offset Area Management Plan.
234	.094	Opposition to project	The information presented in this response overwhelmingly demonstrates why a windfarm at this site should not go ahead. Part of the reason the Draft PER is such a tome is because of the sheer number of threatened species. However only Federally listed species presented. If State listed species were included, it could double the size of the report. To allow such a massive development to go ahead which will affect so many matters of National and State Significance would be unprecedented and grossly irresponsible. Federal and State Governments should work together to locate much lower impact sites, preferably in previously completely cleared areas.		No	The PER is prepared in response to the PER Guidelines issued by DCCEEW. DCCEEW determined that the PER adequately addressed the information requirements within the PER Guidelines and that it was fit for publication. The PER can only respond to the requirements of the PER Guidelines. Matters of State Environmental Significance are addressed through the appropriate assessment processes under the Planning Act 2016 (Qld). Sections 1.5 and 3.0 of the PER describe the broad drivers for renewable energy projects such as the CWF, and the lack of feasible alternatives in the northern QREZ (i.e. the lack of suitably cleared land with commercial wind resource and access to the National Electricity Grid with appropriate capacity to accommodate the electricity generated by the Project.
235	.001	Wet sclerophyll forest impacts	would like to express my deep concerns about the location of the Chalumbin Wind Farm. I am concerned about the north south band of wet sclerophyll forest running adjacent to the edge of the World Heritage Rainforest. The position of the turbines in the southern tail of the wind farm project lie very close to the edge of this forest and in part would cause unavoidable damage and disturbance to this already tenuous and fragmented corridor. The wet sclerophyll forest is home to many vulnerable species that utilise the narrow corridors of forest remaining to maintain a healthy mix of genes between larger areas of habitat. In previous attempts to upgrade the power output from the Chalumbin area, it was proposed to build the Tully Millstream Hydro Electric Scheme in the 1980's. During the environmental impact assessment of the that project it was determined that the very narrow and fragmented band of wet sclerophyll linking the wet sclerophyll block of forest located at Nitchaga Creek to the Tumoulin Block would be irreversibly damaged through submersion of the band , hence preventing the north south movement of animals along the corridor. In recent years with the cessation of cultural burning practices along the wet/dry western edge of the rainforest , rainforest understory growth has encroached on the band of wet sclerophyll forest preventing this ecosystem from occupying its former position and ensuring the slow creep of the band westwards, This fluctuating and dynamic edge has been documented as expanding and contracting over time. With the presence of cattle farms, and the power industry now occupying the Wet Sclerophyll band, it has seen compression and no longer has the space to expand outwards. For the length of the operation of the proposed Chalumbin windfarm, the destruction of this habitat causing greater fragmentation would harm vulnerable species recorded in the area. Those that undertake regional movements would be most greatly impacted.		No	Hydroelectric schemes generally have a much bigger footprint than wind farms and require flooding of the full impoundment area - this naturally results in complete loss of the native flora and fauna from the footprint. A wind farm does not require as much clearing and fauna can (and do) coexist with wind farms provided the appropriate mitigation measures are put in place. A full impact assessment is outlined in Section 5.0 of the PER. Specifically, impacts on wet sclerophyll forest and the fauna species that are endemic to this habitat type, are discussed in Section 8.10. Mitigation measures have been designed to facilitate the continued movements of fauna across the site. Implementation of the Bushfire Management Plan (incorporating cool burns as well as a suite of other measures) will ensure that wet sclerophyll forests are not converted into rainforest.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
235	.002	Opposition to project	I support the comprehensive recommendations that have been submitted by the Cairns and Far North Environment Centre as listed below. These inclusion of these recommendations are essential for a PER that properly assesses impacts, and provides transparency. However, even with these recommendations included, it is unlikely that the impacts to MNES will be acceptable Note remainder of submission is repeating Submission 80, parts .002 to .028		No	See response to Submission 80.
236	.001	Opposition to project	The Chalumbin wind farm should not be approved because: as human's we need to save Mother Earth. STOP		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
237a	.001	Opposition to project	I have lived in Far North Queensland for over 25 years and regularly travel to the the Atherton Tablelands to enjoy the magnificent landscape and natural beauty that makes the Tablelands so special. This unique natural wilderness, comprising wet and dry forests, is a haven for hundreds of different animal and bird species, many of which are native to this region only, and some being critically endangered. It has caused me much stress and concern upon learning of the proposed wind farm in the Chalumbin region and what devastating impact it will have to the environment, fauna and flora to that area.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
237a	.002	Decomissioning impacts	I have reviewed "State Code 23: Wind farm development" and I believe the purpose of the code in the "Purpose Statement" is contravened at the outset: State Code 23 - excerpt below ""Purpose statement The purpose of the code is to protect individuals, communities and the environment from adverse impacts resulting from the construction, operation and decommissioning of wind farm development." Glossary of Terms Decommissioning means that the wind turbines, site office and any other above-ground infrastructure is removed from the site, and roads, parking areas and foundation pads are covered and re-vegetated to return the ground to its former state"" I would like to enquire how Ark Energy plan to remove from the earth the 800 cubic meters of poured concrete per turbine base? Multiply that by 94 turbines! Unless that is possible, it is not returning the ground to its former state as per the Purpose Statement. Covering concrete with dirt does not return it to its former state.		No	State Code 23 is the relevant assessment code for approval under the Queensland State's Planning Act 2016. The project has been assessed in accordance with State Code 23, and approval from the Queensland Government was received in June 2022. A Decommissioning and Rehabilitation Management Plan is likely to need to be prepared as conditioned by the approval, for submission to DSDILGP and other stakeholders. Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects' which has a best practice charter and set of commitments to make a positive contribution to the regions.
237a	.003	Biodiversity general	""Flora and fauna PO5Development is designed, sited and operated to ensure that flora, fauna and associated ecological processes are protected from adverse impacts."" Chalumbin contains rare ecosystems and flora that will be damaged if development of the area is allowed. Chalumbin's cooler, high elevation forests are vital to many animals. Endangered species such as the Northern Greater Gliders, Magnificent Broodfrogs, Koala's, Northern Quoll's and the Red Goshawk. I recently read a media release article dated 24 Nov 2022 from James Cook University on Possums threatened by Climate Change and in particular rising temperatures: excerpt from Media Release: ""In their latest paper on species decline in the Wet Tropics World Heritage Area, James Cook University Professor Stephen Williams and PhD candidate Alejandro de la Fuente found the negative impacts of climate change, including extreme heatwaves, has resulted in a rapid decline in ringtail possum populations over the past three decades. "There are several things happening to these possums," Prof Williams said. "There seems to be a long-term decline in their fitness based on the warming climate and direct impacts from the ever-increasing heatwaves every summer. "These are possums that have evolved in these cool mountaintop rainforests and they really struggle with increasing temperature."" This is significant because it is known that the removal of forests raises temperatures on the ground considerably. The forest canopy keeps the temperature low. The removal of trees will increase the temperature. Also, I have read several reports on how as the blades of the turbines turn to generate electricity, it creates a disturbance in the air is known to warm up the surface temperature at night and can cool it down by day. This also affects the local weather patterns. The loss of forest on mountain tops will lessen rainfall and lead to more droughts and flooding		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
237a	.004	Fauna mortality turbines	It's known that wind turbines affect wildlife in many ways. Wherever commercial wind farms are located, birds have a hard time surviving. Whether small or big, birds are unlikely to survive a direct hit with the turbine blades. And when so many turbines are located in one area, the population of birds goes down.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
237a	.005	Contamination	""Water quality PO7Development maintains the water quality of receiving waters. "" This statement cannot be guaranteed. I watched a very enlightening but alarming interview with Prof. Ian Plimer - A prominent Australian Geologist, a former professor of Mining Geology at the University of Adelaide, and Emeritus Professor of Earth Sciences at the University of Melbourne discussed real science behind climate change in a recent video (https://rumble.com/v1o1pq2-) Below is a transcript at about 28 minutes into the video: ""To make wind and solar generators we actually use more energy to make them then they ever produce in their working life and we omit more carbon dioxide in making and maintaining them than they ever emit. It's a process, which is bonkers. To make it worst: Wind turbines destroy about 25ha per turbine. ... We slice and dice birds and bats. 40% of the epoxy that is used in the laminated blades is made of a chemical called Bisphenol A. Bisphenol A is extraordinarily toxic. It's banned in many countries in the world. We cannot recycle those turbine blades. We lose about 2.5g of Bisphenol A every year from a blade. We only need 1g of Bisphenol A and we have destroyed 10 million litres of water. Over the life of a turbine blade, we destroyed half a trillion litres of water by contaminating it with this high toxin. We cannot recycle these blades. No third world country any longer will take them. We cut them up, put them in soils and substance Bisphenol A leaks out into the soils and waterways."		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
237a	.006	Opposition to project	I am totally astounded that the "SCIENCE" is not absolute by many scientists on the topic of "Green Energy" . If this is the case and there is reason to doubt, then we should Err on the side of caution before we embark on something that is detrimental to the environment and cannot be undone. However, it is quite simple to me that "YOU DON'T RIP OUT FORESTS TO GO GREEN".		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
237a	.007	Visual impacts	My other concerns to this whole proposal is the impact on the beauty, majesty and serenity of the Tableland region. The industrialization of wind farms rob the landscape of its natural greenery and beauty. These ancient forests will be lost forever to the inconsistent ideal of "green" energy.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible.
237a	.008	Emissions	Also, consider the carbon foot print in the manufacturing of wind turbines – it needs metals and other materials. The mining and production of these raw materials as well as the manufacturing process are mostly run using fossil fuels. Once made, the turbines then need to be transported to the location of the wind farms using trucks that run on fossil fuels. Then there's the ongoing regular servicing of the turbines. And to consider this proposal within the NATURAL WILDS of Chalumbin is total INSANITY, in my view.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
238	.001	Opposition to project	Note submission substantially similar to Submission 21, with the addition of: A healthy, biodiverse system may be our most important bulwark against impending climate catastrophe and certainly the most immediately available strategy to reduce runaway planetary heating.. To reduce biodiversity in the rush to decarbonise our energy systems would be misguided and short-sighted in the extreme. Further, habitat loss brings our unique threatened and endangered species closer to extinction. No "offset" can replace lost habitat. No restoration effort can replicate established ecosystems and the endangered species that depend on it. I say NO to the fragmentation and destruction of biodiversity to establish a wind farm. I say NO to the establishment of the Chalumbin Wind Farm.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
239a	.001	Opposition to project	The Chalumbin wind farm should not be approved because it is destroying rich native habitat. Windfarms are meant to protect native habitat by combating global warming. Don't destroy nature with renewables, it doesn't make any sense. Put the windfarms in the fossil fuel shipping lanes down on the coast because we won't need them if we get renewables right!		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
240	.001	Opposition to project	The Chalumbin wind farm should not be approved because: The forests of Chalumbin are a refuge for wildlife in a warming climate. Threatened species live here: Northern Greater Gliders, Magnificent Broodfrogs, Red Goshawks, Masked Owls and more. Exceptional birdlife as well as many possum species, reptiles and amphibians inhabit this area. Here too is Koala habitat - Koalas have been spotted at nearby Yourka Reserve. Queensland wilderness is being cleared at an unprecedented rate, and the wilderness of Chalumbin is a critical haven to wildlife. Chalumbin should not be destroyed for a wind farm.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
241	.001	Opposition to project	The Chalumbin wind farm should NOT be approved because: Not only will it destroy pristine forest, but also badly effect the fauna and flora. And what happens when these monstrosities come to their use by date? Will all the thousands of tons of concrete and steel reinforcing be pulled up and removed from the area?? Wind and solar farms do supply green power but it's obvious to any clear thinking person they have created huge amounts of damage to the environment simple by their creation. Not only that, they are a blight on the landscape. No they should NOT be approved.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
241	.001	Opposition to project	The Chalumbin wind farm should NOT be approved because: Not only will it destroy pristine forest, but also badly effect the fauna and flora.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
241	.002	Decomissioning impacts	And what happens when these monstrosities come to their use by date? Will all the thousands of tons of concrete and steel reinforcing be pulled up and removed from the area?? Wind and solar farms do supply green power but it's obvious to any clear thinking person they have created huge amounts of damage to the environment simple by their creation. Not only that, they are a blight on the landscape. No they should NOT be approved.		No	In accordance with the PER, decommissioning of the project includes the removal of aboveground infrastructure. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
242	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Koalas live in the trees that will be removed! More investigation needs to be followed through!		No	Potential impacts to the koala, including the potential loss of habitat have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. Additionally, large areas of potential koala habitat throughout the Project area will be retained.
243	.001	Opposition to project	The Chalumbin wind farm should not be approved because we already have 2 wind farms in our area. 2 areas which have been decimated of flora and fauna to the extent of being endangered. Ecological studies boxes have been ticked but active studies have not been completed comprehensively. Do you wonder why there has been a public outpouring of outrage to this? We only have a small population in Ravenshoe and surrounds, less than 2000 people, but yet we are loud. We have to be to speak for the ones who cannot. The animals that will be destroyed, their habitat that will never be the same, it cannot be rehabilitated once it is decimated. Please explore different options that don't include this site at Chalumbin for a wind farm. Perhaps also another source for green power? We have the power of water, let's look at that to support the green agenda. Feel free to make contact with me for any further discussions. I live on Wooroora Road with my husband and 2 children, who live and work locally. Our children attend the local school. We are here for the long haul. This project cannot come to fruition, without leaving a detrement so severe in nature so as to destroy actual nature.		No	Section 5.5 of the PER provides an assessment of cumulative impacts of this Project with other projects in the broader region (operational, under construction, and proposed), with a focus on MNES values. Sections 1.5 and 3.0 of the PER describe (respectively) the drivers for the Project and the lack of feasible alternatives to the Project (in terms of location, size and scale). The project advances ecologically sustainable development (ESD) which is an object of the EPBC Act. As described in Table 14-1 of the PER: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
244	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Dams that produced zero carbon electricity were banned because they destroyed nature so why should this go ahead. At least dams provide reliable baseload power and don't need batteries which are also damaging to the environment to produce and to dispose of. Its illogical to be doing this.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
245	.001	Opposition to project	The Chalumbin wind farm should not be approved because I am desperately pleading with industry and government to preserve our wildlife and their natural environment		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
246		Opposition to project	The Chalumbin wind farm should not be approved because: You will kill all of the wildlife and forest. Why do you need more wind farms when you have Kaban windfarm so close to RAVENSHOE QLD.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
247	.001	Opposition to project	The Chalumbin wind farm should not be approved because: The Wet Tropics is too important to fragment any further. We should be rehabilitating land, not clearing it. Windfarms great, but on existing cleared land only, not here.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
248	.001	Opposition to project	The Chalumbin wind farm should not be approved because: The environmental damage being done is not saving the environment. This development is a total disgrace and a blight on the landscape.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
249	.001	Opposition to project	The Chalumbin wind farm should not be approved because it will destroy wildlife habitat contributing to biodiversity loss.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
250	.001	Opposition to project	As per Submission 21, with the addition of: This is wrong on many levels.		No	See response to Submission 21
251	.001	Opposition to project	As per Submission 21, with the addition of: I am very concerned that there's note been enough research into the area proposed for this wind farm - e.g. to the effect to water and endemic animals in this area.		No	See response to Submission 21
252	.001	Opposition to project	As per Submission 21, with the addition of: This project is in a place of wildlife abundance found no where else and is not an appropriate place for this project.		No	See response to Submission 21
253	.001	Opposition to project	As per Submission 21, with the addition of: Kills animals Poisons the earth		No	See response to Submission 21
254a	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
255	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
256	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
254b	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
257	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
258	.001	Opposition to project	As per Submission 41b, with the addition of: The wind farms are an eyesore. They are not green energy. Stop it now. That premier is a nut to think anyone would travel south to 'enjoy' her ugly windfarms.		No	See response to Submission 41b
259a	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
259b	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
260	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
261	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
262a	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
262b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
263	.001	Opposition to project	As per Submission 21, with the addition of: There are no alternatives for our native flora and fauna so the onus is on legislation to make alternatives for windfarms.		No	See response to Submission 21
264a	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
264b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
265	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
266	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
267	.001	Opposition to project	The Chalumbin wind farm should not be approved because destroying native wildlife habitat in the name of intermittent clean energy is anti logic.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
268	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Windfarms has nothing to do in the nature! Don't destroy Australias unique wildlife.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
269	.001	Opposition to project	The Chalumbin wind farm should not be approved because: It does not have proper social support and the proponent has misled the community. Simply, we do not want your industrial wasteland and laying bare of our living flora and fauna. You will cause damage to the GBR if allowed to proceed.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
270	.001	Opposition to project	The Chalumbin wind farm should not be approved because of the impact htat landclearing will have against the unique animals who live here. The decimation of wildlife and vegetation through the use of machinery and blasting will change the landscape and affect the animal habitat....this will have detrimental effects permanently.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
271	.001	Opposition to project	The Chalumbin wind farm should not be approved because: they are destroying natural habitats. What do we have left when our animals homes are gone? The answer, nothing but destruction!		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
272	.001	Opposition to project	The Chalumbin wind farm should not be approved because of the destruction of wildlife habitats due to the clearing of land needed to erect these monstrosities. I live in Tolga and I'm utterly disgusted with the wind farm at Mt Emerald. Not only is it an eyesore but countries overseas have decided this form of energy is not cost effective. Why are we not learning from the people before us? The Atherton Tablelands prides itself on its diverse natural habitats and wildlife. I can not fathom why this project would get the green light to destroy this area...and for what? Please think of the future. You may have kids, you may not, whatever		No	The project advances ecologically sustainable development (ESD) which is an object of the EPBC Act. As described in Table 14-1 of the PER: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
273	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Destroying critical habitat for our precious biodiversity will never be the right answer. The consequence is not worth a wind farm. Other solutions must be sought out. Keep our last remaining wild places wild and find other viable ways. As if our lives depend on it too.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
274	.001	Adequacy of the PER	Renewable energy generation in the Tablelands – the Chalumbin Wind Farm Project Council generally supports renewable energy projects focussed on reducing greenhouse gas emissions if they provide a net benefit for the community and the environment, and mitigate any negative impacts on local and regional environmental values, communities and economy. It is our view that the Draft Public Environment Report (PER) addresses Council's concerns to some extent, but would benefit from additional detailed consideration of the following key issues: • Proximity to Wet Tropics of Queensland World Heritage Area (WTQWHA) and effectiveness of 600m buffer; • The need for a detailed and sequenced rehabilitation plan which sets clear milestones, while also allowing for the development of specific local engagement capacity (e.g. engagement with Jirrbal People, development of research programs, creating investment security for local contractors, etc); • Pest management, water quality, general environmental protection and circularity during construction and decommissioning; • Road access to the site, both during construction and after commissioning; • Accommodation impacts; • Short and long term economic and social impact on the local community, including training, education, development and employment of local residents and First Nations people. Background On 23 December 2021, Tablelands Regional Council (TRC) was formally requested by the Department of State Development, Infrastructure, Local Government and Planning to provide a Third Party Advice for the Application for a Development Permit for a Material Change of Use (Wind Farm) and a Development Permit for Operational Works (Clearing Native Vegetation) on Lot 1 on CWL3298 and Lot 31 on SP288862 (1145 Glen Gordon Road, Innot Hot Springs and 1867 Wooroora Road, Koomboloomba). The Third Party Advice Response (the Response) was provided on 11 February 2022.	Matters raised by TRC in the Response included: 1. Native Title/ILUA. 2. Waterway barrier works on protected waterways. 3. Access route: TRC preferred access route is via Herbert River Road, Mandalee Road, Yourka-Glen Gordon Road and Glen Gordon Road. 4. Construction water supply and dust mitigation 5. Impact on wildlife: affecting critical habitat, disrupting breeding cycles, collision hazard for predatory birds. 6. Disruption to World Heritage, MSES corridors, public and private conservation land. 7. Cumulative effect of wind farms erected along the ridgeline. 8. Impact on scenic amenity values. Consequent direct engagement between TRC Councillors and Officers and the Project Proponents has identified specific matters of significance for TRC, which include: 1. Economic impact 2. Community benefit 3. Environmental impact 4. Rehabilitation and revegetation It is noted that the majority of these concerns have been considered in the PER. Council and officers of TRC have considered the draft PER and the following comments are provided in response:	No	The Project proponent is in ongoing dialogue with Tablelands Regional Council about a number of Project design and development matters. This will continue as the Project progresses.
274	.002	Alignment with government policy	Renewable energy in the Tablelands Council supports the development of renewable energy facilities as a prerequisite to meeting Queensland's and Australia's commitments to clean energy and emissions reduction. The transition to renewable energy is required in order to mitigate the impacts of climate change – and it is important that every renewable energy facility is designed, located, constructed and operated in such a way as to have a genuine net positive impact on the environment. The alternative is a renewable energy industry which potentially damages what it is meant to protect. Council considers that the strategic approach of the State and Federal Government and of the renewable energy industry requires an overhaul to enable for better strategic planning for new projects. In this context, it is noted that the Queensland Government has recently released the Queensland Energy and Jobs Plan and the Queenslanf "SuperGrid" Infrastructure Blueprint, and that the draft Regional Energy Transformation Partnerships Framework is currently under consultation. However, the development of the Chalumbin Wind Farm (CWF) project has commenced, and is likely to come to fruition, well before new and detailed renewable energy strategies are developed. This is particularly valid when considering the environmental, biodiversity, water quality, social and economic aspects of the project and its impact on the Tablelands community.		No	It is possible that strategic planning within the QREZs will occur; however, at this point there is no publicly available information to demonstrate this strategic planning or the mechanisms through which it will be enforced. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
274	.003	Project design	Changes to the initial project as reflected in the PER 1, Reduction in number of turbines It is noted that the number of wind turbines was reduced by eight from 94 to 86, and that internal roads and transmission lines were consequently reduced. The approach of eliminating the turbines closest to sensitive environment is supported. It is however noted that the buffer of 600m between the Wet Tropics of Queensland World Heritage Area (WTQWHA) and the closest project infrastructure will have a limited effect on the environmental impact of this project, which in turn substantiates the need for comprehensive impact mitigation.		No	The Project has been designed to ensure at least a 600m buffer between the WTQWHA and the closest infrastructure associated with the Project. Furthermore, the distance between the WTQWHA boundary and the nearest infrastructure is 600 m in one location only, in a few places 900 m and otherwise much more. This will protect the WTQWHA from edge effects that could potentially occur as a result of the Project. Section 8.10.2.3 of the PER provides justification for the adherence to a 600m buffer between Project infrastructure and the WTQWHA - this includes reference to literature to demonstrate the sufficiency of this buffer.
274	.004	Rehabilitation	2, Biodiversity offsets and rehabilitation It is stated that the project will have a net positive impact on biodiversity by providing 7,400ha of biodiversity offsets and by revegetating 675ha of the 1,071ha disturbed by the project. Biodiversity offsets: The project is likely to result in a significant residual impact on five Matters of National Environmental Significance (MNES): magnificent brood frog, masked owl, northern great glider, koala and spectacled flying-fox. The Offset Management Strategy is based around three areas totalling 7,400ha, located on the host properties. In addition, up to $250,000 will be donated for research of the magnificent brood frog. The EPBC offset calculation methodology will be used to finalise the offsets. Rehabilitation: The rehabilitation plan indicates the estimated areas of land required to be rehabilitated in order to meet offset requirements for each of the MNES experiencing a Significant Residual Impact (SRI) due to the project. It is noted that the area theoretically available for rehabilitation is 963ha, and the minimum overall rehabilitation target is 753ha. TRC supports the principles of the Preliminary Rehabilitation Plan, as stated in the PER. It is noted that rehabilitation is based on "The use of native species, of local provenance as far as practicable" and that consideration has been given to the collection of seed from adjacent areas of undisturbed vegetation. The PER states that "disturbed areas will be rehabilitated to reflect the species composition and density of pre-existing vegetation". It is important to engage with local stakeholders throughout the further development, implementation and maintenance of rehabilitation activities as a prerequisite of achieving quality results in a mutually beneficial way for both the Proponent and the local community including the Jirrbal People.		No	Engagement with stakeholders during rehabilitation is noted. Consultation is outlined in section 11.0 of the PER and Future Consultation and Indigenous Engagement is specifically addressed in Sections 11.5 and 11.6.
274	.005	Erosion and sedimentation	3, Avoiding ground-disturbing works in January - March While this approach is supported, it should be noted that earthworks during the wet season are avoided as a matter of best practice in Far North Queensland. Avoiding disturbance during the wet season is of particular significance considering the number of protected waterways and the 34 or more creek crossings required.		No	Noted.
274	.006	Traffic and transport	4, Considering an alternate access via Innot Hot Springs It is noted that TRC has raised the unsuitability of the Wooroora Road access and recommended the alternate route via Innot Hot Springs very early in the planning of this project. The same recommendation was again made in the Response provided in February 2022. It is consequently of significant concern that the Proponent still indicates a permanent site entrance from Wooroora Road and is only currently "considering" this route, rather than having finalised the technical assessment and adopting this route as main access to the project site. Wooroora Road is not considered suitable by TRC for wide and heavy loads anticipated with the project and will most likely require substantial repair post project if it was used for the development.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. The proponent is in consultation with Tablelands Regional Council about the route to site, as well as numerous other aspects of the development.
274	.007	Social impacts	5, Considering project impact on accommodation The project will require around 250-350 personnel onsite during peak construction. Unless accommodation facilities are provided, this will place an unmanageable burden on the already constricted accommodation and residential facilities available in the Tablelands. It is therefore imperative that the Project Proponents ensure that suitable accommodation for personnel is provided without depleting local residential stock. This could include new accommodation established in existing towns, which is either managed or sold by the Proponent at the completion of the windfarm project, and a construction camp which is established on site and reduces the volume of vehicular traffic on local roads. A detailed analysis of expected personnel numbers and accommodation needs would provide clarity regarding the numbers and percentage split between accommodation options.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
274	.008	Mitigation and management measures	1, The Preliminary Weed and Pest Management Plan contained in the PER will require further refinement in collaboration with TRC officers and DAF Biosecurity officers, in particular regarding emerging and existing pests such as Electric ants and Yellow crazy ants. The construction phase of a project of this magnitude is a high risk condition for the spread of weeds and pests. While the PER generally covers the impact and control of weeds and pests on the project site, the transport of materials, plant and personnel on Tablelands roads creates significant risk for the spread of such weeds and pests throughout the region. Weed hygiene procedures and monitoring must therefore occur beyond the geographical boundaries of our region, and e.g. contractors should demonstrate that they have hygiene procedures in place to also prevent spread while in transit to and from the project site and the Tablelands region.		No	The intention is for the Preliminary Weed and Pest Management Plan to be further developed by the Contractor once they have been assigned. This is so that specific details on methodologies, budgets and resourcing, etc. can be incorporated. The Contractor will collaborate with TRC and DAF in the further development of this plan. The plan will involve biosecurity provisions at the Port of Cairns, the primary entry point for most materials.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
274	.009	Construction impacts	2, Construction water supply: The PER mentions this to be the responsibility of the contractor, who may use bores, rainwater or tankering in from other sources. Considering historical issues with water supply for adjoining properties, it is recommended that availability of water supply is further investigated.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
274	.010	Decomissioning impacts	3, Decommissioning does not address the disposal/recycling of the infrastructure and the site rehabilitation in sufficient detail. It is important that a detailed decommissioning plan be developed and that mechanisms are put in place to ensure that there is clear enforceable responsibility and guaranteed financial capacity to undertake comprehensive and environmentally sound decommissioning at the end of the life of the project.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
274	.011	Social impacts	4, Economic and social impact: It is evident from the CWF Draft PER that construction and operation of the CWF Project will have positive impacts on the level of economic activity in the local, regional and Queensland economies. Whilst it is acknowledged that the CWF proposes to work in partnership with TRC and the community to help maximise the projected economic benefits, preference should be given to Tablelands Local Government Area (LGA) residents and businesses, over those that are regionally (Cairns LGA), or State based. The CWF project should preference the employment of Tablelands LGA residents over regional (Cairns LGA based) residents. Where a skills gap exists and Tablelands LGA residents are unable to filled specific roles, then CWF Project should work with local training providers/universities to establish training programs (tertiary, vocational and traineeships) to upskill the local workforce – for both the construction and operational phase. The Tablelands and broader Cairns region (SA4) is currently experiencing a skills shortage and the CWF project should contribute to the ongoing training and development of Tablelands residents, given the expected life of the project. The CWF project should preference locally sourced (over regionally or state sourced) non-labour inputs to production. Consideration should be given to include a weighting criterion (e.g., 10%) for local suppliers. A clear long term procurement strategy should be developed and shared with local businesses to ensure they have the opportunity to 'gear-up' to supply non-labour inputs. While participating in business group meetings, events or programs in the local and regional community is welcomed, consideration should be given to active participation, that is taking on formal roles within business or community groups, to make a meaningful contribution rather than just tick a box and attend.		No	At this stage in the project development, details of the employment opportunities are to be determined. CWF will prioritise local and regional employment and training opportunities where required. Section 13.1.2.1 of the PER details the expected economic impact of the construction workforce on the local and regional economy, indicating the capacity and benefits CWF will provide through employment on a local and regional scale.
274	.012	Social impacts	Tablelands demographic: on page 621 of the CWF PER it is stated that - The result is that there has been declining population in many rural LGAs that are located in non-coastal areas, including the Tablelands Regional Council LGA. As per Table 13-6 this is an incorrect statement. The Tablelands LGA population has been growing. It is recommended that the final CWF PER be updated to include the 2021 Census data.		Yes	The Final PER is updated to remove the reference to a declining population in the Tablelands LGA. The 2021 census data has been added to Table 13-6 and Table 13-7 in the PER.
275	.001	Opposition to project	The Chalumbin wind farm should not be approved because: - This project is merely a cash grab by an overseas investor who has greenwashed it to sell it to the australian government. - Clearing of any remnant forest should be illegal, let alone one that directly borders the wet tropics world heritage rainforest.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
275	.002	Transmission capacity	- The capacity in in the HV transmision will only allow about 350MW. This project is capable of producing far more. Going ahead with the Glen Gordon stage only, would suffice. With other wind farms being constructed, in more suitable areas, within the southern REZ that could actually accomodate increased power production. An example of this is the already heavily industrialised port areas at Mackay and Bundaberg. These areas already have good HV transmission line access with good onshore wind resource.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
275	.003	Traffic and transport	- It will directly affect the amenity of our property in the Millstream. Not to mention the disruption caused by a rediculous amount of oversized loads utilising Woorooora Road. This will only further impact and fragment the local flora and fauna.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
275	.004	Survey effort	- None of the flora and fauna surveys have been conducted appropriately. Whether that be at an appropriate time of year or, more basic, at the correct scale.		No	Surveys commenced in October 2020 and in some cases are ongoing (as at February 2023). Surveys have undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
275	.005	Magnificent brood frog	- The Magnificent Broad Frog is endangered and endemic to the area. The developer has stated that damaging their habitat and killing more cannot be avoided. To avoid this would mean the project cannot go ahead. Sounds pretty black and white to me. This project would be an attrocity if it were to go ahead. Politicians need to read between the lines not only listen to what they want to hear.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
276	.001	Opposition to project	The Chalumbin wind farm should not be approved because. 1: environment is more important then this. 2. There is land with wind turbines thqt are being decommissioned in 2025 just outside of ravenshoe. 3. A lot better alternatives use the land of the decommissioned wind turbines. 4. No more tearing down rainforest this is not ok. 5. Understand the intention but needs to not happy, enough land had been cleared for farming. Use this land.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
277	.001	Opposition to project	The Chalumbin wind farm should not be approved because: We have a property at South Millstream which is a weekend retreat for us to get away from the hustle and bustle of our lives in Cairns. This proposed wind farm will ruin this tranquility with the visual impacts being the greatest problem for us.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
278	.001	Visual impacts	I am against the Chalumbin wind farm because of the following: 1. It's close proximity to national parkland. 2. The visual impact it will have on the local area. I have a weekend retreat from which I will see these large turbines. The reason I bought this block was to get away to enjoy nature and tranquility. Will you compensate me for this lost.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
278	.002	Biodiversity general	3. The scarring and permanent destruction to the fauna and flora in transporting and erecting this huge infrastructure.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
278	.001	Erosion and sedimentation	4. The runoff into local rivers and streams caused by this gouging of these access tracks and pads will have an immeasurable toll on these ecosystems. I have platypuses in my creek - will they cope with this contaminated water. Please reconsider this proposed development if you would call it that.		No	Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. As part of ESCPs control measures are constantly monitored and adjusted to meet the water quality objectives as required.
279	.001	Opposition to project	As per Submission 21, with the addition of: Existing forests in this area absorb carbon dioxide and shelter a complex diversity of fauna and flora. It makes no senses to destroy and open up huge swathes of this biodiverse land, how do you even propose that this is a Green project?		No	See response to Submission 21
280a	.001	Opposition to project	Killing machines. How many kitehawks and eagles killed while out hunting. Migrating birds. Even at night the killing continues. Watching Netflix. As you go about your day, smiling, have a nice day. Going to the beach. Laughing with friends. Having a shower. Having breakfast. Making a coffee. Sending a witty tweet. Life is so good. The new house. The new car. The wonderful marriage. The new gym membership. Good people. Good respectable people. A firm handshake. Morals. Values. A long healthy life. A round of golf. The killing continues. The renovated kitchen. The Christmas get together. Smiling. At night when you turn out the light, head on pillow. The owls. Bats. Smashed from the sky. The chicks left to starve in the nests. The empty skies. On and on. Day and night. Forever.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
281	.001	Opposition to project	The Chalumbin wind farm should not be approved because: There is no demonstrable net gain that can be justified by the project. The Australian peoples are not interested in the destruction of wilderness and wildlife in return for the expemsive, high energy input of producing non biodegradeable, and relatively low energy producing objects of comparable short lives. This is a net destructive blight on the Australian landscape and leaves a many faceted headache for the future.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
282	.001	Opposition to project	The Chalumbin wind farm should not be approved because: There is enough land already cleared in this country to accommodate wind farms. Clearing old growth forest for renewable energy resources is a shortsighted and perverse action. Australia has pledged to protect land for biodiversity as part of the COP international agreement negotiations.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
283	.001	Opposition to project	As per Submission 21, with the addition of: There are much better places for this where not loss of forests and endangered species would occur.		No	See response to Submission 21
284	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
285	.001	Opposition to project	The Chalumbin wind farm should not be approved because it's remote location ensures native wildlife and vegetation are protected from much human interference. Chalumbin is so remote that there are likely species of flora and fauna here yet to be scientifically described. Queensland wilderness is being cleared at an unprecedented rate, and the wilderness of Chalumbin is a critical haven to wildlife. Chalumbin should not be destroyed for a wind farm.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
239b	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Why destroy habitat that renewables are meant to protect?		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
286	.001	Project location	The Chalumbin wind farm should not be approved because: there are so many places where there would be little damage to habitat and rare and threatened species... this is not the case in Chalumbin which is irreplaceable habitat to threatened species close to the ecotone areas bordering the world heritage wet tropics areas. Migratory cranes fly thru this area every year..there are so many reasons this is the wrong location.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
286	.002	Northern greater glider	We all want to see green power being created in Queensland as soon as possible but we can't allow this to happen at the cost of damaging the little remaining native forests here that may offer refuge to species needing to move due to climate change. This wind farm not only clears large areas of habitat but the vast network of roadways will create barriers for the threatened gliders within this habitat, making it difficult for them to move through the landscape and survive.		No	The PER acknowledges that the project could result in a significant residual impact to the northern greater glider despite the range of mitigation measures that have been proposed to minimise these impacts. Offsets have been proposed in accordance with the mitigation hierarchy.
286	.003	Project location	I fear that our choices of sites for these installation are being driven by convenience and reduced costs to the companies developing these installations. Being close to convenient connection to the grid seems to be the only prerequisite for the chosen locations. Surely the cost of losing these species that rely on these forest to facilitate a greater profit to these multinational companies cannot be justified and cannot be seen as environmentally sound. Please take these wonderful new wind farms to areas where the cost to the environment can be justified. The cost of development may be greater to the wind farm developers but it is well and truly time the actually costs be paid to develop sustainable green power for the future. For too long we have allowed development to happen without costing in the monumental cost it has had on the environment. If this is truly green, environmentally sustainable power it needs to be located where it does the least harm not where it saves the most money for the developer. There is no justification for the destruction of the habitats and species of Chalumbin.		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
287	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Very simply wind generation (and solar generation) cannot under any engineering circumstances provide steady reliable energy, not now, not ever. They rely on fill-in generation which is inefficient and costly. Please note also that no storage be it battery, hydro or any other can overcome3 the vagaries of the weather. Storage is of insufficient capacity and recharge is not possible using the unreliable sources. The wind and solar system simply do not work and cost huge amounts of money, they will fail and the money lost to the pockets of those financial interests building them. Stop it now before it is too late - refer to Germany and the UK,.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
288	.001	Opposition to project	The Chalumbin wind farm should not be approved because: There's to many birds wildlife is under threat from humans activities deforestation To many parrots 🦜 species around Queensland areas to build an ongoing of this wind farm		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
289	.001	Opposition to project	Submission is substantially the same as Submission 80		No	See response to Submission 80
290	.001	Opposition to project	OBJECTION The Chalumbin Wind Farm Chalumbin is unique and a haven for Threatened and Endangered Species and likely contains species not yet documented. It's remote location has seen native wildlife and vegetation protected. Chalumbin is an important corridor to the World Heritage Wet Tropics Area on one side, as well as Bush Heritage's Yourka Station. It countains a transition of landscapes ranging from tropical to woodland and tall open forest. Now thousands of hectares of this precious remnant wilderness are set to be cleared for the proposed Chalumbin wind farm. It is unacceptable that the high mountainous wilderness will be blasted and cleared for haulage roads and wind turbines. Critical habitat will be destroyed. Chalumbin is so remote that there are likely species of flora and fauna here yet to be scientifically described. Queensland wilderness is being cleared at an alarming rate, https://www.theguardian.com/environment/2021/dec/31/carbon-bomb-queensland-reveals-big-jump-in-land-clearing and the wilderness of Chalumbin is a critical haven to wildlife. This wilderness should not be destroyed for a wind farm.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
63h	.001	Spectacled flying fox	Spectacled Flying Foxes have long been considered to be primarily frugivorous and dependent on rainforest for foraging resources [7]. Recent research, however, suggests that this is not the case. In radio and satellite telemetry studies individual animals were located in non-rainforest habitats a significant proportion of the time. Many of these fixes were obtained from locations tens of kilometres from rainforest and included a range of wet and dry Eucalyptus, and Melaleuca vegetation types. [9] This, I believe, is of vital importance to the environmental impacts of the proposed development and the potential damage and harm to the Spectacled Flying Fox. Although, the Spectacled Flying Fox does not usually have its camps or roosting area in the Chalumbin area; it uses this area for food habitat and foraging. I have severe concerns that any land clearing in the Chalumbin area, will have dire consequences for the population of Spectacled Flying Foxes, which have a very small area of habitation in Far North Queensland. I oppose the proposed development because it will damage and reduce the foraging habitat of the Spectacled Flying Fox. This, in my opinion, is very likely to reduce the numbers of this endangered species. Sclerophyll vegetation (wet and dry sclerophy and Melaleuca), which is the remnant vegetation in the Chalumbin area, provided 45% of metabolized resources; and mangroves and orchard/urban areas provided 10% each. [11] [12] This is very significant to me and shows just how very important the Chalumbin area is as a food foraging resource for the Spectacled Flying Fox. The Spectacled Flying Fox feeds on blossoms. For example, Richards [7] found that the flowers of 10 tree species were eaten, comprising three species from rainforest and the remainder from wet or dry sclerophyll forest. This means that 70% of the blossoms eaten are from area of vegetation like Chalumbin. On the IUCN website it states that individuals are known to fly up to 50 km from their roost in a single night to feed, with longer distance movements between roosts recorded over one and several nights. [17][18]	So this would mean that the proposed development area is close enough to established roosts to be a feeding area for Spectacled Flying Foxes. I very much believe based on these studies that it is imperative to the survival of the Spectacled Flying Foxes that their food foraging range in the Chalumbin area is preserved and not developed. Although the camp trees would not be located in the proposed development area, food trees would be and especially mature native trees that offer blossoms and fruit as food for the Bats. So loss of food habitat, could be of serious concern if the proposed development was to occur. One established Spectacled Flying Fox colony, is only 20km from the proposed development. Sightings of the species in the Chalumbin area [16] and the fact that the Spectacled Flying Fox will travel in excess of 20km foraging its food, means that loss of food trees is a major concern if the development were to proceed. The spectacled Flying Fox's food habitat is as important as its roosting habitat, and both need to be preserved if we are to save this species from extinction. Mature native trees in the dry and wet sclerophyll forests, provide flower nectar and blossoms, which are food for the Spectacled Flying Fox, and many of these trees would be removed from the area by the proposed development; their removal would therefore deplete local native food sources for the Bats. This, I believe will affect negatively the Spectacled Flying Fox population in Far North Queensland. Due to depletion of their preferred native fruits and nectars, the Spectacled Flying Foxes will eat introduced fruit species and domesticated and commercial fruit crops, especially in times of drought or native food scarcity.However, their native fruits and blossoms are their preferred and optimal foodstuffs. In times of food scarcity, fewer babies will be born, and adult Spectacled Flying Foxes may fail to thrive due to restricted macronutrients and micronutrients in their diet. Availability of food is affected by rainfall amounts, bush fires, sunshine hours, natural weather crises and other climatic and environmental factors. Inadequate macronutrients and micronutrients in a species diet, will weaken their immune system and make them more susceptible to viruses, parasitic infestations, and bacterial infections	No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
63h	.002	Spectacled flying fox	From my observations and sightings, if there were wind turbines operating in this area, I am sure there would be Spectacled Flying Fox fatalities directly due to Bat impact with the turbines. I believe that the proposed development would cause Spectacled Flying Fox deaths due to turbine collision. This would have a serious impact on population numbers of this endangered species this could be a serious issue for the Spectacled Flying Fox. Spectacled Flying Foxes, typically fly at heights that would mean they would be at risk for collision with the proposed wind farm development turbines.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
63h	.003	Spectacled flying fox	The importance of the Spectacled Flying Fox in the Far North Queensland ecosystem is why it is a Keystone Species. Because the Spectacled Flying Fox is a Keystone Species in this area, any action that would reduce numbers of this Keystone Species, would have a huge effect on all aspects of the local Ecosystem. The proposed wind farm development would cause deforestation, loss of foraging habitat, and injuries to the Spectacled Flying Fox; and by depleting the numbers of this Keystone Species, would forever change the local ecosystems in Far North Queensland.[27] According to the Flying-Fox Roost Management Report by The Environmental Defenders (EDO) Office: "Flying foxes are intelligent and remarkable. These unique animals help regenerate our forests and keep ecosystems healthy through pollination and seed dispersal. They are a migratory and nomadic 'keystone' species; meaning a species that many other species of plants and animals rely upon for their survival and wellbeing. Flying foxes, like bees, help drive biodiversity, and faced with the threat of climate change, land clearing, and other human-caused ecological pressures, we need them more than ever." [28] [29]		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
63h	.004	Spectacled flying fox	What a joy it is to see these Spectacular Spectacled Bats flying majestically across our skies each evening on the forage for native blossoms and fruits in the Chalumbin area. How sad it is to think that the proposed development would remove their food trees, and would endanger their lives, How can we approve any heavy industrial development that would reduce numbers of this Endangered, and potentially Critically Endangered local species. According to the IUCN figures, Population size in Australia in November 2004 was estimated at approximately 250,000 and declined to 75,000 in 2016 [33]. Additional monitoring in November 2018 showed further declines and a population estimate of 44,000. [17] I believe that these numbers should give cause for concern to any individual or Government agency who is concerned about the long-term well-being of the Spectacled Flying Fox and its continued existence. Looking at the figure of 44,000 individuals on the IUCN's website, shows how vulnerable and close to extinction this species is. In addition, bush fires and heatwaves can kill thousands of colony members at one time, further increasing the high risks that face the Spectacled Flying Fox colonies.		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed, including implementation of a Bushfire Management Plan which will result in improved management of fire risks on site. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
63h	.005	Spectacled flying fox	The proposed wind farm development would mean removal of trees, clearing of native remnant vegetation, and the addition of sizeable concrete areas; thus these actions would affect the microclimate, causing reduced rainfall in the area. This reduction in rainfall and change to the microclimate could greatly affect the vegetation and food supply for the Spectacled Flying Fox. The Water Cycle depends very much on trees to function effectively; if trees are removed from the Chalumbin area, this will affect the Water Cycle and could cause reduced rainfall in the area, which would affect the health and well-being of the Spectacled Flying Fox.		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
63h	.006	Water resources	Healthy forests act as a filter to keep pollution out of water. Strong roots anchor soil against erosion and material on the forest floor helps absorb nutrients and sediment. However, when forests are disturbed and degraded; sediment flows into streams and pollutes water. [36] Deforestation also affects the availability of water; Forests help control the water cycle by regulating precipitation, evaporation and flows. Layers of forest canopy, branches and roots can store and release water vapor, which controls rainfall. Forests can also help reduce the impacts of flood from storms by blocking and slowing down the flow of runoff. Deforestation weakens this process, leading to irregular rainfall patterns including drought and flooding. [36] Therefore deforestation in the Chalumbin area could cause changes to both the quality and availability of water; causing a threat to the well-being of the Spectacled Flying Fox.		No	Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site specific construction Erosion and Sediment Control Plans (ESCPs) will be prepared and implemented for the construction of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site. The climate and rainfall within the Project area is highly seasonal and the Project is not expected to have an influence on these very strong seasonal patterns.
63h	.007	Spectacled flying fox	Fires destroy their roosts and their food sources. Fire can also affect air and land temperatures and can be responsible for a decline in Flying Fox numbers. Deforestation can change the microclimate of an area, especially if mature fruiting native trees are cut down. I believe that the deforestation that would occur if the proposed development goes ahead, would change the microclimate, the area would become drier, less rainfall would occur and there would be an increase in the fire risk in the area. Fires have the potential to deplete many thousands of bats, due to direct fire damage and thermal temperatures, and then the subsequent loss of habitat and food sources.		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed, including implementation of a Bushfire Management Plan which will result in improved management of fire risks on site. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
63h	.008	Spectacled flying fox	The IUCN highlight many types of threat to the Spectacled Flying Fox on their website, including threats related to habitat clearing. A Major Scope Threat, where the scope is a majority of 50%-90%, to the Spectacled Flying Fox, according to IUCN is Residential and Commercial Development. These are ongoing threats that are related to habitat clearing. The stresses from these threats are Environmental Stresses, which are: 1.1. Ecosystem conversion 1.2. and Ecosystem degradation [17] There are also Species Stresses, which are: 2.1. Species mortality and 2.2. Species disturbance This would include the proposed wind turbine development. Therefore this development would have a negative effect on the Spectacled Flying Foxes' Ecosystem, well-being, and mortality rates. [17]		No	The PER acknowledges that the Project could result in a significant residual impact on the spectacled flying-fox despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed.
63h	.009	Spectacled flying fox	The PER report also states: page 503: "The Project may have a significant residual impact on the spectacled flying-fox (Endangered) due to the temporary loss of foraging habitat." [39] The PER report says, page 503: that: "Potential foraging habitat is widespread across the Project area as there is a known camp within approximately 30 km of the site" [39] It also goes on to state, page 503: "Aside from the sensitive design measures already employed for the Project, the measures proposed to manage vegetation clearing and fragmentation are expected to be effective in ensuring that the Project does not lead to a long-term decrease in the size of the Project area's spectacled flying-fox population." [39] I do not feel in accord with this statement. I do not feel there is enough research within the PER to validate this statement. If mature food trees are removed and foraging habitat is cleared then I think we need to be aware that this is very likely to reduce the population of the Spectacled Flying Fox. Mature trees take many years to grow and bear blossoms and fruit. Clearing hectares of valuable food forests for the Spectacled Flying Fox, would, I believe have a very serious effect on its numbers.		No	The species has not been definitively recorded within the Project area but has been assessed on a precautionary basis. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
63h	.010	Spectacled flying fox	The PER states, on page 503: "Lead to a long-term decrease in the size of a population – unlikely." [39] Again, I feel not in accord with this statement. Potentially, long-term reduction of the population is very likely, in my opinion, because the Spectacled Flying Fox is very vulnerable to sudden huge demises in population numbers due to fire, temperature extremes, and storms and flooding. [17] So these threats may occur in the period where the Spectacled Flying Fox population is expected to build back its numbers. Therefore, if these threats happen it may not build up its numbers and there may be a long-term decrease in population. I also feel that there is not enough research and evidence in the PER to validate this statement.		No	Despite no Spectacled Flying-foxes being recorded on site the species has still been considered in the design phase as such full range of mitigation measures for both the construction and operational phase of the project are outlined in Section 8.6.10 of the PER. This data has been informed by the current conservation advice issued by DCCEEW. Up to 70 % of cleared foraging habitat will be progressively rehabilitated following construction and therefore the loss will only be temporary. It is anticipated that revegetated areas would provide suitable forage habitat for the species within approximately 5-10 years post-construction.
63h	.011	Spectacled flying fox	There is also some information that appears as contradictory, regarding the proximity of a nearby Spectacled Flying Fox Colony. Here in the PER, page 51 of Appendix G, states: "There is a reported spectacled flying-fox camp at Malaan, approximately 20km from the Project area but within the species' foraging range. The species has previously been recorded (in 1999) within Ravenshoe State Forest Reserve 1, which abuts the Project area to the north (ALA). [19] However, the PER report says, page 503: that: "Potential foraging habitat is widespread across the Project area as there is a known camp within approximately 30 km of the site" [39] I find these two statements to contradict the distance from a nearby colony; I believe that this distance is important and needs to be more precise. Distance differences of 10km from roost to foraging area, could have an impact on the extent the proposed development will affect the Spectacled Flying Foxes' food habitat.		No	The discrepancy has occurred because of the large north-south extent of the Project area itself, and where proximity measurements are taken. The Project area is 19.2km from the camp at Malaan at its nearest point. The nearest turbine location to this camp is 20.7km. The species is able to forage within approximately 50km of a camp, therefore more or less the entire Project area is within foraging range of the camp at Malaan.
63h	.012	Spectacled flying fox	I strongly oppose a heavy industrial project that will further decrease numbers of this species. The fact, stated in the developer's own PER, shows the very serious decline in numbers over a 15 year period, their numbers have decreased by over 90%. According to the IUCN, numbers are even lower at 44,000, and are in decline. [17] I believe that Australia, as a nation, needs to be doing all it can to preserve and protect this Endangered Keystone Species. . I implore anyone taking the time to read my submission to really think what it would mean to Far North Queensland and Australia if we lose this species forever. A population decrease in 15 years of over 90%, should be the wake up call we need to stop any further decrease in numbers of this very important species. We simply cannot replace these creatures if they become extinct. Once they are gone, they are gone. Any heavy industrial proposed development that would cause a moderate risk to this species, needs to be stopped. This wind farm has an expected lifespan of 20-25 year. If the Spectacled Flying Fox becomes extinct, it is extinct forever.		No	Despite no Spectacled Flying-foxes being recorded on site the species has still been considered in the design phase as such full range of mitigation measures for both the construction and operational phase of the project are outlined in Section 8.6.10 of the PER. This data has been informed by the current conservation advice issued by DCCEEW. Up to 70 % of cleared foraging habitat will be progressively rehabilitated following construction and therefore the loss will only be temporary. It is anticipated that revegetated areas would provide suitable forage habitat for the species within approximately 5-10 years post-construction.
63h	.013	Spectacled flying fox	On page 502 of the PER it sates: The risk of barotrauma to the spectacled flying-fox is considered negligible as it is known to primarily affect microbat species due to their specific physiology." [39] However, on Page 264 of the PER, it states: "There is potential for the Project to have a significant residual impact on the spectacled flying-fox through turbine collision and/or barotraumas" [45] These two statements do not seem to be in alignment with each other. On Page 502 of the PER, it states that: "If the Project does result in death to individual spectacled flying-foxes due to collision with a turbine during operation, offsets may be required. In accordance with the EPBC Act, these may take the form of payment into a fund to support research on the species." [44] I really believe that money can in no way offset the potential risk to the survival of the species. Money put into research will be ineffective if there are no more Spectacled Flying Foxes left to research.		No	There is very little published research available on the potential effects of barotrauma on bats generally, let along on specific species such as the spectacled flying-fox. One recent study (Lawson et al 2020) undertook computational fluid dynamics simulations of a wind turbine and estimated the characteristics of the sudden pressure changes that bats may be exposed to when flying near a utility-scale wind turbine. The study concluded that it was unlikely that barotrauma is responsible for a significant number of turbine-related bat fatalities and that impact trauma is the likely cause of the majority of wind turbine-related bat fatalities. Continual monitoring of bat fatalities would be undertaken during the operational phase of the Project and the results would contribute to an adaptive management strategy as required - this may require further consideration of measures such as curtailment of certain turbines that consistently result in collisions, curtailment at certain times of the year, etc. The adaptive management framework is designed such that these measures would be considered before a significant number of individual flying-foxes were lost due to collision. The commitment to fund research in the event of losses due to collision was specifically requested by DCCEEW during their review of the PER.
63h	.014	Spectacled flying fox	Temperature extremes are another majority scope threat for The Spectacled Flying Fox. Where the scope is 50%-90% [17]. This threat is an ongoing threat. Species Stresses are: 2.1. Species mortality and 2.2. Species disturbance. [17] Temperature extremes can kill thousands of Spectacled Flying Foxes in a very short period of time, and can have devastating effects on population numbers.		No	Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change

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63h	.015	Spectacled flying fox	Whole Scope Threats, where the scope is the highest and is >90% include storms and flooding. This threat is ongoing. Species Stresses from this threat are: 2.1. Species mortality 2.2. and Species disturbance Deforestation, land clearing, and the inclusion of manmade objects, such as turbines, and tonnes of concrete, will affect the microclimate and flood risk in the Chalumbin area. This could raise the risk of flooding in the Spectacled Flying Foxes' habitat and increase their vulnerability.		No	The Project team is not clear how flooding could affect spectacled flying-fox, a species which rarely comes to ground and is certainly mobile enough to avoid flooded areas.
63h	.016	Spectacled flying fox	If Spectacled Flying Fox numbers decrease, then, the whole of the local biodiversity of the Chalumbin area and Far North Queensland will be negatively impacted. Offsets will not help because Mature Native Trees, which can also be Keystone Species, will be removed by the project; and Bat numbers will decline and there will be a loss of essential pollinators and seed distributors in the area. We cannot look at any animal, plant, or geological formation in isolation; they all affect one another, they all depend on one another.		No	The PER has assessed that the Project is unlikely to result in a decrease in the spectacled flying-fox population.
291	.001	Opposition to project	The Chalumbin wind farm should not be approved because: a) the retention of existing mature forests is a climate change mitigation process in its own right; b) Australia is entering an extended species extinction crisis period and nowhere is it more evident that on the land & in the waters of Australian east coast states;		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
291	.002	Biodiversity general	c) a windfarm is not a passive construction and during its daily operation will be emitting noise day & night and causing air disturbances, electromagnetic interference, light disturbance via shadow flickering - all of which have the potential to affect native species at any point in their lifecycles; d) windfarm construction will be a major native species disruptor. However, once construction is complete there will still be environmental disturbances on a regular basis for maintenance and/or emergency repair to turbines and, major disruption every 25 years matching the operational life cycle of the proposed approx. 86-94 turbines; and		No	The PER identifies that noise may have an impact upon species occurring within the area and as a result construction and operations will be undertaken in accordance with the Environmental Protection Act 1994 and Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
291	.003	Project location	e) it is not impossible for Ark Energy (a subsidiary of Korea Zinc Inc.) to find alternative cleared rural land for its proposed windfarm, as it has at Hellyer, Guildford & Western Plains in Tasmania.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
292	.001	Fauna mortality turbines	The Chalumbin wind farm should not be approved because: Hi looked into the destruction of wind farms, we did a research subject at Curtin University and the evidence is clear tha a lot of birds die directly because of wind farms.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
292	.002	Loss of carbon stores	It does not make any sense to clear so much CO2 removers(green plants and tress) to make way for these destroyers.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
292	.003	Emissions	It also create more damage to the environment with more mines and China imports., that use hundreds of litres of oil. Can you please provide me with the direct cost and evidence (studies)that this is better to the environment ?		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
292	.004	Opposition to project	I appose against you destroying our forest and ecosystems and bird life to make way for this unproved/unrealisable technology.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
293	.001	Opposition to project	The Chalumbin wind farm should not be approved because: I strongly oppose the recent structures proposed for the Far North Queensland forests , where 250m high robots dominate the last of the forests. Now a remnant of its former self. Recent investigations at Mount Emerald show the wildlife is no longer there and with this, robots, only 148m high. This loss is not in keeping with Tanya Plibersek's involvement with the group proposing to secure a portion of the worlds' dwindling natural resources for prosperity for the animals and the people. The wildlife can escape the sterile environment at Mount Emerald, but what of the people. I have been advised I will see these structures from my garden in Wandecla, and my privacy will no longer exist. I will be overlooked. The Far North has lost a lot of resources due to decisions made in the South. In Wandecla, a southern speculator, made a windfall by proposing a project the community was against. In my mind, I think it is a form of scamming the community. Having these structures here, makes no sense in pursuing tourism. Please reconsider. This proposal is not progress.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
294	.001	Project location	The Chalumbin wind farm should not be approved because whilst I support the progress of green energy production, I believe that at this chosen site at Chalumbin the biological values of the country far outweigh the gains of using this location to produce energy.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
295	.001	Project location	The Chalumbin wind farm should not be approved because: It makes no sense to inflict widespread destruction on largely intact environments to supposedly "save the planet". I have cycled through the site of the proposed wind farm, and I have trouble imagining 86 of these gigantic turbines dominating the landscape. If this project is approved and built, the next "cab off the rank" will be the Upper Burdekin Wind Farm, with 136 turbines, again in relatively intact remnant forest. Both are "co-incidentally" located around existing HV transmission lines, thereby minimising the cost to the developer. I suspect this is one of the main reasons for the choice of site.		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
295	.002	Project viability	I recently went on the fundraiser walk up to the Mount Emerald Wind Farm near Walkamin - an access opportunity that is only permitted once a year, whereas it was previously an area that I had bushwalked in numerous times. No more however, as access to the range is forbidden. During the walk, the fragmentation of the whole area was glaringly obvious. Wide roads have been carved all across the range, and the whole area is dominated by the towering turbines, of which there are only approximately 55. And these are tiny compared to the towers proposed for Chalumbin. As a retired electrician, I understand something about electricity, and I find it very difficult to reconcile the size of these turbines against the amount of power they (hypothetically) produce. According to the project's own information, 86 turbines have an "output capacity of ~602 megawatts, equivalent to the electricity requirements of 320,000 homes". I find it rather telling that the authors of this script chose to use the obscure Tilde (~) symbol to precede the "602 megawatts" figure. They would know, as I do, that the 602 MW figure is purely hypothetical, and in reality will never be attained, due to the poor efficiency intermittent nature of wind turbines. And of course the impressively large figure of "320,000 homes" or whatever is always used for any of these developments, but it is an essentially meaningless figure.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
295	.003	Social impacts	With regard to the supposed "benefits" to the Ravenshoe and Atherton Tablelands communities, the Ark Energy Powerpoint presentation talks of 400 jobs during construction and "15 to 30 ongoing jobs for operation". So apart from the initial "sugar hit" of construction, and a "Community Benefit Program" that looks suspiciously like a sop to the community, the wind farm will actually provide minimal benefit to Ravenshoe, which will be saddled with these monstrous towers just outside town.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
295	.004	Visual impacts	As I scroll through Ark Energy's Powerpoint presentation, all I see is misleading propoganda. For example, the photomontage of what the site will look like from the Kennedy Highway is designed to mislead, just as the photomontage on the first page of the Upper Burdekin Wind Farm website is. Towers are simply photoshopped into the image in a way that shows nothing of the environmental disturbance caused by the project. If they were to be totally transparent using such images, then they should also include a "bird's eye" image of the completed project, complete with roads, drainage runoff, sub-stations and transmission lines. That would paint a completely different picture, and they don't want that.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
295	.005	Mitigation and management measures	Their statement titled "Net Positive for Biodiversity" is simply laughable. How on earth can it be argued that this is a net positive for biodiversity through "improved fire management and feral pest management"? Why is there no mention of the harm to native species, birds and bats, and of the fragmentation of the environment? Nothing to see here, because we'll engage in "improved fire management and feral pest control". Statements like this are frankly an insult to informed people's intelligence.		No	Your concerns have been noted. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
296	001	Community consultation	The Chalumbin wind farm should not be approved because: Ark Energy is a profit-driven South Korean owned multinational corporation with zero social licence. They have a history of gaslighting and lying to Australian rural communities. Community consultation/engagement has not complied with the guidelines		No	The content of this submission is not relevant to the current EPBC Act processes. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
296	.002	Emissions	The destruction of approximately 3000 acres on this site alone is outrageous!!! - wiping out of our remnant biodiversity including threatened and critically endangered species., all in the name of "renewable energy". Not to mention all of the extra land required to be cleared & mined to source the raw materials to manufacture the turbines and the biodiversity clearance required for transmission lines. How much CO2 would this existing vegetation absorb over the years compared to how much CO2 will allegedly be reduced via the proposed wind farm? (deducting coal required to be burnt to manufacture the steel & other materials for the turbines., fossil fuels burnt in transport of raw materials to China and fossil fuels burnt in transporting turbines from China to Australia? And fossil fuels burnt by all of the machinery and vehicles used to build the wind farm? Etc		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
296	.003	Contamination	What about BPA flaking off turbine propellors and contaminating soil and our river systems., impacting our children's fertility/health and also that of the Great Barrier Reef? Will all soil and waterways be decontaminated of BPA and when? At point of decommissioning? Who will pay for this? How much will this cost? What assurances are in place to insure local landowners are not left to foot the bill? How/when/who will undertake ongoing BPA monitoring/testing? What about contamination of adjoining landowners drinking water/water tanks?		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment.
296	.004	Vegetation clearing	A nuclear power plant would involve a fraction of the land clearing compared to this proposal & save our remnant biodiversity.		No	Nuclear energy projects are not permitted under the EPBC Act (s140A).
296	.005	Mitigation and management measures	There should also be a minimum 10km setback of turbines from dwellings., as now required around Mudgee & Gulgong NSW. Nuisance noise and associated health impacts from wind turbines on rural landowners and their children is absolutely unacceptable. Ark Energy, Host Landowners and the QLD government will be sued and tied up in never ending legal battles due to nuisance noise and turbines constructed too close to dwellings. People have a right to a good nights sleep in their own beds. A minimum 10km (ideally 20km) setback is required between turbines and dwellings to ensure rural landowners and the children are not adversely impacted.		No	The primary approvals process for a wind farm project under the Planning Act is well-defined; particularly where a proponent can achieve at least 1,500 m separation between any proposed wind turbine and sensitive land uses (occupied premises) to protect human health and noise amenity. This provides the proponent with an incentive to "design out" potential land use conflicts at a State-level by achieving a suitable separation distance between the wind turbines and surrounding neighbours. The following measures will be implemented to mitigate and manage impacts from noise and lighting as much as practicable during the operational phase: •Night lighting will mainly be limited to that required for safety and security. Project lighting will be minimised (i.e. low luminance) as far as practicable. Night lighting will be required for security and operational purposes on the switchyard and operations and maintenance buildings. The wind turbines and access tracks will not be lit. •Directional lighting will be limited to emergency exits and only be used for emergency access/egress at wind turbines and facilities. This lighting will be directed away from environmentally sensitive areas.
296	.006	Biodiversity general	How do flashing lights, vibration & noise from turbines impact threatened and endangered native species, especially nocturnal ones? Will stress impact their fertility? What studies have been undertaken on this? A condition of consent is required for turbine lighting to be switched off when aeroplanes are not in proximity.		No	The PER identifies a that noise, vibration and lighting may have an impact upon species occurring within the area (see Section 5) and as a result construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
296	.007	Social impacts	Ark Energy should put their money where their mouth is., if as they claim., surrounding land values will not be impacted by their proposed wind farm, then the land must be professionally valued prior turbine construction and at the point of any land sale., if there is a reduction in value then Ark Energy must pay this difference to impacted landowners as a condition of consent.		No	In relation to a project like a wind farm, there are a number of factors that could have an impact on land values and therefore require appropriate consideration. These generally include: - Changes in income earning potential of property - Aesthetic appearance - impact on scenic views - Changes in fencing and on-site access roads - Changes in natural vegetation and ecology - General trends in property prices in the area independent of wind farming. The value of properties also go up and down for a wide range of external reasons. Supply and demand, local industry performance, proximity to amenities and infrastructure, housing affordability and the desirability of the location can all have an impact. The fact that a property is in the vicinity of a wind farm or that a wind farm is visible from a property does not mean that a property value is going to be impacted. There have been two studies commissioned by the NSW Government that have studied many property transactions before, during and after the construction of wind farms. Analysis of the prices obtained in these sales and comparison with the broader market in the region demonstrated no link between wind farms and a decrease in property value. This is no different to any other land use planning decision.
296	.008	Visual impacts	Visual impact is unacceptable.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
297	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Renewable energy projects should not be destroying the thing that they are meant to save. Remnant forests should be protected, not exploited for short term profits.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
298	.001	Opposition to project	Chalumbin is home to an array of diverse and sadly depleting native species. Clearing this vital habitat in order to build the Chalumbin wind farm in its place almost laughably ironic. To destroy dwindling native habitat in the name of green energy is a joke. I and many others desperately call for this senseless destruction to come to an end before we lose our precious native flora and fauna for good.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
299	.001	Opposition to project	As per Submission 21, with the addition of: Save the koalas		No	See response to Submission 21
300a	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end.		No	See response to Submission 21
300b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
301a	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: Wind farms are NOT eco-friendly. To market them as green is FRAUD.		No	See response to Submission 21
302a	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
301b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
303	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: It's just the wrong place.		No	See response to Submission 21
304a	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end.		No	See response to Submission 21
304b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
304b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
305	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
306	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: Solar power is better protect the birds and nature		No	See response to Submission 21
307	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21
308	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
309a	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
309b	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
310	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: Please save our rainforest.		No	See response to Submission 21
311	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
312	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: Worried about wildlife + the health of people nearby. Also power is dearer. Plants need carbon		No	See response to Submission 21
313	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21
314a	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21
314b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
10b	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
315	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
316	.001	Opposition to project	As per Submission 21, with the addition of: Leave the rainforest alone!		No	See response to Submission 21
317	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end.		No	See response to Submission 21
318	.001	Opposition to project	As per Submission 21, with the addition of: Yellow Belly Glider Koalas		No	See response to Submission 21
319	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21
320	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end.		No	See response to Submission 21
321	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: These monstrosities have no place in our environment.		No	See response to Submission 21
322	.001	Opposition to project	As per Submission 21, with the addition of: Keep the wildlife		No	See response to Submission 21
323	.001	Opposition to project	As per Submission 21, with the addition of: Save the wildlife		No	See response to Submission 21
324	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
325	.001	Opposition to project	As per Submission 21, with the addition of: I do not consent for Wooroora Road and surrounding roads to be used for Heavy Haulage Trucks carrying wind turbine parts or Heavy Vehicle Trucks carrying industrial quarrying materials, cement, wind turbine parts, substation parts or any heavy vehicles associated with Chalumbin Wind Farm to be using local rural residential roads as heavy industrial roads, causing dust, noise and diesel pollution.		No	See response to Submission 21
326	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: Not good place		No	See response to Submission 21
327	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21
328	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end		No	See response to Submission 21
329	.001	Opposition to project	As per Submission 21, without the EMF sentence at the end, with the addition of: Work with the people		No	See response to Submission 21
330	.001	Opposition to project	The Chalumbin wind farm should not be approved because: we must develop renewable energy that supports and protects our environment and native flora and fauna are critically important. I cannot believe that a more suitable place can be found.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
28c	.001	Offsets	Executive Summary, Offsets Excerpts from Draft PER relevant to response: Offsets cannot replace bio-diversity. No offsets can replace the eagles, birds, bats, vegetation, koalas, the forests and vegetation, wildlife that will either die from the haulage road development, the high voltage lines, and lastly the enormous wind turbines. The only reason to make an offset is to allow destruction of a (high value) ecosystem. Destruction. That's an absolute. You can choose your pretense at "replacing" it; if it's existing habitat, well, it's already existing - so where's the gain? If you intend to reinvent the lost habitat elsewhere - what was already destroyed at the replacement site? And what omnipotent person imagines they can actually recreate a specific habitat on a different place? Offsets cannot replace the loss of breeding opportunities of the koalas when the haulage roads to cross will be 60m plus wide, or the equivalent of 16 lane highways for industrial haulage trucks. Offsets cannot replace the destruction of aged old trees and vegetation which provides bio-diversity for vulnerable and endangered wildlife that is listed in the EPBC Act of national significance. State Significance vegetation, flora and fauna, should also be listed in the PER, which indicates how deeply flawed our environmental laws have become. The summary Introduction PER states: "If koalas are present within the Project area, it is likely to be on a very sporadic basis.." "The Offset Management Strategy includes indicative offsets located on the host properties. The indicative offsets include three significant areas totalling more than 7,400 ha" "In addition to 100% of direct land-based offsets, the Offset Management Strategy includes a significant indirect offset for the magnificent brood frog to advance the scientific knowledge for this species, in the form of contribution towards research of up to $250,000" Executive Summary, Offsets Response Koalas are almost certainly present on the host properties, and the term "sporadic basis" is not likely to be correct. It is an insult to any thinking person - "indicative offsets" on the host properties simply because it consists of areas of land which won't be cleared on the same two properties. It is also likely that the proposed offsets will become drier, susceptible to fires and weed infestations. It is also likely to become cleared, or more degraded as a result of being designated an offset (rather than improved as claimed by this draft PER). I dispute the comments that were made in the PER documents that this development could ever be (weasel word) 'nature positive'. 10.0 Offsets – Response The PER mentions to allocate $250,000 research in Magnificent Brood Frog Is an insult when no amount of research and monitoring of the Magnificent broodfrog with protect it's habitat from destruction. It has been mentioned by Epuron (Ark Energy) now Chalumbin Wind Farm Pty Ltd that the next investor would pay for this including other money offers.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The $250,000 towards research into the magnificent brood frog is a voluntary commitment made by the proponent over and above the requirement for direct offsets which are also being proposed. Nonetheless, the EPBC Act Environmental Offsets Policy does allow for a proportion of indirect offsets in the form of research and there are many examples of other projects where research has successfully formed part of the offsets program.
28c	.002	Offsets	11.3.4 Community Concerns During consultation activities the Project team has received feedback from community members and sought to address questions around the following issues: 11.3.4.1 Ecological impacts Concerns about clearing of vegetation and potential Impacts on local wildlife, nearby protected areas and key species. CWF has a goal to rehabilitate 70 % of the impact footprint and a substantial offset package including dedication of land-based offsets much larger than the area of clearing for the unavoidable impacts on MNES assessed as having a significant residual impact and a substantial indirect offset of $250,000 towards scientific research for the magnificent brood frog. COMMUNITY CONCERNS – ECOLOGICAL IMPACTS PER RESPONSE [11.3.4.1] Offsets and ecological impacts occur throughout many sections of the PER document - The replanting of 674.7 ha of land will cost around $47 million. It will require extensive resources and due to the proponent selling off the asset to another global investor, may null and void the original intention. The destruction of remnant vegetation cannot be offset by the replanting of seeds / seedlings. It is a fact that bulldozing this vegetation cannot be undone. Claiming offsets for existing land is absurd. $250000 as an offset towards destroying critical habitat for an endangered species with an extremely limited habitat is not going to work. Community concerns regarding ecological impacts have not been met. The entire conservation sector is in agreement that environmental offsets is destructive. The offsets proposed by simply allocating land aside that will not be cleared is not an offset. The only offsets that matter for net gain is the revegetation of land to increase the net cover of rewilded and reforested habitat. The offsets arrangement proposed in the PER is a smoke and mirrors sham and this is why the EPBC Act is being reviewed and ultimately changed in the near future.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The $250,000 towards research into the magnificent brood frog is a voluntary commitment made by the proponent over and above the requirement for direct offsets which are also being proposed. Nonetheless, the EPBC Act Environmental Offsets Policy does allow for a proportion of indirect offsets in the form of research and there are many examples of other projects where research has successfully formed part of the offsets program.
331	.001	Opposition to project	The Chalumbin wind farm should not be approved because:it will destroy a large area of wilderness and the animals who live there. Also any profit from this wind farm will go to it's owners in Korea. Saying it will help our local economy is an untruth. I have seen for myself the amount of destruction that occurs around the installation of a wind farm near here on the mountains west of Walkamin, That area which used to be a wilderness habitat is now a wasteland. And any revenue from that windfarm goes to it's owners in Thailand. I am increasingly more worried about how selling off pieces of our country to foreign investors will play out in future. The big money people in Asian countries now own big pieces of Australia and they have done so without the consent, or even the knowledge of us, the citizens and taypayers. I know the major concern for most of us is the continued destruction of forests, mountains, wild places and the damming or draining of waterways which all contributes to habitat destruction. And this is not just killing all the animals but will also lead to our own destruction as well. How many species have to go extinct, including the people who live here, before we wake up to ourselves? There is an old saying; "When we have killed all the animals and polluted all the rivers then we will discover that we can't eat money".		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
28d	.001	Cumulative impacts	1.0 GENERAL INFORMATION Related Actions Excerpts from Draft PER relevant to response: "Other renewable energy projects are currently proposed or underway within the Northern QREZ; however, these other actions are not related in any way to the Project." General Information 1.6 Related Actions Response 11 I disagree that other renewable energy projects within the Northern QREZ are not related to this Chalumbin Project. Other renewable projects in the Wet Tropics and Einasleigh Uplands are related, due to the destruction of wildlife threatened species, and other important critical vegetation that will be cumulatively impacted.		No	The other renewable energy projects proposed in the broader region are separate to this project for the purposes of considering whether there is any need for a "split referral" under s74A of the EPBC Act. These projects are all proposed independently of each other and are not commercially or operationally linked in any way. Section 5.5 of the PER presents a cumulative impact assessment of the projects in the broader region.
28d	.002	Adequacy of the PER	It is very unfair that a community such as Ravenshoe, and Jirrbal custodians would need to go to enormous lengths to calculate all proposed renewable sites, including their likely overall impact on Federal listed renewable in such a short space of time. This should also include State listed species, which may also be of national significance, even global. There needs to be a review of this whole process. This process is geared towards the developer, but it comes at the expense of our environment and the community. There needs to be a detailed review of all proposed renewable sites and their likely overall impact on all state and Federal listed ecosystems to have some justice and voice for our precious irreplaceable wildlife that have no-where else to go. The figures need to be revised to take into account State and Federal species and eco-systems, and reconfigure		No	The PER assessment process does not require that stakeholders calculate cumulative impacts on MNES throughout the broader region; this is a requirement borne by the proponent, through the preparation of the PER (as required by the PER Guidelines). This information is presented in Section 5.5 of the PER. MNES are the main focus of the PER, as the EPBC Act governs these, and the PER is prepared under the EPBC Act assessment process. MSES are considered to the extent that some of these species are considered important in their association with the outstanding universal values attributable to the WTQWHA. Impacts on State-listed species have been separately assessed and addressed through the development permit issued for the Project under the Planning Act 2016. The Project has sought to avoid, minimise and mitigate potential impacts on MNES and MSES, as broadly described in Section 6.0 of the PER.
332	.001	Opposition to project	As per Submission 21		No	See response to Submission 21

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
333	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Koalas are found only in typical habitats in Australia and are already under threat. I understand that Koalas are also facing extinction threat due to tumour affecting a large number and no noticeable treatment in store We HAVE to conserve Koalas as the biodiversity has to be preserved fo long term sustainable of life on earth		No	Potential impacts to the koala, including the potential loss of habitat have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. Additionally, large areas of potential koala habitat throughout the Project area will be retained.
28e	.001	Yellow bellied glider	Note submission has been summarised to extract key points requiring response.	Section 5 of the PER provides an impact assessment. Table 5-2 indicates that 28.14 ha of habitat will be impacted but that the significant residual impact is unlikely. 4.7.12 PER RESPONSE: The final statement that significant residual impact is unlikely is typical language that we find so challenging with this entire PER document. Every single Yellow Bellied glider counts and deserves to exist. It is also a human right that we need these trees and yellow-bellied gliders that we love so much. Their lives matter, and they do not deserve to be destroyed, driven away by habitat destruction and that they have every right to breed. Every old tree matters for this species and all hollows are essential to this species. No offsets will ever be able to replace these precious innocent wildlife that have nowhere else to go. Their habitats are mainly found in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests	No	Section 4.7.12.4 of the PER provides a referenced description of habitat for the yellow-bellied glider, and distinguishes between denning and foraging habitat per the scientific literature. Section 8.6.12 of the PER indicates that the Project will not result in clearing of potential denning habitat so the loss of hollows suitable for yellow-bellied glider is not anticipated.
28e	.002	Yellow bellied glider	Also, this species has a range of fantastic vocalizations including shrieks, rattles and gurgles – the typical call starts with a soft hoot, is followed with a loud shriek which leads into a gurgling, throaty rattle – Please refer to the concerns of Scientists about noise, nuisance, vibrations of these enormous industrial wind towers in their habitats, that just do not belong. It's obscene that our wildlife could be subjected to this torture. There is evidence that humans are affected by the sounds of the turbines. All the senses for wildlife are known to be much more acute. The precautionary principle needs to apply. This industrial project should be rejected outright.		No	Section 8.6.12 of the PER considers the disturbance impacts to yellow-bellied glider due to construction noise and vibration, and proposes mitigation measures to minimise these impacts. There is a relatively small amount of habitat for the yellow-bellied glider within the Project area and significant residual impacts are not anticipated.
28e	.003	Biodiversity general	Note submitter refers to entirety of Submission 84 in below comment. I would appreciate the same concerns that Koala scientist Roger Martin's PER submission has made in regards to the impacts of sounds & vibrations, as we should not be splitting hairs that one species' sounds is going to be more affected than another.		No	See response to Submission 84
28e	.004	Yellow bellied glider	A 50m exclusion zone must be implemented around trees used as dens by Yellow-bellied Glider's.		No	Based on the habitat mapping for this species (which has been developed with reference to the scientific literature), there is no potential denning habitat for yellow-bellied glider within the proposed clearing area. The separation of the construction footprint from potential denning habitat is much greater than 50m. Prior to construction, a team of fauna spotter-catchers will under pre-clearing surveys of the entire project footprint to confirm there are no yellow-bellied glider den trees.
28e	.005	Survey effort	I raise so many concerns about the inadequate monitoring techniques. I refer monitoring that took place with our Wildlife Photographer at around Ms Sharon Trezise's place that I wish to confirm as follows: I wish to advise that our wildlife photographer on 15 November 2022 and 18 November 2022, with Ms Sharon Trezise undertook a field survey and carried out spotlighting 12 December 2022 Page 8 within the area of turbines 65, 66, 67, 70, 68, 71, 72, 74, 75 & 76. During that time, we are instructed that our client observed: a. 12 greater gliders; b. 3 yellow-bellied gliders c. Approximately 3-4 sugar gliders		No	Your client's trespass has been noted and the landholder has been advised. These purported observations cannot be considered anything more than hearsay in the absence of evidence, nor demonstration of capability in fauna identification. Project surveys commenced in October 2020 and in some cases are ongoing (as at February 2023). Surveys have undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
28e	.006	Biodiversity general	Wind monitoring equipment was found as indicated below – The sign states: "Hearing Protection must be worn on this site" (Note submitter has included in submission a picture and geolocation of onsite equipment). My comment, based on this sign is that this is a dangerous site for humans, as it may impact their hearing. Why should wildlife be subjected to industry. Below: are images (I also have footage) that was sent to myself by the same photographer (mentioned previously). This type of monitoring, that includes lights that go on and off, with continual sounds that may be harmful to humans but may well drive and displace our wildlife away. Our wildlife should not have to share their lives with dangerous sounds, EMFs for a wind industry. These vast industrial areas, if approved, would inaccessible to humans. However, greater gliders and other wildlife, cannot get away from the sounds of industry, they have nowhere to go. They will be just driven away or towards extinction. The sign says "Hearing Protection must be worn on this site". Chalumbin is worthy of being protected as a National Park.		No	We note that your submission does not actually state that the included photograph of a glider was taken within the Project area, nor is a georeferenced location provided for the glider whereas it is for the wind monitoring equipment (the location of which the Project team is already fully aware)
334	.001	Opposition to project	The Chalumbin wind farm should not be approved because: I demand that you protect our endangered kolala habitats now they need protection		No	Potential impacts to the koala, including the potential loss of habitat have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. Additionally, large areas of potential koala habitat throughout the Project area will be retained.
335	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
336	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
337a	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
337b	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
338	.001	Opposition to project	As per Submission 21, with the addition of: We live on the route the wind turbine construction crew travel nd have notices a huge increase in road kill since the beginning of the construction. This must stop. Our wildlife is not disposable!!!		No	See response to Submission 21
339	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
340	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
341	.001	Opposition to project	As per Submission 21, with the addition of: Please let this not go ahead in this area.		No	See response to Submission 21
342	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
343	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
344	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
345	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
346	.001	Opposition to project	As per Submission 21, with the addition of: Surely better system can be investigated to eliminate destruction of habitat.		No	See response to Submission 21
347	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
348	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
349	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
350	.001	Opposition to project	As per Submission 21, with the addition of: Please think of our beautiful wildlife!		No	See response to Submission 21
351	.001	Opposition to project	As per Submission 21, with the addition of: More thought/research should be done concerning the health affects on humans & animals and their environment.		No	See response to Submission 21
352	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
353	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
354	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
355	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
356	.001	Opposition to project	As per Submission 41b, with the addition of: This needs to be (unreadable) with approval and consent from Traditional Owners.		No	See response to Submission 41b
357	.001	Opposition to project	As per Submission 21, with the addition of: Renewable energy is important but so are trees and biodiversity. Careful consideration and broader consultation is needed especially with the Traditional Owners of the country this project is on.		No	See response to Submission 21
358a	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
358b	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
359	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
360	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
361	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
362	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
363	.001	Opposition to project	As per Submission 21, with the addition of: As a local to the area, I strongly oppose this wind farm's placement due to the direct environmental harm and how the reduced biodiversity will hurt community and land.		No	See response to Submission 21
364	.001	Opposition to project	As per Submission 21, with the addition of: I totally disagree with the construction of Chalumbin Wind Farm and the degradation of the environment.		No	See response to Submission 21
365	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
366	.001	Opposition to project	As per Submission 21		No	See response to Submission 21

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
367	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
368	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
369a	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
369b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
370	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
371	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
372	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
373	.001	Opposition to project	As per Submission 21, with the addition of: This is the wrong location for a wind farm. Lots of already cleared land that could be utilized elsewhere.		No	See response to Submission 21
374	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
375	.001	Opposition to project	The Chalumbin wind farm should not be approved because: There is no benefit from creating wind farms and claim doing good for the environment when you are continually destroying crucial native forests that not only mitigate green house gasses and helps to cool the earth, you are killing off endangered wildlife. Clearing over one thousand hectares of this precious remnant wilderness, blasting high mountains and destroying critical habitat is not only tragic, it is not sustainable. You can not green wash this. Chalumbin is so remote that there are likely species of flora and fauna here yet to be scientifically described. Queensland wilderness is being cleared at an unprecedented rate, and the wilderness of Chalumbin is a critical haven to wildlife. Chalumbin should not be destroyed for a wind farm.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
280b	.001	Fauna mortality turbines	I write concerning the proposed Chalumbin windfarm. Can you imagine, over the life of these things, the number of slaughtered birds. Eagles. Kitehawks. The height of the mountain of dead birds. (From just one turbine) If you could look into the future, stand beside that mountain of dead and writhing maimed birds, then look to the camera smiling, 'Yes, let's go with it!' And the killing goes on. Night and day. Silently. 24/7. Owls, Bats. By the thousands. Millions. Killed. Maimed. The suffering. Bats which replenish our rainforest. Blades, carving through complete colonies. The eagle chicks dying in the nest when the parents don't return. Like feral cats. One feral cat, just one feral cat is like a vacuum cleaner. Wiping out everything. But these things. Going about your days, smiling for the cameras. The killing goes on. The spinning guillotines. Snuggled up watching a movie or having breakfast. The killing continues. As your closing your eyes at night. Out there in the dark, the silent killing goes on. After You and I are long gone. The blades keep spinning. Migrating birds coming in from Russia. Smashed to pieces. And when these things crumble, new ones efficiently erected. Never missing a beat. I see so many birds, bats, sugar gliders hung on barbed wire fences. Killed by cars. Cats. It's a wonder there's anything left. And now these monstrosities. The most efficient slaughters of all. You can prevent lifetimes of silent killing here.		No	Your concerns regarding the Project's potential impact on fauna are noted. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. The Project will not install any barbed wire fences. There are already well-established populations of feral cats across the Project area.
376	.001	Biodiversity general	The Chalumbin wind farm should not be approved because it has traditionally been a habitat for birds and animals. Building a farm will destroy their refuge especially now when we have extinction crisis of so many species. So many of the species will be lost for future generation, they will be missing out so much. The earth is a wonderous place, let's not destroy for short term gains.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
377	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. I also wish to emphasise that placing an industrial sized wind farm such as Chalumbin in this area of high biodiversity is ill advised and would involve negative impacts that could not be offset or avoided. Biodiversity encompasses: • genetic biodiversity • species biodiversity • ecosystem biodiversity. This project threatens all three aspects. Therefore the planned siting of this and other wind farms – and indeed the Renewable Energy Zone - along the borders of the biodiverse Wet Tropics World Heritage Area is extremely unwise.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
377	.002	Cumulative impacts	The cumulative impacts of the loss of habitat for food, shelter and breeding will have a significant impact on Matters of National Environmental Significance (MNES) and non-MNES listed species, and a flow on effect throughout the wider environment. In some cases, MNES species may simply not survive.		No	The combined effects on species through multiple impact pathways from Project activities are assessed throughout Section 8 of the PER for each individual MNES. Potential cumulative impacts arising from the Project in conjunction with other planned or current actions within an overlapping area of influence are addressed in Section 5.5.
377	.003	Magnificent brood frog	Magnificent Brood Frog eggs are laid on moist soil in or near a seepage1, usually under vegetation. After hatching, the tadpole makes its way down the seepage or is washed into first order streams where development continues in small pools. Therefore, seepages are critical to the breeding and the ongoing survival of this species. Regrowth forest uses more water than old growth and therefore has the potential to reduce seepages. It can be seen that rehabilitation of Magnificent Brood Frog sites is problematic. If revegetation causes existing breeding sites to no longer function, due to the depletion of water and deletion of seepages, this habitat would no longer exist. The suggested contribution of up to $250,000 by ARK towards research of this frog then appears a tragically inadequate offset.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures (including rehabilitation). This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
377	.004	Northern greater glider	Size of trees is important for Queensland greater gliders, with trees > 30 cm diameter at breast height (DBH) preferentially selected for foraging and > 50 cm DBH for denning. Trees > 50 cm DBH are more likely to contain suitable hollows for sheltering by greater gliders. 2 Therefore once habitat trees are lost from the system, the length of time required for the development of replacement habitat trees appropriate for the species is prohibitive. Claims that the developer will rehabilitate the area within 30 years are therefore extremely dubious.		No	The PER acknowledges the time that hollows take to form and makes a clear commitment to retain existing hollow-bearing tree trunks for re-use in the rehabilitation program. Artificial nest boxes will also be used in the rehabilitation program (these have recently been proven to be successfully used by greater gliders in the aftermath of the 2019-2020 bushfires) so that any hollows will be relocated or replaced at a ratio of 2:1.
377	.005	Biodiversity general	Increased Impacts to Landscape Connectivity The extensive network of access roads will fragment habitat and affect connectivity. Previous experience and research shows that feral predators such as cats move in and weeds start to encroach on areas cleared for roads and other infrastructure3		No	The Preliminary Rehabilitation Plan located in Appendix K of the PER provides a framework for the reestablishment of vegetation to cleared areas and to restore connectivity. The rehabilitation programme will include fauna crossing infrastructure to further facilitate movements across the site. The Project area is already subject to established populations of feral animals and weeds.
377	.006	Rehabilitation	Loss of Habitat & Rehabilitation The area to be cleared is listed as a staggering 1071.1 hectares. The minimum area to be rehabilitated is listed as 753.31 ha (70%) . Anyone who has experience of revegetation will recognise the enormity of this task. While it is stated in the PER: 'Areas of temporary disturbance are progressively rehabilitated as they become redundant throughout the construction phase', if this is to be the case, is the project actually financially viable? Weed control alone will require a large amount of herbicide to be purchased which, if used on a broad scale and repeatedly, is also likely to affect the viability of the regrowth. Increasingly scientific research is uncovering the complexity of forests. These are ecological systems in which trees are just the dominant life-form. Rehabilitation to close to the original form therefore involves more than revegetation and, on this scale, is highly likely to be impossible. In addition I understand that the wind turbines would require replacement in 20 years. Therefore areas of revegetation that may have been successful over the first 20 years would then probably be cleared again. Note remainder of submission is repeating Submission 80, parts .002 to .028		No	The project has allowed for the rehabilitation commitments in the PER. Weed control also includes biosecurity measures to stop the spread of weeds in the first place. Rehabilitation will use the existing soil seed bank and re-establish remnant vegetation communities (where outlined) whereby ecological processes can evolve and develop with the site environmental conditions. The project life is 30 years and decommission will involve significantly less disturbance to remove infrastructure where required with blade swept paths being the only disturbance along the majority of roads.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
378	.001	Opposition to project	The Chalumbin wind farm should not be approved because this proposed area is pristene untouched wilderness with such a diverse range of wildlife soley endemic to the area. Everyone knows Koala habitats are being removed at an alarming rate that they will soon be found only in zoos or nature parks. We the people of Far North QLD are concerned this project will destroy a vast tract of land and many wildlife habitats in the proccess . From what Ive seen of the wind farms out of Mareeba with the turbines rarely turning, I feel wind farms are costing way more than they will ever achieve in producing an efficient power supply to the grid. I feel its a catch 22 calling wind farms GREEN ENERGY yet causing the destruction of pristene untouched wilderness. There are other solutions to the prevailing energy crisis.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
6d	.001	Alignment with government policy	Note submission has been summarised to extract key points requiring response. Over the past month I have written 3 detailed submissions pertaining to the PER, all based on information contained in the PER and, in theory, to be assessed under the current EPBC Act. I now find out that the current EPBC Act is not fit for purpose. If this is the situation then I can see only two possible routes for the current PER process to follow. A)The PER in its current form is submitted to Minister Plibersek to make a ruling on the suitability or otherwise of the Chalumbin site for a wind farm. Minister Plibersek makes a ruling under a defective EPBC Act. If the ruling is in favour of the wind farm then obviously there will be a protest from the opponents that the judgement was made under an "ineffective and inefficient" EPBC Act. B)The PER in its current form is returned to the proponent to re-address issues that have since arisen and remarked upon in the NPP (Nature Positive Plan (NPP) released on 8th December https://www.dcceew.gov.au/sites/default/files/documents/nature-positive-plan.pdf), plus all the critical issues raised in submissions to Ark Energy during this PER period. To use one example I quote the following regarding the use of "offsets". "The use of 'averted loss' offsets (protecting one patch of existing habitat in exchange for clearing or loss of another) will be discontinued" (emphasis mine) pg. 21 in NPP I did address the fallacious concept of "offsets" employed in the PER in an earlier submission. And this is only one of a host of regulatory changes proposed for a more vigorous and substantial EPBC Act. A more 'fit for purpose' EPBC Act will incorporate regional plans. Again I quote from the NPP pg. 19 "Priority areas for consideration will be those experiencing development pressure and with high biodiversity values. These might include urban growth areas, renewable energy zones, and future development areas." (emphasis mine) There is no doubt that the Chalumbin area satisfies these criteria and the proposed CWF should be assessed accordingly.		No	The Project is being assessed under the legislation in force at the time of the proposal.
6d	.002	Alignment with government policy	Minister Plibersek returned from Montreal and the COP15 Biodiversity Conference on 19th December and issued a press release informing Australians that we had signed up to a pledge that "30% of the world's land and 30% of the world oceans by 2030" would be protected. Her final statement was: "Now it's back home to Australia to get on with delivering our own ambitious plans to protect and repair nature." I would suggest that the Chalumbin Area would be an excellent project for Minister Plibersek to add to her land protection strategy so that the 30% goal can be achieved. As has been told in many submissions to the PER, the land where Ark Energy wants to develop a wind farm is a wedge slice of territory between the Wet Tropics World Heritage Area and the Yourka Nature Refuge. With the extremely high species and flora biodiversity Chalumbin would be an excellent candidate for a National Park or some other form of conservation status. This proposition to conserve the Chalumbin Area would also be backed up with reference to the Threatened Species Action Plan (TSAP). As listed in the TSAP the Chalumbin Area falls under "Appendix 2: Priority Places" (pg. 45). "Most places have high densities of threatened species and threatened ecological communities,..." In the list of 14 priority mainland places, "Eastern forests of Far North Queensland" is the first region categorised! If we add in all the threatened species listed (e.g. Red Goshawk, Koala, Northern Quoll, Spectacled Flying-fox) pgs. 42-43, plus those species listed under Matters of National Environmental Significance (MNES) – Magnificent Brood Frog, Masked Owl, Northern Greater Glider – there is a compelling case to preserve, not industrialise, the Chalumbin Area.		No	The Project is being assessed under the legislation in force at the time of the proposal.
6d	.003	Survey effort	I note that in the PER (Section 8.1, Significant Impact Assessment) when addressing the Chalumbin Wind Farm's (CWF) impact on several listed species (Red Goshawk, Southern Cassowary, Magnificent Brood Frog, Masked Owl, Northern Quoll) a time frame for field work was given between October, 2020 and January 2022. Considering the totality of all the species in the Chalumbin Area and their inter-reactions over time, does 16 months seem long enough to really understand the ecological impact of 86 x 250 metre tall turbines? Baseline studies of such a diverse ecosystem would take years, not months! In effect there is just not enough baseline data to come to any sort of conclusive statements regarding the potential deleterious impacts or otherwise on the native flora and fauna of such a huge industrialised project.		No	Surveys commenced in October 2020 and in some cases are ongoing (as at February 2023). Surveys have undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
6d	.004	Community consultation	I would also like to highlight that a large community of people live in and around the Ravenshoe/Chalumbin district and that the majority of people are vehemently opposed to the siting of this wind farm in its proposed location. Listed hereunder are some of the objections raised by fellow citizens:- a)The dialogue with indigenous peoples has not been all inclusive. Other submissions will elaborate on this issue.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
6d	.005	Visual impacts	b)The visual amenity of a bushland setting consisting of vegetated hills and a treed landscape will be severely compromised by construction of 86 gigantic 250 metre tall wind turbines. Just looking at the current Kaban Wind Farm on the northern side of Ravenshoe with the 28 x 220 metre turbines is enough to instill a dread of what Chalumbin would look like.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
6d	.006	Traffic and transport	c)The initial proposed access route along Wooroora Road would be a nightmare for local residents. School and local transport in the mornings and evenings would be severely disrupted. The delightfull tree lined, winding bush road of today would turn into some mega industrialised super highway.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. The widening of the access roads will be largely limited to those areas shown in the swept path assessment in the Transport Route Study (Appendix R of the PER). Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
6d	.007	Social impacts	d)Health issues are of concern. With all the wind turbines in operation or planned around Ravenshoe (Windy Hill – 20, Kaban – 28, High Road – 20, Chalumbin – 86, Total – 154) when is enough enough? What is the cumulative effect of all the noise and emf radiation going to be on local citizens? This is a real concern.		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
6d	.008	Social impacts	e)I note that in the PER (Section 13.0, Economic and Social Matters) a lot of weight is given to the supposed economic benefits to the local area. Although all tables measure supposed financial benefits to the Ravenshoe community, it is not the case that everything in life can be measured in dollars alone. Quality and amenity of life are also important metrics of harmony and community well being than just money. I believe that the CWF would jeopardise these qualities.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans.
6d	.009	Project location	The siting of the proposed Chalumbin Wind Farm, as outlined in the PER document, is in a totally inappropriate place.		No	Section 3.0 of the PER explains that the Project area is well-positioned for a prospective wind farm development due to the three factors of (a) proximity to existing and future transmission infrastructure, (b) low population density, and (c) excellent wind resource. It is highly unlikely that any investor would proceed with a commercial wind farm project if the ability to connect to the national electricity grid was uncertain, or if the quality of the wind resource within the site was not well understood. Projects such as the Chalumbin Wind Farm are a balance in land use planning where the fundamentals for the wind farm (i.e. grid connection, wind resource, land access and tenure) are overlayed with other considerations (population and settlements, protected areas, biodiversity, civil engineering, cultural heritage) to determine the project's ultimate location and design. The Chalumbin Wind Farm is proposed in this location as the proponent believes, and asserts within the PER, that potential impacts to MNES (as a function of biodiversity in the discussion above) are manageable and the Project advances ecologically sustainable development (ESD), which is an object of the EPBC Act.
6d	.010	Adequacy of the PER	There are enormous ecological and biodiversity concerns that need addressing whether under the existing EPBC Act or any revised legislation.		No	These matters are addressed through the PER in response to the PER Guidelines (for the EPBC Act) and through the Project's development permit issued under the Planning Act 2016 (for MSES).
6d	.011	Project alternatives	On the other hand a more positive outcome for the Chalumbin Area would be to incorporate its unique and outstanding biodiversity values (a high elevation, wet forested environment with outstanding species diversity) in some form of conservation zone. This would be in accord with Minister Plibersek's pledge to protect 30% of Australia's land area.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The Offsets proposed in Appendix O of the PER provide a mechanism for the future strengthening of ecological values within the site.
379	.001	Opposition to project	Note Submission substantially the same as Submission 21, without the EMF sentence at the end and reference to Ravenshoe. Added the following: What is being proposed at Chalumbin impacts all living flora and fauna. Why would you do this? This is NOT GREEN ENERGY. I say NO to Chalumbin Wind Farm, how can you agree to something that you know will change the environment for the worse. It is so disappointing that the Federal Government have not been involved in this situation. How could you refrain from comment and action to this destruction of the natural environment. This Chalumbin Wind Farm is NOT GREEN		No	See response to Submission 21

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
380	.001	Project location	Note submission has been summarised to extract key points requiring response. My name is XXX my traditional name is (madja-ji) born and raised here on the Atherton tableland where I done my schooling at Atherton school finished school grade (10) my uncle gave me my traditional name Water Goanna, Goanna from the land to the sea. I am a traditional lore man through my mother mothers bloodline (Nadjon:ji) (Ena Gertz nee Mitchell) Eddie Gertz is my father his mother's bloodline (Nancy Jordon Ah-Sam Girramay Jirrbal). Our song lines are interrupted by these giant windmills. I have driven and walked around on my country. I have visited the painted rock art, 2 lots of art painting, and how my people walked through the country from the painting on the cave. I've seen the walking tracks then went walking around in the canyon where we also spotted a few animals and took photos of the Yellow bellied Glider possum and a Koala. My country it is still alive we don't want the wind turbines I am not against wind mills it's the wrong place to put them this is the last rare and vulnerable eco system of its kind.		No	The submitter's response and comments regarding the cultural significance of parts of the Project area are noted. The Project has an executed Cultural Heritage Management Plan (CHMP) in place with the Jirrbal People (the traditional owners of the land), in accordance with the ACH Act. The cultural values of the site will be managed in accordance with the provisions of the CHMP.
380	.002	Yellow bellied glider	If I was to turn your graveyard upside down you wouldn't be happy. You be wanting to kill me or imprison me. Yellow bellied glider is family to us Aboriginal see how we live that's how the yellow belly glider as family so if we knock down the environment they would have no place to go.		No	Your concerns regarding the yellow-bellied glider are noted. There is a relatively small amount of potential habitat for this species within the Project area and the PER has determined that the Project will not result in a significant residual impact on the yellow-bellied glider. In particular, the Project is not anticipated to result in clearing of yellow-bellied glider denning habitat.
380	.003	Indigenous Cultural Heritage / Engagement	We got the last of the fauna flora and I don't won't you to destroy it. I want to preserve the last of my eco system, and to protect my sacred land that's held dear to my heart and soul.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
380	.004	Fauna mortality turbines	Having the wind turbine in our homeland it a site for sore eyes its destroying my land and environment and the waterways and my culture heritage, throwing the flight paths out for the birds animals eg (crane, bats, and all the other flying animals) that will fly into the wind turbine, causing death to them and the land such as kangaroo the tree mapi is our totem not much room to move cause of the deforestation of our country.		No	A detailed Landscape and Visual Impact Assessment (LVIA) has been undertaken for this Project and is attached as Appendix M. Specific assessment of the potential for the Project to affect the scenic amenity and the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
380	.005	Biodiversity general	You put the windmills next to the swamps and waterholes will destroy the ecology of our soak holes. The land animals such as the brood frog, snakes, lizard, ants with your impact you will upset the Eco system by clearing the forest with heavy machinery, drilling holes, your fracking the ground, using explosives it makes a big impact on the environment and the animals.		No	The project design and location has been refined to avoid the values within and surrounding the site. Turbines have been sited on ridgeline to maximise the wind resource, not adjacent to swamps and waterholes. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
380	.006	Erosion and sedimentation	When it rains all the runoff will be washed down the river.		No	A Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. The key principles of ESCPs are to minimise erosion and prevent sediment leaving the site.
380	.007	Community consultation	My Aboriginal country is NOT FOR SALE. Your proposal of a windfarm on Woorooora Glen Gordon is just another act of genocide to stop my peoples from entering their land. The rightful people of this country have not been consulted.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
381	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. I am a knowledgeable Gambilbarra Jirrbal language speaking Traditional Owner and Custodian and I am standing up for my family and country. I am a member of Wabubadda RNTBC. I do not support your proposal and I have not given you nor Wabubadda RNTBC my consent!		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Woorooora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. The Project will seek to maximise the involvement of Traditional Owner knowledge in the rehabilitation, revegetation and offset management aspects of the Project.
381	.002	Indigenous Cultural Heritage / Engagement	The YBG has a very specific cultural understanding for me and the whole Jirrbal language speaking peoples that make up at least 10 tribal clans. The YBG is my family members and father knew that every tree that was logged we lost another part of our culture another inch of our song lines destroyed along with our story telling of belonging. As an Aboriginal woman who grew up on her country with my elders we did not have a voice on the destruction of our natural landscape. When the World Heritage listing came in we were very relieved as no more trees could be cut down that were significant to us and our cultural heritage protection including the habitat of our family the Yellow bellied Glider's survival.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
381	.003	Biodiversity general	The Song Lines of the Yellow bellied Glider unnamed WT subspecies is also the homelands of many many faunal species found nowhere else on our Planet, these species include Koalas, 13 species of Possum and including our Mapi (Lumholtz Tree Climbing Kangaroo) Quolls, Northern Bettong, Antechinuses, rodents, Bats, Birds, Amphibians, Reptiles and a great diversity of invertebrates. They have survived against the greatest odds of disturbance just like us Aboriginal peoples they are still here and must not be disturbed any further.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
381	.004	Indigenous Cultural Heritage / Engagement	My Ancestors and their burial grounds live on Woorooora/Glen Gordon stations including the wider region of the Herbert Catchment, The Blunder, The Burdekin and Mt Fox. They are not just Cattle Stations! This region is my Ancestral Country that tells me 'How' I belong. Hypothetically How would colonial founding pioneers and their families feel if I bulldozed their gravesites at Ravenshoe Cemetery and threw them across the creek.? How would they feel as Roger Kelly (previous owner of Glen Gordon) puts it, 'Chicken Bones that's all they are' we got rid of them…		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
382	.001	Adequacy of the PER	Note submission has been summarised to extract key points requiring response. The Public Environment Report (PER) and the associated Impact Assessments for the proposed Chalumbin Wind Farm (CWF), seriously underestimate the significant natural and cultural values in this mostly natural area, and the likely cumulative impacts on those values.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines.
382	.002	Biodiversity general	Destroying any of the remaining restricted habitats of iconic and threatened species is not only unconscionable, but illegal. In view of what we know about the world today, particularly in regard to climate change and species extinctions, it is unacceptable to destroy self-sustaining, natural environments like that in the proposed development area.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
382	.003	Emissions	Natural ecosystems of this caliber are quite unique, and they are essential to the absorbtion of the destructive greenhouse gasses this kind of greenhouse emitting industrial infrastructure will issue		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
382	.004	Decomissioning impacts	Further, the estimated lifespan of this eyesore juggernaught is a mere 25 years by which time technology will most likely have moved on and the waste will be hard-felt by the whole community, wildthings and humans both.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
382	.005	Project location	I feel that it is an immoral choice to corrupt and disrupt this country's natural ecosystems and endemism to further an industry that is killing it, especially when there is more than enough disfigured land available for this kind of infrastructure.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
382	.006	Adequacy of the PER	The proposed CWF development also lies within the Northern Queensland Renewable Energy Zone (QREZ), but the QREZ has not been mapped to identify the biodiversity values believed to be contained, particularly in the eastern section where the proponents intent to locate the infrastructure.		No	It is noted that the QREZ is a broad area within which land use planning decisions must be made to determine the most appropriate locations for renewable energy projects. As described within Section 1.5 and Section 3.0 of the PER, there are many drivers and variables that influence where a wind farm project may be located. There are merits to undertaking a REZ-wide assessment of the most strategic locations for renewable energy development (one that takes into consideration the multiple variables that influence the land use planning decisions - including ecological values). This is considered to be something that will be difficult to achieve given the momentum towards renewable energy development, the progress already made over the past few years in terms of project development and maturation of the industry, and the commercially sensitive and competitive processes that renewable energy developers are presently required to follow.
382	.007	Social impacts	The climate and landscape along with its significant indigenous heritage provide a very attractive tourism and recreation value that could, if developed, provide immediate social, economic and psychological benefits to the local people of Ravenshoe and surrounds		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans.
382	.008	Visual impacts	Towering and noisy infrastructure planted along 70m wide dirt roads winding through the ridgelines and mountaintops will will not attract significant numbers of visitors to the area. Landscape amenity will be seriously compromised where gigantic infrastructure dominates the skyline above a diminished green backdrop.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
382	.009	Biodiversity general	The high elevation and cool ridgelines of the proposed area are primarily untouched and currently provide a sanctuary for a wide range of recorded wildlife. Remnant forests of this scale and location are quite rare now, and they will provide critical future habitats for many wildlife and plant species in their natural state as climates change. The CWF poses a significant threat to the ecological function of these bioregions for the following reasons; •loss of habitat integrity for endemic species •loss of refugia for threatened and vulnerable species •fragmentation of a sustainably functioning ecosystem •interuption to wildlife life feeding, breeding, communication or movement •lowering of the high level of landscape resiliance believed to be due to its location, size, elevation, degree of naturalness and lack of significant human inteference including roads and powerlines •the likely introduction of threats such as feral pests and weeds, fire and microclimate changes •disruptions to wildlife conditions due to noise, dust, water runoff and stream ecology.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
382	.010	Vegetation clearing	The CWF proposal is likely to seriously corrupt the ecotone between the high altitude rainforests along the western boundary of the adjacent WTWHA and the wet sclerophyll forest adjoining it. The WTWHA rainforest of Queensland is buffered on the western side by wet sclerophyll forest transitioning into dry sclerophyll further west. Sclerophyll forests provide a very important transition zone between wet and dry ecosystems, and with climate changing predictions they are likely to be the heroes of much of Queensland's WTWHA ecosystem resilence and survival as long as they are not destroyed or fragmented. These high-elevation rainforests act like giant sponges capturing large volumes of moisture from the clouds they are immersed for much of the year in the tropics. Cloud stripping or occult precipitation allows the cool, slower growing forest to release moisture throughout the year, and maintaining stream flows throughout the dry season. Currently cloud stripping occurs in rainforest around 600m above sea level. With a 3.0°C rise in temperature the rise in effective cloud stripping condensation layer is predicted to rise fro 600m to 900m above sea level significantly reducing water yields during the dry season .		No	Section 8.11 of the PER provides an assessment of potential impacts on wet sclerophyll forests (as values of the WTQWHA) and determines that a significant residual impact is not anticipated.
382	.011	Weeds and pests	Approximately 1,000ha of high-altitude forest is proposed for clearing to accommodate the CWF infrastructure on the eastern fringe of the proposed area. Roadworks and wind-tower clearings at this scale create fragmentation of the surrounding ecosystems, and over time predispose sites to invasions of cane toads, feral cats, exotic insects, many weeds, a myriad edge effects as micro-climates change, and sharp spikes in fire intensity (Attachment 3).		No	Edge effects are addressed in Section 5 and Section 8.10 of the PER. The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It should be noted that there are already established populations of feral animals (pigs, cats and cane toads) throughout the Project area. A Bushfire Management Plan will also be developed and implemented to avoid the likelihood of high intensity bushfires.
382	.012	Biodiversity general	Transport corridors of this scale will, without doubt, fragment this vulnerable area irrevocably, disrupting species everyday and possibly increasing evolutionary change over time. Seventy meter corridors not only clear significant vegetation and disturb the geology and water catchment characteristics, but creates noise, dust and heat affecting the immediate microclimates.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
382	.013	Erosion and sedimentation	Soils in this area are well know to erode easily, both on the steep forested inclines but also on the flatlands, especially when they carry a lot of heavy machinery as well as regular traverses of lighter vehicles, throughout the wet season of the tropics. Soils on the western section are sure to create gully erosion without sediment traps. The eastern side of the Chalumbin area is in a high rainfall area and its ranges provide water catchment values for the southern Wet Tropics Area as well as the rural and farming communities closer to the coast. Significant erosion and runoff can be expected from the footprint of the CWF infrastructure, particularly along the Scenic Rim above the southern Wet Tropics Area.		No	The roads will be designed and maintained to carry the traffic expected for construction and operation of the project. Soil management, erosion and sediment control and stormwater management have all been identified as key issues for the project. To address these issues the PER includes a Preliminary Construction Management Plan and Preliminary ESCP (Appendix I), a Sediment and Erosion Management Plan (Appendix J) and a Preliminary Rehabilitation Plan (Appendix K). The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard.
382	.014	MNES	Noise, light and vibration from vehicles can disturb animals, causing them to avoid the vicinity of a road when selecting feeding or nesting sites. Traffic noise has the potential to cause stress, hearing loss and altered behaviour particularly when breeding communication is affected . If vehicular noise is able to penetrate to distances greater than two hundred metres in the Wet Tropics rainforest , imagine how far it will travel in a less densely sclerophyll forest. Noise penetration is affected by type of vehicle, speed, and road topography and was found to travel further uphill on steep slopes, especially from noisier sources such as semi-trailers with exhaust brakes. Haulage vehicles carrying the blades and stems of the wind turbines, and a variety of other heavy machinery movements will not travel lightly. High levels of noise adjacent to a highway (heavily used pathway) may be the cause of edge avoidance in certain forest animals, particularly birds and amphibians that use auditory communication		No	Potential impacts from noise, light and vibration are discussed in Section 5 (generally) and throughout Section 8 (in relation to specific MNES). Mitigation measures have been proposed and this impacts will be limited to the construction phase of the Project.
382	.015	Biodiversity general	The 250m high wind turbines and the loss of a significant number of old stag trees and their hollows are certain to endanger the feeding and breeding habits of several species including the Red Goshawk, considered Australia's rarest raptor.		No	As noted in Section 8.6.7, stags containing hollows suitable for the northern greater glider will be retained and reused in the rehabilitation program. The red goshawk has not been definitively recorded in the Project area.
382	.016	Fauna mortality turbines	Wind turbine blades rotate up to 280 km per hour putting the lives of birds, bats and insects at risk. World-renowned specialist, Dr Tim Nevard found that 5km buffer zones around Chalumbin wind farm contain numerous confirmed roosting areas of brolgas and Sarus cranes. Sarus Cranes, listed as Vulnerable globally, are the world's tallest flying bird. Both species migrate from the Gulf Country to the Atherton Tablelands annually and are at serious risk from the fast turning blades of the wind turbines.		No	Neither Sarus cranes nor brolgas have been recorded within the Project area, despite two years of regular, seasonal surveys. There is no suitable foraging habitat for these species within the Project area, although large flocks have been observed by the Project team in the cotton fields to the west of the Project area. In the absence of any sightings of these unmistakable birds, it is assumed that their flight path between the cotton fields and the Atherton Tablelands KBA does not intersect the Project area. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
382	.017	Weeds and pests	The major incursions into this mostly native environment will be wide heavy-bearing roads and the large turbine and maintenance pads. Linear clearings and the ongoing movement of an assortment of heavy machinery provide avenues for the introduction and spread of weeds, feral animal incursions, particularly wild dogs and bush pigs and avenues for wildfire in the open country. Native animals, cattle and other herbivores traversing the area are also party to the invasions, transporting exotic seed on their coats, feet and waste. Biosecurity controls are the responsibility of the landholder, in this case the leaseholder, not the developer or owner of the CWF. The leaseholders have the "duty of care" provision in their lease agreements .		No	The Project team is aware of the existing presence of weeds (and pest fauna species) throughout the Project area and has developed a Preliminary Weed and Pest Management Plan (Appendix F of the PER), which will be developed further by CWF and/or the Contractor (including the undertaking of detailed weed mapping across the Project footprint). The proponent has a Duty of Care towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval.
382	.018	Vegetation clearing	The south-east portion of the Wooroora Holding, an area of approximately 5,000ha, has been identified by Bush Heritage Australia as an important acquisition target to support the significant conservation values on their adjoining Yourka Reserve, including the habitat for several threatened plant and animal species. The proposed clearance for 15km of roads is of critical concern in this section which has been proposed for the reintroduction of locally extinct species, listed as under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999; the spotted-tailed quoll (Dasyurus maculatus), the northern quoll ((Dasyurus hallucatus), and possibly the northern bettong (Bettongia tropica). Habitat destruction, inappropriate fire regimes, fragmentation, wild dogs and cats are the biggest threats to these small nocturnal mammal. The adjacent Wet Tropics Bioregion Corridors depend on the transition zones to the west, of wet sclerophyll forest in particular, to safely allow its native occupants to traverse a variety of habitats mainly in search of seasonal food sources but also in response to climate changes.		No	The Project team has already entered into discussions with Bush Heritage Australia regarding management of the southern-most offset area on Wooroora Station and these discussions are ongoing. None of three species listed in your submission (the two quolls, the northern bettong) have been recorded within the Project area despite an extensive camera trap campaign. The landholder appears to have no knowledge of this property being proposed for reintroduction of these locally-extinct species. In any case, wild dogs, feral cats, cane toads and pigs are already widespread across the Project area which could partly explain why the three threatened species are locally extinct in this area.
382	.019	Opposition to project	Such valuable ecological assets, so specific to their current site and having developed and matured over thousands of years, makes the idea of offsets a laughable offence. It will take eons for the natural ecological process to renew once the CWF is decommissioned and those will undoubtedly be more depauperate as endemic species are lost. No amount of money or rehabilitation, fire and pest planning and management will ever adequately protect the remaining ecosystems.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
382	.020	Decomissioning impacts	P.S. its not the turbines that the community is concerned about with fire management practice and I'm pretty sure I have seen images of turbine blades dumped in nearby remnant forest.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
382	.021	Social impacts	The proposed Community Benefit Program is not even enough to employ a team of consultants to develop a plan of action, let alone implement anything. Maintaining the roads alone replacing load bearing bridges used by the contractors will blow out that budget in a nano-second or are those things the responsibility of the taxpayers of Queensland. What does Community Benefit entail? Better employment and health services, entertainment and sporting facilities, re-skilling, public transport etc.. Benefits rarely accrue for the traditional owners and the other residents of the nearby areas with developments of this scale. In fact the costs to the affected communities is well documented eg mining companies not feeiling responsible for the maintenance and use of public infrastructure. The very idea that jobs will benefit the community is also absurd. The construction phase will no doubt bring in skilled outsiders, raising rents and overloading services as well as causing social unrest and the ongoing 15-30 ongoing jobs will hardly add anything to the local purse. The Ravenshoe area does not have the capacity to service the additional 400+ employees, their families and their needs.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
382	.022	Alignment with government policy	I disagree with the Queensland State Assessment and Referral Agency (SARA) in that •The wind farm is not appropriately located and sited. •The development cannot possibly minimise and adequately mitigate adverse impacts on the natural environment and associated ecological processes, and the lives and behavioursa of endemic species. •Constructed giant turbines and wide roads through steep wet high-altitude significant forests will undoubtedly negatively impact the character, scenic amenity and landscape values of the area.		No	The Project obtained a development permit under the Planning Act 2016 and the requirements of State Code 23. The status of this permit is not in question at this point.
383	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. The complete lack of consideration of biodiversity in the siting of the project is not acceptable. These impacts can not be avoided effectively or offset. Lastly, it is not a strategic necessity for the transition to renewable energy, and there is currently not enough capacity in the grid for the energy produced by the Wind Farm.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
383	.002	Koala	The proposed wind farm threatens koalas an Endangered species. The clearing of the forest as well as the noise emanating from wind turbines both constitute significant threats to them. Despite acknowledging that "Noise may adversely affect fauna by interferring with communication and despite wind turbine noise (WTN) and it's impact on wildlife currently being of great concern to wildlife scientists, it is not otherwise mentioned in the PER document. That is an extraordinary OMISSION as there is a prima facie case that koalas in low abundance populations rely on their low frequency vocalizations to locate each other during the breeding season. The scientific literature suggests that these large wind turbines emit significant amounts of infrasonic and low frequency noise so there is strong possibility that koalas contact calls will be dampened or totally overridden by it.		No	Potential impacts to the koala, including the potential loss of habitat have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. Additionally, large areas of potential koala habitat throughout the Project area will be retained. Infrasound is not listed as a threatening process in the National Recovery Plan 2022. The PER addresses the effect that noise may have an impact upon species including the koala occurring within the area. As a result construction and operation will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
383	.003	Survey effort	The Chalumbin wind farm ecologists didn't look for scratch marks on gumtrees when surveying for koalas in Chalumbin. They only conducted spotlight surveys. Local ecologists konw the best way to detect koalas in a forest is to look for scratch marks on Eucalypts they eat.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. As noted in Section 4.2.2.3 of the PER, the survey teams undertook searches for scratches and scats, in addition to nocturnal spotlighting (all of which are accepted methodologies for koala surveys).
383	.004	Spectacled flying fox	Spectacled flying fox listed as Endangered this specie is under significant threat due to habitat loss and urban encroachment. This keystone species plays a critical role in defining entire ecosystems. With this species in clear conflict in heavily built-up urban areas, it is incomprehensible that a critical population such as the colony of up to nearly 10000 individuals near Chalumbin would be put at threat. The development area is within the colonies feeding zone and this habitat must be protected. The fact that the Spectacled Flying Fox is also critical to the survival of flora species found within the WTWHA, and to precious remaining rainforest fragments has not been properly addressed in the draft PER.		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
383	.005	Fauna mortality turbines	The lives of critically endangered species that live in Chalumbin such as the Red Goshawk will be further jeopardised. Studies have shown raptors and bats are most likely to be killed by wind turbines,placing the Red Goshawk at particular risk as well as native bat species in the area		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
383	.006	Biodiversity general	The lives of critically endangered species that live in Chalumbin such as the Red Goshawk will be further jeopardised. Studies have shown raptors and bats are most likely to be killed by wind turbines,placing the Red Goshawk at particular risk as well as native bat species in the area		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
383	.007	Alignment with government policy	The amount of Clearing of Remnant Forest is Unacceptable. Clearing 1026ha of remnant forest sets a precedent for our transition, and indicates to industry that clearing is acceptable. If clearing like this is allowed, it is unlikely that we will meet our commitments to end deforestation by 2030 Note remainder of submission is repeating Submission 80, parts .002 to .028		No	This point is noted. Sections 1.5 and 3.0 of the PER identify the drivers for the Project in its current location and form. Section 13.2 of the PER presents a greenhouse gas assessment for the Project and determines that the Project will be carbon positive after 1.5 years of operation. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
69b	.001	Emissions	THE production and installation of wind turbines has an actually bigger carbon footprint than coal burning when one takes in the consideration of how many you to need produce equivalent power. The irreparable destruction of environment is mind blowing. How can a sane person justify this development other than personal gain of money and notoriety. The public peasants have been conned to believe this is clean energy.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
69b	.002	Social impacts	The "assault" of electrical radiation against humans is a crimminal act.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards.
69b	.003	Biodiversity general	The wiping out of 'Koala" habitat is also a crimminal act as they are now on " the endangered species list". The environmental damage is staring you in the face now with the "Kaban windfarm" now operational wiping out habit"eg.birds, koalas and frogs, the list goes on.		No	The PER acknowledges that the Project could result in a significant residual impact on the koala despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected.
69b	.004	Erosion and sedimentation	The waterways are getting polluted from the start of the wet season with little or no sediment control.		No	The project will stop ground-disturbing works between January and March (inclusive) in response to increased seasonal risk of high intensity rainfall. A Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project.
69b	.005	N/A to PER matters	The lies of any environmental care are blatantly there for the world to see. How can our government promote and profit from this environmental damage and say that they represent the future of this country. So many proven alternate energy options are available that are not full of corruption to make a few people rich. The time to save what we have left of environment is NOW> not in 5/10 /20-year plans. Wake up Pilbershack "minister for environment [apparently]" and do what you proclaim. Save the destruction or are you another lying corrupt politician stuffing your pocket and business associates bank accounts with blood money. I am one of the peasants of the world trying to have a voice to stop you greedy self-centered people from destroying the planet for short term gain. Your governments have made submissions to very difficult for ordinary people to object as every article in the Public environment report must be individually addressed. More proof of your corruption to deceive the public and destroy what is left of our world to feather your nest and your corrupt overseas investors, selling out our country with no thought of future generations. If this government approves this development of " Chambulan winfarm" and others in untouched environments I hope the public will riot build gallows and hang you all because your lives are obvoiusly as worthless as the wildlife, clean water, trees, soil biodiversity and offshore reefs that you are happy to destroy. WAKE UP AND STOP THIS MADDNESS!!!!!!!		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
237b	.001	Southern cassowary	The PER has detailed some of the habitats and distribution. The proponent states that "The Project area does not align with any of the above areas and therefore is not considered to constitute an important population" My feelings on the cassowary is that they are so unique, and synomymous with Far North Qld, that to see one in the wild, is an amazing and rare event. For us to see one on New Years day, 2023, along the Tully Falls Road, heading to Koombaloomba, was exciting and exhilarating. Your claims in the PER the population does not align with any of the above areas, and is not considered to constitute an important population is clearly wrong and uninformed. I've got video and photographic evidence of this encounter sighting of the cassowary. It was about 200 meters from the Epuron sub-station gate. We were heading back towards Ravenshoe, the gate was on our left. I would be prepared to make a Statutory Declaration on this. I do not consent to Chalumbin Wind Farm project to go ahead, due to my serious concerns about this vulnerable species. The cassowaries will be seriously impacted by the following: • the widening of the roads, • the increase in haulage trucks and traffic, • the noise and sounds of the trucks, • road kill will be unavoidable because cassowaries just appear • juvenile cassowaries that get kicked out by the father may not survive as they have to find new territory • more destruction of habitat that is going to displace or kill the cassowaries that are there, and their chicks • more expose to feral animals and poaching will threaten this species • this is in close proximity to the wind turbines, so their expose to noise, EMFs may well be their death knell. It is well known that cassowaries roam, and require long range territories for them to be able to breed, and survive. I do not consent for Chalumbin wind Farm pty Ltd to kill, displace our irreplaceable cassowaries and the habitats they need for their survive.		No	There is no such thing as the "Epuron sub-station gate". There is a gate on Tully Falls Road to the existing Chalumbin substation which is outside the Project area and at least 3km from the nearest proposed Project infrastructure. The PER makes a clear commitment that no construction vehicles or plant will use Tully Falls Road (south of its intersection with Wooroora Road) to access the Project area. The Project will not widen or upgrade Tully Falls Road. The location of your southern cassowary observation is within rainforest habitat which is well known to be the preferred habitat for this species. There is very little rainforest within the Project area and no rainforest vegetation will be cleared as a result of the Project. Other vegetation types that are known to be habitat for the southern cassowary have also been avoided through Project design.
384	.001	Opposition to project	The Chalumbin wind farm should not be approved because: the area should be protected from development for the wildlife. We need wildlife for future generations. There are enough windfarms in Far North Qld!! We DO NOT need anymore! SAVE THE WILDLIFE!!		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
385	.001	MNES	Note submission has been summarised to extract key points requiring response. The Public Environment Report (PER) for the Chalumbin Wind Farm has caused me great concern, and after considering the impacts, I don't believe that the impacts to Matters of National Environmental Significance are acceptable.		No	Your submission has been noted. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts.
385	.002	Project location	The project is poorly sited; development of this scale and impact does not have place in such close proximity to the Wet Tropics World Heritage Area (WTQWHA).		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
385	.003	Offsets	I was struck by the complete lack of consideration of biodiversity in the siting of the project. These impacts can not be avoided effectively or offset. There is very little evidence that offsets are effective in preventing species declines (Ermgassen et al. 2019). On the contrary, there is growing evidence that offsets (as currently implemented) will ultimately lead to the demise of biodiversity because offsets permit further habitat loss such as is proposed by Chalumbin Wind Farm.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
385	.004	Project viability	Lastly, it is not a strategic necessity for the transition to renewable energy, and there is currently not enough capacity in the grid for the energy produced by the Wind Farm.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
385	.005	Vegetation clearing	1. There are unacceptable impacts to threatened species habitat 2. The project will increase landscape fragmentation – e.g. Offset Area 2 4. The extent of clearing of remnant forest is unacceptable Note remainder of submission is repeating Submission 80, parts .002 to .028		No	Since release of the PER for public comment, changes to the offset management areas have been made and Offset Area 2 no longer straddles Project infrastructure. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
386	.001	Project location	I wish to comment on the Public Environmental Report (PER), and the underlying Impact Assessments, for the proposed Chalumbin Wind Farm (CWF) that grossly underestimate and under-state the direct and cumulative impacts of this development on both the natural environment and the local community. Firstly, I believe the Wet Tropics and Far North Queensland are not suitable for the location of the windfarms, due to our region's substantial unique ecosystems and wildlife values, significant biodiversity and iconic cultural significance.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act. The cumulative impact assessment as required by the PER Guidelines is presented in Section 5.5 of the PER.
386	.002	Erosion and sedimentation	The Great Barrier Reef, in Ark Energy's summary, didn't even ashamedly get a mention. The Government is rightfully pushing supposedly all stakeholders including farmers on the floodplains to improve water quality reaching the Reef. If the proposed CWF gains approval, without a doubt muddy water will be flowing over our internationally renowned Tully Falls, which would be a slap-in-the-face to those farmers and community who have and are continuing to work diligently towards creating fish and wildlife habitat, whilst improving water quality, since the 1990's. (view Ross Digman Presentation of local interest - YouTube. Tully canefarmer who constructed the first lagoons along all of the sugar cane growing coastal belt).		No	A Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER and the protection of the Great Barrier Reef is a key consideration. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project.
386	.003	Community consultation	Secondarily, I draw attention to the Indigenous Engagement aspect of the PER. Chalumbin Wind Farm state, "The department considers that best practice consultation, in accordance with the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016)". The developer has failed to comply with best practices and is therefore in breach of the guidelines by refusing to talk to, listen, acknowledge or accept the concerns regarding Sacred Sites and areas of significant Cultural Heritage value, that the Jirrbal community members were trying to raise at the September 16th, 2021, community 'info session' meeting. By refusing to engage with relevant affected Jirrbal people and discriminating against many in the community, the developer has denied their rights to be heard, respected and to be a part of the consultation process. The developer by their conduct has shown they are not a fit and proper company and should NOT be granted development approval.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
387	.001	Opposition to project	The Public Environment Report (PER) for the Chalumbin Wind Farm has caused me great concern, and after considering the impacts, I don't believe that the impacts to Matters of National Environmental Significance are acceptable. I have provided a comprehensive list of recommendations for the proponent to ensure the Final PER has properly assessed impacts and provided better transparency. However, our assessment of this proposal is that the impacts to Matters of National Environmental Significance (MNES) are unacceptable.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
387	.002	Project location	The project is poorly cited, development of this scale and impact does not have place in such close proximity to the Wet Tropics World Heritage Area (WTQWHA).		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
387	.003	Biodiversity general	The complete lack of consideration of biodiversity in the siting of the project is not acceptable. These impacts can not be avoided effectively or offset. Note remainder of submission is repeating Submission 80, parts .002 to .028		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
388	.001	Community consultation	The Chalumbin wind farm should not be approved because: This submission is to state that I was not consulted. I also did not find out about Chalumbin until a townhall meeting.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
388	.002	Visual impacts	The impacts to Ravenshoe far outweighs any money promises to a few. The visual amenity of this project will affect land values and destroy the beautiful mountains that we may have taken for granted that would never be destroyed for a Wind Farm. Chalumbin is worthy of being a national park.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
389	.001	Biodiversity general	The Chalumbin wind farm should not be approved because: This particular wind power development results in a variety of negative effects, including landscape disruption, noise pollution, and adverse impacts on wildlife, particularly birds.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
389	.002	Weeds and pests	"Wind turbines destroy the landscape", and especially with this location being exceptionally significant as Chalumbin adjoins Wet Tropices World Heritage Areas and Forest and Wildlife Reserves, any land clearing would result in infestations of weeds that would require chemical suppression which most likely seep into adjacent ecologically protected areas.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan" are intended to be frameworks only at this stage, and will be developed further (including the allocation of sufficient budget and resources, descriptions of specific procedures, etc.) by CWF and/or the Contractor prior to works commencing on site. As for the use of chemical suppression all control and management works will be undertaken by suitably qualified persons holding the correct chemical licence and training.
389	.003	Biodiversity general	"Wind turbine activity is harmful to animals and especially in the case of Chalumbin being nestled in an area that has threatened species such as the Northern Greater Gliders, Magnificent Broodfrogs, Red Goshawks, Masked Owls just to name a few and not to mention the exceptional birdlife!		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
389	.004	Project location	As a concerned Queensland Citizen I respectfully request this Wind Farm project be stopped and alternative sites be considered that are not as ecologically critical as Chalumbin.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
390	.001	Biodiversity general	As per Submission 387, with the addition of: The sheer number of threatened, vulnerable and endangered species known to be present within the project area should rightly preclude any kind of development in the Chalumbin area. To proceed with this proposal would simply be pushing these species even closer to extinction. With the current Government commiting to a goal to prevent the new extinction of any Australian species there can only be one course of action, which is to reject this proposed development outright.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
390	.002	Biodiversity general	The proponents claim that this development would increase connectivity between the Wet Tropics area and other forested areas is simply ludicrous. This project will fragment these habitats and reduce connectivity, any other claims are simply false.		No	The proponent has not claimed that the development itself would increase connectivity, but rather the proposed offset management areas.
390	.003	WTQWHA	The documentation supplied by the proponent in favour of this proposal is better described as creative writing rather than having any kind of Ecological or Scientific basis. The proximity of this development to our Wet Topics World Heritage Area flies in the face of all that has been achieved in the protection of this natural asset in the last few decades.		No	This objection to the Project is noted. The PER has fully assessed potential impacts on the WTQWHA and determined that significant residual impacts to world heritage are not anticipated.
390	.004	Vegetation clearing	We simply cannot afford to clear any more forest, anywhere, for any reason. Our Western lifesyle, the root cause of the Climate Crisis, and our Economies, must urgently become secondary in importance to our Environment. The clearing of over 1000ha of the little forest that remains since European invasion/settlement would be a travesty. We quite simply have taken far too much already.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
391	.001	Opposition to project	As per Submission 383		No	See response to Submission 383
392	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
393	.001	Opposition to project	As per Submission 41b		No	See response to Submission 41b
394	.001	Opposition to project	I am an Australian citizen, an age pensioner, living in NSW. I totally support the letter below and the vision suggested for action in it. I am fully in favour of wind farms and other forms of renewable energy, am even invested in some, but the siting of this Chalumbin Wind Farm is all wrong for the reasons stated and should not be allowed. I admit the letter below is not written by myself but the writer is more completely informed than I am and I am happy to back her up as best I can. I am writing to you to urge you to reject the proposal for the Chalumbin Wind Farm. While I am excited for the transition from fossil fuel to renewable energy, we must ensure that we protect our important natural areas, and biodiversity. Our biodiversity is essential for a safe climate and liveable planet, and we must ensure our transition doesn't come at an unacceptable cost to nature. The Chalumbin Wind Farm does not reflect the energy and climate future I want.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
394	.002	MNES	The Public Environment Report (PER) for the Chalumbin Wind Farm, provided by Ark Energy has raised major concerns for me and the community I am a part of. The impacts to Matters of National Environmental Significance (MNES) resulting from this proposal are unacceptable.		No	Your submission has been noted. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts.
394	.003	Project location	The project is poorly cited, development of this scale and impact does not have place in such close proximity to the Wet Tropics World Heritage Area (WTQWHA). The complete lack of consideration of biodiversity in the siting of the project is not acceptable. 3.The citing of the project did not consider biodiversity and the proponent has not provided enough information about the alternatives to this proposal, particularly regarding the citing		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
394	.004	Offsets	These impacts can not be avoided effectively or offset. 6.Offset area 1 will actually increase landscape fragmentation, and the proponent has demonstrated a clear lack of understanding regarding effective offsetting		No	We fail to understand how offset area 1 (on Glen Gordon Station) will increase landscape fragmentation?
394	.005	Transmission capacity	Lastly, it is not a strategic necessity for the transition to renewable energy, and there is currently not enough capacity in the grid for the energy produced by the Wind Farm. 1.There is not enough capacity in the Grid, Chalumbin proposed 602 MW of energy while there is only 350 MW of available capacity in the Transmission		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
394	.006	Cumulative impacts	2.The proponent has not sufficiently assessed the cumulative impacts of the proposal		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
394	.007	Alignment with government policy	4.Clearing 1026ha of remnant forest sets a precedent for our transition, and indicates to industry that clearing is acceptable. If clearing like this is allowed, it is unlikely that we will meet our commitments to end deforestation by 2030		No	This point is noted. Sections 1.5 and 3.0 of the PER identify the drivers for the Project in its current location and form. Section 13.2 of the PER presents a greenhouse gas assessment for the Project and determines that the Project will be carbon positive after 1.5 years of operation. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
394	.008	Biodiversity general	5.When considering the needs of threatened species individually, clearing amounts to 8043.21ha of threatened species habitat. Given our current species extinctions in QLD, this is unacceptable		No	The maximum clearing footprint of the Project is 1,071ha. This vegetation may represent habitat for more than one species but it can only be cleared once. This submission's interpretation of clearing amounts is unnecessarily alarmist, which may suit their agenda but is not realistic.
394	.009	Decomissioning impacts	7.There is no decommissioning plan, which could mean we see the 70% of restored land, cleared again only 30 years later		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) describes this in section 3.6: In very rare cases, it may be necessary for the Project to replace an existing turbine blade during the operational lifetime of the Project. Delivery of the new blade would require clearing of areas that had previously been rehabilitated, on specific access roads only. In this instance, new rehabilitation activities would be undertaken as soon as possible on completion of the works, following the principles described in this Plan. Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated.
394	.010	Mitigation and management measures	8.There is no fire management plan, posing a real risk to the Wet Tropics World Heritage Area, which has increasing fire risk due to climate change		No	The Bushfire Management Plan (required under the State development permit) will be developed by CWF and/or the Contractor prior to any works commencing on site. This plan will detail the firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
394	.011	Social impacts	9.The social impact assessment and consultation is insufficient and does not provide sufficient consideration of training, accommodation, jobs and impacts to the Ravenshoe Community For the reasons stated above, I urge you to reject the Chalumbin Wind Farm Proposal.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
394	.012	N/A to PER matters	We are excited about the Labor Government commitment to renewable energy, and to help you understand the vision we have for the renewable energy industry I would like to share the concept of a restorative renewable energy industry. One that work for people and nature Vision A restorative energy industry that increases biodiversity in Queensland, and empowers First Nations people and regional communities while providing affordable, reliable renewable energy. Principles 1.Rapid and Restorative Rollout 2.Biodiversity Positive 3.Self Determination for Aboriginal and Torres Strait Islander people. 4.Transparent and ethical 5.Reformed Planning and Nature Laws 6.Local conservation and restoration leading 7.Innovative land use 8.Training and jobs for locals 9.Retaining Government Owned Energy 10.A diverse energy sector 11.Full life cycle planning and assessments 12.Affordable energy You can see a detailed version of the vision here: https://cafnec.org.au/wp-content/uploads/2021/10/Restorative-Renewable-Energy-4.pdf		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
395	.001	Opposition to project	As per Submission 21, with the addition of: CONSULTATION: I WAS NOT CONSULTED. There was no public forum by the proponent to inform the community about the proposal and the consequences if this proposal went ahead. Environmental protection and bio-diversity is important to me and my family. I do not grant you a social license to develop this beautiful environment of Chalumbin, which is worthy of being a national park.		No	The suggestion that there has been no public consultation in the Chalumbin Wind Farm project is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
396	.001	Opposition to project	As per Submission 21, with the addition of: As a young person I wish to keep Chalumbin natural for future generations.		No	See response to Submission 21
397a	.001	Biodiversity general	As per Submission 21, with the addition of: The Chalumbin wind farm should not be approved because: The main thing for me is the impact it has the birds and wildlife. Turbine strikes and sounds, ultrusonic sounds, that will affect of nature.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
397a	.002	N/A to PER matters	The other thing that concerns me is that - the words Green Energy that is supposed to combat climate change are just greenwash words, that will accelerate fossil fuels, mining for cobolt, copper, lithium and other rare earths. I am concerned about human rights abuses with regards to the manufacturing of wind turbines and solar panels.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
397a	.003	Project viability	I am concerned that all this environmental destruction for this energy that will not provide good baseload power is just not worth it.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
398	.001	Biodiversity general	As per Submission 21, with the addition of: This proposal will have a huge impact on the environment. This project proposal will also have a large affect on the atmosphere, our health, the health of wildlife, butters, insects, all the living creatures.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
398	.002	MSES	I am very concerned that this PER only relates to federal endangered wildlife under the EPBC Act. It also needs to include all wildlife and plant life that is of State significance. If the PER included vegetation and wildlife under of state significance, then there would be a lot more plants, and wildlife that would be impacted. I recommend that the PER also includes plants and wildlife include State significance, which I believe is of global significance. We speak about the wildlife and the earth.		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. The species protected under the Nature Conservation Act 1992 are not a consideration under the EPBC Act, unless they are also listed under the EPBC Act. The Project did assess potential impacts to State-listed species through the Development Application process under the Planning Act 2016.
398	.003	Social impacts	There is enough research that the low frequency will affect earth and human beings, particularly from europen studies. Studies are showing that humans and wildlife should have a distance of minimum 10 kms. This is of serious concern to me, because we live within that range.		No	Multiple scientific peer-reviewed studies on wind farm noise have found that infrasound from wind farms does not cause impacts to human health. This includes the Victorian Department of Health which states that "...sound can only affect health at sound levels that are loud enough to be easily audible. This means that if you cannot hear a sound, there is no known way that it can affect health. This is true regardless of the sound.", and the South Australian EPA which states that "...the contribution of wind turbines to the measured infrasound levels is insignificant in comparison with the background level of infrasound in the environment".
399	.001	Opposition to project	As per Submission 398, with the addition of: As a young person, I am concerned about the wildlife being damaged and also the future of humanity and the planet, and all living things. I don';t understand why this approval has been allowed to get this far, knowing how much damage will be done. I live within 10kms of the wind turbine proposals, and it';s not good for anyone's health, my family, my community and wildlife.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
397b	.001	Opposition to project	COMMUNITY CONSULTATION: When we were looking to live here, we wanted to be in quiet area with nature, in a small town. We found a gorgeous place, but to hear by word of mouth about the proposal, made us apprehensive. However, we still purchased our property. We considered that Chalumbin Wind farm was still only a proposal, and we seriously thought, there is no way, that this would be approved. We also thought, if people purchased this property, then it may attract people that don't care about our nature and our country. We were not publicly informed about the proposal, nor made aware of the consequences considering that we're living within the 10km danger zone is very serious. The words Green Energy is misleading to the public. It confuses the public as research now shows that fossil fuels will be accelerated, mining. I believe that if people knew about this underhanded spin, then they would not agree to the subsidies. This is the people's money. I do not consent.		No	The suggestion that there has been no public consultation in the Chalumbin Wind Farm project is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
400	.001	Community consultation	As per Submission 21, with the addition of: The Chalumbin wind farm should not be approved because: For a start, I did not know about Chalumbin Wind proposal, and nor was I consulted in the community public forum. I was not made aware by the proponent, nor the Government, that this proposal would have such a devastating impact on our irreplaceable ecosystems.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
400	.002	Social impacts	This is my home, my backyard, and this is why i moved here about 9 years ago. I have property and walk gently. I also have a small business in eco-tourism that will be seriously impacted should this proposal go ahead. Cairns, including Townsille, Port Douglas (local tourists), come here for the beauty and the camping experiences that Ravenshoe has to offer. This greatly assists my business.		No	Multiple studies nationally and internationally have shown that wind farms can boost tourism as they provide an additional point of interest for tourists. It is acknowledged that the type of tourist may slightly differ to those presently catered for by the submitter, but it is not expected that a notable decrease in tourism will occur as a result of the Project.
400	.003	Project location	I cannot fathom how an industrial wind farm can be placed anywhere near a world heritage area. The Chalumbin is wild and large void of human interference. It is home to unique bio-divesity that is nowhere else in Australia, let alone in the world. It';s well known listed Federal and State listed threatened species and migratory birds will be impacted immensely.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
400	.004	Biodiversity general	We also have wildlife that are unique to this area that cannot be replaced nor moved on. For example, the Tree Kangaroo, if they lose their immediate habitat, will perish. The cassowary needs large roaming habitats, and they will be seriously impacted.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The PER has concluded that neither the Lumholtz tree-kangaroo nor the southern cassowary will be significantly impacted by the Project. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
400	.005	Erosion and sedimentation	Writing this as the wet season rains have begun, I'm dumbfounded at the massive clearing of vegetation that is proposed and then the re-sculpturing of that land will hold up in future wet seasons. Water being re-deposited, and the spin that the proponent will revegetate and put us into greenwash words "nature positive" is an insult to my intelligence. Nesting sites, burrows, fungis, and what lives below the ground will be affected by mud, pollution, run offs, over hundred kilometres of 60 m to 100m wide haulage road. The Great Barrier was not mentioned in the first section of the PER		No	A Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER and the protection of the Great Barrier Reef is a key consideration. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project to reduce the risk of erosion.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
400	.006	Biodiversity general	I have been in my own home for 5 years on Wooroora road. I have seen two greater gliders dead, they are just magnificent, but now they're dead. As I have noticed a huge increase in traffic. from people who don't care, nor belong here. The cost of flora and fauna genocide is unethical and short sited.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
400	.007	Social impacts	. Our local small business, regenerative farming, and cultural tourism does employ long term people which benefits our community. This is positive economic business, without the destructive impact of an industrial wind development.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
400	.008	Biodiversity general	This is part of the Great Divide, that provides a narrow corridor that has impact on our rainfall, Tablelands basin areas, oceans and seas. It also has an impact on our identity as what is Australian. We have an abundance of wildlife, that are State and Federal signifant, that would be also globally significant for it's wild beauty. This wild beauty of intact forests should not be scalped for profit and greed.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
400	.009	Indigenous Cultural Heritage / Engagement	It should never be considered because it will destroy cultural heritage, indigenous elders and the future Jirrbal people, who did not consent to this destruction.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
401	.001	Biodiversity general	The Chalumbin wind farm should not be approved because: The location is on mainly remnant vegetation and in close proximity to the Wet Tropics World Heritage Area. It is an extensive remote area containing endangered and vulnerable species and will cause large scale habitat destruction. Impacts of the windfarm if approved will cause large scale land clearing and building of access roads . It will require massive concrete footings for each wind turbine with steel reinforcements		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
401	.002	Fauna mortality turbines	The massive blades are likely to kill many birds and bats.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
401	.003	Visual impacts	It will result in serious visual impacts for the area.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
401	.004	Alignment with government policy	Chalumbin and similar areas in Queensland should be protected from further renewable energy development. Why is this even being considered by the Queensland Government when their environment policies claim to be all about protecting threatened species and their habitats		No	Sections 1.5 and 3.0 of the PER identify the drivers for the Project in its current location and form. Section 13.2 of the PER presents a greenhouse gas assessment for the Project and determines that the Project will be carbon positive after 1.5 years of operation. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
401	.005	Rehabilitation	These pristine areas must be left alone for future generations because once they are destroyed there is no turning back or ability to restore them to their original state.		No	The majority of the area has been extensively logged and used grazing land. The Preliminary Rehabilitation Plan (Appendix K of the PER) has been developed to facilitate the re-establishment of native ecosystems that are self-sustaining in the long-term and provide comparable habitat value to the pre-construction ecosystems. Key objectives of the rehabilitation is to restore ecological functions and rehabilitation various vegetation communities to their remnant status.
401	.006	Social impacts	There is a risk to the future tourist industry. If approved, there will be further applications for wind farms to follow in areas such as this and North Queensland will basically become an industrial centre		No	Multiple studies nationally and internationally have shown that wind farms can boost tourism as they provide an additional point of interest for tourists. It is acknowledged that the type of tourist may slightly differ to those presently catered for by the submitter, but it is not expected that a notable decrease in tourism will occur as a result of the Project.
402	.001	Community consultation	As per Submission 21, with the addition of: The Chalumbin wind farm should not be approved because: I did not know about chalumbin Wind proposal. I was not publicly informed, nor was I made aware of the impacts that this proposal would have on our environment and community.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
402	.002	Biodiversity general	From my point of view, I am deeply concerned about the environmental impact. The reason we chose to live here is because of the beautiful environment that is here. I am also concerned about the perilous danger for the biodiversity of plant and animal life in the area, as it appears it wont just impact one species that may be listed on the EPBC threatened species, but also other species that are of State significance and no global significance. This is a major environmental bio-diverse area that needs protection at all costs.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
402	.003	Visual impacts	I live on Millstream Parade. The visual amenity will be very damaging to me and my partner. This proposal will depreciate the value to our property.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
402	.004	Social impacts	Being rather close to the proposed turbines and the Chalumbin Sub-station is deeply concerning to us on many levels, which includes * our health and lifestyle * visual amenity * the health of our irreplaceable wildlife and ecosystems that belong here. * wildlife and industry are not compatible. We are proposing to establish a spirutal healing and teaching sanctuary on our property that will be detrimental to our business and our future vision to be able to assist the people in our community.		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans.
403	.001	Project location	Windfarms A great idea, but this one is obviously in the wrong spot. Position As I understand it, the basic idea of renewable energy is to compensate for carbon dioxide released to a large extent by clearing forest worldwide. But Chalumbin is full of trees, savannah/tropical woodland. Huge numbers will have to be bulldozed to make roads wide enough to bring in the giant wind turbine blades. These will eventually decompose, adding to the problem. Surely this is contrary to common sense. We have already cleared millions of hectares of forest throughout Australia. One only has to drive from Cairns to Rockhampton to pass huge areas of convenient flat empty land adjoining the Eastern power transmission line. You see the occasional cow, some sugar cane. Surely somewhere here there is a better location.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
403	.002	Magnificent brood frog	6th Extinction We all know the planet is on the edge of the 6th Great Extinction with many species on the brink. This is caused basically by human overpopulation then destruction of habitat. While Climate Change is a concern it is really land clearing that is sending so many plant and animal species towards extinction right now. You only have to look at the Koala to see how a well known animal can be propelled to now becoming Endangered through steady encroachment on it's habitat. - Death by a thousand cuts. The same is true for the Magnificent Broodfrog. This tiny, little known and almost never seen Endangered (IUCN) amphibian lives in a very small area, mostly around Ravenshoe. Perhaps 20-30% of the entire world population lives at the Chalumbin Wind Turbine Development. Part of its habitat was recently wiped out at the Kaban Wind Farm. In the Statement of Reasons for Approval for Kaban Wind Farm under the Environment Protection and Biodiversity Conservation Act 1999, Andrew McNee, Assistant Secretary, Environment Assessments Queensland, delegate for the Minister for the Environment, provided the following statement of reasons for approval: "57. I agreed with the department's determination that, given the proposed action will remove 3 ha of habitat critical to the survival of the (Magnificent Broodfrog) species, the proposed action would result in a significant impact on the species. In addition, I considered that the proposed action is likely to have ongoing indirect impacts on the species without adequate mitigation measures" "78. Based on the nature and scale of the impacts, the avoidance and mitigation measures committed to in the fauna management plan, and assuming compliance with conditions, I concluded the proposed action would not have an unacceptable impact on the Magnificent Brood Frog." Result - Habitat critical to the survival of the species was removed, but this action was not considered an unacceptable impact. (With a few minor inadequate technical mitigations e.g. Not driving faster than 40kmh when clearing the frog's home). Death by a thousand cuts. We have already cleared millions of hectares of forest throughout Australia. One only has to drive from Cairns to Rockhampton to pass huge areas of convenient flat empty land adjoining the Eastern power transmission line. You see the occasional cow, some sugar cane. Surely somewhere here is a better location, that doesn't already harbour threatened species.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
403	.003	N/A to PER matters	why am I submitting this comment to the proponents? Surely I should be sending it to an independent advisor to Government? There is something seriously wrong with the approval process here.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. The process established under the EPBC Act is clear that the submissions are provided to the proponent for review and to address matters. Any resultant changes are then accommodated in the revised/ final PER.
404	.001	Magnificent brood frog	Submission repeats Submission 76 parts .003, .004, .005, .007 and .008, with the addition of: Many of the threatened species and range-restricted species recorded on and immediately adjoining the CWF development proposal, are locally or "at-best" regional endemic species. The magnificent brood frog (Pseudophryne covacevichae) is one example. Loss of their habitat and loss of local populations as a consequence of the CWF cannot be offset. There is nowhere else for those species that is not already occupied. There is no acceptable level of loss if we are to avoid extinction of these range-restricted species.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
404	.002	Emissions	Crucially there's no consideration of emissions by destruction of wet sclerophyll forest or ongoing loss of carbon sequestration. Wet sclerophyll forest in Queensland can contain around 370 - 1800 tons of CO2 equivalent per hectare (6,7). When this is cleared, much of that carbon ends up in the atmosphere either from burning and/or decomposition. So assuming this is 1000 tons per hectare, direct emissions from forest clearing will add 1.25 MILLION tons of CO2. That's again double the emissions as stated by Ark Energy.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 21 per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from that which was quoted by the submitter within the Peeters and Butler (2014) reference which was between 100t and 500t of carbon per hectare ("Wet sclerophyll forest: regrowth benefits management guideline"). The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
404	.003	Project viability	"Biodiversity is the bumper at the end of the tracks that stops the runaway train of climate change bursting through. So to destroy biodiversity to have greater amounts of wind energy is a complete oxymoron." Adjunct Professor Tim Nevard. A significant reason for scepticism of the value of this project for the mitigation of climate change is that historical weather data does not show this area as being of significant average windspeed and direction for ongoing power generation from wind.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
405	.001	Opposition to project	As per Submission 404		No	See response to Submission 404
406	.001	Biodiversity general	The Chalumbin wind farm should not be approved because:of the impacts on protected wildlife and fauna.. The huge catchment that the displacement of land will cause to waterways of the catchment. It is in a direct path of the yearly Boroga flight migration. I am all for progress but not at the risk of contamination of the northern catchment..		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
406	.002	Traffic and transport	The impact to the roads in the entire area to transport the infrastructure and the materials for this development		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. The widening of the access roads will be largely limited to those areas shown in the swept path assessment in the Transport Route Study (Appendix R of the PER). Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
406	.003	Social impacts	At least more public consultation and planning. Ravenshoe also has a huge housing shortage. Without proper examination towards the long term benefits and impacts on the local community and habitat..		No	At this stage in the project development, details of the employment opportunities are to be determined. The proponent will prioritise local and regional employment and training opportunities where required, and is motivated to work with TRC and local stakeholders to advance these interests. Section 13.1.2.1 of the PER details the expected economic impact of the construction workforce on the local and regional economy, indicating the capacity and benefits the proponent will provide through employment on a local and regional scale. The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
407	.001	Biodiversity general	Note submission has been summarised to extract key points requiring response. The Chalumbin wind farm should not be approved because it will involve the destruction of natural ecosystems, native species and indigenous peoples' heritage. It is unacceptable to destroy critical habitat of vulnerable and endangered species for profit. With deforestation a leading cause of climate change, the destruction and fragmentation of biologically diverse ecosystems is completely unacceptable and is not 'renewable' or 'green'. Wind farms and solar power plants are only ecologically acceptable if they do not involve the expansion of human activities into natural areas. In total, 200 native animal species have been recorded to inhabit the area. These include three species classed as vulnerable or endangered under the Nature Conservation Act 1992 and the IUCN List of Threatened Species 2020 - the Northern Greater Glider, the Magnificent Brood Frog and the Red Goshawk. Your company's own Environmental Protection and Biodiversity Conservation Act (EPBC) referral application states the project is assessed as "having a potentially significant residual impact" on all three species Chalumbin is so remote that there are likely to be species of plants and animals that are yet to be scientifically described. Native animals still living their original natural way of life should be left in peace to continue living in their homeland as they have done for millions of years. In addition to their ecological role as home to native animals and their value to people, forests should be protected because they have an intrinsic value as do individual trees, since they are living beings. The natural ecosystems of Queensland are being destroyed at an unprecedented rate, and Chalumbin is a critical haven to native species. Chalumbin should not be destroyed for a wind farm.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
407	.002	Community consultation	The company has consistently failed to consult with the community in an open and transparent manner. It is abhorrent that there has been no engagement and open consultation with the community, including with the Jirrbal people, Traditional Custodians, of this land. It is unacceptable to refuse to listen to or acknowledge the Jirrbal Elders who have spoken publicly of sacred sites on this land and who oppose this project.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
408	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. SOS strongly objects to this project. A simple analysis shows it is not "fit for purpose" and is environmentally damaging. The costs in net jobs, environmental damage, destruction of wildlife and habitats, visual pollution of natural landscapes, immediate significant increase in greenhouse gas emissions, increased cost to electricity consumers and tax payers, cumulative disruption to local communities and others along transport routes, health and fire risks, possible use of slave labour, energy and sovereign security risk, and unfunded end-of-life costs, are just a few more reasons this project should not proceed.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
408	.002	Project design	inconsistency of information on the proponent's web-site and other documentation, a typical issue with most proposals; e.g. is it a claimed 25 or 30 years life? Studies to date show less than 20 years economic life. A misleading claim?		No	The operational lifetime of the project is presently assumed to be 30 years, at which point a decision will be made on whether to repower the site or decommission the project.
408	.003	Project design	1,985GWh generated annually; 602MW and 1,985GWh equates to a capacity factor of 37.6%, which is significantly greater than the 30.1% average of all wind works combined across the National Energy Grid over several years of data collection. Is the output for first year of operation only as wind turbines decline in efficiency by over 1% pa thereafter? A misleading claim?		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
408	.004	Biodiversity general	in addition to scarring kilometres bushland mountain tops it further scars the landscape with kilometres of transmission lines and associated infrastructure and 122km of dirt roads. How much destruction of natural habitats, not just for endangered species, but all wildlife in each habitat is acceptable? Far too much for this project to proceed.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
408	.005	N/A to PER matters	claims it will supply electricity to 320,000 average Queensland homes; however, what homeowner or business only wants electricity available on average 9 hours a day (i.e. 38% of the time) with none on some days and nights when in a wind drought or too little or too much wind blows? A misleading claim?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
408	.006	Social impacts	audible noise can travel long distances; however infrasound (inaudible low frequency sound) can travel, according to some studies, a lot further (up to 13km for much smaller wind turbines); elephants can pick up infrasound through their feet over tens of kms away and whales sense infrasound over vast distances; both audible and infrasound have been shown to be detrimental to human health; the nearby residences and the village of Ravenshoe and Millstream (each 15km away) are potentially within the range that 86 250 - 280 metre high wind turbines that, under certain conditions, may adversely affect the health of these people and animals within the vicinity. Why does the proponent not address this health issue?		No	Multiple scientific peer-reviewed studies on wind farm noise have found that infrasound from wind farms does not cause impacts to human health. This includes the Victorian Department of Health which states that "...sound can only affect health at sound levels that are loud enough to be easily audible. This means that if you cannot hear a sound, there is no known way that it can affect health. This is true regardless of the sound.", and the South Australian EPA which states that "...the contribution of wind turbines to the measured infrasound levels is insignificant in comparison with the background level of infrasound in the environment".
408	.007	Project alternatives	312km2 is an enormous waste of resources and destruction of bushland and agricultural land for such an intermittent, unreliable, weather dependent and weather impacted source of electricity generation; especially when much more electricity can be produced 24/7 from generators requiring very little land and materials by comparison e.g. HELE, CCGT-CC or SMRs, and at much lower life-time cost/MWh. Other countries are embracing these alternatives. Why does the proponent exclude any comparison of their proposal with genuine sources of low emissions full-time electricity generation alternatives? Is it because it will not stack up against the alternatives? Studies and actual overseas experience indicate that this is the case.		No	The (temporary) construction Project footprint is proposed at 1,071ha (not the 312 km2 stated by the submitter). Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
408	.008	Social impacts	15-30 operating jobs is a poor return for the communities around this project, especially as it is very unlikely many of the jobs will be drawn from the existing workforce; the cumulative impacts of this project and nearby projects in the REZ will result in years of disruption to their lives, damage to roads, loss of tourism, traffic delays, etc. What will be the true employment benefit for local communities? Is the cost to the community worth the it for such little benefit?		No	At this stage in the project development, details of the employment opportunities are to be determined. The proponent will prioritise local and regional employment and training opportunities where required, and is motivated to work with TRC and local stakeholders to advance these interests. Section 13.1.2.1 of the PER details the expected economic impact of the construction workforce on the local and regional economy, indicating the capacity and benefits the proponent will provide through employment on a local and regional scale. The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
408	.009	Social impacts	a project value of $1b, based on NREL modelling and other studies, indicates that about 75% ($750m) is for imported equipment; 12.5% capital cost ($125m) and 12.5% ($125m) for construction; not much Australian content in this project! What are the actual figures for Australian content. From where will the equipment be sourced? Will it be from China, who has 7 of the top 10 manufacturers of exported wind turbines in the world and generates 30% of global CO2e emissions?		No	The anticipated sources of materials for the Project are described in Section 13.0 of the PER.
408	.010	N/A to PER matters	it has been observed that wind and solar works change ownership before, during and after construction; e.g. Beryl solar works changed owners three times in three years. Is this latest project owner for Chalumbin Wind Works in it for the long haul of 25 years plus decommissioning/rehabilitation time or are they just a typical construction firm that builds and sells, like several other such projects have done?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. CWF is committed to this project, should any change of ownership come about then all commitments for the project are passed on with the project.
408	.011	Decomissioning impacts	there is no satisfactory disposal or recycling of wind turbines, especially the composite blades. The fibreglass, carbon fibre and plastic composite blades produce micro particles over their deteriorating life. Based on the proposed location of the project these tiny particles will find their way into the soil and waterways and hence the food chain. At end of life the blades are cut up and buried. Where will these blades be buried? Is this pollution acceptable?		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
408	.012	Decomissioning impacts	at the project's end of economic life the rehabilitation of the land does not involve removal of the massive concrete and steel bases. Will these concrete monoliths not eventually be exposed as the soils over them are eroded away? Is this the future, millions of massive concrete mounds, polluting our regions and natural environments?		No	The concrete foundations are typically left in-situ. Once the wind turbines are dismantled, the foundations will be covered and revegetated with a groundcover. The Project owner will be responsible for ensuring that the rehabilitation occurs in accordance with the Decommissioning Plan (to be prepared closer to the decommissioning date). The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning.
408	.013	Opposition to project	The project requires massive biodiversity offsets. Is not this a red flag as to the extent of just the local environmental damage this project will cause? Add the damage elsewhere by mining, processing, manufacture, transport, disposal and the environmental damage caused by necessary backup (e.g. batteries, pumped hydro) and infrastructure (e.g. transmission lines, sub-stations) and the project is not the least bit environmentally friendly. In fact the exact opposite. Is the claim it is a clean form of energy blatantly untrue?		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national elecity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
408	.014	Social impacts	much is made of a proposed community benefits scheme of $500,000pa, which equates to the subsidies received for just one turbine each year. There are a few issues with such schemes. Why is the scheme necessary? Is it a bribe to get approval for an otherwise unjustifiable project? Are the funds just a small return of some of the massive subsidies that Australians provide to the project? How are funds disbursed and does the Council become liable for future maintenance of assets built be community groups?		No	The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Similar models (though lower in value per MW of project output) are commonplace throughout the industry in Australia.
408	.015	N/A to PER matters	The ultimate owner of Chalumbin Wind Farm P/L is Korea Zinc Company Ltd, the world's largest producer of zinc, lead and silver. Is the motivation for the project just to claim CO2e offsets for the emissions generated overseas by the parent company? How can the proponent claim its project will reduce the effects of climate change when even if Australia produced absolute zero emissions it would have no measurable effect on the climate? In fact, does not the project actually substantially increase greenhouse emissions, not just as stated but when all other backup and additional infrastructure needed are also considered?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
408	.016	Decomissioning impacts	The extent and costs of end-of-life decommissioning, disposal and land humiliation in 20 - 30 years time is given little consideration. The costs in future dollars could be in the hundreds of $millions. Will the proponent, if the project is approved, agree to establish a fund (bond) to ensure the end-of-life works will be fully funded?		No	The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning.
408	.017	Project viability	does the claim that the wind project is necessary to replace the output of fossil fuel electricity generators, such as the Liddell power station when it closes completely in April 2023, stack up? AGL states (4/12/22) that Liddell is currently a 1260MW available capacity power station, has an output of 6000GWh annually, supplies 750,000 average family households and employs about 200 people. Several other wind and solar proposals make the similar claims of filling the gap; table 1 compares this proposed wind project with the current 50 years old Liddell power station. From Table 1 it is evident that: 1. the capacity of the wind works is not equivalent to a similar base-load power plant e.g. the 602MW capacity for the wind project equates to only about a 200MW capacity of a base-load power station. Is it not misleading to pretend that the nameplate capacity is equivalent to base-load alternatives? 2. it is even more evident that the intermittent output of the wind works (1,985GWh) is much less than an equivalent 24/7 base-load power plant (3,000GWh based on Liddell's output). AGL's proposed modern 250MW dual fuel CCGT would provide over 1,971GWh at a cost of $400 million and would connect to the existing Liddell transmission, thus avoiding the additional backup generation and storage, etc. required for this wind works project. Surely, this is a cheaper and less environmentally damaging proposition? 3. the wind works capacity factor (37.6%) is vastly inferior to even a 50 years old based-load power station (54.4%) that is constrained by regulation when it can generate electricity; modern base-load power stations have capacity factors above 90%, much lower emissions and provide low cost electricity on demand. [capacity factor is the ratio of actual or estimated output to the potential 24/7 output over a year based on the stated maximum capacity of the power plant]. Is it not misleading to pretend that the project generation would be remotely equivalent to base-load alternatives? 4. the Chalumbin wind works operating staff of 15 -30 is much lower than a base-load power station, which also provides such jobs for at least twice as long (> 50 years and even well over 60 years). The conclusion is that the project will contribute substantially to a net loss of jobs in Australia. A study in Spain revealed 2.1 jobs were lost for each renewables job created. 5. to even get close to the same output as Liddell, a wind works would need to be nearly 3 times larger, so requiring nearly 14 times more land and $5.1billion in expenditure plus other costs specifically needed to be incurred for the wind works to be constructed and operate (e.g. new/upgraded roads, new transmission infrastructure, compensation payments, higher subsidies, access to a BESS). The LOCE is a flawed measure of cost. Total system cost changes are the only valid measure. No country or jurisdiction in the world has reduced their actual average electricity prices when renewables are 30% or more of their installed electricity generation capacity. There is a significant additional cost to provide electricity from somewhere else when the wind is zero, too light or too strong. Such extra costs are caused by the project, which on average only produces electricity 38% or less a year. To claim the project will reduce electricity prices is misleading. Should not the proponent be open about this significant short-coming? The claims that the project will result in clean, cheaper and reliable energy generation are unsubstantiated and are contrary to the real world facts evidenced by both domestic and overseas experiences. This proposed project will do little to address the already compromised energy needs of the NEM grid, let alone, Australia. In fact, it will make it worse as evidenced by overseas experiences in recent years and our own experiences in 2021 and 2022, with soaring electricity prices, blackouts, energy rationing and business closures predicted for years to come.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
408	.018	Project alternatives	The non-equivalence of capacity values results in misleading the general public and others, as does the omission of capacity factors. The PER requires proponents to include a comparison with alternatives to their project but they do not do so. By omitting comparisons with rooftop solar, offshore wind turbines, HELE, CCGT and nuclear power plants they avoid a proper understanding of the options, particularly those that can produce lower cost electricity at least 90% of the time compared to the wind works estimated optimistic 38% a year.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Nuclear energy projects are not permitted under the EPBC Act (s140A).
409	.001	Opposition to project	The Chalumbin wind farm should not be approved because: It will have devastating effects on the wildlife and the environment in the area.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
410a	.001	Biodiversity general	Submission has been summarised to exract key points requiring a response. Chalumbin Proposal will drive wildlife to Extinction as follows: • In order to maintain a viable population. These are some of the examples of upland species that are in Chalumbin , that need protection Tree Kangaroos, gliders and possums, yellow bellied gliders, greater gliders, the sugar, the squirrel glider, the feathertail gliders, and Herbert River Ringtail, Lemuroid Ringtail possum. There should be no more land clearing of the various types of forests that are found in Chalumbin.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
410a	.002	Biodiversity general	• Glider species cannot glider across 70m wide haulage roads. This project would seriously isolate individual populations that will lead to their extion.		No	The maximum known gliding distance for a greater glider is reported at 100 m (Smith et. al 2007) although it is acknowledged in the PER that the average gliding distance is likely to be closer to 50m. Not all roads will be 70m wide and those that are will be rehabilitated as outlined in Appendix K of the PER. This will include the installation of fauna crossing infrastructure such as glider poles and rope bridges to facilitate fauna movements while the revegetation is establishing.
410a	.003	Opposition to project	• The status of the Lemuroid possum has just been raised to critically endangered. has just been raised. • So much critical habitat has been cleared and fragmented of these rare ecosystems, the clearing I do not consent to chalumbin Wind Farm proposal.		No	The Lemuroid Ringtail Possum is listed as critically endangered under Queensland's Nature Conservation Act 1992 and is not listed under the EPBC Act. The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
411	.001	Cumulative impacts	Note submission has been summarised to extract key points requiring response. Cumulative Impacts to Threatened Species Habitat Cumulative impacts on the site itself, in regards to threatened species habitat, have not been considered in the PER. In section 5.5 of the PER, a very narrow definition of CIA has been adopted: "Cumulative impacts on MNES can be defined as the additional effects caused by a proposed action in conjunction with other similar developments". The PER goes on to list the various other wind farm projects in the region. I do not believe that this can be considered a cumulative impact assessment by any means. Elliot, M., & Thomas, I. (2009) Describes eight different examples of cumulative impacts, one of which being the "Joint effects of multiple stresses on plant and animal populations". The PER does not address the secondary and tertiary impacts at a project scale, resulting from the primary activity. The combined effect of habitat destruction; noise pollution; vehicular traffic; changes to water flow; wind turbine strikes; introduction of new pathogens etc., all add up to create a much bigger pressure on the threatened species and habitats existing within the project location. Adding to this is the already existing and increasing threat of climate change.	a)The PER includes details of tree clearing and road and bridge upgrades for the primary transport route and not just the alternate route. A cost-benefit analysis and local consultation would be appropriate to compare these two options.	No	The combined effects on species through multiple impact pathways from Project activities are assessed throughout Section 8 of the PER for each individual MNES. Potential cumulative impacts arising from the Project in conjunction with other planned or current actions within an overlapping area of influence are addressed in Section 5.5. The PER has been assessed by DCCEEW as meeting the PER Guidelines. A study is currently underway to determine if the alternative transport route via Innot Hot Springs is feasible; there is little point in undertaken a CBA or stakeholder consultation if this alternative is not feasible.
411	.002	Visual impacts	This development will significantly impact the visual amenity of properties within the Ravenshoe and Millstream localities. Although I personally do not believe wind farms should be assessed on visual amenity, I am aware that this may significantly impact the value of properties in this locality. The Millstream attracts buyers looking for a quiet country lifestyle and natural surroundings and this is why we purchased a property here in 2018.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
411	.003	Traffic and transport	It is expected that the primary transport route would bring significant increases to traffic along Wooroora Road. This road is heavily used by bushwalkers, birdwatchers, cyclists and horse riders and it also has several school bus stops. An increase in traffic, particularly of this type puts these users' safety at risk and I do not believe this has been considered within the PER. The road is also bordered by heavy vegetation, with steep turns, many gullies and the tiny and old Vine Creek bridge. I would like to point out that the PER uses dismissive language in regards to the alternate transport route stating that the Herbert River Bridge would require major upgrades. However, the PER fails to mention the upgrades that would be required for the Vine Creek bridge. This bridge is currently adequate for the semi rural residents that live beyond Vine Creek. Upgrades to the Herbert River Crossing on the alternate route however would likely be welcomed by the graziers and cropping industry that predominates along this route.	a)The PER includes details of tree clearing and road and bridge upgrades for the primary transport route and not just the alternate route. A cost-benefit analysis and local consultation would be appropriate to compare these two options.	No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
411	.004	Opposition to project	Note remainder of submission is repeating Submission 80, parts .002 to .028		No	See response to Submission 80.
410b	.001	Opposition to project	As per Submission 21, with the addition of: We reject the Chalumbin Wind Farm proposal and do not consent for the following reasons: As wildlife carers on the Atherton Tablelands, we are writing to urge you to not develop Chalumbin Wind Farm. This proposal will require the clearing of native vegetation of national and state significance. We oppose the destruction of our forests because we have first hand seen the impacts to native wildlife. There has been too much cleared already, and we cannot afford to destroy any more. The extinction crisis of Australian wildlife must be controlled. Australia has the worst reputation of any developed country in dealing with its natural assets.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
410b	.002	Traffic and transport	We are very concerned about the increased traffic such a development would create should Chalumbin wind Farm be approved. We object, because our wildlife have been killed outside our place have increased since Kaban and Wind Farm has been developed. Chalumbin wind proposal will be much worse.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
410b	.003	Erosion and sedimentation	We strongly oppose the development of Chalumbin due to the pollution, the run offs, and will affect the micro-climates, the rainfalls that is synonymous with the highland mountains of the Atherton Tablelands.		No	The project has considered the rainfall and climate of the area and will stop works between January and March in response to increased seasonal risk of high intensity rainfall. Erosion and sediment is a key issue for the project and a Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project.
410b	.004	Social impacts	SUBSIDIES: I oppose the subsidies that go towards Kaban and proposed Chalumbin wind Farm, as these projects are destructive, and will not provide any long term benefits to our region. We do not agree with the way you conducted the whole process.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
410b	.005	Community consultation	There were no independent ecologists, scientists and respected non government organisations were consulted, nor respected.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is opportunity for public involvement in the process providing opportunity for comment
410b	.006	Opposition to project	We urge that any further development should cease immediately.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
412	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Due to its effect on the unique wildlife in that area. Its a disgrace this huge windfarm owned by foreign interests would be in the middle of world heritage area		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
413	.001	Project location	In response to the Draft Public Environment Report (EPBC 2021/8983-Chalumbin Wind Farm) I would like to state my objections to this project as follows. * this is first and foremost the wrong place for such industrial development. I have no objections to renewable energy sources and wind farms in particular, given the dire threat to our planet if we continue using fossil fuels. However, the targeting of wilderness landscapes with high biodiversity in the name of "green energy" is not the answer.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
413	.002	Erosion and sedimentation	* the vast clearing of forest necessary for the access roads will not only cause the immediate death and displacement of many animals but the ongoing sedimentation of watercourses, leading eventually to the Great Barrier Reef. This will pose a great risk to frogs such as the endangered Magnificent Brood Frog, a poorly known species found in a very limited range in and around the proposed wind farm site. Proposed mitigation processes are just not credible.		No	A Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER and the protection of the Great Barrier Reef is a key consideration. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Significant impact assessment has been undertaken for the Magnificent Brood Frog that identifies potential impacts such as sediment runoff and proposes a range of mitigation measures. The PER has been appropriately reviewed by technical experts.
413	.003	Fauna mortality turbines	* the turbines will be an ongoing hazard for birds, especially raptors (including the endangered Red Goshawk) and cranes (including the vulnerable Sarus Crane) that soar at heights and regularly traverse this area; and for bats, both fruit eating and insectivorous. The critically endangered Spectacled Flying-fox, known to occur here, is considered a keystone species for its role in pollination and seed dispersal of forest trees.		No	The Sarus crane is not listed as Vulnerable under the EPBC Act, nor under the NC Act. The spectacled flying-fox is listed as Endangered. Neither of these species, nor the red goshawk, has been confirmed present within the Project area. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. Flying-foxes are included in the Management Plan.
413	.004	Koala	* the noise of the turbines is predicted to impact the ability of the critically small population of koalas, known from the general area, to communicate with each other. The roads will increase the risk of vehicle strike and leave them vulnerable to predation as they are forced to cross in search of trees and mates.		No	The PER identifies that noise may have an impact on species occurring within the area and, as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
413	.005	Weeds and pests	* the risk of weed invasion along the roads and around the turbines poses a great threat to the surrounding flora and fauna and will doubtless alter fire regimes in the future.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. A Bushfire Management Plan will also be developed and implemented to avoid the likelihood of high intensity bushfires.
413	.006	Transmission capacity	* the proposed transmission line that connects the proposed High Road Wind Farm to the 275kV transmission line through The Bluff State Forest is also of concern, the proponent announcing on the day the PER was released that the Chalumbin Wind Farm will be broken into two Stages. This was never revealed or published before the release of the PER. Stage One will use existing transmission availability. Stage Two will require upgrades to the line. This may likely require a new parallel transmission line next to the present one. Yet more vegetation clearing would be required and therefore should be included in the cumulative impact of the entire project. The latest ten-year energy plan announced by the state government does not include transmission upgrades north of Ross. The proponent uses the AEMO REZ expansion guide for planning which is contradictory to state planning forecasting.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
413	.007	Offsets	* offsets are meaningless, given that those areas will already be at capacity for the flora and fauna they can accommodate. Instead we will watch the "death by a thousand cuts" of a relatively undisturbed area of high conservation value. I therefore oppose the construction of this wind farm on this particular site and ask that more considered thought goes into the choice of future sites for such projects.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The proposed offset management areas have specifically been chosen because they are currently subject to a number of threatening processes. The aim of the offset is to manage these areas and remove the threatening processes, and in doing so, improve the habitat quality for the relevant MNES fauna species.
414	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. The continuing destruction of the Australian countryside, forests and fauna habitats is unacceptable to Australian citizens who support farmers, graziers and regional Australians in their campaign against the irrational development of wind projects and solar projects, which are environmentally destructive.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
414	.002	Project alternatives	Wind projects are considered to be short term installations and the push for nuclear energy in Australia and the rest of the world to provide reliable, sustainable, affordable energy while not emitting carbon dioxide will, in my opinion, see this project, if approved, become a stranded asset.		No	Nuclear energy projects are not permitted under the EPBC Act (s140A).
414	.003	Emissions	When considering environmental issues there is a dark side to renewable energy. Much emphasis is placed on the worldwide production of carbon dioxide by the burning of fossil fuels. What isn't discussed is the life cycle of wind turbines which includes the sourcing and mining of raw materials to enable the manufacture of wind turbines and their associated infrastructure (See Appendix A – The Dark Side of "Renewable Energy" – Phases 1 and 2) Note Appendix A has not been included here as it is background information which has informed the submitters comments.		No	Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
414	.004	Social impacts	Social impacts include, what is increasingly being reported as the use of forced labour by some wind turbine manufacturers in the production of wind turbines (See Appendix A – The Dark Side of "Renewable Energy" – Phase 4)		No	Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
414	.005	Contamination	Again, there are threats of serious and irreversible environmental damage associated with the manufacture, installation and decommissioning of wind turbines. (See Appendix A – The Dark Side of "Renewable Energy" – Phases 1, 2, 3, 5, 7, 8 and 9). Wind turbine blades are not recyclable and are currently buried. Toxic elements in the blades then leak into the water table and poison the groundwater. Currently there is no effective waste management plan for the decommissioning of wind turbines. The bases of wind turbines containing tons of concrete and steel are left in the ground effectively preventing any ongoing use of that area.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades. Generally the WTG foundations are left in-situ, with the broader hardstand area made available for grazing purposes. This also improves access within the property for the landholder.
414	.006	Rehabilitation	Mining leases are required to provide bonds for the rehabilitation of mined areas at the completion of mining operations. No such rehabilitation bonds are currently required for wind projects which has resulted in many abandoned wind projects overseas being left as ghost structures dotting the landscape.		No	A Decommissioning and Rehabilitation Management Plan to need to be prepared in accordance with the Project Development Permit approved under the Planning Act 2016 in June 2022 (prepared in accordance with State Code 23 and State Code 16). Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects' which has a best practice charter and set of commitments to make a positive contribution to the regions.
414	.007	Social impacts	Wind projects are short-term installations and will not provide meaningful jobs for the local community during their short lifetime as opposed to ongoing employment for locals. As noted in 3A (b), the inground bases of decommissioned wind turbines prevents the land they're built on to be effectively reused. Thousands of tonnes of concrete and steel will remain as a testament to the folly of those who believe wind projects and solar projects are the answer to Australia's energy needs. With coal, gas and uranium, Australia has energy sovereignty. With wind projects, PV solar projects and batteries we cede our energy generation to a foreign power. Energy security is national security. This is providing meaningful inter-generational equity and security. There is an ancient Indian saying: "We do not inherit the earth from our ancestors, we borrow it from our children" Intergenerational equity for our children, grandchildren and the descendants of all Australians must be foremost in our minds.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. This is also fundamental to intergenerational equity.
414	.008	Fauna mortality turbines	Wind turbines are bird killers.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
414	.009	Weeds and pests	The bird carcasses attract foxes and other feral animals such as feral cats. Foxes and feral cats don't discriminate and kill domestic animals, small livestock and small native mammals. The proposed Chalumbin Wind Project would not be conducive to the conservation of biological diversity and ecological integrity.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It should be noted that there are already established populations of feral animals (pigs, cats and cane toads) throughout the Project area.
414	.010	Offsets	The EBPC Act referral document, Chalumbin Wind Project (EBPC 2021/8983), notes that the proposed project is adjacent to the Wet Tropics World Heritage Area. Critically Endangered, Endangered and Vulnerable Flora are on and adjacent to the Proposed Site. Critically Endangered Fauna on the Transport Route. Critically Endangered and Endangered Flora on the Transport Route. There is no amount of biodiversity offset that would compensate for the loss of the listed fauna and flora. In excess of 100,000 trees would be destroyed if this project is approved.		No	Your concerns are noted. The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
414	.011	Hazard and risk	How would a turbine fire similar to https://www.abc.net.au/news/2023-01-05/fire-crews-tackle-wind-turbine-fire/101828414 be controlled adjacent to the Wet Tropics World Heritage Area.		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
414	.012	Biodiversity general	It is ludicrous that while conservationists from Taronga Zoo in Sydney are working diligently to save the Critically Endangered Regent Honeyeater (see YouTube video below), wind projects including the proposed Chalumbin Wind Project, kill thousands of Australia's unique birdlife each year https://www.youtube.com/watch?v=D6ir5Xl0QyU The information in the EBPC Act referral document alone, should confirm that approval must not be given for this environmentally destructive project. As per the EBPC Act clause – "the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making". The four videos below show why wind projects need to be stopped to prevent the destruction of Australia's fauna and flora. They were prepared by Steven Nowakowski an environmentalist and supporter of renewable energy until he saw the destruction wrought on the environment by the Kaban Wind Project. Short Upper Burdekin Film https://vimeo.com/706882264 Short Kaban Film https://vimeo.com/633451905 Short Chalumbin Film https://vimeo.com/582415839 Kaban destruction https://vimeo.com/775033740		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
414	.013	Project alternatives	It is ridiculous that Australia is currently not effectively using its abundant coal, gas and uranium resources to provide an affordable, sustainable and reliable energy generation network for its citizens and businesses. In conclusion, the Federal Government needs to legislate to remove the prohibition on nuclear energy, which is required to meet Australia's national security needs and not rely on supply chains that use forced/slave labour and are becoming more tenuous.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Nuclear energy projects are not permitted under the EPBC Act (s140A).
415	.001	Opposition to project	The Chalumbin wind farm should not be approved because: it will endanger habitat and flora and a better more sustainable way can be found please don't destroy our last trees		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
416	.001	Opposition to project	The Chalumbin wind farm should not be approved because deystroying rainforests and killing threatened wildlife is, actually, NOT GOOD FOR THE ENVIRONMENT		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
417	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. I am writing this submission to state that I am against the proposed development by Ark Energy, formerly Epuron, As a resident of this area I have a number of concerns about this proposed development which I will outline below.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
417	.002	Community consultation	Firstly there has been many claims made by Ark which have been shown to be false upon further investigation. The fact that the company claims there has been community consultation is ridiculous. This community does not want another wind farm. The two we already have is more than enough for one community to bear. I have attended meetings where the company has stonewalled locals trying to have their say , have ignored questions from locals or they have not attended the meetings at all. The claims the company made that they reduced the number of turbines from 200 to 94 due to their consultation with the community is also false, it was then reduced to 86 at the last minute on 5th November 2022 a total of nine, not 114 as previously claimed.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. Refinement of the project and the reduction in turbine numbers is an outcome of community consultation and development processes.
417	.003	Social impacts	The 15-30 full time jobs that the company claims will occur is also highly speculative. Also, nowhere does it state these jobs will be concurrent or throughout the life of the development. The 10 technicians will require specialist skills and it is unlikely these jobs will be filled from within the local community.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
417	.004	Traffic and transport	As a resident of Wooroora Rd, I deplore the fact that this winding and already dangerous road will become even more so with work crews and heavy machinery using it heavily. I own the property adjacent to a very windy section of the Stony Batter and I do not give permission for any road widening to occur or to incur onto my property. I know that the developers have claimed that they'll investigate the Innot Hot Springs access but this was for the actual delivery of the blades, not the workers and other machinery necessary for works to occur and furthermore, the developer has faced fierce community backlash from residents in Wooroora road over the impacts the heavy haulage and construction vehicles will have on their amenity. The developer has only stated the 'consideration*' [4] and 'investigation' of an alternate route. There is no commitment nor any obligation within the draft PER to make use of the alternate route. [*Draft PER Executive Summary page 15] .		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
417	.005	Erosion and sedimentation	The fact that there could be 86x turbines up to 160m tall, blades 90m, max tip height 250m is absolutely over the top. These turbines should not be so big, they will absolutely dominate the surrounding environment and the blades will be so long that the roads needed to move them will have to be widened, especially if its Wooroora Rd or even the road from Innot Hot Springs to Glen Gordon Station, which I've driven many times, would need to be upgraded massively at the river crossing and through to the station. This would cause sedimentation and environmental damage to the Herbert river.		No	A detailed Landscape and Visual Impact Assessment (LVIA) has been undertaken for this Project and is attached as Appendix M. Specific assessment of the potential for the Project to affect the scenic amenity and the Outstanding Universal Values of the WTQWHA is presented in Section 8.10 and Section 8.11. Erosion and sediment is a key issue for the project and a Sediment and Erosion and Management Plan for the project is contained in Appendix J of the PER. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project.
417	.006	Construction impacts	There are also questions left unanswered by the developers concerning the concrete batching plants necessary to build the pads for the turbines. This is a critical issue. 68,800m3 of concrete is required for the foundations for the turbines alone. [Source: draft PER section 2 page 57] This is in addition to the considerable amount required for the other infrastructure outlined above. Where will the water for these batching plants come from? This is not disclosed in the draft PER, nor has it been detailed in any previous state or federal development submission. Without doubt, the developer plans to extract water from the Herbert River catchment – most likely Blunder Creek. This cannot be allowed to occur.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
417	.007	MNES	A report on all the MNES listed species that live in this (Blunder Creek) and other waterways within the development area has been omitted from the draft PER. Endangered species of flora and fauna are found in this creek, and the removal of water from this catchment will have a catastrophic impact that has not been assessed. Similarly, water for other construction related purposes should not be taken from local waterways.		No	The Project team has been made aware, through the submissions process, of one endangered fish that potentially inhabits Blunder Creek that was omitted from the PER. The report has been revised to now include an assessment of the Lake Eacham rainbowfish. The majority of infrastructure associated with the Project will avoid direct and indirect impacts to Blunder Creek as per Section 4.1.5 of the PER. The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site.
417	.008	WTQWHA	Epuron's Environment Protection and Biodiversity Conservation (EPBC) Act referral makes a significant contradiction regarding the projects proximity to the Wet Tropics World Heritage Area (WTWHA). This requires further investigation. Section 2.1 of the EPBC Act referral states 'The Project area is located adjacent to the Wet Tropics World Heritage Area... The nearest proposed project infrastructure is approximately 500m from the edge of the WTWHA boundary.' (^1) Section 3.8 states 'The Wet Tropics World Heritage Area (WTWHA) is adjacent to, and partially within the Project area'.		No	This submission appears to relate to the EPBC Referral made in 2021 rather than the PER that has been released for public comments (the PER does not include a Section 3.8, for example). To be clear, the Project area does not overlap with the WTQWHA. One of the host properties does overlap with the gazetted boundary of the WTQWHA but this area has been intentionally excluded from the Project area.
417	.009	Community consultation	Another issue is that the developer claims to have entered into a Cultural Heritage Management Agreement with the Jirrbal Native Title party and Wabubadda Aboriginal Corporation.Many Jirrbal community members who attended Epuron's so called "information session" (16/09/21), were adamant that that they had not been consulted about the Chalumbin Wind Farm development.Jirrbal Elders with direct connections to the land of the proposal, made it very clear they were opposed to the development. Elders were very upset that Sacred Sites were not being acknowledged. Traditional Custodians were being ignored.Epuron was asked many times to answer who was being consulted in their name. This question was largely ignored. The Jirrbal Elders were emphatic; if Epuron had made an agreement with a group or corporation, this group or corporation did not consult with nor represent them nor their views.John Sadler, Epuron's QLD Development Manager refused to acknowledge nor answer the questions posed by Elders at that meeting. Epuron refused to consult. It refused to listen. Epuron failed to attend the Dec 4th 2021 community meeting that I attended, Jirrbal Elders and community members at that meeting again made their views clear - that this development must NOT proceed at this site. We also emphatically agreed at the meeting that the community and I myself do not give Ark Energy or the Qld or Federal government permission to create any more of these wind farms that increase the amounts of radiation in our environment.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community.
417	.010	N/A to PER matters	Another issue is that as a tax payer I do not want to contribute towards Ark Engery getting handouts through our tax dollars. According to the Australian Parliamentary Senate Select committee final report on Wind Turbines, "On a conservative estimate, each RET* - eligible company receives in excess of $500 000 a year for each turbine" (^1). Based on that conservative estimate, the Korean owners of Chalumbin Wind Farm stand to earn $43 million per year in taxpayer funded subsidies once this development is complete. In effect, Australian taxpayers would be paying this company for the privilege of destroying critical habitat of multiple vulnerable and endangered species. In total 2797 acres of 95% remnant vegetation to be bulldozed, bordering the Wet Tropics World Heritage Area. *(RET- Renewable Energy Targets). (^1) Source: The Senate Select Committee on Wind Turbines final report August 2015 (chapter 7.53)		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
417	.011	Project location	This project is not appropriate for the proposed area and so I ask that a more appropriate location for this windfarm is sought by Ark/Epuron: somewhere that doesn't affect the traditional owners, flora and fauna, the safety of local road users or where the health of our community is endangered. There are alternatives that provide more reliable wind, such as outside the Great Barrier Reed marine park and either further out west or to the south around Rockhampton. There is no point in "Green Energy" if it is at the expense of this wonderful and biodiverse area. To lose such beauty and diversity is at the detriment to our planet. Go away Ark Energy!		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
418	.001	Project location	Note submission has been summarised to extract key points requiring response. Please take note of the comments below as my submission in opposition to the construction of the proposed Chalumbin wind farm. I am entirely in favour of controlling climate change by establishing alternative sources of electricity including wind farms, but degrading and disrupting an area of native forests and woodlands in order to achieve a degree of protection from climate change is thoroughly silly. Windfarms need to be sited on already degraded land, even if such sites are a little less efficient than sites which require invasion of forested land. I am a naturalist with long held, well-founded concerns for the protection of all native forest and woodland in order to retain as much health and biodiversity as remains possible in our environmentally much degraded world. In the course of my investigations I became aware of considerable areas of degraded and unused or little used cleared land on numerous properties at high altitudes on "tableland" country which I then advocated should be planted up with timber-tree species, BUT much of such areas would also be suitable for establishing wind farms on already cleared and degraded land.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
418	.002	Biodiversity general	Disruption of the standing forests and woodland because of clearing for roads and turbine pads will cause severe losses of fauna, most particularly losses of arboreal fauna. In 1996 I was the first to initiate, design and direct erection of the first rope crossing for arboreal mammals in forest disrupted by roads. Monitoring of this and subsequent rope crossings has shown that arboreal mammals are continually in need of connected forests protected from disruption by roads, tracks and clearings.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The operational footprint of the access roads will be 5.5m wide, with the remainder of the cleared footprint to be revegetated using species of local provenance, indicative of the pre-clearing vegetation. The revegetation will be boosted by fauna crossing infrastructure such as glider poles and rope bridges to facilitate fauna movement across the site. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
418	.003	Weeds and pests	Disruption of native forests and woodlands by roads, tracks and clearings inevitably leads to erosion, invasion by weed plants and aids the spread feral pest animals, cats, cane toads and pigs.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intended that these "Preliminary" documents act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept. Fine-scale weed mapping will be undertaken by the Contractor when developing these plans further. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary.
237c	.001	Southern cassowary	Note submission has been summarised to extract key points requiring response. In reference to the Southern Cassowary, I shall now detail an experience I had when encountering this magnificent bird several days ago in an area within the proposed site of the Chalumbin Wind Farm. (see photos attached here). The location of my sighting was about 200 metres from the location of the Chalumbin Gate 32 signage on Tully Falls Road (Epuron substation gate), heading back to Ravenshoe from Koombooloomba Dam. This encounter clearly shows that there are active cassowary habitats in the area of the Chalumbin Wind farm proposed construction zone. If this proposal goes ahead it is likely to mean that the road will be widened, additional access roads created, there will be an increase in traffic, including haulage trucks, clearing and destruction of forests, and other devastation. Cassowaries are known to roam vast areas so the huge wind farm area will impact their survival greatly. This can be likened to a war zone for the forest, animals and birds, including the Southern Cassowary of that area. Such an assault on our landscape and wilderness will severely impact our vulnerable Southern Cassowary population and all other wild creatures. The PER has detailed some of the habitats and distribution. The proponent states that "The Project area does not align with any of the above areas and therefore is not considered to constitute an important population" As you can see from my photographic evidence, the Southern Cassowary is undoubtedly inhabiting this very area that is proposed for the Wind Farm zone. The continuation of the Wind Farm proposal will be detrimental to the survival and existence of the endangered Southern Cassowary. I do not consent for Chalumbin Wind Farm Pty Ltd to kill or displace our irreplaceable Southern Cassowaries and the habitats that they need for their survival.		No	There is no such thing as the "Epuron sub-station gate". There is a gate on Tully Falls Road to the existing Chalumbin substation which is outside the Project area and at least 3km from the nearest proposed Project infrastructure. The PER makes a clear commitment that no construction vehicles or plant will use Tully Falls Road (south of its intersection with Wooroora Road) to access the Project area. The Project will not widen or upgrade Tully Falls Road. The location of your southern cassowary observation is within rainforest habitat which is well known to be the preferred habitat for this species. There is very little rainforest within the Project area and no rainforest vegetation will be cleared as a result of the Project. Other vegetation types that are known to be habitat for the southern cassowary have also been avoided through Project design.
419	.001	Opposition to project	The Chalumbin wind farm should not be approved because: 1. It is a wildlife sanctuary basically for many threatened Australian specie. 2.Windfarms, solar panels etc. are not a viable alternative to Coal and Gas. They will never supply sufficient energy for our economy to grow. 3. The windmills are made in China as are most solar panels making us dependent on China for energy which is insanity.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

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419	.002	Decomissioning impacts	4. The windmills have a limited life and are only disposable for landfill.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
419	.003	Project location	5.This move toward windfarms will use up large areas which are required for farmers and ecological conservation.		No	Wind farms typically occupy a small proportion of the host land (generally in the order of 2-3%). This is also the case with this Project.
180b	.001	Social impacts	Note submission is substantially the same as Submission 180a, with the addition of: I draw to your attention THAT you do not have a social license to undertake the proposal, nor do you or others in the zone.		No	Stakeholder engagement has been extensive for this Project, as described in Section 11.0 of the PER.
180b	.002	Alignment with government policy	You are in breach of QLD State Code 23, as is the Kaban operation.		No	The Project obtained a development permit under the Planning Act 2016 and the requirements of State Code 23. The status of this permit is not in question at this point.
180b	.003	Adequacy of the PER	I further draw your attention to your failure to undertake proper, or any assessment of the Rainforest continuum, referring to it, improperly as Einasleigh upland and no/ inadequate mapping of Mabi rainforest remnants, which occur, at least to the Glen Gordon boundary.		No	Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). No Mabi forest remnants were identified. The western part of the Project area is within the Einasleigh Uplands bioregion, this is indisputable.
180b	.004	Adequacy of the PER	The Chalumbin wind farm should not be approved because: Fails to meet the direction under the EPBC Act in one or more areas Fails to report ALL impacted species that are vulnerable		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines.
180b	.005	Magnificent brood frog	The proposal WILL damage the local environment including habitat of the Magnificent Brood Frog.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
180b	.006	Biodiversity general	The site approval, in this or any form will have a significant impact on regional flora and fauna as well as migratory bird movements.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
180b	.007	WTQWHA	In the PER, there is a failure to declare the correct flora assemblage and hence, understates and undervalues the flora's importance in being a protective margin to the Rainforest and does NOT address the effect of further removal of the rainforest assemblage. This failure will reduce and threaten the stability of the World Heritage Wet Rainforest.		No	The flora surveys were undertaken by well-respected and experienced botanists and we have every faith in the quality and accuracy of their work. The PER acknowledges the importance of intact wet sclerophyll forest as a buffer to rainforest; the tendency for rainforest vegetation to invade and take over wet sclerophyll forests in the absence of an appropriate fire regime is also discussed.
180b	.008	Community consultation	PS: I take issue with: 1. Submissions going directly to the proponent, without the perusal of the Minister.		No	The process established under the EPBC Act (section 98) requires the proponent to invite comment on PER. In order to finalise the PER the proponent must take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. The finalised PER is submitted to DCCEEW for review and all submissions are summarised within the final PER.
180b	.009	Cumulative impacts	2. The failure to consider the additive impact of the Mt. Emerald, Kaban, Chambulin, Upper Burdekin and Mt. Fox proposals. All these proposals have similar issues to PER 2021/8983		No	Cumulative impacts of the Project in conjunction with the other existing or proposed wind farm projects in the Northern QREZ has been undertaken in Section 5.5 of the PER. This analysis has necessarily been qualitative, as there is insufficient publicly available information on the impacts from the other projects for any individual proponent to be able to quantitatively assess cumulative impacts. Such an assessment would need to be coordinated by the Regulator.
180b	.010	Erosion and sedimentation	Note from this point onwards, submission has been summarised to extract key points requiring response.	The report fails to demonstrate that there this is a suitable or sustainable development and should be immediately rejected. The proposal/ report does not demonstrate any way that it can be in the direct catchment to the Herbert River and the Great Barrier Reef [GBR] without causing significant sedimentation and soil loss and movement onto and into the GBR or significant impacts on flora and flora.	No	Detailed assessment of the soil erosion risk and the local climatic, soil and topography factors have been considered in detail in Appendix J of the PER. The project will not undertake any ground disturbance works during January to March in response to this analysis and it has highlighted the importance of strong planning and detailed site-based Erosion and Sediment Control Plans to be used during the construction of the project.
180b	.011	Visual impacts	It is likely that there are unexplained additive effects of Mt. Emerald, High Range, Kaban, Chalumbin and Mt. Fox proposals and serious effects on visual and physical amenity.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Section 10 of the LVIA sets out the cumulative assessment for the CWF and establishes the projects in the surrounding are which have been considered as part of the assessment. Existing projects form part of the baseline so are not assessed in the LVIA, these include: - Windy Hill Wind Farm (comprising 20, 44 m high turbines built in 2000) is approx. 17 km from the site - Mount Emerald Wind Farm (comprising 53 148.5 m high turbines, built in 2018) is located approx. 62 km from the site, given the considerable distance from the Chalumbin Site , noting it will take around one hour to drive between the two sites, the potential for cumulative impact is marginal. Two proposed wind farms have been identified and included as part of the cumulative assessment being the Kaban Green Power hub (18, 225m high turbines, currently under construction) is located approx. 9km north of the site. High Road Wind Farm is location approximately 13km north of Ravenshoe and 23km north of the site (18, 150m high turbines), currently being assessed thought Queensland State processes.
180b	.012	Adequacy of the PER	In this case, the degree of mis-representation, is astounding. From the direct use of materials downloaded from "Dr. Google", without credit: To the non-use of data and flip-flopping of different naming conventions or the misnaming of significant flora groups. At the very least misleading, at worst fraudulent.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER has been authored by, and reviewed by, Certified Environmental Practitioners with the relevant qualifications and experience to produce a document of this nature. The document has undergone a lengthy quality assurance review process on behalf of the project team and the proponent. No specific changes to the PER can be made based on this comment as no specific errors are pinpointed in the submission.
180b	.013	Adequacy of the PER	Scale on map None given on https://arkenergy.com.au/wind/chalumbin/ or on the flora maps in the appendix. Demonstrates proponents' willingness to deceive.		No	It is not clear which maps are being referred to with this comment. The maps depicting flora values within Appendix B (desktop searches), Appendix E (Preliminary VMP), Appendix K (Preliminary Rehabilitation Plan), and Appendix O (Preliminary Offset Strategy) contain scale bars or scale ratios. The maps on the Project website are not relevant to the PER, but are prepared for ease of legibility.
180b	.014	Project viability	Epuron say: "…44 operational renewable projects in Queensland represent over 5 GW of clean energy capacity……." Chambulin proposal is: "……The Project will be an important part of the future energy generation portfolio within Queensland……." These comments are counter intuitive, as the proposal only represents a 602MW nameplate, less than 8% of current operational. A careful look at the expected output [which is not justified in the document], of 1985GW, shows on nameplate: 24/7 per annum is 5085GW, so the proposal is to produce power, on the proponents data, just 39% of the time. In fact, more likely 50% of that, just 29.5% - so a return of just 1000GW/annum, given local low wind flows for the majority of the year.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
180b	.015	Project viability	What's the cost of a wind turbine in 2022? $1,300,000 USD per megawatt. The typical wind turbine is 2-3 MW in power, so most turbines cost in the $2-4 million dollar range. Operation and maintenance runs an additional $42,000-$48,000 per year according to research on wind turbine operational cost. Economic?? Unlikely. A simple "back-of-the-matchbox estimate shows 11.6 years before 'break-even" with NO subsidy. If these were so "economic", breakeven would be much shorter. Simply not worth the environmental vandalism proposed.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
180b	.016	Offsets	Offsets are just words. The destruction and dislocation of habitat have still occurred [Kaban example], which is the underlying issue. The comment in the summary is just not supportable, when compared to the map showing location of proposed turbines and the connecting services combined with the industrial devastation proposed. The activities at Kaban show "offsets" that will not achieve the "written word". Chambulin will give us more of the same. This includes 5,700 ha contiguous with the Wet Tropics, protecting the largest patch of intact wet sclerophyll forest adjacent to Tully Falls National Park and improving habitat connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
180b	.017	Rehabilitation	The issue of "rehabilitation" is relied on to support the PER. In any case, this is a long term 20+ year project or is it really only 20 years and no replacement?? The PER says 30 years, but the 'private meetings' say 20 years. There is no information on this important area, which is typical of the flawed document and proposal. The PER says: "….Rehabilitation would prioritise habitat for key species……" NOT supportable.		No	The project has a life of 30 years, but would likely need to be re-powered after 20 years.
180b	.018	Social impacts	The proposal is to sell out the Ravenshoe community for "a few pieces of silver" and no permanent jobs.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
180b	.019	Community consultation	When it comes to community consultation, Epuron uses the same play book as the Kaban proponents: • Don't consult with the locals. • Call meetings and then abandon the meeting, call no further meetings; • Overload the meetings with company personnel. • Only put "spin" articles in the press. • Demonstrate to the community that there is a big car presence. [Visit of premier/ Deputy Premier, but refusal to engage with the community [Threats by security to individuals who were on public land] • Don't establish mailing lists/ mailings for the proposal; • Use a "community committee" with a captive chair, who is compromised due to their work output/direction and • Chair prepared to direct committee to an specific outcome for, so called – community benefits • For bribes to the community to be made $500k/ annum The Kaban development was not made properly public, nor any locals were properly made aware or encouraged to comment, which is the same methodology being used with Chambulin. Most people here are very private and keep away from public outings or comment. "We" do not wish to be disturbed. There was NO attempt to contact people here by mail. There is NO roadside/ street delivery, except in Ravenshoe town. All the rest have mailboxes. There was NO PO mailbox drop regarding the proposal.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The references made to other project are not relevant to the proposed development.
180b	.020	Community consultation	The proponent does not meet at 11.1.1, the IAP2 Framework requirements partially or at all.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project.
180b	.021	Social impacts	Accommodation: Has become unaffordable or unavailable for both residents and travelers, with ONLY the Kaban devastation currently being active. This situation will only multiply and has been evident in areas eg. Parkes, where a new development puts unsustainable pressures on the local housing stock.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
180b	.022	Traffic and transport	The Wooroora road is the central access point for south bound traffic. The proposal gives no methodology to prevent non-local [within 25km] from using it to access the proposed area to the south. That a PER says that is what will occur, is no guarantee at all and damage will occur to the area that is unfunded. The PER at P64 says: "…located…… away from higher density populations to the east……". In other words, the population at Ravenshoe can put up with the development and won't complain: OR, there will be less complaints by going to that site. Traffic and the integration into daily life means that traffic changes are an important part and impact on a rural community, with little or no access to public transport, having to travel to other centres for services not available locally [within 20km] together with road condition. It impacts safety of travel and broader amenity. Not addressed. That a meeting was called in Innot Hot Springs at very short notice does not allow individuals to voice their concerns.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
180b	.023	Community consultation	That other locals, who will be impacted on the inbound Kennedy Highway areas, need to have their concerns heard. There was NO CONTACT of this group of people. This is the modus operandi of Epuron/Ark/ Korea Zinc in their approach. Exclude and say no-one came, so all is OK.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. he publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project is utilising the same transport route from the Port of Cairns to the Kennedy Highway as is currently being used by the Kaban Wind Farm. Therefore, it is reasonable to conclude that the upgrades undertaken from the Port of Cairns to the Kennedy Highway (inclusive) for the Kaban Wind Farm will be sufficient to support the movements associated with the Chalumbin Wind Farm. Additional works to sections of the Kennedy
180b	.024	Traffic and transport	Wooroora Road: This road is the proposed access and will carry daily light to middle sized vehicles in massive numbers. For the period prior to commencement and the duration of the project. The road [Wooroora], on my travelling on it over a 3-year period, until I moved further west, never had less than 9 cars passed in the travel from Kookaburra Drive or Binbrook Road to Ravenshoe or on return. The road is designed as a secondary road with a single sealed lane. The local use is not accounted for in the report or the proposals effects on local users and residents. There is no indication of undertakings to repair and maintain with TRC. There is no document to go to the cases of people who will be wedged between two industrial developments – Kaban and Chalumbin and the effects and means to fully ameliorate any effects. That there is no method proposed to have a corrective action for damage repair due to traffic movement over the full life of the proposal. This also resolves to State funded roads. An alternative did not enter the PER, which is the document in front of the public and the Minister. The Innot proposal was much later. This proposal would smash down the area and render it to be like any other "industrial" road. It is an 80km/hour zone, with a double white line for most of its length. This increases the viability for it's current use and clearing would remove the ambience of the area irrevocably.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. The widening of the access roads will be largely limited to those areas shown in the swept path assessment in the Transport Route Study (Appendix R of the PER). Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
180b	.025	Social impacts	Sound and health effects: No mention of this in the summary document, particularly low-level emissions or locality problems. The proposal does not meet the international sound requirements, particularly for "quiet enjoyment". The wind farm must meet the noise conditions as stated and that the noise levels include all other sources of noise. That is, even if the wind farm is quieter than the specified noise levels it could still be non-compliant if ambient (non-turbine) noise levels "push" the overall noise levels above the criteria. (Thorne R. sub 154) However, affected residents have little opportunity to gain redress because: 1. There is no compliance mechanism. 2. There is no complaints mechanism. 3. There is no practical way for anyone to challenge noise exceedances, or adverse effects on wellbeing through sleep disturbance. Wind farms characteristically have low frequency and infrasound issues. The proposal does not lead to proper conditions being raised. The PER does not address infrasound and there is no way to ensure that only wind farm low frequency noise is being assessed.		No	Multiple scientific peer-reviewed studies on wind farm noise have found that infrasound from wind farms does not cause impacts to human health. This includes the Victorian Department of Health which states that "…sound can only affect health at sound levels that are loud enough to be easily audible. This means that if you cannot hear a sound, there is no known way that it can affect health. This is true regardless of the sound.", and the South Australian EPA which states that "…the contribution of wind turbines to the measured infrasound levels is insignificant in comparison with the background level of infrasound in the environment".
180b	.026	N/A to PER matters	Get out of Jail Free card: The main PER says: The information contained in this document produced by Attexo Group Pty Ltd is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Attexo Group Pty Ltd undertakes no duty to or accepts any responsibility to any third party who may rely upon this document. Which is a complete "get out of jail card" for the developer and the documents for the proponent. It allows the proponent to essentially, do anything it wants once it gets approval. Further, there is NO punitive effect or "risk" attributed to the proposal There are NO constraints or losses OR major fines for not keeping to an approved proposal.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
180b	.027	Adequacy of the PER	However, the requirements for a PER and site assessment include: The PER must contain a description of the existing environment of the proposed action area and the surrounding areas that may be affected by the action. This is NOT the case, for the Chalumbin proposal.		No	Section 4.0 of the PER provides a comprehensive assessment of the Project area and the areas surrounding this. This has been deemed adequate by DCCEEW in response to the PER Guidelines.
180b	.028	Erosion and sedimentation	Soils Soils are dealt with in a 1/3-page, with the descriptions not being accurately carried into the document proper. There is no use of the local mapping carried out in the area, which gives the erosion risk and soil/sediment loss rates. Local published data has rates from 3tonnes/ha upto 300tonnes/ha. The Kaban site had works commencing before protective works were in place. I see no means in place, Minister, to prevent this with Chalumbin.		No	The soils are presented in the Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER where the best available soils mapping and local soil types are presented along an erosion risk assessment (Section 3.3 - Appendix J) with the topsoil and subsoil characteristics such as % clay, % silt and sodicity. The majority of the Project footprint is mapped by the soil survey titled Land resources of the Ravenshoe – Mt Garnet area north Queensland Vol 1 – Land resource inventory (Heiner and Grundy 1994) at a scale of 1:100,000. The soil loss rates have been calculated using the best available data at a landscape scale and included the use of rainfall erosivity (EI30) from historic daily rainfall data from the project area to model the impact of high intensity rainfall. The project is not the Kaban site and there has been a far more detailed assessment of erosion risk and the project has committed to not undertaking any ground disturbance works during January to March which Kaban did not.
180b	.029	Adequacy of the PER	Flora No proper assessment of the protective margin of the rainforest [support flora] and misnaming conventions.		No	Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). We are confident there are no misnaming conventions in the document.
180b	.030	Biodiversity general	Fauna No proper assessment of the effect of the proposal on migratory birds as related to the WR-DRWS-F continuum and these species and other species eg. Cranes, which frequent these paths.		No	Impacts on migratory birds are assessed in Section 8.8 of the PER, Appendix G provides a preliminary Bird and Bat Management Plan and Appendix Q presents the results of two years of bird utilisation surveys. Cranes, which are not listed as migratory under the EPBC Act, have never been recorded within the Project area.

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180b	.031	Adequacy of the PER	The summary document is not sustainable, compared to the documents proposed industrial destruction of habitat and the biosphere. The PER says "…Avoiding and minimising impacts to local flora and fauna is a priority for this project. Increasing renewable energy capacity and biodiversity conservation are both critically important and compatible objectives, it just requires careful planning and management, and the right approach. Chalumbin Wind Farm is committed to working with ecology specialists and local knowledge holders to achieve a net positive outcome for biodiversity in the project area over the longer term…." This does NOT meet the requirements of the PER report and process. This is a blatant attempt to fool people who have no understanding of the process, much less the technical language used. In the PER at P2, Epuron/Ark/Korea Zinc say: "……..The PER should enable interested stakeholders and the Minister to understand the environmental consequences of the proposed development. Information provided in the PER should be objective, clear, and succinct and, where appropriate, be supported by maps, plans, diagrams, or other descriptive detail. The body of the PER is to be written in a clear and concise style that is easily understood by the general reader. Technical jargon should be avoided wherever possible. Cross-referencing should be used to avoid unnecessary duplication of text but must be specific. The PER does not follow this "objective", but is inconcise, misleading, does not justify the environmental consequences or a clear style used. It is pompous, bloated and difficult to follow for the reader, requiring a high level of technical skill. The summary document is NOT a summary, but a blatant coverup of a flawed investigative process set to come to a specific end and support of the proposal.		No	The Executive Summary of the PER provides a concise precis of the extensive and comprehensive material provided in the main body of the PER document (which is necessarily a long document, owing to the extensive list of information requirements identified in the PER Guidelines).
180b	.032	WTQWHA	"The project does not involve any rainforest, or the Wet Tropics of Queensland World Heritage Area, or Chalumbin Hill and the wilderness area known as Chalumbin." The statement above is unable to be supported, as there is no discussion of the gradation that occurs from Rainforest to Dry Rainforest/Vine Forest to Wet sclerophyll to Dry sclerophyll to Savannah [WR-DR-WS-F]. This is a continuum of flora and related fauna, which is a dynamic feature and is moving westward. See PER and Rainforest below. The importance of this continuum in the region cannot be understated, as it is the support mechanism for both flora and fauna in the region plus the migratory birds. The impact will be exponential in the proposal, which has no standing in it's assessment of the complex flora and fauna of the Far North and this bio-region. The PER does not distinguish between the boundary of the rainforest, the Dry rainforest and the wet sclerophyll of the area. There is no assessment of the fragmentation of this continuum [R-DR-WS], nor of the cumulative impact of all the proposals in the region. I believe that this is a deliberate attempt and strategy to divert the approval process away from the true and distinctly negative impact of the proposal. When Epuron/Ark/Korea Zinc is asked for an explanation of the cumulative [Emerald Hill, Kaban, Chalumbin, Mt. Fox] impact, it says "The other proposals have nothing to do with us" "The PER says: The project is now less than half its original size. It completely avoids all rainforest and the nearest disturbance to the boundary of the Wet Tropics of Queensland World Heritage Area is 600 m in only one location and otherwise almost 1 km or more."	The Wet Tropics Commission says: "…In the Wet Tropics World Heritage Area 2321ha of secondary forest is protected, while another 27,502ha is found outside of protected areas. Secondary forests generally occur around the boundaries of the World Heritage Area and also offer an important buffer against threatening processors. However, the natural regeneration of rainforest is a slow process and is frequently suppressed by woody weed competition see Tng et al. or can possibly become arrested in a state dominated by a single native tree species. See Yeo et al." https://www.wettropics.gov.au/still-valuable-the-second-time-around.html This, in other words supports the importance of the rainforest flora community to be preserved, due to it's support function and importance of the margin species to the rainforest stability. The case for conserving tropical dry forests Joyita Ghose November 18, 2020 says: The case for conserving tropical dry forests Tropical dry forests are among the most threatened biomes in the world, but are often overlooked while creating conservation plans and protected areas. Conserving these forests can protect thousands of species that are only found in these regions and support the livelihoods of millions of people. There is a conflict of interest of Korea Zinc/ Ark Energy/Epuron in removing the references to the Rainforest-Wet Sclerophyll continuum and substituting an argument for this area adjoining the World Heritage Rainforest as being Einasleigh Upland Forest, in the PER. Minister, the PER must reflect this continuum and it must be preserverved in it's current form, by refusing the proposal.	No	The PER identifies that the Project area overlaps the Wet Tropics bioregion and the Einasleigh Uplands bioregion. This is indisputable, as per Queensland Government land mapping which is referenced in the PER and used to produce Figure 4.2. "Einasleigh Upland Forest" is not mentioned anywhere in the PER and it is uncertain to what exactly this submission is referring (particularly as it does not reference specific sections of the PER). The fact remains that the Project will not result in the clearing of any rainforest vegetation communities and has been specifically designed to achieve this.
180b	.033	Project location	Alternate site The PER does not reasonably assess an alternate site, but is dismissive of it at P65 of the PER: Considering the driver of proximity to existing grid infrastructure, it is considered that the alternative location should be assessed within the Einasleigh Uplands Bioregion. IN fact: The proposed site has a high to extreme sediment load RISK and all the site drains to the Herbert River and GBR [Great Barrier Reef] There is NO discussion of this in the PER at all. In fact sediment loads are extreme and could reach over 200 tonnes sediment/ha/annum from disturbed areas. In fact, the generation of sediment from 1071 ha of disturbance is: At just 100 tonnes/ ha, given that the local mapping shows a range from This demonstrates that the company has a set objective and, no matter what, will not deviate from these specific outcomes.		No	It is true that the project will involve clearing and soil disturbance that increases the risk of soil erosion and sediment movement. The project has made a significant commitment to shut down construction activities during the highest risk period Jan - March and the project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks.
180b	.034	Project design	See attached image. The table above infers that there will be: • A 90% effective reduction in the construction footprint due to "revegetation"; • The access tracks and the internal overhead transmission lines do not agree; • Clearing and construction footprint do not agree Misleading and is improperly used as a key explanator for the proposal.		No	The changes made to the Project have been assessed via GIS tools to ensure the proper calculations of operational and construction related footprints are determined.
180b	.035	Alignment with government policy	The current proposal by Korea Zinc/ Ark/ Epuron has not taken into account the current Threatened Species Strategy [2022]. It is obvious that there is no strategy presented by Korea Zinc/ Ark/ Epuron, to meet the Australia wide strategy. Further, the proposal in the PER by Epuron/ Ark/ Korea Zinc does not properly deal with the following matters, as allowed for in the Threatened Species Strategy: Emergency intervention to avert extinctions In the Chalumbin case, there are flora and fauna impacts, as the area lies beside the Wet Tropics World Heritage area and the proposal is a significant threat to the region, which, despite the PER proposals, is unlikely to be sufficient to avert significant damage. I believe that the precautionary principle should be invoked, and the proposal refused. Further, the proposals further south in the Upper Burdekin as the lands are in a major bird migratory zone and have a lot of similar characteristics, should also be refused as there is a cumulative impact from Mt. Emerald to south of Mt. Fox.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. With respect to the precautionary principle, the Project provides sufficient certainty with respect to the potential impacts of the action on the existing values of the environment. A cumulative impact assessment is presented in Section 5.5 of the PER.
180b	.036	Adequacy of the PER	Soils and Geology A mere 1/3 page is used to "describe" the major site resource and in reverse, major limitation. A straight "Dr. Google" take and insert. The names used are not repeated as to limitations in sufficient detail for the reader to conclude there is a serious site limitation.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. Section 4.1.6 of the PER describes the soils and geomorphology of the Project area, with Figure 4.5 of the PER showing the surface geology across the Project area and surrounding locations.
180b	.037	Erosion and sedimentation	Erosion Management Plan The report, in the appendices, goes on the link management to a site Erosion management plan and does not even bother to give method of application, except to pass off the management of soil movement etc. to a mythical "on-site manager and an unsupervised plan. The reality of the soils [and concurrently, the rock pavements] is the interaction of the local high rainfall, high erosivity rainfall rates and soil loss. These from existing mapping are from <5T/ha/annum to over 300t/ha/annum. There is no mention of soil erosion losses from the site or any state-of-the-art methodology for control. From the soil erodibility map, a range of soils are intersected. These have from low to high erodibility. At the low end, these range locally from low soil loss < 10 tonnes/ha/annum to extreme loss rates of >300tonnes/ha/annum. This does not include non-agricultural lands, which, where steep slopes occur have erodibility expected of up to 300 tonnes/ha/annum. Using the proponents 1000 ha footprint [maybe up to 2000 ha], there is a range of: ▯ 10,000 tonnes sediment/ha at the low end AND: ▯ 300,000 tonnes sediment produced. Regardless, there is a serious impact likely to the GBR and localised destruction of habitat. This is a high rainfall, high intensity zone [rainfall from 1.2 m to over 2.0 metres]. A comment by A. Russo, a senior company man, was that fill batters will be 1:2 [45-degrees] – All this would do is increase site soil losses and sedimentation into the Herbert River via it's tributaries.		No	The Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER undertakes a detailed assessment of the soil erosion risk and the local climatic, soil and topography factors have been considered. A Preliminary Erosion and Sediment Control Plan contained in Appendix C of the PER presents the ESC Monitoring, Maintenance and Reporting (Section 5.0) that will be undertaken as part of ESC. The construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP. Soil loss rates are presented in Sections 2.1.2 and 2.2.2 of Appendix J with detailed calculations in Attachment A. The soil loss rates have been calculated using the best available data at a landscape scale and included the use of rainfall erosivity (EI30) from historic daily rainfall data from the project area to model the impact of high intensity rainfall. Soil loss rates have been calculated for all land within the proposed project footprint, which includes 'non-agricultural' land and areas of steep slopes. The Sediment and Erosion and Management Plan contains a section on proposed ESC measure and proven effectiveness (Section 4.3.3) that outlines the project ESC best practice management measures and natural features as individual elements work together to minimise erosion and maximise sediment retention onsite. Sediment reduction performance of each of the measures is presented and preliminary sediment basin sizing has been undertaken to demonstrate that there is space to incorporate their use in suitable locations. Fill batters at a 1:2 slope have the potential to reduce erosion with less surface area exposed to rainfall impact and less area for concentrated runoff to form resulting in less erosion compared to flatter batters. Final batter slope specifications (following site and geotechnical assessments) and erosion and sediment control methods will be developed during the detailed design phase of the project.

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180b	.038	Adequacy of the PER	the PER by all judgement, FAILS to delineate the rainforest system by mapping AND Uses terminology to describe the system that is not commonly used. There is NO mention of "dry rainforest" as dominates literature that describes the Australian Rainforest, Nor The Rainforest-Dry Rainforest-Wet Sclerophyll [R-DR-WS] continuum. It uses the term mesophyll six times and does not link the term to the common usage of "dry rainforest". Further, there is no separate map showing this flora form except by viewing fauna distribution maps one-by-one. There is a definition showing the importance of this continuum for the ultimate survival of the wet rainforest. http://rainforest-australia.com/vegetation_history_of_the_athert..html At P73, it is noted: "…….The western part of the property is in the rain shadow of the Cardwell Range and supports wet sclerophyll forest. In the Wet Tropics this vegetation community is restricted to a narrow, broken strip, 400 km long, bordering the western edge of the rainforest…." This in fact is the rainforest margin, which supports the stability of the rainforest continuum. It should be protected and expanded. The true perimeter, as is now occurring [given expansion as noted by Unwin and others.		No	Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). Furthermore, the Wet Tropics Management Authority have not raised any concerns with the manner with which vegetation forming the western edge of the Wet Tropics has been described or mapped within the document. One of the references in this submission (DSITIA 2014) notes that dry rainforest is sometimes referred to as "vine thicket" and you will find that the PER (Section 4.1.4 Vegetation) acknowledges the presence of small areas of vine thicket within the Project area. The DSITIA document also includes a map (Figure 9) which supports the claim in the PER that the rainforest within the Project area is primarily wet, not dry. Impacts on wet rainforest are not anticipated as the Project has been designed to avoid any clearing of this vegetation. Impacts on wet sclerophyll forest are fully assessed in Section 8.10 of the PER.
180b	.039	Biodiversity general	The proposal grossly interferes with wildlife corridors, on the admission of the proponent. To rely on "offsets" to give effect to the proposal interferes with what is a dynamic system and continuum of both flora and fauna.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
180b	.040	Survey effort	Koala Habitat Section 8.6.3 of the PER: The surveys that were used to conduct to locate and map koalas in the Draft PER are not adequate. Koalas have been found nearby at Yourka Reserve, Kaban, Ravenshoe and Tumoulin. The latest technology such as thermal imagery drones were not used. It is likely that if the thermal drones were used, provided that professional methodology was used, then it is likely the koala findings may have produced different results. The koala is listed as endangered, which makes it imperative that the latest thermal imagery drones should be used to identify koala populations and mapping. It is my opinion that the precautionary principle was also not used.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
180b	.041	Koala	The PER does not address that the fact that most of the koala populations on the western edge of the Wet Tropics are in low abundance does not mean that they are not viable populations or that they are unimportant. On the contrary, in the current scenarios of increasing temperatures, more frequent extreme heat events and increasing bushfire frequency, they are extremely important populations. Based on the modelling released by IPCC, suggests that with + 2 deg C rise in temperature the higher altitude (900 metres and above) eucalyptus forests will be the only habitats in which koalas will survive in the far north. This, plus the fact that the hottest time of the year in this area coincides with the wettest time of the year, means that forest fire frequencies are much lower than they are further south. It is arguable that these forests are a climate refugia for koalas and of extreme importance for their longterm conservation.		No	The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined for both the construction and operational phase and the species has been included in the Preliminary Offset Strategy. It is worth noting that most of the Project area is below 900m in elevation and that published models (including Briscoe et al 2016) appear to show that climate refugia in 2070 will more likely be located at higher elevation sites to the east, within the WTQWHA.
180b	.042	Koala	Impacts on koala populations: The PER does not detail the cumulative impacts of clearing for 60m to 100m wide haulage roads would interfere with the koala's breeding patterns. The endangered koala populations could be displaced by noise from planned wind farm developments across Far North Queensland. The Northern Koala was a lower weight than the Southern Koala and they travel further to find the trees that suit their diet. This has not been addressed in the PER. Cumulative impacts to koalas that stem from the low frequency sound waves generated by the turbines which researchers believe could drown out the mating bellows made by males which have a mean of approximately 60 Hertz". Koala populations from Atherton to west of Ingham survive in "very low abundance", and according to wildlife biologist Roger Martin their communication calls are "the glue that holds populations together".		No	Infrasound / low frequency sound is not listed as a key threatening process for the koala in the National Recovery Plan 2022. The PER does address impacts to the koala as a result of fragmentation. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
180b	.043	Koala	The cumulative impact to koalas would be severe, particularly knowing that their breeding patterns would be adversely affected. The PER does not address that Koalas would be impacted by the sounds of dynamite blasting, drilling, including the haulage trucks going backwards and forwards during development. Also Chalumbin falls adjacent to the Wet Tropics World Heritage Area. The western edge of the WTWHA is identified as a koala and wildlife corridor. Coupled with the usual koala threats, altered fire regimes and invasive declarable weeds also poses an enormous threat. This is underestimated in the PER. Cumulative impacts will be loss of forest on mountain tops will lessen rainfall and lead to more droughts and flooding. This will have an enormous impact on the koala habitat and their future security should this proposal go ahead. The vegetation clearing for the haulage roads, and the drying affects of the gigantic wind towers, would potentially cause bushfires. The koala has enough threats to deal with. The cumulative affects of the haulage roads, and vehicle strikes which doesn't go far enough in the PER. A higher level of assessment for this project, is required for these reasons: In considering the likely impacts Koala habitat, we consider that there should be careful regard to the adequacy of the information submitted. Koalas were found to have potential habitat within the Project Area, however no Koalas were found onsite by surveyors.		No	The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala (including due to noise and vibration, and the access roads) have been assessed in Section 8.6.3 of the PER, mitigation measures have been outlined for both the construction and operational phase and the species has been included in the Preliminary Offset Strategy. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan. The PER includes a Preliminary Weed and Pest Management Plan (Appendix F) and commits to the development of a Bushfire Management Plan prior to construction activities commencing. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
180b	.044	Survey effort	Koala survey methods have been insufficient. Opportunistic searches are a low-cost method of Koala surveying. This is not a fail proof methodology. Recent research indicates that human observers can miss up to 46% of trees with scatsi. Therefore, there is a reasonable chance that the results of the opportunistic searches have failed to detect Koalas inhabit the site.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
180b	.045	Magnificent brood frog	Magnificent Brood Frog – Endangered species This is a threatened species, with a range similar to the PER and likely to extend towards the second occurrence south of Ingham on the range. Minister, this local occurrence, on it's own, must be sufficient to STOP the PER process and deny the application.		No	The magnificent brood frog is listed as Vulnerable under the EPBC Act, Endangered on the IUCN Red List. It is unclear what the specific issue or query is here. The PER does not have a range? The magnificent brood frog extends as far south as Mt Spec (but species presence is most likely discontinuous within the extent of occurrence)
180b	.046	Indigenous Cultural Heritage / Engagement	Indigenous influence As a result of historical and ethnographic descriptions the rainforest is often defined as a 'cultural zone'. The proclamation of the Wet Tropics World Heritage Area, based on environmental parameters, has exaggerated the idea of the rainforest as a cultural boundary. We propose that in the past, Aboriginal connections were multifaceted, multifunctional and multidirectional, extending beyond the Wet Tropics boundaries. We use rock art to illustrate connections within and beyond the rainforest. For example, decorated shields, an iconic item of rainforest material culture, are depicted in rock art assemblages south of the rainforest boundary. Are the shield paintings out-of-place or do they illustrate networks of connection? We suggest that, like other areas, there were connections between cultural groups within the rainforest but that these same groups had links that went beyond this environmental zone. We further propose that the proclamation of the Wet Tropics World Heritage Area has particularly influenced non-Aboriginal understandings of the past within this region. This supports the flora continuum and inter connectivity in the region and it's fauna. Albeit, in this case, anthropogenic.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
180b	.047	Visual impacts	Table 17 Tablelands Regional Council, in its planning scheme says: At a strategic level the Planning Scheme identifies specific outcomes related to scenic amenity within the Tablelands Regional Council area. These Include: 3.6.1.4 Landscape qualities and preservation areas The outstanding landscape qualities, iconic landscape features and scenic routes of the Tablelands are conserved and protected from development that diminishes their visual and aesthetic values. The rural character, evidence of geomorphologic history and natural features within the regional landscape are preserved through sensitive development which complements iconic views, forested hill slopes, bushland and rural vistas. This is dismissed in a handful of words in the PER [It is noted by the PER, that there are no iconic landscape features on or around the Site]		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. This submission provides incorrect summary of the LVIA. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered for the CWF. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
180b	.048	Alignment with government policy	The PER says: The Tablelands positions itself as a major sustainable energy region of Australia, providing a significant portion of the region's electricity supply through the large scale generation of renewable energy. New power generation facilities are well located to ensure they achieve economic benefits at both the local and regional level without compromising existing urban and rural development. This completely avoids the issue: "….new development is located to avoid conflict with surrounding uses." as provided in the TRC Planning Scheme, which Korea Zinc MUST abide by in it's application/PER. The case is NOT made out. Regional Plan: The plan: • identifies sufficient developable land to meet future growth • prepares for growth in a way that progresses the Queensland Government's Q2 objectives, and protects and enhances the region's natural environment, biodiversity and natural resources The PER in it's effect, completely over-rides the purpose of this document and as a result, the community wishes.		No	The provisions of the Tablelands Regional Council Planning Scheme and the Far North Queensland Regional Plan were considered in the assessment of the Project under the Planning Act 2016 and State Code 23. The Project obtained a development permit under the Planning Act 2016 and the requirements of State Code 23. The status of this permit is not in question at this point.
180b	.049	Social impacts	There are a series of Wind Turbine proposals that extend throughout the region, which are opposed by the local residents. The level of community acceptance for Wind Turbines is less than 15%. To overcome opposition, the proponents Kaban/Epuron/Ark/Korea Zinc/Twiggy Forrest/Apple Inc negatively "engage" with the community, by offering bribes, donations, prizes etc. This is specifically shown by the proposed $500,000 "contribution" to the Ravenshoe community is around 80 cents per day/person. Minister, this is PEANUTS against the Environmental cost to the community There is no community survey or polling from the applicant to demonstrate acceptance. By any measure, acceptance is essential. This is not happening with Chambulin -- No social licence The publicly available measurable outcomes are not clear, but research into community outcomes indicate a Government [QLD] undertaking that would be $70 per year: The Government is promising CleanCo will help cut the average power bill by $70 a year. This demonstrates the concept that the community is about to "sell out" for no benefit. There is no absolute guarantee from the proponent to pay the locals the $70/annum. And remember that $90 is less than a months' worth of coffee at the local barista.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
180b	.050	Social impacts	The PER states at page 632: "……..The CWF Project proposes to work in partnership with Tablelands Regional Council and the local and regional community to help maximise the projected economic local and regional benefits whist minimising potential impacts. In this respect, a range of general economic impact mitigation and management measures are proposed and will include: • Employment of local and regional residents preferentially, including traditional owners and gender diversity, where they have the required skills and experience. • Participating, as appropriate, in business group meetings, events or programs in the local and regional community. • Locally source non-labour inputs to production where local and regional producers can be cost and quality competitive. This is patently not supportable, as there is no evidence presented of a gold-standard agreement. "……..Working in partnership…." Does not meet any definable endpoint and there is no impact for the proponent if the "aim" is not met, nor attempted to be met.		No	The proponent will use best endeavours to maximise local stakeholder involvement, local workforce and TRC engagement to realise beneficial outcomes for the community during construction and operation.
180b	.051	Offsets	The PER calls for offsets, but there is no detail as to location, botanical assemblages or altitude as to whether these offsets are similar or represent . It is obviously impossible to offset corridors for transit of migratory and locally based species.		No	The PER includes maps of the proposed offset areas. Detailed habitat quality assessments of these sites have been underway since November 2022 and will support the development of a detailed Offset Area Management Plan for each proposed offset site.
180b	.052	Cumulative impacts	The PER says " …..should identify and address cumulative impacts…" This is NOT undertaken with due diligence. The PER says: "Due to the distance of Mount Emerald from the Chalumbin Site it is noted that it will take around one hour to drive between the two sites, so the potential for cumulative impact is marginal." Minister, the applicant just does not get it. This is demonstrated by the short assessment of important features and robust dismissal in summarizing documents or "management of community inputs".		No	The Project team is not clear what part of the PER this submission is referring to. Nowhere in the PER does this phrase occur "Due to the distance of the Mount Emerald from the Chalumbin site it is noted that it will take around one hour to drive between the two sites to the potential for cumulative impact is marginal"
180b	.053	Biodiversity general	"The Project has been designed to avoid any clearing of rainforest vegetation therefore threatened species specifically associated with these communities are not expected to be impacted." Clearing of eucalypt woodland will reduce breeding, foraging and sheltering habitat for flora and fauna species, and the process of vegetation clearance has the potential to result in injury to or mortality of native fauna species. Some species are more sedentary and hence more susceptible to impacts than others. Conversely, more mobile species such as migratory birds are unlikely to be disturbed by vegetation clearing as they are able to disperse more easily. The total estimated area of vegetation clearing is 1,071.15 ha of regulated vegetation. That Epuron/Ark/Korea Zinc have not investigated and reported on the Rainforest-Dry rainforest-Wet sclerophyll continuum so cannot make the highlighted comment above. This is the area of greatest impact AND summarily dismissed by the proposal.		No	Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). Indeed, one of these botanists, Dr Paul Williams, is the author of one of the papers included in your submission. One of your other references (DSITIA 2014) indicates that dry rainforest is sometimes referred to as "vine thicket" and you will find that the PER (Section 4.1.4 Vegetation) acknowledges the presence of small areas of vine thicket within the Project area. The DSITIA document also includes a map (Figure 9) which supports the claim in the PER that the rainforest within the Project area is primarily wet, not dry. Impacts on wet rainforest are not anticipated as the Project has been designed to avoid any clearing of this vegetation. Impacts on wet sclerophyll forest are fully assessed in Section 8.10 of the PER.
180b	.054	Biodiversity general	"The maximum known gliding distance for a greater glider is 100 m (Smith et. al 2007) so clearings greater than 100 m wide are likely to act as a barrier to this species' movement at that location." Well, what about the poor little gliders who didn't go to Glider School 101 and can't make more than 20m. They die and are lost to the population.		No	The maximum known gliding distance for a greater glider is reported at 100 m (Smith et. al 2007) although it is acknowledged in the PER that the average gliding distance is likely to be closer to 50m. Not all roads will be 70m wide and those that are will be rehabilitated as outlined in Appendix K of the PER. This will include the installation of fauna crossing infrastructure such as glider poles and rope bridges to facilitate fauna movements while the revegetation is establishing.
180b	.055	Contamination	Hazardous Materials The PER says: Project activities have the potential to result in accidental releases of hazardous materials, such as fuels and oils from vehicles and machinery. These hazardous materials can lead to localised soil contamination and contamination of water resources, which in turn can cause injury, reduced vigour or mortality to flora and fauna. The severity of the impact is dependent on the location and magnitude of the release. AND that is all. No mining lease interrogation, no geological provenance investigation, no historical mining investigation. What else has been investigated in a low-level way?		No	The PER, in section 5.2.8, goes on to say that "This is generally expected to be associated with low volumes and localised on the soil that can be collected and remediated as per standard construction projects". This section of the PER was required to look only at potential impacts. Strategies to manage these impacts are further discussed in Section 6.2.8.

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180b	.056	Erosion and sedimentation	Erosion and Sedimentation In the PER [page 49] it says: "…….the steepness of the terrain requiring a level of cut and fill to optimise the road layout and minimise slopes to 15 % maximum….." There is no attempt in the PER to discuss the current environment by dismissing the matter in a few words. Sedimentation rates are not considered at all, nor the off-site impacts and on-going risks to the environment including the GBR. The impact of post-construction damage in the next wet season is not considered at all. When I attended a "briefing meeting" on 29th November 2022, Russo from the "Company", who appears to be a "true-believer", spoke about batters, roads etc. I asked Russo what slopes of cut and fill would be. He said: "…gullies would be 1:2 and cuts in rock steeper." I said: "That is a 45 degree slope, isn't it??" There was no reply from Russo. If the Company is using 45-degree slopes on batters, from my over 40 years working in the field, it is impossible the use machines on the slope and impossible to get any meaningful revegetation. All these areas will be point-source for erosion and site instability and ultimately movement of sediment off-site and into the Herbert River.		No	The project disturbance areas and earthworks are a key consideration of the project and are assessed in the PER including: - A Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER undertakes a detailed assessment of the soil erosion risk and the local climatic, soil and topography factors have been considered. - A Preliminary Erosion and Sediment Control Plan contained in Appendix I of the PER establishes the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. - A Preliminary Rehabilitation Plan (Appendix K of the PER) has been prepared for the project. Batters at a 1:2 slope have the potential to reduce erosion with less surface area exposed to rainfall impact and less area for concentrated runoff to form resulting in less erosion compared to flatter batters. Final batter slope specifications (following site and geotechnical assessments) and erosion and sediment control methods will be developed during the detailed design phase of the project. Where topsoiling and revegetation of batter slopes is the preferred option batters will be laid-back at a slope closer to 1:4 depending on the site and characteristics of the soil to ensure long term stability.
180b	.057	Erosion and sedimentation	Management/mitigation measures The PER says: Areas stripped of topsoil not required for operation will be rehabilitated as soon as practicable. That is simply not a good solution and a proper management plan should allow for immediate revegetation, proper stockpiles, ring collection banks, use of soil retention matting, hydromulching or a myriad of suitable techniques for a high rainfall, high impact environment. We are in a 1200mm to 3000mm environment, with daily rainfalls of over 100mm common. Does not meet any normal design parameters. Minister, the PER is flawed and must be rejected.		No	As soon as practicable will often be immediate depending on the construction activity being undertaken. A Sediment and Erosion and Management Plan for the project is presented in Appendix J of the PER and a Preliminary Erosion and Sediment Control Plan presented in Appendix I of the PER which assess the soil erosion risk and establish the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. A number of proposed ESC measures and their proven effectiveness are included in Section 4.3.3 of Appendix J. High intensity rainfall events and erosion risk have been assessed in Appendix J.
180b	.058	Construction impacts	33. Use of potable water: Water use is a particularly difficult issue for the area south of Ravenshoe, with BWN [boiled water notices] i.e. No potable water available and in 2022, approaching 10-months of the year. The PER [page 58] blithely states: Potable water will likely be provided though the provision of rainwater tanks or through transactions with the local government and associated water reticulation network. Construction water supply options will be determined during the detailed design of the Project and confirmed with State and local authorities prior to construction. The decisions made regarding construction water supply sources will involve ongoing discourse with landowners and relevant stakeholders. There has been no discussion of the impact locally. It should be noted that removals from the Millstream above Ravenshoe by Kaban, have impacted downstream users in Evelyn Creek and The Millstream. There was no local input or discussion, except for a 'stage managed' community "group and "individual briefings". These do not meet the spirit of community consultation.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Consultation with relevant stakeholders, including Tablelands Regional Council will be undertaken to determine the appropriate water sources and identify potential impacts to other parties/water users and the environment. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
180	.059	Social impacts	The applicant Epuron has changed hands, following a failure to meet the community at all. It is now Ark Energy, wholly owned by Korea Zinc. I cannot see how any of these structures have or can develop a proper connection with a community: particularly when the community is firmly against the development. Consequently, there is no social licence. The integrated PER process, with comments going to the proponent rather than an independent group within, at least the Minister's office must occur/ be changed. This can be direct bribery of a community to achieve an end. The community in the regions is disenfranchised by the plan. AND the environment has no money OR voice It is not good enough to say there is a lot of money coming, which will create jobs. These aims are counter intuitive. After completion of these "Turbine placements", history shows no local [within 20km] jobs. What my experience has been, is that after completion there is a preference to bring in contractors from anywhere in Australia.		No	The submissions process under the EPBC Act is legislated and the proponent can only be expected to follow the requirements of the prevailing at the time of the proposal. The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
180	.060	Emissions	Crucially there's no consideration of emissions by destruction of wet sclerophyll forest or ongoing loss of carbon sequestration. Wet sclerophyll forest in Queensland can contain around 370 - 1800 tons of CO2 equivalent per hectare (6,7). When this is cleared, much of that carbon ends up in the atmosphere either from burning and/or decomposition. Assuming this is 1000 tons per hectare, direct emissions from forest clearing will add 1.25 MILLION tons of CO2. That's again double the emissions as stated by Ark Energy/Korea Zinc. Add to that the ongoing loss of carbon sequestration resulting from permanent clearing of wet sclerophyll forests. Wet sclerophyll forests can sequester 6->30 tons of CO2 per hectare per year (8). As this is high sequestering mature forest, we should be using 25-30 tons. So, assuming 25 tons, this means that this project will stop the sequestration of 25 x 1250 x 20 = 625 000 tons of CO2 over its lifetime. This will be permanent, as no forest can grow back on concrete or compacted earth for the foreseeable future, and no doubt Ark Energy or future owners will prevent this happening via liberal use of noxious herbicides. So millions of tons of carbon sequestration will be lost as a result of this project. [Dr Michael Seebeck]		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 2t per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from that which was quoted by the submitter within the Peeters and Butler (2014) reference which was between 100t and 500t of carbon per hectare ("Wet sclerophyll forest: regrowth benefits management guideline"). The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
180	.061	MNES	"Vegetation surveys undertaken to ground-truth REs within the Project area did not confirm the presence of the Mabi Forest community (nor either of the constituent REs) and it is therefore considered that there is no Mabi Forest TEC within the Project area." In fact, the casual observer finds remnants of Mabi Forest travelling south from the Glen Gordon/ Wooroora Station intersection and there are species allied to the Mabi forest in drainage lines including lianas and epiphytes visually intercepted. At the southern gate, the true boundary to Einasleigh Uplands vegetation commences & to the south. The PER, at length tries to establish that the vegetation for the site is Einasleigh Uplands. This definition suits the applicant.		No	The likelihood of whether an EPBC-listed ecological community is present or has the potential to be present at a particular site is based on an assessment of how an area meets the listing description, key diagnostic characteristics and condition thresholds of the national ecological community (as described in Section 4.3.2.1) (TSSC 2012a). Perhaps the casual observer is not familiar with these key diagnostic characteristics? As expressed within the Project Area Habitat Assessment of the Mabi Forest TEC (see Section 4.3.1.4 of the PER), the community was listed in the PMST (see Appendix B of the PER) as likely to occur within the Project area. The Recovery Plan for Mabi Forest (Latch 2008) does not indicate any known patches of remnant Mabi Forest within the Project area, nor does the mapped pre-clearing extent of this community appear to extend as far south as the Project area. Vegetation surveys undertaken to ground-truth REs within the Project area did not confirm the presence of the Mabi Forest community (nor either of the constituent REs) and it is therefore considered that there is no Mabi Forest TEC within the Project area. The western part of the Project area is located within the mapped Einasleigh Uplands bioregion, this is an indisputable fact.
420	.001	Project location	I am writing to you in regards to the Chalumbin wind farm project. I strongly oppose this project going ahead as I believe it is not the appropriate location for such an undertaking, as it Borders the world heritage wet tropics. This area is a unique and fragile ecosystem that will be greatly affected by this massive Land clearing.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
420	.002	Erosion and sedimentation	. The deforestation of this land will cause massive amounts of erosion, as we live in the Wet Tropics with big amounts Of rainfall. This runoff with not only affect the local area but will greatly affect the Barrier Reef, which is already struggling Due to the hands of men. Our community has had many meeting with environmental scientists over these issues and they are Factual not hypothetical.		No	A Sediment and Erosion and Management Plan for the project is presented in Appendix J of the PER and a Preliminary Erosion and Sediment Control Plan presented in Appendix I of the PER which assess the soil erosion risk and establish the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site.
420	.003	Biodiversity general	We have wildlife and flora which is unique to this area and to the world. Once the forests delicate system is interrupted it will affect The fauna greatly. My concerns on having these gigantic wind turbines dominating the landscape, is the impact on the migration of birdlife and bat colonies , Which are all important to the balance of life. The amount of wildlife which inhabit these areas is incredible and irreplaceable.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
420	.004	Traffic and transport	I have lived on Wooroora Road for 5 years , the proposed road which will be used as an access road for the construction of these wind Turbines. Just in the last twelve months I have noticed the increase in the amount of traffic on this road created by the people who have Been visiting the site, employees of the EPURON Company. I have also noticed the increase of roadkill, the Pretty Face Wallaby being the number one fatalities.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. The widening of the access roads will be largely limited to those areas shown in the swept path assessment in the Transport Route Study (Appendix R of the PER). Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
420	.005	Social impacts	My other concerns over the increase of traffic on this unsurfaced road is the increase of dust which plagues the locals in this area. It is a health hazard as we are constantly breathing in dust. I have already contacted local council TRC in regards to this matter.		No	Any use of local roads for the Project will be undertaken through comprehensive stakeholder consultation and the preparation of a Traffic Impact Assessment and Traffic Management Plan - this will consider potential amenity impacts associated with the use of local roads and will identify measures to reduce these (such as the use of water trucks to minimise dust generation).

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
420	.006	Community consultation	Another issue I have with this proposal for the wind turbines is the fact that the local community were not consulted nor were the Traditional owners of this land. EPURON have not been transparent on any of their intentions. They have been misleading and dishonest About what they are planning to do and any environmental studies which they have so called taken out. The Traditional Land Owners The Jirribal people were not consulted about this matter , and ae already deeply affected by this decision To have their sacred land taken from them. This is their sacred land and should not be interfered with. Once the foreign owned company get approval to go ahead, they will not be allowed "On Country", which is their birth right. The amount of anxiety and stress Which is being felt throughout the community is unacceptable.		No	The suggestion that the community consultation has been improper for the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
420	.007	Opposition to project	The EPBC Act, protect matters of National significance and the proposed Chalumbin Windfarm will have a massive environmental and social impact on; World Heritage Wet tropics National Heritage places including sacred sites and nationally threatened species and The Great Barrier Reef. I say No to the Chalumbin Windfarm, I do not consent to this project. I moved to this area tho live a healthy stress free life and I do not want this to change for the benefit of a Foreign owned company, who have no regard for our magnificent environment or the people who live here.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
421	.001	Project location	Note submission has been summarised to extract key points requiring response. Wind Plants must be confined to areas of poor quality country, away from human settlements and forest ecosystems that support precious Australian flora and fauna. In a continent that is largely desert, or marginal country at best, it is short sighted and reckless of governments to allow our limited, vegetated areas to be damaged, contaminated and segmented by wind plants such as the one proposed at Ravenshoe.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act.
422	.002	Opposition to project	.....The energy used to manufacture construct and maintain wind turbines is far greater than will ever be produced in their working life. The large-scale slaughter of birds and bats, the sterilisation of some 25 hectares of land for each turbine and the criss-crossing of land with construction and service tracks and wires is apparently in the name of the environment. The more renewable energy that enters the grid, the higher the domestic electricity costs and the more infrastructure needs to be built..... No data is available on hazards, accidents, fires, safety, health and human suffering as required by other industries. ....Millions of used blades are now destined for landfill. ....The cut surface of the blade allows leaching, and soils and waterways are contaminated by bisphenol A. At present there are 6,000 blades for dumping in Australia and the number is increasing as Australia surges towards being the mythical renewable energy global superpower. (Ref: Professor Ian Plimer. "Green Murder" (2021, Connor Court Publishing) The environmental hazards discussed in the article above demonstrate the lasting, and widespread potential effects of proceeding with the Chalumbin Wind Plant.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
422	.003	Contamination	BPA (Bisphenol A) has been outlawed all over the world in the food and drink industry, so covering our natural landscapes with it, moreover, the tops of major watersheds as in the case of Chalumbin, in the name of 'green' energy is ludicrous. Has the flow on effect of BPA in the local hydrology of this wind plant been considered?		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
422	.004	Emissions	Moreover the average wind turbine needs 80 gallons of oil as lubricant, PAO synthetic oil based on crude oil, (reliant on imports) and that oil needs to be replaced once a year. (Larger turbines need more than this). The army of large equipment needed to transport and build these wind plants run on petroleum. As well as the equipment required for installation, service, maintenance, and eventual removal.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. According to James Bailey and Associates, during the operational phase the emissions will largely be limited to light vehicle movements within the site (for inspections and maintenance) and occasional deliveries of replacement parts. The quantity and distance of these vehicle movements is negligible compared to the construction phase and will not materially contribute to the GHG costs of the Project. With respect to the comment about the GHG costs of a wind turbine's ongoing operation, the embodied energy calculation of the wind turbines presented in the GHG assessment in Section 13.2 of the PER included energy required in the manufacturing, construction, installation and ongoing maintenance stages (adopted from Crawford (2009)) - 'Life cycle energy and greenhouse emissions analysis of wind turbines and the effect of size on energy yield', Renewable and Sustainable Energy Reviews, 13, pp. 2653-2660.
422	.005	Erosion and sedimentation	Each turbine requires a footprint of several hectares, cleared of trees because trees create a barrier & turbulence that interferes with the sustained wind velocity necessary for the turbine to work properly. This sort of clearing, on the tops of vegetated hills with unstable soils in the Ravenshoe area, where rainfall events can be extreme, is an unacceptable interference with huge erosion and land slip potential.		No	A description of the project components is presented in Section 2.2 of the PER and stats that each turbine will require a handstand area of 1.5 ha to 2 ha to allow for the turbine foundation, laydown of components and area for crane use. This area will also encompass firebreaks around the turbine foundation. A Sediment and Erosion and Management Plan for the project is presented in Appendix J of the PER and a Preliminary Erosion and Sediment Control Plan presented in Appendix I of the PER which assess the soil erosion risk and establish the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Geotechnical assessments will be undertaken to minimise the potential for land slips.
422	.006	Decomissioning impacts	The maximum lifespan of a modern, top quality, highly efficient wind turbine is 20 years. (Currently proving to be less in areas of harsher climates.) They cannot economically be reused, refurbished, reduced, repurposed, or recycled so they go to landfill. Has this aspect been considered at Chalumbin, has disposal and rehabilitation been planned and catered for? Where will the used turbines be buried, and who will pay for the transporting of used turbines to landfill? Has the company paid a bond for this expensive process in case, like so many other RE companies, they no longer exist in a few years?		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
422	.007	Opposition to project	The lack of transparency by governments with communities local to the Ravenshoe area is typical of the manner in which these developments are being rapidly and recklessly rolled out across rural Australia, impacting people who are unaware of the consequences involved. This development is entirely inappropriate and unacceptable for the Ravenshoe area. When will governments use common sense and put a stop to this cancer spreading over our country. Food security + energy security = national security.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
422	.001	Community consultation	11.3.4.4 Aboriginal and cultural heritage Concerns about consultation with Jirrbal community members who have a historical and ongoing connection to the Project area were raised and further information can be found in Section 8.10.3.1 and Section 11.6. Response: SECTION 10.10, 11.3.4.4 , 8.10.3.1 and Section 11.6 I am a young Jirrbal Custodian. With the proposed Chalumbin Wind Farm, I feel angry more than anything that I didn't get any information about it. I didn't have a clue about it, and still I have not a clue about what is happening today, because I feel this is wrong. It's just not the right way. I am really concerned about the future, because I want to go on country for the future, to walk on country I do not want to be denied, to have people say that I "what are you doing here". I want to see the land out there, to connect with country. I don't want to be asked if I have permission to go on country. I have deep spirutal connections, for me it is like a calming, a big relief when I am out there on Chalumbin. I can forget about things. It clears my mind, I feel the old people, I feel everything. The culture is very powerful for me. I feel if they were real traditional owners, they would not allow this destruction. I just don't understand how it got approved by State Government. I would like Chalumbin to be protected, just left. How do I put this, just want it left alone, to see it remain beautiful, full of life. That's just the main thing, just left alone. I have been out there summertime, we go for our usual swims at Charmillan Creek. I need the land to give us the stories, our culture, our land, that is us. Without the land, we would be nothing. No Jirrbal land, no culture. The respect for the land, the people, the culture, the animals, it's just fading and soon it will just disappear. I'd like to see the young Jirrbal people learn respect, and this can only be learnt on country. You can't teach respect in school. Going on country teaches respect for elders. I want to see elders and ancestors acknowledged. I know about the massacres out there, at the falls, it makes me sick to my stomach, that it's not respected. It's a burial ground, it's just a lack of respect. As a Jirrbal custodian, I do not consent to the destruction of Jirrbal country, land, and culture. I am proud of my culture, my country I love and Chalumbin needs to be protected		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
423	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
424a	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
425	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
426	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
427a	.001	Opposition to project	As per Submission 21, with the addition of: I live in pristine bushland just 3.5 kilometers away from the nearest wind turbine on the Chalumbin site. Obviously this will be a huge impact the native and untouched wilderness that I have paid for and chosen to live!		No	See response to Submission 21
427b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 21
424b	.001	Opposition to project	As per Submission 41b		No	See response to Submission 21
428	.001		As per Submission 21		No	As per response to Submission 21.
429	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
430	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
431	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
432	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
433		Opposition to project	As per Submission 21		No	See response to Submission 21
434	.001	Opposition to project	As per Submission 21		No	See response to Submission 21
436	.001	Opposition to project	As per Submission 21		No	See response to Submission 21

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
437	.001	Project location	I am writing to register my lack of support for the proposed Chalumbin Wind Farm development. This is something I never considered I would do. I support renewable energy over fossil fuels whole heartedly, but we cannot afford to lose the little biodiversity we have left regardless of the gains we make in emissions reduction. Australiae leads many developed countries in its ability to destroy forests. An area equivalent to the MCG is lost every 86 seconds, and we lead the world in extinction of our beautiful mammals*. This is not something we should be proud of, and as we transition to clean, renewable energy we must get it right. Clean energy is not clean if it comes with significant biodiversity loss. The Chalumbin Wind farm is proposed in a heavily vegetated landscape, containing threatened species and in close proximity to the Wet Tropics World Heritage Area. The project will set a precedent for renewable energy development in Queensland and it's a precedent local residents do not support. This is not NIMBism. I'd love to see wind farms on the hills of the Atherton Tablelands and surrounds where clearing has already taken place. There are suitable sites and this would provide an additional income for multiple farmers who can lease the land to wind farm owners. Currently the Queensland Renewable Energy Zones (QREZ) have not been mapped to understand the intersection of high value biodiversity locations and high potential renewable energy resource areas (wind and solar). This mapping is essential for knowing where renewable energy projects should be located, ensuring that we are not clearing essential habitat and losing biodiversity as a result. Until the planning and mapping of QREZ's is complete, we can not be confident that the Chalumbin wind farm is not resulting in the loss of essential habitats and biodiversity. No amount of minimising, offsetting, rehabilitation, will account for poorly placed, and poorly planned development. I support renewable energy developments in FNQ. I see localised production of energy a key to FNQ resilience as we face more intense storms and rainfall in our changed and changing climate. Distributed small scale local energy production could mean fewer homes cut off from mains electricity - it just needs to be carefully planned and make use of areas that are already disturbed and cleared as a priority.. Other locations that could work - grazing land for wind and solar, roof tops (residential, commercial and agricultural), cemeteries & dams for solar.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
180c	.001	Opposition to project	This submission is repeating points raised in Submission 180b.		No	See response to Submission 21
438	.001	Opposition to project	The Chalumbin wind farm should not be approved because: Comment - Chalumbin Wind Farm, near Ravenshoe, Queensland (EPBC 2021/8983) PUBLIC ENVIRONMENT REPORT (SECTION 10.10, 11.3.4.4 8.10.3.1 AND SECTION 11.6 The Per states: 10.10 Aboriginal Cultural Heritage Act 2003 The purpose of the Aboriginal Cultural Heritage Act 2003 (ACH Act) is to recognise, protect and conserve Aboriginal Cultural Heritage and is administered by the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP). The ACH Act defined aboriginal cultural heritage as anything that is: • a significant Aboriginal area in Queensland; 11.3.4.4 Aboriginal and cultural heritage Concerns about consultation with Jirrbal community members who have a historical and ongoing connection to the Project area were raised and further information can be found in Section 8.10.3.1 and Section 11.6. The CWF Project has engaged with the Jirrbal Peoples for the purposes of a Cultural Heritage Management Agreement (CHMA) under the Aboriginal Cultural Heritage Act 2003 and in relation to negotiation of an Indigenous Land Use Agreement (ILUA) under the Native Title Act 1993 via North Queensland Land Council, as required by the statutory processes. The CHMA was signed in October 2020. The ILUA was authorised on 7 May 2022 and subsequently signed by the Applicants, WAC and CWF Response: SECTION 10.10, 11.3.4.4 , 8.10.3.1 and Section 11.6 I am an Elder Jirrbal traditional owner, custodian. I am standing up for my family and my ancestor's county, Jirrbal country. My primary school weekends was about going out to Koomboolloomba, looking for witchity grubs for fishing bait. Holiday time was fishing and camping on the Herbert River, all the way to Blunder Creek, driving through Wooroora Road out to Mandalee through to Hot Springs. Like my parents, grandparents, great grandparents, my ancestors, I will die there and be buried there, back on country. Knowing that, gives me a very satisfying, a calming feeling within my heart, body and soul. I am also a member of the Wabubadda RNTBC (Registered native Title Body Corporate), Although I do not wish to be a member of Wabubadda, the reason I am a member, is so I am able to attend their meetings, even though I do not get a voice. Jirrbal Land, it's rivers fauna and flora have been dealt a very cruel, savage, despicable, disregard, dishonest disheartening, disgusting, most of all disrespectful blow to First Nation's people. Not just Jirrbal people, but worldwide indigenous people's. Indigenous peoples around the world, irrespective of their lands, look deep into a person. They study that persons' habits, finally that person is identified with an animal, and so that animal becomes their totem. Chalumbin has plenty of secrets, an abundance of food, for each and every one of it's inhabitants, for the animals to survive, so I say I give no consent to the proposed Chalumbin Wind Farm. No consent, wrong place, NO WAY.		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent.
439a	.001	Vegetation clearing	Petition the Proposed Chalumbin Wind Farm Pty Ltd on Wooroora Station-Not Clean or Green The area designated is of extreme importance to the biodiversity of this area, it is now at risk of destruction. Many listed vulnerable and endangered species are at risk of becoming EXTINCT due to the proposed clearing of their habitat. Over 78,000 acres of high biodiverse habitat of wet and dry sclerophyll, woodland forest is planned to be cleared of over 2,700acres, 95% bordering the boundary of Wet Tropics World Heritage Area and culturally significant to the Jirrbal First Nations containing sacred sites and burial grounds. An ecosystem found nowhere else on our planet for 94 Wind Turbines (since downgraded to 86) 250m high with 75m long serrated blades that only last for 20-25 years, subsidised from Taxpayers money to foreign investors. Once cleared gone forever, Offsets dont work! You can't offset against an environment that already exists. These forests and waterways are thousands of years old and impossible to replace.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
439b	.001	Traffic and transport	Residents of Wooroora Rd, surrounding Roads and area say NO to using Wooroora Rd as the proposed Access Rd for the Chalumbin Wind Farm Wooroora Road a Wildlife Corridor for Vulnerable and Endangered species of fauna; including the Northern Bettong, Cassowaries, Echidna, Yellow bellied Glider Petaurus australis Wet Tropics unnamed sub species, Blue Tongue Lizards, Rock Wallabies, Platypus, Red Goshawk and many others. With an increase of traffic of 300% to 649% this proposes a massive Health & Safety risk with the road being used as Heavy Industrial for a Rural Residential area. These risks include Safety of Children in a School Bus Route, Emergency Services, Speeding of trucks and Work Utes, Dust & Noise Pollution and much more. The Road has historical Value too, especially Stoney Batter written by Glenville Pike in the book 'Bill Toohey The Legend'. also used by soldiers in the 2nd World War. Vine Creek is a well known Camping and Fishing Grounds for Traditional Owners and Locals.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
180d	.001	Opposition to project	Submission is repeating comments raised in Submission 180b		No	See response to Submission 108b.
440	.001	Opposition to project	The Chalumbin wind farm should not be approved because: IT will destroy the native environment and Animals .coal is needed to make the windmills that's not saving the environment.this will a environment disaster.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
63i	.001	Survey effort	Due to the limited time spent on field work for the developer's PER; it could be that any nest found in the proposed development area, may have been empty and not in current use because the breeding season might have been outside the developer's fieldwork months. One concern I have over the developer's PER is the number of hours spent in looking for this species within the Chalumbin area. On page 114 of the PER document in the section (4.2.2.3) in Section 4 Part 4: [26] "The survey team spent a total of 263 person hours over 13 days surveying the Project area for red goshawk." [26] "An additional 180 person hours were spent undertaking visual surveys for soaring red goshawks" [26] I really believe that a 13 day timeframe of field observation is insufficient to give an effective indication of Red Goshawk occurrences in the area. The Red Goshawk can be hard to spot, and many ornithologists will spend many months in an area before they spot resident bird species. Ornithologists and scientists have often spent many months looking for the Red Goshawk to no avail. [27] I also think the information on the additional person hours is insufficient; the PER report does not tell us how those 180 person hours were distributed and the timeframe involved. I believe that a period of observation of the Red Goshawks of at the least three years would have been more appropriate to give an accurate reflection on their current numbers in the Chalumbin area.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. Nonetheless, a full impact assessment for the red goshawk has been presented in the PER, and the species has been included in the offsets program.
63i	.002	Red goshawk	Bearing in mind that the range of the range of the Red Goshawk can be large [9] and have an estimated home range of 200-220 km², [17] [4] which yields an area of occupancy of 100 000 km², [11] sightings within 200km radius of the proposed development site have significance for this submission and for local Goshawk populations. It can be seen from the Government department's data that there have been many sightings of the Red Goshawk within the home range area (200-220km) [17] [4] of Chalumbin and the proposed development. [1] Because the Chalumbin area would be in the home range and potential breeding area of all these sightings; any destruction to the Chalumbin area, any mature tree removal, and any fragmentation of vegetation, would, I believe, negatively affect the numbers and health of local Red Goshawk populations. I very strongly believe the remnant non-fragmented vegetation in the Chalumbin area provides ideal nesting sites for Red Goshawks; and that according to Australian Government Department of Environment, Land, and Water data, there are Red Goshawk home ranges in the Chalumbin area. [1] And this quote is from a 25 page document, Australian Government Department of Agriculture, Water and the Environment: Conservation Advice for Erythrotriorchis radiatus (Red Goshawk) Canberra; produced in 2022 by the Australian Department of Agriculture, Water, and the Environment, Canberra: [29] "Due to a small population size, all foraging and breeding habitat is considered critical to the survival of the species." [29] From the map shown in the developer's PER document, showing the foraging and nesting habitat; according to the Government's own Conservation Advice, the Chalumbin area is considered critical for the survival of the Red Goshawk. Therefore, any proposed development that would damage critical foraging and nesting areas, needs to be prevented if we are to believe the Government's own data. In Section 4 Part 6, page 152 of the PER [28] it states: "As the species has not been recorded from within the Project area (nor within the broader Study area for approximately 15 years), no habitat critical to the survival of the species has been mapped within the Project area."	I believe this to be a very important point to be taken into account when deciding if the development is environmentally appropriate. I believe that remnant areas of vegetation, which have water access within them, tall mature suitable nesting and roosting trees are areas critical to the survival of the Red Goshawk, I believe that Chalumbin is such an area. I strongly believe that the proposed industrial development of a wind farm in the Chalumbin area is environmentally inappropriate and will reduce the likelihood of Red Goshawks nesting and foraging in the area. Even taking into account the highest Red Goshawk population, there are at most 700 breeding pairs, and at worst 350. [19]. In addition, according to the Australian Government Department of Climate Change, Energy, the Environment and Water, there are only around 330 breeding pairs of red Goshawks left. [30] From these figures, it can be seen that the Red Goshawk is indeed Australia's rarest Bird of Prey and needs protection of its foraging and nesting environment. A recent nest was found during the developer's field investigations in the area proposed for development. [26] This shows that the Red Goshawk uses the Chalumbin area as a nesting area. I believe that any area used as a nesting area by an endangered bird, should not go from an area of remnant vegetation to an area of heavy industrial use. I believe that we need to preserve all Red Goshawk breeding and nesting areas. I believe that the Australian nation needs to do all it can to protect our rarest Bird of Prey and to be in alignment with International advice and recommendations regarding this species. We cannot prevent natural disasters such as cyclones, flooding, droughts, fires, and other serious climatic factors, which can negatively affect the Red Goshawk population; however, what we can do is to preserve current foraging and nesting habitat and potential Red Goshawk foraging and nesting habitat, to help ensure future generations of Australians get to live in harmony with the Red Goshawk. We can help protect this species by not approving industrial developments, such as the proposed Chalumbin wind farm, in areas of high biodiversity and ideal Red Goshawk habitat.	No	The area of occupancy for the red goshawk (134,000 km2 per Garnett and Baker 2021) is for the entire species, not an individual bird. The National Recovery Plan (DERM 2012) indicates females will fly 5-7km from a nest and males will fly 7-10km. The Study area for the PER was defined by a 10km radius around the entire Project area, thereby encompassing the full range of any nesting pairs within the Project area. The species has not been reported within this broader Study area for approximately 15 years. Reference #29 from this submission is a consultation draft of the revised conservation advice that states in bold, red text on the front "this draft assessment should be considered tentative at this stage..." The approved conservation advice available via SPRAT is still the 2015 version which does not provide a definition for critical habitat for this species. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. The Project area comprises mostly remnant vegetation (as described in the PER) however it is not entirely unfragmented, with existing roads (Glen Gordon Road, Blunder Park Road) and high voltage transmission lines crossing both properties.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
63i	.003	Red goshawk	The removal of mature native trees, which would occur if the proposed development goes ahead, could severely impact the nesting and roosting sites of the Red Goshawk. Research showed that nest trees for Red Goshawks had an average height of 31.4 meters, and an average girth at breast height of 2.9 meters. [11] This shows that mature trees are used for nesting sites and are vitally important for successful Red Goshawk breeding. If mature trees are removed from potential nesting sites, this could negatively affect successful nesting for local Red Goshawk populations. This reduction in nesting sites, could reduce the number of chicks, and so reduce the local population. In addition, removing mature trees, suitable for nesting, would cause a negative impact to the likelihood of Red Goshawks nesting in the area. [11] The developer's PER Document also records the sighting of the nest, which could belong to the Red Goshawk. The wording differs in different areas of the same PER. I am concerned with the differences in the initial EPBC Act Referral and then within the same PER document. [43] [26] [28] On page 114 of the developer's PER: Fauna Surveys (4.2.2.3) it states: "A nest considered possibly belonging to red goshawk was observed in the Project area in January 2021, in riparian vegetation. The nest was unoccupied (as would be expected in late January) but appeared to have been recently built (no older than the 2019-20 breeding season). Photographs of the nest were sent to four recognised red goshawk experts; one (a QPWS ranger) stated the nest was likely to belong to the red goshawk while two others considered it was 'possibly' belonging to the red goshawk (the fourth did not respond). The difference in adverbs and wording between the first EPBC document, page 8 [43] and the PER report page 114 Fauna Surveys (4.2.2.3) [26] is as follows: 'highly likely' becomes 'possibly'. In addition, 'confirmed' becomes "likely'. I personally think that the description of 'highly likely' gives the impression of it being almost certain that the nest is that of a Red Goshawk. I personally think that the term 'possibly' gives the impression that it may or may not be a Red Goshawk nest. The difference between the two is very pronounced in my opinion. The inconsistencies in the various documents, does not give me faith in the thoroughness and accuracy of the developer's field reports.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
63i	.004	Red goshawk	In addition to the above points regarding the developer's fieldwork and sighting work, I would like to also submit my thoughts on the part of the PER document that deals with the RED Goshawk, section (4.6.3) in Section 4 Part 6: pages 150-153: [28] I would like to say at this point, that I find four pages in the PER document to be greatly insufficient in regards to the rarest Bird of Prey in Australia that has both International and State Endangered Status [19] [1] I also find the developer's PER document challenging to navigate because it is divided into 32 different online segments. I have found this to be challenging and ineffective when I have been searching for a particular area of concern. In Section 4, Part 6; the map on page 153 [28] shows that the entire proposed development area is either Red Goshawk foraging habitat or nesting habitat or both. From all the research I have done, I believe that any remnant vegetation (95% of the proposed development area), which is wild, natural, and as yet unfragmented, really does need to remain this way for the survival of the Red Goshawk.[17][18][29]		No	The PER has been published online in accordance with DCCEEW's requirements, including in relation to file size limits. It was not the proponent's choice to publish the document in 32 separate sections. The PER has been assessed by DCCEEW as meeting the PER Guidelines
63i	.005	Red goshawk	There are areas in Australia where this endangered bird does not nest or forage, and I would suggest that wind farms would not harm the National Red Goshawk population if they were sited in areas that are not current or potential foraging or nesting habitat areas for this rarest Australian Bird of Prey.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
63i	.006	Red goshawk	According to the Action Plan for Australian Birds, Management Actions Required [13] are: 1) Increase the proportion of habitat protected. 2) Ensure developments do not reduce the Red Goshawk population. 3) Ensure compliance staff are sufficiently knowledgeable to enforce conditions. All these points are very important Management Actions, to ensure the protection and existence of the Red Goshawk. Point 1, about increasing the proportion of habitat protected, is directly in opposition to damaging Red Goshawk foraging and nesting habitat by any industrial development of the Chalumbin area. Point 2, is even more relevant, I believe, to the proposed Chalumbin wind farm development. I do believe that this proposed development would reduce Australia's Red Goshawk population. I believe that it would reduce the population by the following ways: 1) Fragmenting the vegetation of the area, which would make breeding in the area unlikely. [17] [18] 2) Removing nesting and roosting trees. 3) Turbine impact, which affects many Hawks and Birds of Prey. Looking at the recommendations of the Action Plan for Australian Birds, it would appear that the proposed development in the Chalumbin area would contravene their recommendations for protecting the Red Goshawk. [13] To avoid National extinction of this species, I believe that we need to protect existing populations in other states so that Red Goshawks in Queensland do not become Critically Endangered as they are in NSW. [32]	I believe that developing the Chalumbin area will be in contravention of point 7.1.7 in the developer's PER. [6] Even though the EPBC lists the Red Goshawk nationally as Vulnerable, it is listed in the State of Queensland as Endangered. I believe that we need to regard the Red Goshawk's status of Endangered in Queensland when considering the threats the Red Goshawk would face by the proposed wind farm development. This is because the proposed development is situated in Queensland and any negative effect to the Red Goshawk through turbine injury or habitat destruction would affect the Queensland Endangered population of Red Goshawks. As we have already seen, once vegetation is fragmented it is highly unlikely to be used as a breeding site. [17] [18]. The proposed development will fragment this very biodiverse and remnant vegetation. Even though a proposed turbine location may have been relocated away from the discovered nest; I believe that the real threats to a decline in Red Goshawk numbers in the area, is the fragmentation of native vegetation, the removal of mature nesting and roosting trees, and the depletion of native food species.	No	Management actions described in the Action Plan for Australian Birds are not aimed at individual proponents. Nonetheless, by developing offsets within the Project area, remnant vegetation that is potential suitable nesting and foraging habitat for the red goshawk will be protected. There is no confirmed population of red goshawks within the Project area and it no longer nests on the adjacent Yourka Nature Reserve (Bush Heritage Australia, pers. comm.) The Project area comprises mostly remnant vegetation (as described in the PER) however it is not entirely unfragmented, with existing roads (Glen Gordon Road, Blunder Park Road) and high voltage transmission lines crossing both properties.
63i	.007	Red goshawk	Australian Government Department of Agriculture, Water and the Environment: Conservation Advice for Erythrotriorchis radiatus (Red Goshawk) Canberra. On page 5 of the document, it states: "Research by Baker-Gabb (2013)[34] demonstrated that breeding success declines when a threshold level of greater than 25% of forest is cleared within 4 km of nesting birds. Debus and Searle (2014) [35] also suggest the removal of actual or potential nest trees is detrimental to their ongoing persistence in an area, particularly as they select for the tallest stands in a given area." This information shows how important it is to keep the Chalumbin area intact and not to remove any actual or potential nest trees to maximise breeding success for the Red Goshawks in the area. Any removal of mature trees in the area or any forest clearing has the potential to negatively affect Red Goshawk populations in the area, and lower the total number of red Goshawks nationally. The Conservation Report looks at Conservation and Management Priorities for conserving the Red Goshawk. [29] - Disturbance is minimised in areas where the Red Goshawk is known to breed. – Nesting habitat is maintained in parts of production forest considered important for raptors including the retention of adequate tall trees suitable for breeding by the Red Goshawk. The last two points are particularly relevant to this submission. Red Goshawks have been found in the area, [1] and a nest has also been found in the area. [26] The major disturbance that would come from the construction of the proposed development is in direct conflict with the strategies in this 2022 Government document. - Locate, monitor and protect known nesting sites and birds. However, note that the location of all sites should remain confidential to ensure the sites are not then exposed to other threats, such as egg collecting. In particular, the first strategy is applicable to the Chalumbin area. Any industrial development of the area would be in direct contradiction to this guidance to protect known nesting sites and birds.		No	There is no evidence that red goshawks are currently nesting in the Project area, and the species no longer nests on the adjacent Yourka Nature Reserve (Bush Heritage Australia, pers. comm.). The project will clear approximately 3% of the potential nesting habitat within the Project area and approximately 3% of the potential foraging habitat; this is far below the 25% threshold cited in the submission.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
63i	.008	Red goshawk	Turbine Impact: Another major reason why I believe that the proposed development will greatly negatively affect the Red Goshawk is the risk of turbine impact to this species. The height that Red Goshawks fly at is in range of the proposed turbine blades. Hawks and Raptors are particularly likely to be killed by turbine blades. [40] [41] From another scientific paper, published in April 2022, on factors influencing wind turbine avoidance behaviour of a migrating soaring bird. [41] The authors state that Birds of Prey are especially sensitive to the negative impact of wind power plants and are more likely to collide with turbine blades than other bird species due to the peculiarities of their morphology and behaviour. [41] From these three scientific papers, it would appear that they are all in agreement that out of all species of birds; the Birds of Prey, which includes Hawks, are at most risk of Turbine Strike and death from wind turbines. [40] [41] [42] I believe that the Red Goshawk will be at great risk from death due to impact with the proposed 86 turbines in the proposed wind farm development. Because breeding pairs rely on each other to successfully raise their eyasses (young) . If the male is killed by a turbine, then the eyasses will perish because both male and female Red Goshawks are needed to successfully raise their young. The tiercel (male) provides food for the eyasses, whilst the hen (female) protects the eyasses. [16] Therefore, if a tiercel is killed, it may be that in reality, the potential Red Goshawk population is reduced by three, not just one; because two eyasses may also perish. They also say: "In South Africa, recent research found that 36% of birds killed by wind turbines were birds of prey. These birds have long lifespans and produce relatively few young each year, which means that even a small increase in deaths can cause their populations to decline. [44] These experts in the field of protecting Birds of Prey from Turbine Strike say: "The best way to reduce the threat to eagles is to locate turbines away from areas that are most often used by the birds. Until now this has typically been done crudely by excluding development from a circular area around eagle nests." [44] We can see from the above data, that Red Goshawks foraging or nesting in the Chalumbin area, would be at risk of death, and the National Red Goshawk population would be at risk of a reduction in numbers, from the proposed wind farm development at Chalumbin.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
63i	.009	Red goshawk	In addition, the development will reduce trees in the area and thus cause microclimate changes that may make the area more vulnerable to fires and habitat loss for the Red Goshawk. Red Goshawk nests would be affected by Bush Fires, and any increased risk of Bush Fires, could affect the safety of nesting sites. If industrial development occurs in the Chalumbin area, then I believe that the resultant ecological damage could cause environmental stresses for the Red Goshawk, which could negatively affect its health.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The Project will develop and implement a Bushfire Management Plan which will result in improved bushfire management on the site compared to the current situation.
441	.001	Project location	The Chalumbin wind farm should not be approved because: I strongly object to the proposed Chalumbin Wind Farm. I have lived on the Atherton Tableland for fifty years and spent my childhood in the Ravenshoe area. The location of an industrial scale wind development in this ecological significant area, on the border of the Wet Tropics World Heritage Area, is a short sighted, commercial proposition that has not considered the long term environmental impacts on this undeveloped wilderness area and the local economy. The negative impact on this proposal far outweighs the benefits of renewable energy. In my opinion, any proposed wind turbines should be constructed on already cleared agricultural land . The Ravenshoe "Windy Hill" wind farm is an example that seems to have been successful as the farm has continued to function and produce an income for the farmer. Clearing land for the production of "green energy" is an obscene contradiction. Keeping the forest undisturbed would have a long lasting positive impact on climate change and the unique biodiversity of the area. It is my sincere hope that this planned development will not proceed in this area. Surely there are a plethora of alternative sites along the east coast that are not wilderness areas nor do they border the small but unique, biologically diverse Wet Tropics World Heritage Area. The Wet Tropics has been significantly impacted and fragmented by human activity over the past 150 years so what remains needs to be carefully managed and fiercely protected. This includes and managing and protecting the wilderness areas that surround the Wet Tropics World Heritage Area. . It is ludicrous to even consider disturbing a wilderness area to develop "green energy". Leave the wilderness area that surrounds the Wet Tropics World Heritage Area undisturbed. We all have a responsibility to protect our ever diminishing wilderness areas for the health of the the planet now and into the future. No wind turbines should be erected in Chalumbin.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
441	.002	Social impacts	I was a teenager living in Ravenshoe when the Wet Tropics World Heritage Area was declared by the then Labour Government. It was a controversial decision at the time and did split the community. However, time has shown that this was the best decision for the area both from an environmental and economic point of view. The jobs that have evolved around showcasing and managing the Wet Tropics Area far out number the jobs lost in the closure of the timber industry. Based on the Windy Hill wind farm, many jobs were created during the construction but since then has been managed by a minimal number of staff. It can therefore, be assumed that the jobs created by the Chalumbin development would significantly diminish after construction. In addition, I feel the visual impact of the turbines on this wilderness area will mean that it is no longer a draw card for the thousands of tourists who visit this area annually and this will have a flow-on effect on jobs in the area. I firmly believe t hat the current proposal threatens to degrade and diminish this internationally significant wilderness area and it will have a long term negative impact on the local economy. In summation, I feel that the proposed Chalumbin Wind Farm will have no long term positive impacts for the community and will definitely degrade this wilderness area.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
442	.001	Project location	Note submission has been summarised to extract key points requiring response. While not being anti-windfarm or anti-renewables I am when the development proposal warrants it ANTI-windfarm when that windfarm is proposed to be in an UNSUITABLE location. A question I have to ask regarding the Chalumbin proposal is – why here ? Chalumbin exists in an irreplaceable environmental area situated where it is. It's habitat is relatively untouched and unique. It's wildlife, many unique and endangered and also unable to live in any other region or conveniently relocate to "offset" locations. Chalumbin is unique in its biodiversity and its iconic cultural heritage. Located in the wet sclerophyll forests with rainfall feeding into the Great Barrier Reef (GBR) and down along the east coast of Far North Qld. The effects upon the GBR that is already under threat, under scrutiny and surveillance now and UNESCO reporting the seriousness of the situation. Chalumbin windfarm will also impact the resulting weather patterns in this area, changes that CWF will undoubtedly wipe their hands of. The unintended consequences and negative impacts that will be a result from the changes to the terrestrial environment and weather patterns. I can support windfarms on existing cleared farmland where the benefits can be many, in locations that are not of high and irreplaceable environmental value and in more desolate and remote locations. In areas where the environmental and wildlife impacts have been both independently, scientifically and environmentally accessed.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
442	.002	Loss of carbon stores	Claims that Wind farms are a cleaner alternative to fossil fuels for mitigating the effects of climate change are obviously necessary in our efforts to reduce our production of CO2 emissions that are currently on track to cook us, and our environment – alive ! We know both from scientific studies and by our own anecdotal experiences the impacts that climate change is now having upon us, together with the scientific reports of where we (both us and globally) are heading if we don't get serious about both reducing our CO2 emissions and reducing our environmental impacts that the outcomes will be dire, both for mankind and our wildlife and our environment. The rationale of destroying prime existing carbon sequestration sinks/locations defies any attempts to justify this. We are fully aware of how crucial our environment is to our survival and if you wish to be soullessly commercial in your assessment then call it a "comodity", however be aware that for EVERY hectare of this "commodity" we DESTROY we also subsequently DESTROY our ability to survive on this earth by a magnitude of. Accepting the facts that we need to reduce our CO2 emissions drastically and fast, and acknowledging that windfarms will need to be part of the solution together with the easiest untapped solution to date – empty rooftops for solar.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
442	.003	N/A to PER matters	The current ponzi "goldrush" that is in play around the construction of windfarms, and the corporate opportunism that accompanies it, aligned with naive and complicit governments in their political (if not stupid and gullible) attempts to appease concerns, has led us to situations just like this one, where developers can nominate pretty much any location that easily meets their financial/profit motives without being required to uphold true social and environmental standards that pass scientific environmental scrutiny. CHALUMBIN is just such a proposal. The corporate operating agenda around the development of windfarms such as Chalumbin are based on and critically reliant upon the generous subsidies obtained from the public purse from various government sources. Without this publically funded generosity many of these windfarm proposals would not proceed. In most cases once funded and spent the modus operandi where the initial developer sells off the windfarm to further enhance profits to corporations that in most cases are foreign owned, thus selling off valuable and critical infrastructure that has initially been funded by the public – a classic "privatise the profits and publicise the costs". At no point is the prime agenda that of reducing CO2 and enhancing our environment, but purely and simply – profits. It has to be asked that in the subsequent ownership transfers of these developments whether the initial requirements set for the developer are required to be upheld, or merely and conveniently lost in transfer ? Think history will prove this will be the case and the resultant costs will fall on both the environment and the community. Chalumbin, should it proceed, will result in complex and devastating consequences inflicted upon the environment and the wildlife. The resultant impacts upon biodiversity, environment and flow on impacts of decreasing wildlife endemic to that location will undoubtedly be underestimated and conveniently undervalued and trivialised. Combined with Australia's shameful global reputation for land-clearing, animal extinctions and environmental degradation, Chalumbin will just be another of the death by a thousand cuts that environmentally, socially and ethically deaf corporations will undoubtedly wish to continue pursuing especially when they are able to get away with the ultimately costs inflicted while pocketing the profits. Multinational companies are good at this, their destruction of forests, grasslands and wetlands they have caused has resulted in the loss all around of vast swathes of wild ecosystems and degradation's of the essential processes embedded within them that stabilise the environment. Chalumbin plays into the "great expectations" of the multinational energy corporates, there is no intention towards environmental responsibility just exploitation and profiteering.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
442	.004	Community consultation	HOW do you and WHERE is the COST/BENEFIT analysis of the outcomes of Chalumbin with its EXTRACTIVE/EXPLOITATIVE mission ? Not just the simple minded drivel presented by the developer but one impartially assessed by an outside party with strong scientific and environmental credentials ? One that is not beholden to the developer, and also answerable to the community and the local indigenous community ? There have been many Community sponsored Public Meetings held to inform both the local and wider community of the details of Chalumbin with considerable numbers attending. The information imparted on this proposed windfarm has raised both alarm and anger across the local and much wider communities. The feeble "attempts" by the developers to make contact and openly discuss the community of their proposal was fiercely manipulated and controlled. At no stage did the developer (Epuron) make any serious and open attempt to speak to the community. This also raised the ire of the local community. The developer while attempting to manipulate/intimidate and bribe the community was well recognised and strongly and appropriately rejected as the whitewash or should I say "greenwash" was glaring. However they (Epuron at the time) make all the right "squeeks" about the "success" of their procedures. It was both a misuse and abuse of the system, and a joke ! One can only assume from this they have much to hide.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. Section 13 of the PER sets out the Economic and Social considerations for the Project.
442	.005	Biodiversity general	The hypocrisy of this development when evaluating the proposal against the EXISTING priceless condition and contribution of Chalumbin currently, against the assumed and undoubtedly understated impacts of this windfarm are to be honest, highly questionable if not outright LIES. The ruthless and coldblooded manner in which the developer has proceeded with this obviously on the assumption (or knowledge) that governments are "on side" has been contemptible. While the local community has seen and felt this resulting in great anger at both the developer and its government support this charade continues, WHY and HOW ?? The biodiversity of Chalumbin and the resultant impacts the wind farm will inflict will produce cascading impacts, many still unknown together with more "unknown unknowns" are undoubtedly and deliberately underestimated and understated. There is thus a strong need for an ecosystem-wide view when aligning green-energy goals with environment protection and this is the GREAT FAILURE of the CHALUMBIN proposal.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
442	.006	Social impacts	It is the surrounding local community of Ravenshoe that will be impacted by the daily movements of the developer and their workers and contractors. The inconveniences that will be imposed upon it, the results of housing demands upon the local town, the noise factor from heavy vehicles etc. To date the community has been lied to, bullied, bribed, intimidated and treated with disdain, to say nothing about the outcomes in the local indigenous community. The promises of "jobs" - to who, as what and term & length of employment ? Bribed with the "promise" of $500k community spend – cheap if they can get away with it. Setting some locals against others (intended), indigenous groups against others and causing great distress. Then again isn't that the "divide and conquer" agenda ? Still trying the old well used methods ! These people are just trying to protect their communities, their homelands and their local environment and its entrenched heritage and values , speaking out against the theft that CWF plans to inflict upon them. Any windfarm proposals HAVE to be predicated on a SOCIAL LICENCE one that is supported by the local community and preferably with local community ownership.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.
443	.001	Opposition to project	As per Submission 21 and Submission 41b		No	See response to Submission 21 and 41b.
444	.001	Opposition to project	As per Submission 21 and Submission 41b		No	See response to Submission 21 and 41b.
445a	.001	Magnificent brood frog	Note submission has been summarised to extract key points requiring response. During the North Queensland Threatened Species Symposium in February 2021 the Magnificent Broodfrog was identified as one of the species most under threat in the region. An outcome of the Symposium was the formation of the Magnificent Broodfrog Working Group to resurvey the population distribution and assess threats. The Magnificent Broodfrog Working Group comprises an association of concerned citizens, scientists, NGOs and Government Officials. The Magnificent Broodfrog Working Group views that the current EPBC processes for protecting endangered species are not fit for purpose, as evidenced by the loss of critical Magnificent Broodfrog habitat at the Kaban Wind Farm site and is very concerned that the same or similar outcomes will be applied to the Chalumbin Wind F arm Development. For this and other reasons listed below the Magnificent Broodfrog Working Group recommends the Chalumbin Wind Farm Development should be rejected. Based on the Queensland Regional Ecosystems known to support the Magnificent Broodfrog the Chalumbin Wind Turbine Development holds 20-30% of all potential habitat across the species range, from Atherton to Paluma. The environmental assessment for the proposed Chalumbin Wind Turbine Development found a high abundance of Magnificent Broodfrogs on the project site expanding the known range of the species further into the southern Tablelands. As a group, we are concerned that there have only been two surveys for the species (detailed in the EPBC report) that took place for a total of ten nights. The Magnificent Broodfrog is a cryptic species that only vocalizes during specific condition; because of this multiple surveys may be required in varying environmental conditions to confirm their presence or absence.		No	We note your concerns regarding the EPBC Act but the proponent is bound to act within the legislation in place at the current time. As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Additional surveys in areas of potential habitat have been underway since late December 2022, are ongoing and will be reported on in the final PER.
445a	.002	Survey effort	Despite this success the land that will be impacted by the d evelopment has not been surveyed thoroughly for the Magnificent Broodfr ogs We understand that this is likely due to the challenges of accessing these areas during the wet season, as well as the lack of roads/tracks on site. As a group we are concerned that there have been only two surveys for the species (detailed in the EPB C report), that took place for a total of ten nights. The Magnificent Broodfrog is a cryptic species that only vocalizes during specific condition because of this multiple surveys may be required in varying environmental conditions to confirm their presence or absence		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment, Brood Frog surveys are ongoing.
445a	.003	Cumulative impacts	The proposed Chalumbin Wind Turbine Development and the High Road Wind Farm will have direct and measurable impacts on known Magnificent Broodfrog populations. The impact of this habitat loss and successive modifications i.e., sedimentation and changes to landscape hydrology), coupled with the results of a warming climate could leave this species at risk of significant population declines over the coming decades With the declaration of the Queensland Renewable Energy Zones th e species are facing widespread habitat loss across their known and potential range A concerning issue, that we feel is being ignored, is the cumulative impacts for threatened species within these zones, as more energy hubs are proposed for the same geograp hical and elevational range. The cumulative impacts should be considered as a priority in the assessments for new developments. Without that factored into decision making we do not believe that there can be positive outcomes from the EPBC offset program. When managing threatened species, the Precautionary Principle should be adhered whereby caution, pause and review is prioritized before making decisions that cannot be reversed.		No	The Project team has tried to assess the potential cumulative impacts of the Project in conjunction with the High Road Wind Farm project, however there is very little information available publicly on that Project and we understand it may actually be on hold.
445a	.004	Magnificent brood frog	The Mitigation and Offsets methods listed for the Magnificent Broodfrog are insufficient as the species has not been studied in detail, meaning there are still many unknowns regarding their basic ecology (e. distribution, breeding habitats, habitat selection, movements). Additionally, we are concerned about the Offsets that have been suggested for the species. We question their viability, given there are still many unanswered questions surrounding this species ecology. The published Magnificent Broodfrog Recovery Plan lists habitat loss as the priority threat to the Magnificent Broodfrog and states that there should be a zero net loss of habitat and no disruption of hydrology flow for this species to survive.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. A proportion of these funds is being made available to researchers now, prior to Project approval.
445a	.005	Opposition to project	Our group believes that renewables should not come at the expense of some of Australia's most intact, biodiverse environments. Focus for development should be in low biodiverse areas and not within statewide biodiversity corridors (See attachment 1). There are currently 77 renewable energy projects in the pipeline with over 27GW of available capac ity for Queensland. Rejecting the Chalumbin project will not have a significant impact on achieving climate targets. In summary, the Magnificent Broodfrog Working Group do not consent to the construction of the Chalumbin Wind Turbine Development.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
445a	.006	Magnificent brood frog	Magnificent Broodfrog habitat is mapped throughout the Project area as illustrated by Figure 4.18. The area is vast and inadequately surveyed. We therefore recommend the "No Action" alternative described in Section 3.1.		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species. The clearing estimate of 120.5ha is considered "worst case". Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on in the final PER.
445a	.007	Magnificent brood frog	Avoidance is not possible as suggested in Section 8.4.2 and the land based offset is not adequate in addressing loss of habitat of a species we know very little about. The land based offset is an insult considering it was land that was never going to be impacted upon and will now be compromised by a large haulage road carved through the centre of it. The $250,000 that may be payable to study the species is rejected as an offset. This money would only be useful in furthering the objectives and conservation actions outlined in the species recovery plan, prior to any further development taking place within its range, including the Chalumbin Wind Turbine Development.		No	The locations and configurations of the proposed offset management areas have been revised since the PER was released for public comment and the new areas will be presented in the final PER. Taking on board feedback received from various stakeholders, the offset management areas in the far south and far north of Woororoora Station are no longer intersected by project infrastructure. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The $250,000 is a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
445a	.008	Survey effort	Total number of days of targeted Magnificent Broodfrog field surveys: 7 11th December 2021 12 16 th January 2022 (total 10 days) The Magnificent Broodfrog Working Group has undertaken regular field work now in its third season, and many in the group have long experience in the field with this species. Recent efforts have been concentrated on returning to known populations to confirm the ongoing presence of Magnificent Broodfrog s at these sites. Due to the difficulties inherent in detecting these frogs It has often required multiple visits to these sites before call s are detected. We consider that 10 days' worth of surveys is wholly inadequate for a property spanning 31,000ha. The Proponent states that 140 person hours of survey effort was conducted surveying the frog. This conflicts with Section 4.2.2 where survey effort was only conducted in December 2021 and January 2022. The lack of clarity over the dates and survey effort for this species introduces doubt for the entire survey methodology and credibility. It is extremely concerning that even with such minimal survey effort one observation was made further south of its known range highlighting the fact we are still learning where this species is. This is another indication there should be a "No Action" decision and disallow this Project from proceeding.		No	As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Additional surveys in areas of potential habitat have been underway since late December 2022, are ongoing and will be reported on in the final PER. Surveys have naturally focused on mapped areas of potential habitat within the Project area, rather than the full extent of both host properties. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
445a	.009	Magnificent brood frog	As stated in this section: "Habitat loss and degradation appear to be the greatest threats to the Magnificent Broodfrog. 97 of known sites are located on unprotected land." "Roads and cuttings can alter the water quality and hydrology, and may affect seepage areas and first order streams. Regrowth forest uses more water than old growth and therefore has the potential to reduce seepages (McDonald et al 2000)." The Magnificent Broodfrog Working Group therefore recommends a "No Action" decision on this project.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting one of the key objectives of the National Recovery Plan).

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
445a	.010	Alignment with government policy	The Magnificent Broodfrog is now listed as Endangered under IUCN criteria. Its major threats are logging, road works, clearing and development. All of these actions are proposed for the Chalumbin Wind Turbine Development. The Magnificent Broodfrog Recovery Plan 2000 2004 has not been enacted upon. None of the objectives have been fulfilled. To proceed with the Project without achieving any of the goals of the Recovery Plan is contrary to recent statements from the Federal Environment Minister to halt the decline of species extinction.		No	It is not the task of individual proponents to enact upon recovery plans. And this submitter is well aware of the voluntary commitment to fund research into the magnificent brood frog that the proponent has made, which could be put to good use on some of the objectives listed in the recovery plan. in addition, the proposed offset management areas have been selected because they contain known populations of magnificent brood frog and would result in the protection in perpetuity of this habitat - a key objective of the recovery plan.
445a	.011	Magnificent brood frog	In this section the Proponent states, "The area of habitat within the broader Study area has not been estimated in the absence of the detailed LiDAR data for this extent. The Project will require the clearing of 67.9 ha of habitat for Magnificent Broodfrog during Stage 1 and 52.6 ha during Stage 2. This is 120.5 ha in total across the two Stages. This is primarily associated with access tracks crossing spring lines and minor watercourses that cannot be avoided in order to access Project infrastructure along the ridgelines." The Magnificent Broodfrog Working Group recommends a "No Action" decision and disallow this Project from proceeding. Sedimentation is discussed by the Proponent as thus, "The methodology determines that there is approximately 39 ha of potential magnificent brood frog habitat within the Stage 1 Project area "at risk" from offsite sediment runoff and a further 26.4 ha in the Stage 2 Project area; however, the Project is not expected to impact these areas with appropriate installation of erosion and sediment control measures. These soil loss calculations demonstrate that the rate of soil loss during construction and operation of the Project is not expected to be elevated above existing levels." The Magnificent Broodfrog Working Group response to this is contrary. There is no discussion whatsoever on how these roads will become physical barriers to the movement and migration of the species. Hydrology flows will be greatly modified by increased water flow velocity by either rock revetment, culvert drains under roads, hard road pavement areas and the ultimate introduction of weeds that will colonise road verges. No amount of remediation can eliminate the quick succession of weeds that will colonise the road verges in wet tropical forests. These weeds will transplant seasonal creeks and moist gullies, crowding out the species conditions the frogs require for breeding.		No	A preliminary Weed and Pest Management Plan has been prepared (Appendix F of the PER) and includes management of weed spread, management of pest infestations (including specific advice for amphibian chytrid fungus) and monitoring effectiveness of control measures. This plan will be further developed by CWF and/or the Construction Contractor prior to works commencing on site. A Species Management Plan for the magnificent brood frog will be prepared for review and approval by DCCEEW prior to works commencing on site. This will provide further detail on mitigation measures such as the design of culverts under access roads through potential habitat. A system of adaptive management will be implemented to continually improve the performance of mitigation measures. It should be noted the species persists in the Project area in close proximity to existing powerline easements (minimum 60m wide disturbance area) and the Project will implement a rehabilitation program that exceeds that which was done for these easements.
445a	.012	Rehabilitation	The revegetation of cleared areas purported by the proponent can be considered a farce. To revegetate 73% of cleared areas would be an undertaking of epic proportions and would be one of Australia's largest revegetation projects ever. There is no mention whatsoever in the Public Environmental Report (PER) how this will be achieved. No costings are mentioned, nor any nurseries nor land rehabilitation services have been consulted on how this is to be achieved. In any case, revegetation would not restore the habitat requirements for Magnificent Broodfrog, whose reproductive strategies depend on maintaining a delicate balance of soil moisture, seepage and runoff. This demonstrates a lacklustre commitment and investment in this outcome by the Proponent. It could be considered as an afterthought to gain approval. Revegetation and remediation may never occur due to logistical challenges and vast monetary cost to the Proponent.		No	Revegetation does not have to involve highly intensive replanting. The Project will be use multiple approaches and strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A low cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. The Project is not significantly altering the hydrology of the catchments. Revegetation will mostly be the same vegetation that was present prior to the Project and therefore habitat requirements for Magnificent Broodfrog and the 'delicate balance of soil moisture, seepage and runoff' is likely to be restored or maintained.
445a	.013	Erosion and sedimentation	The entire Sediment Management Plan of Appendix J Part 1 can be completely discredited. Section 2.2 says, "The soil loss modelling found that the Project footprint under operational conditions has a sediment yield 0.45 kt/year less than current conditions. This assumes that the soil loss equation has a C-factor of 70% cover which is the Reef 2050 WQIP target (year 2025) for grazing land, end of dry season, cover. " How can there be less sediment under operational conditions with dirt haulage roads than at present being heavily vegetated? The entire assumption is that there will be LESS sediment after the site has been revegetated by 70%. It is assumed the finished project will maintain 70% ground cover (which includes gravel, dirt, bitumen, hard stand areas which is the same percent as the surrounding forest. Therefore, their sedimentation control measures make it even better! Worst case scenario has also not been addressed adequately whereby multiple high rainfall events during the construction phase could cause multiple erosion measures to fail (this can happen anytime of the year – especially April). This causes the Magnificent Broodfrog Working Group to doubt the competence of the Proponent and causes one to place no confidence in any of the Public Environmental Report (PER) delivered by Ark Energy (Chalumbin Wind Farm Pty Ltd and Korea Zinc).		No	The soil loss modelling models roads and vegetation with different K and C factors and a detailed breakdown of the models is provided in Attachment 1 of Appendix J. There are also modifications to landforms for the operational gravel areas that also modify the LS factor. The potential for high intensity storms to occur during the dry season (or at any time of the year) are discussed in Section 2.2.2 of Appendix J. A 'worst-case' scenario has been discussed in this section and presented in Table 2-11 comparing the net sediment loss during the highest daily dry season rainfall event during the last 10 years compared to the net sediment loss over a 2 month construction period. It is important to note that the project will plan the construction activities based on risk and will be undertaking progressive rehabilitation during construction to limit the total disturbed area at any one time.
445a	.014	Magnificent brood frog	In depth analysis between the interplay of turbine noise and infrasound on amphibian reproduction has yet to be demonstrated. This is a major issue not only on amphibian survival but for bird song and certain mammals that require sound to attract a mate, for example koalas. We have grave concerns that the constant audible and inaudible infrasound could be a major hindrance to the survival of this species as with such a small frog the call from the male is critical for attracting a mate. There is no mention of this as a key threatening process in the Public Environmental Review (PER) document and no data whatsoever on how this interaction affects amphibians.		No	The PER does not list infrasound as a key threatening process for the magnificent brood frog as it has not been identified as such in the scientific literature. The proponent would be willing to fund research into this potential issue and to make the results publicly available.
445a	.015	Decomissioning impacts	The Magnificent Broodfrog Working Group is also deeply concerned there is no environmental bond. This is vital to cover expenses in such an instance the Proponent was to go into Liquidation or Administration. Funds needed would be used to cover compliancеissues (at present there is none) and to remediate the site in case of Liquidation. Much of the site will need to be cleared again in 20 25 years' time to remove and replace infrastructure, in particular the blades which require large, cleared sweep areas causing further environmental damage. A ticking time bomb for taxpayers will be the decommissioning of potential stranded assets such as wind farms. Again, it will be the environment that will bear the cost.		No	The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning. The Project owner will be responsible for ensuring that the rehabilitation occurs in accordance with the Decommissioning Plan (to be prepared closer to the decommissioning date).
446	.001	Project viability	Note submission has been summarised to extract key points requiring response. A) The first concern we have is that the aspirations of the Australian government when it comes to shutting down coal fired stations and replacing them with renewables has not undergone due diligence and has not made a business case for plastering the countryside with wind farms. Renewables are not now capable of replacing existing base load supplies and that discrepancy will only increase if the uptake in electric vehicles increases. No-one can expect to substantially increase the demand while you paradoxically switch to a source that supplies a fraction at best of what is available now to meet that demand. There are wind farms in existence now that are instructed to shut down every time the base price for energy drops. What is the point of investing the scale of money required to construct a facility that will be told to reduce its output every time the price changes? That is even if the wind farm is able to output a reasonable amount of power in the first place. Many of the existing farms in Australia only average a maximum of 20% output. For the kind of money and habitat destruction wind farms cause, that does not justify a business case for investment.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
446	.002	Transmission capacity	Additionally, the grid is not able to accommodate what Chalumbin might be prepared to put into it. So you can build it and then it will sit there much of the time not earning you any money at all. Part of the reason for this is because of the construction of the Kaban Green Energy Hub nearby. Most of what was left available to be accommodated in the grid was taken up by Kaban.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
446	.003	Erosion and sedimentation	B) Another issue connected to the existence of Kaban is the damage to the environment that simply cannot be replicated if Chalumbin were to go forward. The clearing alone is just the start of a negative cascade. As Kaban has demonstrated, there has been fragmentation, EROSION, possible pollution with chemicals and heavy metals (an investigation has been requested) and that is even before we can start looking at the wildlife carnage due to propellers in the sky. How will erosion be controlled in Chalumbin?		No	The project is not the Kaban site and there has been a far more detailed assessment of erosion risk and the project has committed to not undertaking any ground disturbance works during January to March which Kaban did not. Clearing and fragmentation issues have been assessed in the PER and are included in the Impact Assessment section 5 and the Significant Impact Assessment section 8 in relation to the MNES. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. A Sediment and Erosion and Management Plan for the project is presented in Appendix J of the PER and a Preliminary Erosion and Sediment Control Plan presented in Appendix I of the PER which assess the soil erosion risk and establish the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works.
446	.004	Contamination	What about the handling and disposal of chemicals and solvents?		No	It is noted that controls are necessary to ensure that any spill of hydrocarbons is managed appropriately so as to avoid and minimise potential impacts to the environment. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8.
446	.005	Mitigation and management measures	How will breaches and incidents be discovered and reported if an outside, independent body is not involved in regular surveying in the site for animals needing rescue and keeping data on any deceased wildlife found?		No	The construction contractor will be required to prepare and submit a monthly report to CWF which will include information pertaining to: • The outcomes of environmental monitoring undertaken. • Environmental training delivered. • Complaints received from the community. • Environmental incidents and the details of any corrective action taken. External reporting relating to Project environmental performance will be undertaken in accordance with the duty to notify of environmental harm under section 320 of the Environmental Protection Act 1994, and otherwise as specified by permit conditions.
446	.006	Biodiversity general	Both Kaban and Chalumbin represent the majority of the range where the specialist amphibian Magnificent Brood frog (Pseudophryne covacevichae) exists. The Kaban Green Hub has already damaged the habitat of this highly restricted species and we won't tolerate any more damage occurring to this species because of the Chalumbin project. There are other endangered species at Chalumbin as well but our frog group wishes to emphasise the impacts to this amphibian. We are also concerned about the Spectacled flying-fox, tree kangaroos, all bird species in the site, and koalas. Ark Energy cannot be allowed to proceed with a project that could lead to the extinction of a species. That is reinforced further by the fact that Queensland government has not discussed or accepts removing this frog species from the site so that those animals can go to a protected private location or to a breeding program to create an assurance population.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent has also offered a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. If your organisation is interested in receiving funds for research into the species (including a potential translocation programme), we would urge you to approach the Project team to discuss this further. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
446	.007	Project location	C) It is said that switching to renewables will "save the environment". Sorry, but if you need to clear any intact habitat to build a wind farm, then you are NOT saving the environment. No wind/solar farm should be built anywhere that requires removal of intact habitat, especially when that habitat houses endangered species. Additionally, putting a wind farm next to World Heritage Area is also illadvised and will maximise animal deaths. One thing the Australian public is quite sick and tired of are the 'thousands cuts' to habitat that are leading to this country having one of the worst extinction rates in the world. We understand the selection of this particular piece of land for your project is so that you can be close to the high voltage grid. Our view is that Chalumbin does NOT belong where you want to put it. If you want to invest in a wind farm, put it where it will have the least disturbance to habitat and just build the extension lines to connect to the grid. This applies to not just Chalumbin but for any renewables project - we want no more clearing and no offsets (research is NOT an offset).		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
446	.008	Project design	D) Why is this wind farm (or any other wind farm for that matter) using propellers? This is the equivalent of a blender in the sky chopping up anything that tries to get past it - birds, bats, insects. There are innovative designs overseas that would be far more friendly to wildlife, create less infrasound, and even provide more electricity per tower than the propeller design. (A note here about infrasound: just because people don't live within hearing distance of a turbine doesn't mean that wildlife and insects are not impacted.) Some of these designs require very little clearing as the device is held above the tree line. Others have no blades at all so wildlife deaths are minimised/eliminated. Propellers are 'old hat', not cost effective, and kill too many airborne species. Both investors and the government should be abandoning the propeller and looking at better designs.		No	Wind turbines, such as those proposed for the Project, are a proven and reliable technology. Potential impacts to birds, bats and other wildlife during operation are managed through standard adaptive techniques that will become conditions of approval for the Project, should it be approved.
446	.009	Decomissioning impacts	E) What is the process of decommissioning and rehabilitation? Even if tree planting is done where clearing has occurred, this will never replace what was there to start with. What about the disposal of large components which cannot be recycled? How much land is going to be wasted by becoming the final resting place of giant blades and turbines? (The same agument can be said about replacing petrol vehicles with EV's - are we going to create giant landfills -not of garbage bags but entire cars?!) When does the volume of garbage left to petrify forever in landfills exceed the space occupied by people living on the planet?		No	Revegetation does not have to involve highly intensive replanting. The Project will be use multiple approaches and strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A low cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
447	.001	Opposition to project	The Chalumbin wind farm should NOT be approved because: The beautiful Chalumbin region has been largely protected until now due to its isolation and rugged wild landscape. Wilderness areas are precious and becoming scarce. Unique and Endangered native animals, reptiles, amphibians and Birds live here and/or travel through the area... The Chalumbin Wilderness provides Critical Vegetation and protection for unique and endangered Australian Wildlife. This Mountainous range connects different vegetation and landscapes in Far North Queensland. The area connects transitional Rainforest Coastal areas and Rainforest Escarpment with magnificent waterfalls, rivers and Lakes... to the drier areas of the Atherton Tablelands with Woodland and Tall open Forest. Huge Granite seams provide habitat and protection for vulnerable animals such as little Rock Wallabies. A wide range of vegetation provides food, habitat and protection for Wildlife movement. Blasting enormous Granite seams and bulldozing the Great Dividing Range...leaving a permanent flattened scar of sediment...creates ugly open areas. This allows wind to blast through areas previously sheltered within a healthy Environment. Chalumbin must be protected...it's an area of rich Cultural significance. Aboriginal Jirrball country. Chalumbin Industrial Wind Turbines do NOT belong here. The proposal is permanently damaging to this World class Environmentally precious Region. In a time of 'Mass Extinction'... WHY would this proposal be allowed to go ahead. The Chalumbin Region should be placed in Tanya Pilbersek's RED Zone...'never to be cleared'!		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
447	.002	Project location	WHY would a huge Industrial Wind Turbine Proposal be approved when: 1. It's adjacent to a World Heritage Wet Tropics Rainforest. 2. The Region is one of the known... wettest areas of Australia. Huge Tropical rainfall...eroding and washing enormous quantities of loose sediment into the the Herbert River catchment which flows into the Great Barrier Reef. 3. The Chalumbin region is a Critical haven for Wildlife, including Threatened species.		No	Section 3.0 of the PER explores the feasible alternatives to the action. This includes an investigation into whether there are feasible alternatives within the Northern QREZ that have similar wind speeds and less regulated vegetation. The PER determines that such a location does not exist that might be feasibly developed for wind farm purposes, without requiring more extensive clearing for transmission infrastructure to connect the wind farm to the existing National Electricity Grid. The PER assesses the potential impacts of the Project on Matters of National Environmental Significance (largely related to biodiversity) and concludes that an appropriate balance can be achieved to promote ecologically sustainable development, which is a fundamental principle of the EPBC Act. It is true that the project will involve clearing and soil disturbance that increases the risk of soil erosion and sediment movement. The project has made a significant commitment to shut down construction activities during the highest risk period Jan - March and the project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks.
447	.003	Fauna mortality turbines	4. Removing large trees on top of the Escarpment and replacing them with huge Wind Turbines creates additional dangers to bird life, particularly raptors. I am familiar with Eagles behaviour. They like to use large dead trees to roost... then take off to catch the Thermals... An Eagle will see the top of a Wind Turbine on top of an Escarpment as a convenient landing place. Unfortunately, unlike dead trees... Wind Turbines have moving blades. There are numerous accounts of Wind Turbines causing Bird mortality. Please consider the wider repercussions of this Proposal. If a Mining or Farming Company was behind this proposal... There would be a huge outcry! Are the native animals or the beautiful Wild Country any less important... Because it's for Industrial Wind Turbines.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
448a	.001	Opposition to project	As per Submission 420		No	See response to Submission 420.
449	.001	Opposition to project	The Chalumbin wind farm should not be approved because: It is absolutely ridiculous to destroy this vast area of beautiful wilderness for the sake of an ideology called renewable energy. I have lived in Cairns for 7 years and I know the area and it really makes me sad and angry to see what is happening there now. I also find it disgusting for all these wind farm projects to be happening under the radar and a large part of the public don't realise how much concrete, steel, fibreglass, copper, neodymium and dysprosium amongst other materials goes into the construction of these monsters. This nonsense has to be stopped.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
180e	.001	Opposition to project	Submission is repeating points raised in Submission 180b		No	See response to Submission 180b.
450	.001	Biodiversity general	Note submission has been summarised to extract key points requiring response. The Chalumbin wind farm should not be approved because: 1. Of the ecological damage to both native flora and fauna in the region, some unique to the area, some critically endangered, some vulnerable and some in more than one of the previous categories. Noise from the turbines which disturbs the wildlife up to a radius of 10km, it will affect mating habits. Damage to Birds from blades. Damage to habitat with roads and infrastructure. The cumulative impacts on this project is inadequate and underestimated		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
450	.002	Decomissioning impacts	2. There is no restitution process once the useful life of the wind turbines has ended. What happens to the 800sqm of concrete required as a base for each turbine? What happens to the blades and the towers which will not only leach toxins into the soil during their lifetime, if they are buried on site they will continue to poison the soil.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
450	.003	Visual impacts	3. Material change of Land Use from Forest to Major Industrial. This is unacceptable. If transmission lines, access roads, abandoned mine sites and areas which had been selectively logged are unacceptable then the visual pollution of the wind turbines which compound the human disturbances that cumulatively detract from the overall natural integrity on the horizon, absolutely detracts from the Daintree pristine rainforest and our world heritage wet tropics and also goes against unesco World Heritage Convention.		No	The Material Change of Use application has been granted approval by the Queensland State Government on 30 June 2022 (SARA Ref: 2112-26517 SDA). The PER is required as part of the referral process under the EPBC Act. A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA considers that the Chalumbin Wind Farm will result in a significant direct impact on the landscape character of the immediate Site and limited areas of the adjacent landscape. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered for the CWF. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
450	.004	Social impacts	4. Tourism and the Economy. I've just returned from a trip through South Australia's mid North. I am horrified that wind turbines blot the landscape and it's impossible to see a range where they are not able to be viewed. Not only that, at least 20% of them are not operating, in one case there was a group where over 50% were not operating. This is grossly inefficient and a blight on our landscape and means I won't be returning to this area any time soon. It absolutely spoilt the remoteness of the area and the feeling of being somewhere man had not yet desecrated. Putting these 1/4 km high monstrosities on the edge of the Daintree will deter myself and many other eco-tourists from visiting and spending in Far North Queensland and is hugely detrimental to the long term economy of the area.		No	The landscape and visual impacts associated with the Project are investigated comprehensively in Appendix M (LVIA) of the PER. Multiple studies nationally and internationally have shown that wind farms can boost tourism as they provide an additional point of interest for tourists.
180f	.001	Opposition to project	Submission is repeating issues raised in Submission 180b		No	See response to Submission 180b.
237d	.001	Southern cassowary	Note submission has been summarised to extract key points requiring response. Further to my previous email dated 06/01/2023, I now attach a video of the cassowary sighting that I experienced on 01/01/2023 along Tully Falls Road near Ravenshoe. As reported, this sighting was approximately 200 metres from the signed gate Chalumbin Gate 32, located along Tull Falls Road. This sighting and my video footage is clear evidence that cassowaries are inhabiting this area of the proposed wind farm zone. You will clearly see the cassowary emerging from the forest and then crossing over Tully Falls Road to the other side. If the wind farm proposal goes ahead, this same road will no doubt be widened to at least twice its current size and will have increased traffic and trucks driving along - if this occurs, the cassowaries are sure to be displaced from their natural habitat and are also likely to be run over by the many vehicles on the road. Similar opposition to project type comments raised in previous submissions.		No	The PER makes a clear commitment that no construction vehicles or plant will use Tully Falls Road (south of its intersection with Wooroora Road) to access the Project area. The Project will not widen or upgrade Tully Falls Road and therefore the concerns raised in this submission will not eventuate.
448b	.001	Opposition to project	As per Submission 420		No	See response to Submission 420.
451	.001	Project location	Note submission has been summarised to extract key points requiring response. With reference to above report as a Community Resident of Ravenshoe and surround Suburbs I object and do not consent to the proposed Chalumbin Wind Farm Construction Project- The major objections listed below explains why this is the wrong location for an Industrial Wind Farm of 86 Turbines standing approximately 240m tall. Project Location 1.3 Preliminary Fauna Management Plan-Chalumbin Wind Farm Pty Ltd, please look at Figure 1.1 2, 3, 4 of 4 the green area to the right of the map is marked as Wet Tropics of Queensland (IIId), which was inscribed on the World Heritage list in 1988. Also, the Industrial Wind Farm abuts (be next to or share a boundary with) Wet Tropics of ald/World Heritage area. (Ref Wet Tropics Plan Zoning Map Editions 3.0) Show boundary. Note the location of Lake Koombooloomba on this map, now position the same Lake on Ark Energy maps. So, 7 to 81cm from the Lake is where they are building the industrial turbines. When you measure from Lake to boundary of the World Heritage 8km, do you really think it is not disturbing the eco-system. All for 25 years as a power provider and full recovery after 30 years, it will never regain the irreplaceable Wet Tropics of Queensland.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
451	.002	Opposition to project	The Wet Tropics of CHd World heritage area retains the largest expanse of rainforest in Australia and is considered to have outstanding value for the whole world, Ravenshoe wet tropics area is ZHI% of the wet tropics belt. Many livelihoods and economies in the wet tropics depend on healthy natural systems. The health of country is essential to the physical, psychological and spiritual well-being of Traditional Owners and community. (Ref The Wet Tropics: worth acting now page 5 Accept, Act, Adapt: Climate Adaptation Plan for the Wet Tropics 2020-2030) This is not Green Energy clearing the Great Dividing Range		No	As described in Sections 8.10 and 8.11 of the PER, the Project will not have a significant residual impact on the WTQWHA.
451	.003	Fauna mortality turbines	Turbine siting will influence collision risk, with turbines located near wetlands likely to lead to greater risk of collision with birds and bats which congregate near wetlands habitats.		No	The turbines have been located on the top of ridgelines to benefit from higher wind speeds. There are no turbines proposed to be located near wetland areas. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
451	.004	Opposition to project	I could make comment on so much more of this PER and why Companies and Government should do their Duty of Care to support the best outcome for Australia's Great Dividing Range, Herbert Catchment Area 44% Wet Tropics region, World Heritage Wet Tropics of Queensland, if you allow the removal of the wet sclerophyll forest adjacent to the World Heritage Rainforest it will become open to overheating and affect the health of the biodiversity and ecosystems. We must not forget that what happens on top of the mountain goes all the way down stream to the World Heritage Great Barrier Reef. There are other options out there that are green, clean and reliable energy source.		No	Sections 1.5 and 3.0 of the PER identify the drivers for the Project in its current location and form. The Project's potential impacts to wet sclerophyll forest equate to 0.17% of the wet sclerophyll forest in the Wet Tropics Bioregion and 0.86% of the wet sclerophyll forest within 10km of the Project area.
452	.001	Social impacts	The Chalumbin wind farm should not be approved because: I don't recall ever being asked if I wanted to stop current established use of inexpensive coal based electricity (base principle: IF IT IS NOT BROKEN DON'T "FIX" IT). ◦ There is no guarantee of employment for the current workers in those industries so financial, social, emotional, health and mental impacts are unknown. ◦ And the resultant cost to Australian society (people who care) and state (taxpayer) is also therefore unknown. ◦ Local land holders who are permanently affected, are dismissed as collateral damage for the questionable greater good. ◦ Following an overseas group such as the World Economic Forum policy, whether the UN agrees or not, without referendum, or any considered consent, from the majority of Australian men and women, is unacceptable and dishonorable behaviour		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.
452	.002	Project alternatives	I don't recall the public being involved in open, honest and comprehensive debate & presentation of unbiased facts about viable alternatives with low to no impact, on living, breathing people or nature (base principle: MEASURE TWICE, CUT ONCE). ◦ Wind turbines have a reputation for stopping frequently. ◦ turbine blades are NOT recycled. A hidden fact. So discarded blades are quietly buried into the land out of sight. Not very green. ◦ Alternative energy options have not been debated involving all Australians.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. The Integrated Systems Plan was released as a draft for public comment in 2022. Alternatives with low to no impact as described by the submitter are not available.
452	.003	N/A to PER matters	I have zero trust in many company, corporate, council, state or federal actions, as opposed to the words (spoken and written) before results of their activity were realized (base experience: THE DETERIORATING GEOPOLITICAL ENVIRONMENT / BEHAVIOUR OF THE LAST 50 YEARS). ◦ The impact on the land, flora and fauna is presented and paid for, by those with vested interests and therefore unreliable. ◦ The rezoning of land is a cheat to avoid the scrutiny of public awareness regarding legitimate negative impact risks on the native flora and fauna of the area if the project were to go ahead.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999, including biodiversity impacts.
452	.004	Fauna mortality turbines	◦ The unsightly turbines will kill birds and tourism generally and specifically any chance I have to visit the FNQ wilderness.		No	The effects of wind farms on tourism is highly subjective; many people actually consider the turbines to be a drawcard. The Project is not located within the Chalumbin Wilderness Area, it is located on private property to the west of there. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
452	.005	Community consultation	I REQUEST THERE IS AN OPEN, HONEST AUSTRALIAN PUBLIC DEBATE OF ALL ASPECTS OF THE CHALUMBIN WIND TURBINE PLAN, THEN TO ASK THE CONSENT OF AUSTRALIAN MEN AND WOMEN.		No	The processes established under the EPBC Act (section 98) requires the proponent to invite comment on draft public environment report. In order to finalise the PER the proponent must take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. These must be included in the finalised PER for submission to the Minister to consider as part of the assessment.
453	.001	Opposition to project	The Chalumbin wind farm should not be approved because: you have no right to push the First Nations People off there land.The Jirrabal Nation have not given their permission. therefore we will take you to the international Court of Justice. just food for thought... i ask you, who owns the port that you plan to off load your fans? because its not the Australian Government. The Australian Government is and illegal Corporation entity. so good luck with that.		No	The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Woorooora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent.
106b	.001	Social impacts	The site of Chalumbin Wind Farm, In Wilderness. 15 km from Ravenshoe. Thats within a Threat area. 20 km is the zone for Infrasound. These Wind Turbines must not go near Ravenshoe. Nor Wilderness. Infrasound is Harming to Wild animals and humans.		No	The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. This is also fundamental to intergenerational equity.
106b	.002	Project viability	Where proof says these Unreliable sources of electricity only manage a 30 % rate of production over what time. What time. A year. Yes. All that Harm and Loss to Wilderness just for these things. They are the Highest Emission source of electricity ever created by Unintelligent humans.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
106b	.003	Fauna mortality turbines	When a Wind Turbine begins turning, it will kill a bird a day. Red Goshawk is Brink of Extinction Now. Eagle fledglings stay in nests for 6 months. Then they fly. Into what. Moving Blades ? How many Birds will be killed. Which ones will not ever return into this Sacred area. Red Goshawk are Sacred birds. Messengers to Mob. Messengers. They message Mob. They are Sacred. Very Sacred. And will be killed out If a Industrial Site Wind Farm is allowed. The figures stated for Habitat areas of Red Goshawk are Wrong. Wrong. 1,189 ha isn't the amount of Country they will Range over. It's 4 times that amount. Moving Blades kill birds and Bats and owls and mopokes. And sound out Infrasound Impact over a distance of 20 km. 20 km. It is 20km. I've tested it. On Maybole mountains you see. Figure 4.26. Ghost bat. Fly over 40 km a night. Are you aware bats search wide areas to source Rare food areas. Now threatened completely by 86 Turbines..		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. The habitat area stated in the PER (1,031.7ha) is the amount of potential habitat proposed to be cleared, not the range of the species. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The ghost bat has also not been confirmed as present within the Project area.
106b	.004	Indigenous Cultural Heritage / Engagement	You lot think a Sacred Site is Physical. And that's how you get away with destroying Country Not yours to destroy. Never yours to Destroy. Sacred Sites can be huge areas. Custodians aren't there. How come. Where are they. The Four Mobs in Chalumbin region. Where are they. They should be there. Protecting it. They're not. Did they get informed. Were they paid for the Land. I Object to this proposal of a Industrial Site Wind Farm named Chalumbin, in a area of Sacred women's business. And women's business needs to be Respected. You haven't Respected this Land. You need to learn about the totem species you are placing under Threat. Water Rat is Honoured.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
106b	.005	Construction impacts	Amphibians will be destroyed when Excess Extraction of water , From Where, will occur, If this project is approved.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Sourcing of construction water will avoid impacts to species. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
106b	.006	Weeds and pests	Amphibians will not be the Original ones. Cane toads will enter a Wilderness for the First time. And kill any species that eats the tadpole to toad animal.		No	Cane toads are already established throughout the Project area, as identified in Section 4.1 of the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
106b	.007	Project location	Either use Turbines with No blades. Or get them Onto Rooftops. I suggest Rooftops. Lower cost for us all. Cost an issue you see. With roads accounting for 8 % of Land Clearing to put Wind Turbines in Wilderness. Prime Agricultural Land. Put them on there. It's cleared. It's cleared. Put them on there. Farms. Better place for them. Roads are there. Already there. No new roads using materials in short supply.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
106b	.008	Decomissioning impacts	Toxic are Renewables. Cannot be Recycled. Why. Why create something you cannot recycle.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
106b	.009	Koala	Renewables out On Country On Farmland In Wilderness are Another Added Threat to Koala. This is Disgraceful. How Dare You people ignore an Endangered listing.		No	The PER acknowledges that the koala is now listed as Endangered under the EPBC Act 1999; however, the species is assessed per its former Vulnerable listing as required by the PER Guidelines. The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
106b	.010	Opposition to project	Look at the differences before and after construction of a Wind Farm. How could you do this to a World Class Wilderness region. Cease and Desist Chalumbin Wind Farm. A Crime against Threatened species in north QLD. With a need for a Royal Commission immediately. I Object Outright to Chalumbin Wind Farm. And to QLD government I say this. I need you investigated for Harm and Loss to Vital Habitat for Threatened Endangered Brink of Extinction species. How Dare You allow Renewables into a complete Wilderness area. How Dare You threaten Rare Threatened Endangered Brink of Extinction species. How Dare You ignore Koala Endangered listing. How Dare You invite Foreign Investment companies into Vital Wilderness areas.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
454	.001	Opposition to project	The Chalumbin wind farm should not be approved because: your EMF ratings are grossly fabricated, and due to the international safe levels, this fails in its self. you will be held accountable in an international courts. I live in Ravenshoe and i do not give you permission to destroy this pristine wilderness. The Australian Government has no right to allow you to proceed and they to will be held accountable also. Everyone's lack of consideration about the damage to the lands and animals (plus the list of endangered species) is appalling.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
455	.001	Visual impacts	Note submission has been summarised to extract key points requiring response. I am writing to express my opposition to the proposed wind-farm at the site referred to as Chalumbin, south of Ravenshoe. My house is located on a hill and has sweeping views of the horizon looking west. Almost certainly the turbines will be visible from my front verandah. The visual pollution created by the turbines would obviously be a significant disappointment.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
455	.002	Project location	What I do vehemently oppose, however, is the destruction of our natural environment, both habitats and their residual biodiversity, in the name of 'green energy'. It is inconceivable that we would seek to solve one environmental problem (carbon emissions) whilst exacerbating another (biodiversity loss). Across much of Australia, including the Tablelands itself, there has been extensive land clearing leading to the loss of natural habitats and their associated wildlife. The conversion of forest to agriculture has already been widespread across the Tablelands region. If we are to develop alternative forms of energy then these MUST be done in such a way that they minimize our impact upon the environment. Extensive clearing of habitat and the loss of biodiversity should automically preclude any such proposals from being developed. Instead, collaborative arrangements should be sought between the owners of landscapes already heavily degraded (such as farmland) and the proponents of wind farms. Just outside Ravenshoe is a long-standing wind farm that was developed on farmland and which produces green energy with no resultant loss of biodiversity. Surely this is the model we should be seeking to achieve. By contrast, the development of the Kaban wind farm project, also just outside Ravenshoe, is an example of how wind-farms are damaging and degrading the natural environment and as such act is a timely reminder as to why this current proposal should not proceed. I trust that the views expressed here can be seriously considered and ultimately the proposed Chalumbin wind-farm NOT proceed. It is important that intact forest habitats should not be disturbed and degraded in the name of so-called green energy. Support for alternative energy projects should not only be based on enabling a move away from fossil fuel dependency, but also on the assumption that the environmental footprint that they inevitably leave behind is deemed to be minimal. The clearing and fragmentation of extensive areas of woodland forest habitat, as this project proposes, does not in my view meet this threshold.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.
180g	.001	Opposition to project	Submission is repeating issues raised in Submission 180b		No	See response to Submission 180b.
439c	.001	Opposition to project	As per Submission 439c		No	See response to Submission 439c.
439d	.001	Opposition to project	Note submission has been summarised to extract key points requiring response.	Friends of Chalumbin Group with over 800 members, plus over 1000 signatures that Hon Bob Katter MP took to Federal Parliament object and do not consent to the proposed Chalumbin wind farm going ahead. The large majority of Ravenshoe people do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and as a Community Group we say NO to Chalumbin Wind Farm. The proposed Chalumbin wind farm is one of Australia's biggest threats to Flora & Fauna Extinction in Far North Queensland and destruction of Cultural Heritage. Bordering World Heritage Wet Tropics; and the Herbert & Tully River Catchments that flow directly into the Great Barrier Reef.	No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
439d	.002	Project location	Prior to the start of planning the development, the Proponent 'Ark Energy' should undertake viable research and risk analysis to engage, whether a particular site is viable due to significant impacts, our community group feels this has not taken place to consider all stakeholders. We believe that this is fundamental in any renewable project and therefore a prior planning process needs to be considered and in reference to Chalumbin.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
439d	.003	Community consultation	1)First Nations engagement & participation, including an understanding of the historical cultural, significant sites and all relevant parties. Not all voices have been heard and boundaries are being disputed. 2)Community engagement & consultation, A comment was made to the Proponent that there should be an open community forum where everyone can attend public meetings, not these private meetings. Proponent responded "the community advisory group doesn't work like that". 3)Identifying all relevant parties including Indigenous expertise, also other council areas that might have a possible impact. 6)Community consultation on proposed access roads.		No	The submitter has highlighted a number of points in relation to the community consultation of the Project. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately.
439d	.004	Project location	4)Identifying first as with the proposed Chalumbin site that this area is of High Environmental Value, Bioregion – Wet Tropics, Proportion of regional ecosystems endangered or of concern is 89.7%. This is the highest area out of the all 13 Bioregions in Queensland and has been planned for a proposed Chalumbin wind farm which will have the highest Significant Impact. It is an area of National Environmental Significance for biodiversity. 5)Critical amounts of Endangered species are at risk of Extinction. Proper prior planning would ultimately assess a site such as Chalumbin and conclude that it is clearly the wrong site for an industrial wind power station and that there are many already cleared areas or degraded areas that would be more suitable for such a project in Queensland to go ahead.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
439d	.005	Community consultation	Therefore, because no prior planning has been carried out in the groups above the proponent is faced with massive 'GAPS' between the proponents' expectations and community's opposition; and impacts on the environment. Some have been identified below: a)The proposed site is Culturally significant to the Jirrbal Language speaking Aboriginal people, containing Sacred Sites, Rock Shelters, Rock Art, Stone Artefacts, Song Lines, and Burial Grounds. b)This site holds 60 years of Massacres and it is extremely sacred. (Ref: Qld Police Archive Records & Cultural Heritage Protection Unit Data Base). c)There are 8th generation families living in Ravenshoe who have local knowledge of the area and would have been able to provide an understanding of the site proposed. d)The proponent had been planning the development for many years before the planning application was sent to the State Government, the Community was 'kept in the dark' during this process and only found out when the proponent announced that the planning application had been signed off by Qld Government. Only a limited amount of local engagement had been sought before. e)Local knowledge or consultation in the prior planning stage from regional environmental groups, indigenous rangers etc of Threatened and Endangered Flora and Fauna.		No	The submitter has highlighted a number of points in relation to the community consultation of the Project. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
439d	.006	Contamination	a)Local knowledge of toxic minerals in the area. Natural Arsenic is found in these mountain ranges (ref: Mine Safety Journal 25/11/2013 – "Operators of the Baal Gammon copper mine, west of Herberton in Qld, pleaded guilty to three charges last Thursday, relating to the unauthorised release of contaminated water into Jamie Creek and the Walsh River during the 2011/12 wet season.") which if the arsenic is disturbed from blasting and excavation of theses mountains, this development could lead to one of the biggest environmental disasters to FNQ waterways. Pollution to the Communities drinking water & livestock along Blunder Creek and Pollution to the Great Barrier Reef.		Yes	A geochemical risk assessment has been undertaken for the project and a summary has been included below. The high risk of AMD posed by the geology of the Baal Gammon Mine is due to the intrusion of metal- and sulfide-rich hydrothermal fluids associated with the UNA Porphyry. As the UNA Porphyry slowly cooled underground, major rock forming elements such as calcium (Ca), sodium (Na), potassium (K), and silica (Si) were incorporated into the minerals of the porphyry, enriching the surrounding heated hydrothermal fluids in elements such as arsenic (As), antimony (Sb), copper (Cu), and sulfur (S). The cooling of these hydrothermal fluids then led to the precipitation and concentration of metal sulfide minerals, including the arsenic-bearing mineral arsenopyrite (FeAsS), found at Baal Gammon. The subsequent excavation and oxidation of these minerals at Baal Gammon has then lead to the generation of AMD (specifically acidic and arsenic laden drainage) at the site. This contrasts with the underlying geology of the Project area which is predominantly the Glen Gordon Volcanics and the rocks excavated for the wind turbine foundations are expected to be ignimbrites. An ignimbrite is a type of rock formed when a volcano erupts and the ash and pumice solidify while still in the air and fall to the ground as a thick deposit, or from a pyroclastic flow. Ignimbrites are made up of a mixture of ash, pumice, and other volcanic fragments. They are typically characterised by a fine-grained, glassy texture and a uniform, layered structure. The mineralogy of the ignimbrite is described as rhyodacitic to rhyolitic. This means that in an unaltered state the rocks are expected to be sulfide-poor. The primary mineralogy is expected to be plagioclase, feldspar, and quartz with lesser amounts of biotite, mica, and hornblende which are considered environmentally benign from an AMD perspective. Three foundations are proposed to be placed outside the Glen Gordon Volcanics in the Cp-7962 granite. It is important to note that while the granite is described as a porphyritic granite, this is a description of the relative sizes of the mineral phenocrysts in the granite and shouldn't be confused with the porphyry derived mineralisation described at Baal Gammon. The granite is also expected to be sulfide-poor, with the major minerals present being quartz, plagioclase, feldspar, and biotite. It should be noted that granitic intrusions may also alter the host rock where the intrusion contacts the host rock, potentially leading to sulfide mineralisation. As nearly all the proposed foundation locations are away from the intrusion margins it is considered unlikely that if sulfides were generated by the intrusions of the Ingham Granite Complex and the Cp-7962 granite that these mineralised areas would be encountered during the excavation of the wind turbine foundations. Acid sulfate soils (ASS) are soils, sediments, or other materials containing iron sulfides. Based on data retrieved from the Atlas of Acid Sulfate Soils (Fitzpatrick, et al., 2011) the occurrence of ASS in the project area is considered unlikely. Given the differences in geology and mineralogy of the Project area and the Baal Gammon Mine, coupled with the relatively shallow excavation depths likely for most wind turbine foundations the risk of AMD generation from the excavation of foundations at the Project is considered to be low. Similarly, due to the likely absence of ASS and the shallow depth of disturbance the risk of AMD generation from the clearing and construction of tracks and infrastructure areas at the Project is considered to be low. Due to the low risk of AMD generation at the Project, the potential for the leaching of arsenic or other metal(loid)s is also considered low.
439d	.007	Erosion and sedimentation	a)The development is proposed in the Tully and Herbert River Catchment area; these river systems run directly into the Great Barrier Reef. The Herbert River rises in the Eastern Highlands, flows for 150 miles (240 km) southeast across the Atherton Plateau past Ingham, and enters the Coral Sea at Halifax Bay in the Hinchinbrook Channel, which is a known breeding habitat for Dugongs and an area of Significant Environmental Importance. Erosion, Pollution, sediment run-off and invasive weeds, are massive potential impacts on Coastal Councils areas. Consultation and engagement with Hinchinbrook shire & Tully shire Councils on potential impacts, also local indigenous knowledge, including impacts to Hinchinbrook & Tully First Nation people.		No	The protection of the Great Barrier Reef, breeding habitat for Dugongs and areas of Significant Environmental Importance are key considerations of the project. Erosion, Pollution, sediment run-off and invasive weeds are all assessed in the PER specific management plans developed including: A Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER; A Preliminary Erosion and Sediment Control Plan contained in Appendix I of the PER; Preliminary Rehabilitation Plan (Appendix K of the PER); a Preliminary Weed & Pest Management Plan (Appendix F or the PER). Consultation undertaken for the project is presented in Section 11 of the PER, which started in 2017 and will continue into the future (section 11.5). Relevant councils and Traditional Owners will continue to be part of the ongoing engagement program.
439d	.008	Adequacy of the PER	a)Significant Impact Assessment and Suitability of Proposed Offsets To determine impacts, residual significant impacts and the identification of proposed offsets, there must first be a robust and reliable understanding of the baseline data/ status quo, a clear understanding of impacts and proposed avoidance/ mitigation measures. The Proponent with regards to the draft public environment report has not provided adequate baseline data with respect to the current state of the environment. The proponent has provided no reliable information regarding impacts from noise, dust, vibration and lighting. Without this information, significant residual impacts cannot be identified and assessed.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. Section 4.0 of the PER provides a comprehensive assessment of the existing environmental values of the Project area, as requested within the PER Guidelines.
439d	.009	Transmission capacity	There is also a lack of Capacity in Transmission, currently only 350MW available in transmission, but the Chalumbin Wind Project proposes to add 602 MW in total. This also associates immediate problems, as there are already 3 other wind farms trying to use the grid and are currently not being used to their full capacity, let alone household solar that is also supplying the grid in this area.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
439d	.010	Biodiversity general	Cutting down remnant Forests bordering World Heritage Wet Tropics is not 'GREEN' and will ultimately only add to Climate Change, Forest regenerate for thousands of years, wind turbines only last 25 years. The construction footprint is identified as over 1071 ha of pristine remnant Wet Tropics Forests deforestation over a land parcel of 75,000 acres bordering an area of World Heritage significance and there is no baseline data to assess impacts.		No	The project design and location has been refined to avoid the values within and surrounding the site (as identified in Section 4 of the PER). In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
439d	.011	Indigenous Cultural Heritage / Engagement	Culturally significant to the Jirrbal Language speaking Aboriginal peoples, containing Sacred Sites, Rock Shelters, Rock Art, Stone Artefacts, Song Lines, and Burial Grounds. This site holds 60 years of Massacres and it is extremely sacred. (Ref: Qld Police Archive Records & Cultural Heritage Protection Unit Data Base) Jirrbal First Nation ancestors are buried there, who would like their ancestors remains to be desecrated? The sacred area is not a commodity that can be bought and sold! Please do not let this be another destruction of Cultural Heritage, like what happened in 2020 of the Aboriginal rock shelters at Juukan Gorge by mining Company Rio Tinto. Georgina Wieden, Jirrbal community member: How do I explain that their animals don't have homes anymore because we need electricity. What about us? What about our culture? What about us as people? Where do we belong in all this? Where do we have a say? Where are our Elders and our Ancestors respected? It's not about the people. It's about the country and where we come from. We belong to that land and that land does not belong to us. Therefore, we need to respect it and respect ourselves. Clarence Kinjun, Gulngay Elder: But I hope, with a bit more consultation with Aboriginal people, we need for that land to be culturally surveyed. I don't see any maps where sacred sites have been marked…we mustn't forget the massacre sites there. It's really important to us. I hope for my Jirrbal people that the decision is made that they do not build this wind farm up there. As a Gulngay Traditional Owner, I hope it never comes to having those great turbines up there David Carney, Jirrbal Elder: About Chalumbin, all along there where they're going to put the wind turbines, all that along there is sacred sites, all the way along there. Right back behind Yourka, from Wooroora Station, to Blunder Park, to Yourka station and so forth right back around behind Kaira. All up there are sacred sites, all the burial grounds along those tracks. And the reason why we don't want that to go ahead, is because of the flora and fauna. There are species there in that Rainforest that have never been found. Only by the Indigenous owners. That's the only reason why we're standing up to fight all this. Because we do not want that to go ahead. All we ask is that you leave the Rainforest alone, that it's going to be there for future generations and life after life after life after life. Georgina Wieden: It's a really hard one, because where these windmills plan to go, it's on sacred sites. There's massacre sites there. What I don't understand is, how many times do these bones need to be dug up and reburied. When is it going to stop? You know, they talk to the Indigenous community and give them half the story. They promise them peanuts but they don't tell them the consequences of those peanuts. They don't tell them what's being lost or damaged. So yeah, I'm fighting for my culture. And my heritage is going to be lost. Not just mine but a whole entire tribe. Our culture can remain for another thousand years. But if we keep selling out, we're going to have nothing. These voices above and many more Jirrbal Language Speaking Aboriginal People are not being heard. Elders & Custodians of this community have major concerns regarding the proposed Chalumbin wind farm project as it is being rushed through very quickly and the fear for their Cultural Heritage will be lost forever.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
439d	.012	Indigenous Cultural Heritage / Engagement	Cultural Heritage is referenced many times in the feasibility study on Tully-Millstream Hydro Dam; it was proposed in 1988, and Hon. Paul Keating, Prime Minister at the time stopped the project going ahead, he stated "The project cannot be built without significant damage to the environment, including to World Heritage Value" yet in 2023 we are faced with the proposed Chalumbin wind farm which overlays the same area as the Tully-Millstream Hydro Dam. A feasibility at the time (approx. in 1988) was carried out on this area commissioned by the Queensland Electrical Commission (QEC). The Cultural Heritage side was reported by N. Horsfall B.Sc., B.A. (Hons) pg174 and he states in this report, "During the feasibility study, a total of 38 archaeological sites were recorded; thirty-seven small, stone artefact scatters and a small rock shelter with paintings and occupational deposits "it also states that in order to complete the historical record of the general area, it may be advantageous that further investigation be undertaken by an oral historian, with particular reference to post-contact Aboriginal history at Woorooora Station and the reported Aboriginal walking tracks." A study of post-contact Aboriginal history would undoubtedly uncover the 60 years of Massacres. "The artefact scatters contained a range of artefact types (e.g., ground-edge axes, hammerstones, top grindstones and a range of flaked artefacts, including several large caves). Most of the raw materials used (mainly acid volcanics and quartz) were available locally, though at least one axe was made of a metamorphic stone that occurs some 50km from the site." The map where these artefacts, large caves, rock shelter with paintings, occupational deposits were found in the proposed project site for the Chalumbin wind farm, The feasibility study for the Tully-Millstream Hydro Dam in 1988 is geared towards QEC who paid for the report, the sample of Aboriginal Artefacts findings today, would be regarded as very significant in 2023. A FULL ENVIRONMENTAL ASSESSMENT, ARCHAEOLOGICAL SURVEY AND A FULL CULTURAL HERITAGE STUDY BY AN INDEPENDENT SOURCE NEEDS TO BE CARRIED OUT BEFORE IT IS TOO LATE.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
439d	.013	Indigenous Cultural Heritage / Engagement	As a developer would you not source studies and do risks assessments regarding cultural heritage before a draft public environment report? There are also 8th generational families living in Ravenshoe who have great knowledge also of the cultural heritage at this site. The proponent is basically saying we recognise that there is cultural heritage on site yet we will just deal with it as we go. There is no base-line data for cultural heritage in the Public Environmental Report for the public to comment on any assessable impacts to cultural heritage sacred sites. It is known also that these walking tracks, bora grounds, rock paintings, sacred sites are all through Glen Gordon Station too as Aboriginal people used the whole area and would also use the mountain tops for smoke communications. The wider community including the many Jirrbal custodians of the land feel grief, and a great sense of loss, that the mountains that provide their homes to irreplaceable wildlife are being desecrated. As the Community is watching Kaban wind farm, the proposed Chalumbin wind farm is causing further anxiety and stress due to the land being used for heavy industrial power stations. This is creating a cumulative effect of sadness, we are seeing tears from the Elders who are coming to see Friends of Chalumbin for help, Chalumbin is extremely sacred to the Jirrbal language Aboriginal people and the community of Ravenshoe. It is an extremely rare ecosystem. There is no respect for the Cultural Heritage nor the Community who do not want any more wind farms here. Please stop Corporations taking First Nations Lands, please protect the land for future generations, make this area a National Park status! Help traditional owners to reconnect to their Lands.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
439d	.014	Biodiversity general	The Community of Ravenshoe is extremely concerned about Biodiversity Along Woorooora Road there have been many sightings of Red Goshawks, other regular sightings of the Red Goshawks have been on Blunder Park Station which is sandwiched between Woorooora Station and Glen Gordon Station, also sightings at 1125 Woorooora Road and the Junction at Woorooora Road and Greys Lane. Woorooora Road is the Proposed access road for the Project, with a proposed massive Concrete batch plant and an additional Sub-station proposed in a rural area. Woorooora Road is a living wildlife corridor, there is also a breeding colony of Northern Bettong, Rock Wallabies, Gliders, Emu, Cassowaries, Echidnas, Blue Tongue Lizards, Tawny Frogmouth, high populations of platypus, masked owls, sea eagles and wedge tail eagles. The whole area proposed as an access road is thriving with wildlife and should not be exposed to such destruction & industrialisation. Woorooora Road is also a school bus run, emergency services access, cultural and historically significant. Picture below baby kangaroo rescued after it's mother was killed by a vehicle along Woorooora. Please no more increased traffic along this Road!		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.

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439d	.015	Survey effort	An independent field survey and spotlighting with a wildlife photographer was carried out and covered approx. proposed wind turbines 65, 66, 67, 70, 68, 71, 72, 74, 75 & 76, in the project area in the Wet Sclerophyll forests on the 15/11/22 and 18/11/22, and observed 12 Greater Gliders, 3 Yellow-bellied, 4 Sugar Gliders. A film was taken of a Yellow-bellied Glider on a branch of a tree whilst its mate jumped out of the branch above and caught in flight. Coordinates also spotted different species of possums including 2 brushtails and 2 ringtails. The Survey guidelines for Australia's threatened mammals' states that for the yellow-bellied glider, for an area of 5ha, survey techniques should include investigation of the presence of key eucalypt species, daytime searches for den sites, daytime searches for signs of activity, call playback surveys and spotlighting surveys. In relation to spotlighting surveys, the guideline states that it is strongly recommended that spotlighting surveys are not conducted from a vehicle (since the species is difficult to detect using spotlighting and that listening for vocalization is a primary technique for detection). In section 4.2.2.3 of the Public Environment Report, under the heading "Fauna Survey Limitations" on page 115, the proponent states: "Night-time survey work was targeted towards vegetated areas that were safely accessible. Due to the terrain and the target species, most of the spotlighting surveys were undertaken from a vehicle on existing access tracks that were considered safe to drive at night." Surveys for the yellow-bellied glider and many other threatened and vulnerable species have not been carried out in accordance with the Survey guidelines for Australia's threatened mammals', raising concerns with respect to the reliability of any assessment of their habitat, occupation and impacts.		No	Your client's trespass has been noted and the landholder has been advised. These purported observations cannot be considered anything more than hearsay in the absence of evidence, nor demonstration of capability in fauna identification. Section 4.7.12.3 quite clearly states that spotlighting within areas mapped as potential habitat for yellow-bellied glider were undertaken on foot rather than by vehicle.
439d	.016	Adequacy of the PER	The Community and Indigenous Rangers are concerned that there is inadequate and unreliable information to enable a proper assessment of impacts on all Threatened Species. There is inadequate information to properly consider the way in which the species might use the land within the project footprint, and how it might be affected by the proposed action.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
439d	.017	Biodiversity general	Please do not let there be more deforestation in Queensland. The magnificent brood frog only occurs in a small area near Ravenshoe and the National recovery plan seeks to very clearly protect its habitat, any loss of habitat should be viewed as significant in this context. The proponent has identified that the 120.5 ha of habitat will be cleared. This includes in areas where the species has been recorded during field surveys. The video marketing tool for the Proponent make out that Chalumbin is just cattle stations and shows barren, sparse trees, but this is far from true. Some parts are used to graze cattle, however where they want to locate the wind farm is high-biodiverse remanent forests. The area is high altitude forests and many endangered species only live at these altitudes, deforestation will warm the area exposing it to the hot Australia sun which will ultimately kill the wet sclerophyll forests. There are only a few pockets left of this type of wet sclerophyll forests left in Australia due to land clearance, they are now considered rare. World Heritage Wet Tropics, Koombaloomba Dam and Tully Gorge are all bordering this development. The proposed development site is a complex and diverse area, which adjoins the Wet Tropics World Heritage area. The project area will impact a large area of habitat. The edge effects have been largely unassessed.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species, which tends to undergo "boom and bust" population cycles from year to year (MBF Working Group, pers. comm.) The clearing estimate of 120.5ha is considered "worst case". Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on in the final PER. The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
439d	.018	Erosion and sedimentation	Many river systems are under threat from population due to 800m3 concrete footings & erosion from clearing, these fragile rivers systems are: Tully River, The Millstream, Nitchaga Creek, Koolmoon Creek, Sunday Creek, Oakey Creek, Herbert River, Wild River, Blunder Creek, Break a day Creek, Vine Creek, Cameron Creek. All these river systems eventually flow to the Great Barrier Reef. The Blunder Creek is part of the Herbert River Catchment area, a threat to The Great Barrier Reef with erosion & run off! Suffocating the Coral, what happens in the Highlands has to come down! No measure of erosion management control will stop the sediment run-off, especially through Far North Queensland's yearly natural monsoon floods and cyclones. The Herbert River flows out into Hinchinbrook, where there are more extremely fragile ecosystems, including the breeding grounds of the Dugong The Great Barrier Reef is at MAJOR RISK of pollution, erosion & run-off from this project, Direct flows into the Herbert & Tully River Catchment, Queensland Government has announced they will protect the Great Barrier Reef, yet they have signed this project off that will kill the reef from pollution and erosion, The Proponent have not even put plans in place to stop this, they have basically said we will deal with impact on the waterways when it happens. . THE PROPONENT HAVE FAILED TO PROVIDE A TRUE REPRESENTATION OF THE BLUNDER CREEK, PHOTOGRAPHS AND FIELD STUDIES SHOULD BE TAKEN DURING MANY SEASONS. UNIQUE WATERWAYS THAT HAVE RARE AQUATIC LIFE, PLATYPUS, FRESHWATER MUSSELS, FRESHWATER CROCODILES AND MUCH MORE. THE PROPOSED CHALUMBIN WIND FARM WILL POLLUTE THE BLUNDER CREEK AND KILL THE AQUATIC LIFE!		No	The project disturbance areas / earthworks and the protection of the Great Barrier Reef are key considerations of the project and are assessed in the PER including: - A Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER undertakes a detailed assessment of the soil erosion risk where the local climatic, soil and topography factors have been considered. - A Preliminary Erosion and Sediment Control Plan contained in Appendix I of the PER establishes the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. - A Preliminary Rehabilitation Plan (Appendix K of the PER) has been prepared for the project. The purpose of this Preliminary Rehabilitation Plan is to facilitate the re-establishment of native ecosystems that are self-sustaining in the long-term and provide comparable habitat value to the pre-construction ecosystems. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Relevant standards will be used in the development of the monitoring program and a specific focus will be on the potential fine sediment transport that could impact on the GBR, aquatic values and the Magnificent Brood Frog habitat.
439d	.019	Offsets	Once cleared gone forever, offsets don't work, they are only fit for accountants, you can't offset against habitat that already exists. Wind Turbines only last for 25 years, Chalumbin forests will regenerate thousands of years and the biodiversity is impossible to replace.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
439d	.020	Loss of carbon stores	Friends of Chalumbin are not against renewables, Chalumbin in FNQ Wet Tropics is just the wrong site! Cutting down Trees is not GREEN! Nor Clean when a whole unique and rare ecosystem found nowhere else on the Planet will be destroyed. Deforestation is not 'GREEN 'The disturbance of the soil leaching C02 and the cutting down of the trees will have a massive impact on the local environment. Trees, especially high biodiverse rainforests pull C02 from the atmosphere and the soil holds CO2, why are you touching this area? The Proponent needs to "Leave it alone", they will do more damage than what it is worth, the accumulated long-term impact is irreversible.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 2t per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from the 100t to 500t of carbon per hectare within the "Wet sclerophyll forest: regrowth benefits management guideline". The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
439d	.021	Transmission capacity	The transmission lines cannot take the power anyway. Build the same project in already degraded or altered landscapes or consider the CopperString 2.0 line, straight into Townsville. Leave the wet tropics alone. No-one can calculate the future damage		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. The Project is proposed in 2 stages, either of which may or may not be developed in the future. It is not correct to state that the Project will only be viable if both stages are developed. Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
439d	.022	Contamination	There is also Natural Arsenic found in these mountain ranges (ref: Mine Safety Journal 25/11/2013 – "Operators of the Baal Gammon copper mine, west of Herberton in Qld, pleaded guilty to three charges last Thursday, relating to the unauthorised release of contaminated water into Jamie Creek and the Walsh River during the 2011/12 wet season.") which if the arsenic is disturbed, this development could lead to one of the biggest environmental disasters to FNQ waterways		No	A geochemical risk assessment has been undertaken for the project and a summary has been included below. The high risk of AMD posed by the geology of the Baal Gammon Mine is due to the intrusion of metal- and sulfide-rich hydrothermal fluids associated with the UNA Porphyry. As the UNA Porphyry slowly cooled underground, major rock forming elements such as calcium (Ca), sodium (Na), potassium (K), and silica (Si) were incorporated into the minerals of the porphyry, enriching the surrounding heated hydrothermal fluids in elements such as arsenic (As), antimony (Sb), copper (Cu), and sulfur (S). The cooling of these hydrothermal fluids then led to the precipitation and concentration of metal sulfide minerals, including the arsenic-bearing mineral arsenopyrite (FeAsS), found at Baal Gammon. The subsequent excavation and oxidation of these minerals at Baal Gammon has then lead to the generation of AMD (specifically acidic and arsenic laden drainage) at the site. This contrasts with the underlying geology of the Project area which is predominantly the Glen Gordon Volcanics and the rocks excavated for the wind turbine foundations are expected to be ignimbrites. An ignimbrite is a type of rock formed when a volcano erupts and the ash and pumice solidify while still in the air and fall to the ground as a thick deposit, or from a pyroclastic flow. Ignimbrites are made up of a mixture of ash, pumice, and other volcanic fragments. They are typically characterised by a fine-grained, glassy texture and a uniform, layered structure. The mineralogy of the ignimbrite is described as rhyodacitic to rhyolitic. This means that in an unaltered state the rocks are expected to be sulfide-poor. The primary mineralogy is expected to be plagioclase, feldspar, and quartz with lesser amounts of biotite, mica, and hornblende which are considered environmentally benign from an AMD perspective. Three foundations are proposed to be placed outside the Glen Gordon Volcanics in the Cp-7962 granite. It is important to note that while the granite is described as a porphyritic granite, this is a description of the relative sizes of the mineral phenocrysts in the granite and shouldn't be confused with the porphyry derived mineralisation described at Baal Gammon. The granite is also expected to be sulfide-poor, with the major minerals present being quartz, plagioclase, feldspar, and biotite. It should be noted that granitic intrusions may also alter the host rock where the intrusion contacts the host rock, potentially leading to sulfide mineralisation. As nearly all the proposed foundation locations are away from the intrusion margins it is considered unlikely that if sulfides were generated by the intrusions of the Ingham Granite Complex and the Cp-7962 granite that these mineralised areas would be encountered during the excavation of the wind turbine foundations. Acid sulfate soils (ASS) are soils, sediments, or other materials containing iron sulfides. Based on data retrieved from the Atlas of Acid Sulfate Soils (Fitzpatrick, et al., 2011) the occurrence of ASS in the project area is considered unlikely. Given the differences in geology and mineralogy of the Project area and the Baal Gammon Mine, coupled with the relatively shallow excavation depths likely for most wind turbine foundations the risk of AMD generation from the excavation of foundations at the Project is considered to be low. Similarly, due to the likely absence of ASS and the shallow depth of disturbance the risk of AMD generation from the clearing and construction of tracks and infrastructure areas at the Project is considered to be low. Due to the low risk of AMD generation at the Project, the potential for the leaching of arsenic or other metal(loid)s is also considered low.
439d	.024	Alignment with government policy	Australian Government, Threatened Species Action Plan 2022 – 2032 – Towards Zero Extinctions, 14 Priority mainland places (A) Eastern forests of Far North Queensland are where the proposed Chalumbin wind farm will be. These are Priority Places! So I ask the question: why are Ark Energy Proposing to build a wind farm there?		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
439d	.025	Alignment with government policy	The statement is very imperative to Chalumbin, as the Tully-Millstream Hydro Project is the same footprint of the Proposed Chalumbin Wind Farm, the Tully-Millstream was stopped due to the "The project cannot be built without significant damage to the environment, including to World Heritage Value" (see statement attached). All this work was achieved, and taxpayers' money spent to protect this area of the proposed Chalumbin Wind Farm approx. in 1988; yet we are now seeing a return of proposed destruction to the same area in 2022. Why is this happening? and the Labour Government in Queensland has signed the development application off using a 'cop out system', "State code 23" therefore pushes this development through, avoiding the correct planning procedures. A farmer here cannot even clear a fence line without getting into trouble, yet we see proposed development can clear over 1071 ha of pristine remnant Wet Tropics Forests over a land parcel of 75,000 acres of World Heritage significance and National & Cultural Heritage and this is, okay? How did this development application even get this far? State code 23 "Ensure that flora, fauna and associated ecological processes are protected from adverse impacts" Really? Which part of the 'ADVERSE IMPACT' is not understood! The accumulative effect of this project is a MASSIVE IMPACT to an area that should never be touched and is sacred! The Federal Labour Government have made a pledge to the World in the upcoming COP 15 UN Biodiversity summit to protect areas such as this, Labour need to uphold the pledge to the world. COP15 UN Biodiversity has identified 5 threats to our natural world, the proposed Chalumbin wind farm breaks all 5 of these natural world threats, number 3 on their list 'biodiversity is just as important as climate change', "solve both or solve neither". Also on the UN list is the major threat of land clearing!		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The Project obtained a development permit under the Planning Act 2016 and the requirements of State Code 23. The status of this permit is not in question at this point.
439d	.026	Social impacts	The Community have real concerns regarding their cultural heritage and also operational noise and EMFs associated from the wind turbines, especially Turbines on Glen Gordon Station as they will be opposite residential homes. The Community are extremely upset with the threats on endangered species, reduction in housing prices, increase in rentals especially in a low social economical region. Just a in November 22 an elderly lady, well respected in the Community was evicted from her rental property where she had resided for over 15 years, she was told that they were getting the property ready in anticipation of the proposed Chalumbin wind farm going ahead. The project has divided our community for a 'quick few dollars' and in the process, Ravenshoe will become completely industrialised, pushing Community members who have lived here all their lives 'out on the streets' unable to afford a home as property rentals go through the roof. This is socially unacceptable in a small country town. We do not want any more wind farms built here. Ravenshoe has already undergone extreme pressures on rental properties from the Kaban wind farm. Friends of Chalumbin are currently seeing the problems with the Kaban wind farm which had been closed down due to Environmental reasons. Also members of the Community have now made serious complaints regarding the Turbine noise; they are unable to sleep and live at their properties where they have lived for generations. Just imagine the noise levels for wildlife if humans can hear them. It is Cruelty!		No	The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. This is also fundamental to intergenerational equity. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. Multiple scientific peer-reviewed studies on wind farm noise have found that infrasound from wind farms does not cause impacts to human health. This includes the Victorian Department of Health which states that "...sound can only affect health at sound levels that are loud enough to be easily audible. This means that if you cannot hear a sound, there is no known way that it can affect health. This is true regardless of the sound.", and the South Australian EPA which states that "...the contribution of wind turbines to the measured infrasound levels is insignificant in comparison with the background level of infrasound in the environment". At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
439d	.027	Project location	These wind farms with proper planning could have easily been situated in a less biodiverse region and not the highest biodiversity region. The average wind speeds for Ravenshoe are not the highest and therefore, 'pick your project up' Ark Energy and move it somewhere else that does not have a massive impact on Cultural Heritage, Threatened and Endangered Species and that does not have an impact Socially on a small country town.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
439d	.028	Visual impacts	The Community is also concerned regarding the visual damage to the natural landscape, concerns regarding the weather as the first storms are brewed up in the Chalumbin area for the Atherton Tablelands and all the migratory species that use this area as a sanctuary and a feeding source.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
456	.001	Indigenous Cultural Heritage / Engagement	As a resident of Atherton Tablelands I am writing to you to submit my strong opposition to the proposed Chalumbin Wind Farm at Ravenshoe. First of all, the disrespect that this wind farm proposal shows towards the traditional custodians of the land, the Jirrba People, is devastating in its complete disregard for their ability to retain what is left of their cultural traditions and custodianship of the land. For any government or private entity, let alone in this case a foreign entity from South Korea, to invade their traditional lands to desecrate their natural heritage should be seen as a criminal act of the highest degree. The untouched high altitude forest and all wildlife within will be destroyed, and no amount of 'regeneration' could possibly restore what has been there for millennia, and all for turbines with an expected life of between 20-30 years. It is unconscionable to even consider this, and will rip the heart out of all who love this forest and all its inhabitants. Not only the Jirrba People will be affected. The entire community who love and support them will share their pain.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
456	.002	Emissions	Secondly, this proposal, like all wind farms, is presented as 'clean and renewable energy', sold to us as an alternative to fossil fuels. In fact, the amount of minerals needed for even one generation of proposed turbines far exceeds the entire mineral reserves currently available globally, which would mean thousands of new mines must be excavated in order to advance such proposals. THOUSANDS!! How anyone could call this 'sustainable' or 'good for the planet' or 'environmentally friendly' or 'carbon neutral' is beyond imagining. It is simply a lie. It is so unfeasible that one can only conclude that there must be another agenda at play because only the insane would even contemplate such a scheme. Most of the are turbine parts are not recyclable or degradable.		No	Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned. Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
456	.003	Social impacts	Thirdly, the harmful effects this will have upon human health, and also upon the health of animals including insects, from the constant exposure to electro magnetic radiation and low level noise frequencies has already been proven throughout the world and acknowledged by the WHO, with such health problems as childhood leukaemia, cancer, tinnitus, heart problems, mental health, insomnia, blood pressure problems and also electro magnetic sensitivity which is a condition recognised by the Australian Health Practitioner Regulation Agency. If this proposal goes ahead, we as a community, will be installing an independent monitoring system to measure EMFs in real time and will be ready to proceed under criminal law for assault the moment Euron's claimed emissions are exceeded. The Federal Minister for Energy will also be responsible for any adverse health effects. There is NO CURE FOR RADIATION POISONING. Under Queensland Criminal Code this falls under Assault by Applied Force and there is absolutely no justification if consent has not been given, or consent has been withdrawn.		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
456	.004	Opposition to project	The legality of this entire enterprise is questionable, the criminality of it leaving those responsible open to private prosecution under the Environmental Protection Act 1994, this includes federal ministers who are not covered with non liability in such cases. Hopefully, reason will prevail over profit, while the people of Queensland's North, and all the peoples of Australia, will see these senseless monolithic monstrosities that pollute the mountain tops and our horizons being stopped for good. Short term profit by criminal means is not something that we, as Australians, or citizens of the world, will ever accept and will continue to oppose. The willful destruction of nature, its animals, and what it truly means to be human, will continue to be fought against with all means we have available to us. Halt this Chalumbin Wind Farm now, and may this proposal never rear its ugly head again.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
457	.001	Vegetation clearing	Note submission has been summarised to extract key points requiring response. In this era, the year 2023 no wet sclerophyll forests whatsoever should be cleared for any purpose whether it is for coal or wind or solar. This forest type is very well documented as being habitat for a wide range of species including the northern Yellow-bellied glider amongst many other special and unique forest dwellers. If this project was to proceed the photography and video that will be captured showcasing wet forests being bulldozed will be beamed around the world by activists. This is not a good look for Copenhagen Infrastructure Partners (CIP) the project financiers. The conservation sector will not budge one bit on this issue. Therefore, the footprint needs to be reconfigured to avoid these areas.		No	Your concerns are noted. The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
445b	.001	Vegetation clearing	The North Queensland Natural History Group Inc. has many concerns both with the proposal and with the draft PER. Fundamentally we believe that any industrial development of any area of remnant vegetation is unacceptable, let alone unique and unspoilt remnant habitat, adjacent to the World Heritage Wet Tropics and within a catchment flowing down to the World Heritage Great Barrier Reef.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
445b	.002	Cumulative impacts	The cumulative effects of previous and planned wind farm development of high altitude sites bordering the western edge of the Wet Tropics will be severe on species restricted to this region and a huge loss of important remnant vegetation and the habitat it provides for a wide range of species.		No	The PER has qualitatively assessed potential cumulative impacts in Section 5.5. There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
445b	.003	Biodiversity general	The PER itself describes an area rich in biodiversity; one could be excused for thinking that the document was recommending the properties for conservation listing rather than industrial development. We note the following with regard to the natural values of the site: • The project area contains a long list of Of Concern and Endangered regional ecosystems, bioregion corridors of State Ecological Significance and Vulnerable and Endangered plants and animals. The proposed Wind Farm will impact EPBC listed threatened species and potentially other listed species not yet recorded on the property. • Mapped remnant vegetation comprises 10588.9 hectares on Glen Gordon and 19785.9 hectares of Woowoora Station. • Essential Habitat for a range of threatened species makes up large portions of Woowoora and Glen Gordon Stations. • Significant impacts will undoubtedly occur on the species which have localized populations, including the critically endangered plant Prostanthera clotteniana and the vulnerable Magnificent Brood-frog Pseudophyrne covacevichae that could contribute to their extinction. We believe the risks are too great and the control measures too inadequate to protect the integrity of the project site. The clearing and modification of this irreplaceable habitat will directly impact and reduce available habitat for threatened species. Further to this, the edge effects of erosion, sedimentation, changes to the hydrology and weed incursion will further degrade the site.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
445b	.004	Weeds and pests	We consider that the following Listed Key Threatening Processes apply or have the potential to apply to this project: • Competition and land degradation by rabbits - rabbits are present in the area and will be likely to increase in numbers in the modified habitat, as will Feral Pigs, Cats and Cane Toads • Infection of amphibians with chytrid fungus resulting in chytridiomycosis – this is particularly relevant to the Vulnerable Magnificent Broodfrog • Invasion of northern Australia by Gamba Grass and other introduced grasses – modification of habitat favours introduced grasses and weeds • Loss of biodiversity and ecosystem integrity following invasion by the Yellow Crazy Ant (Anoplolepis gracilipes) – these are known to favour rainforest margins and are found nearby, in the Cairns area • Predation by feral cats • Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs • The biological effects, including lethal toxic ingestion, caused by Cane Toads (Bufo marinus) • The reduction in the biodiversity of Australian native fauna and flora due to the red imported fire ant, Solenopsis invicta • Weed invasion from roads and turbine areas. We note that the Weed management plan "is not intended for implementation purposes" (App. F: 3). Has a plan been considered to implement to reduce introduction of and control infestations of weeds?		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intended that these "Preliminary" documents act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept. Fine-scale weed mapping will be undertaken by the Contractor when developing these plans further. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary. The proponent has a Duty of Care towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval. Control measures relating to yellow crazy ants have been added to the Preliminary Weed and Pest Management Plan, the updated version of which will be included in the final PER.
445b	.005	Mitigation and management measures	Fire regimes that cause declines in biodiversity		No	The Bushfire Management Plan (required under the State development permit) will be developed by CWF and/or the Contractor prior to any works commencing on site. This plan will detail the firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
445b	.006	Rehabilitation	• Rehabilitation of the site will never restore such a complex ecosystem. • Is there any provision for independent monitoring of environmental standards?		No	Section 4.0 of the Preliminary Rehabilitation Plan (Appendix K of the PER) outlines the monitoring and reporting of rehabilitated areas and states that monitoring reports will be supplied to regulators as they are completed, to demonstrate progress towards the rehabilitation objectives.
445b	.007	Offsets	• Offsets are wholly inadequate		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
445b	.008	Opposition to project	In summary, the North Queensland Natural History Group does not support the Chalumbin Wind Farm Development. We recommend that the area be converted to tenure that protects the natural biodiversity values of the site and that all development be halted.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
459	.001	Cumulative impacts	The Draft PER has inadequately addressed the cumulative impact of this project properly. The Draft PER glosses over the enormous implications of the cumulative impacts that this project will have when combined with additional projects planned in the vicinity. A hastening of species extinction is inevitable if allowed to proceed. See Diagram 1 for all proposed projects overlaid and Diagram 2 showing proximity to protected areas and World Heritage Areas. The guidelines for the PER required the proponent to identify the cumulative impacts of this development in Section 5.0		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
459	.002	Red goshawk	The cumulative impact on species such as the red goshawk is unknown. One would assume the species will see regional extinction, if not state-wide extinction considering their vast ranges. The proponent published in Table 5.5.2 that the Project will not result in residual impact. Clearing 1,031ha of habitat is significant for endangered species. Considering a nest was found on the site (Page 93 of MNES Report) which was deemed to be that of the (Qld) Endangered Red goshawk nest that then mysteriously disappeared (see Diagram 3). Was the nest tampered with? Was DNA available from the nest before it disappeared? Have any studies on the impacts from wind farms on Australian raptors been done?		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. There is insufficient publicly available information on the potential impacts from other windfarm projects on the red goshawk for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
459	.003	Magnificent brood frog	The proponent has not included the cumulative impact of the proposed transmission line connecting the proposed nearby High Road Wind Farm to the 275kV transmission line through The Bluff State Forest. This will be another blow to the survival of the Magnificent Broodfrog. This consideration must be included in the PER. It has not been done.		No	A transmission connection for the High Road Wind Farm is not currently determined and therefore cannot be included in the cumulative impact assessment presented in Section 5.5 of the PER.
459	.004	Cumulative impacts	The proponent has been sneaky to announce on the release day of the Draft PER that the Chalumbin Wind Farm will be broken into two Stages. This was never revealed or published before the release of the PER. This makes perfect sense because Stage One can utilise existing transmission availability of 300MW. Stage Two will be difficult to commence until there are upgrades to the existing 275kva high voltage transmission line with more capacity. This could include widening of the existing transmission line easement which means more forest clearing. This needs to be included in the cumulative impact.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating for the two stages of the Project) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
459	.005	Alignment with government	An addition to this, the latest ten-year energy plan announced by the state government does not include transmission upgrades north of Ross. The proponent uses the AEMO REZ expansion guide for planning which is contradictory to state planning forecasting.		No	The AEMO ISP referenced in Section 1.5 of the PER is an important document that outlines the likely future direction of energy generation, transmission and consumption within the NEM.
459	.006	Project alternatives	Section 3.2 refers to alternative locations within the QREZ for renewable energy. The proposed Chalumbin Wind Farm does not need to be where it is currently located within a state biodiverse corridor. See Diagram 1. At this early stage of rapid renewable energy development, with the State Planning Code 23 for Wind Farms in effect having no environmental protection safeguards, renewable projects must be placed in degraded, modified or altered landscapes. Failing this, projects should be concentrated along the CopperString 2.0 line where remnant forests are lower in biodiversity. I have attached Diagram 2 to illustrate the vast opportunities available with strong wind resources and Photovoltaic availability along an existing transmission corridor to Georgetown. This provides power transmission opportunities into where the energy will be consumed in Townsville. Renewable projects must be in lower biodiverse areas in the interim period until the new planning guidelines and state codes are developed as published recently by the Premier in the new ten-year power plan. Rushing ahead with the Chalumbin project is a folly of an idea when other opportunities in lower biodiverse areas are available. Ark Energy have chosen the Chalumbin site because this is a cheap option that can be fast-tracked in the absence of any state planning controls. State Planning Code 23 for Wind Farms allows clearing high value forests because the Code exempts all environmental restrictions including the Vegetation Management Act.		No	The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. The State Code 23 (Wind farm development) sets out the requirements for wind farm projects in Queensland to be permitted under the Planning Act 2016 for a material change of use. However, it is important to note that this does not exempt the project from assessment under State Code 16 (Clearing native vegetation) for operational works under the Planning Act. In combination, the State Codes 23 and 16 provide a comprehensive framework for the assessment of wind farm projects under the Planning Act (and associated legislation such as the Vegetation Management Act 1999) in Queensland.
459	.007	Project viability	In Point 1.8 Ark Energy explains that the Chalumbin Project is integral to the decarbonisation of Queensland's fossil fuel emissions. The Chalumbin Project is not needed for the decarbonisation of the state. These are the projects already in the pipeline for Queensland with a total of 28,473GW of available capacity. Take away Chalumbin's 600 MW leaves 27,873MW of capacity currently being rolled out across Queensland. This is a table of all renewables thus far in the pipeline for development. Some have already been developed such as Mount Emerald and some projects are excluded such as Proserpine Wind Farm and Eungulla Wind Farm which are still in planning stages. The Chalumbin Wind Farm Project is neither critical nor necessary for a net zero outcome for Queensland and therefore should not proceed because of its high impact on biodiversity. **Note that full submission includes list of 77 projects in the pipeline for development/have been developed.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
459	.008	Wet sclerophyll forest impacts	In Figure 4.42 Ark Energy explains, 'to avoid wet sclerophyll forest would require the removal of Project infrastructure (or supporting infrastructure) that intersects this community, thereby eliminating: • 11 WTGs on the Wooroora property north of the existing Chalumbin to Woree high voltage transmission line (and associated access tracks and meteorological masts); and • 26 WTGs on the Wooroora property south of the existing Chalumbin to Woree high voltage transmission line (and associated access tracks and meteorological masts). A total of 37 proposed WTGs would require removal from the Wooroora property in order to avoid the wet sclerophyll forest. This alternative is effectively akin to a subset of the Lower Intensity Configuration Alternative (see Section 3.3.2) and is not considered feasible due to the identified drawbacks associated with that alternative. In this era, the year 2023 no wet sclerophyll forests whatsoever should be cleared for any purpose whether it is for coal, oil or wind. This forest type is very well documented as being habitat for a wide range of species including the northern Yellow-bellied glider amongst other unique forest dwellers. If this project was to proceed the photography and video that will be captured by neighbours showcasing wet forests being bulldozed will be beamed around the world. This is not a good look for Copenhagen Infrastructure Partners (CIP) the project financiers nor governments and their governing political parties. The conservation sector will not budge an inch on this issue. Proceed if you dare. The footage will be ugly.		No	Your concerns are noted. The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
459	.009	Project design	In Table 6.1 and publicly on ABC Radio and Cairns Post newspaper reports representatives from Ark Energy have mislead the public in describing the current configuration of the project being reduced in size by half. This is deceptive and misleading. The project was never and has never consisted of 200 turbines. The project was first published in the EPBC Referral Summary on 8th July 2021 as 95 turbines. This is like a real estate developer wanting to build a high-rise building and ideally wants 200 floors to maximise profits, but engineering and planning constraints limit the height to 95 floors. The 200 floors were never going to be a credible option. This is deceptive behaviour on behalf of the developer to publish through mass media deceptive information. This is indicative of the sly behaviour from this developer from the start.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations.
459	.010	Offsets	The entire conservation sector agrees that environmental offsets are a sham. The offsets proposed by simply allocating land aside that will not be cleared as some sort of offset for the land that is to be cleared is farcical. The only offsets that matter is net gain. Additional land that is degraded or cleared should be revegetated to increase the net cover of rewilded and reforested habitat. To throw $250,000 at the Magnificent Broodfrog Group as an offset is an insult. The biggest threat to the Magnificent Broodfrog has been climate change. Now it is windfarms. This money would be used to monitor the species extinction. The offsets arrangement proposed in the PER is a smoke and mirrors con job and this is why the EPBC Act is being gutted and reintroduced fit for purpose. Bare minimum is to halt any decision on this project until a new EPBC Act is enacted.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The $250,000 towards research into the magnificent brood frog is a voluntary commitment made by the proponent over and above the requirement for direct offsets which are also being proposed. Nonetheless, the EPBC Act Environmental Offsets Policy does allow for a proportion of indirect offsets in the form of research and there are many examples of other projects where research has successfully formed part of the offsets program.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
459	.011	Koala	Section 8.6.3 refers to the koala. The Draft PER indicates an inadequate survey effort was conducted to find and map koalas on the subject site. The survey effort for the Koala was woeful. The koala has been found on adjacent properties at Yourka Reserve, Kaban, Ravenshoe and Tumoulin. As a mandatory pre-requisite, latest technology such as thermal imagery drones should be used to identify koala density and populations. For this project to proceed without conducting baseline surveys using latest technology is unprofessional. On another note, the western edge of the Wet Tropics World Heritage Area is identified as being a corridor for the koala. Fragmentation, altered fire regimes and weed incursions will be another blow for a species facing extinction in other states. Perhaps north Queensland is a place where they can survive if left alone.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, in a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
459	.012	Magnificent brood frog	Section 3.3.3 Magnificent Broodfrog habitat is mapped throughout the Project area as illustrated by Figure 4.18. The area is vast and inadequately surveyed. We therefore recommend the "No Action" alternative described in Section 3.1. Avoidance is not possible as suggested in Section 8.4.2 and the land based offset is not adequate in addressing loss of habitat of a species we know very little about. The land based offset is an insult considering it was land that was never going to be impacted upon and will now be compromised by a large haulage road carved through the centre of it. The $250,000 that may be payable to study the species is rejected as an offset. This money would only be useful in furthering the objectives and conservation actions outlined in the species' recovery plan, prior to any further development taking place within its range, including the Chalumbin Wind Turbine Development.		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species. The clearing estimate of 120.5ha is considered "worst case". Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on in the final PER. The locations and configurations of the proposed offset management areas have been revised since the PER was released for public comment and the new areas will be presented in the final PER. Taking on board feedback received from various stakeholders, the offset management areas in the far south and far north of Wooroora Station are no longer intersected by project infrastructure. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The $250,000 is a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
459	.013	Magnificent brood frog	Section 4.2.2 Total number of days of targeted Magnificent Broodfrog field surveys: 7-11 th December 2021 12 16 th January 2022 (total 10 days) The Magnificent Broodfrog Working Group has undertaken regular field work, now in its third season, and many in the group have long experience in the field with this species. Recent efforts have been concentrated on returning to known populations to confirm the ongoing presence of Magnificent Broodfrogs at these sites. Due to the difficulties inherent in detecting these frogs It has often required multiple visits to these sites before calls are detected. I consider that 10 days' worth of surveys is wholly inadequate for a property spanning 31,000ha.		No	As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Additional surveys in areas of potential habitat have been underway since late December 2022, are ongoing and will be reported on in the final PER. Surveys have naturally focused on mapped areas of potential habitat within the Project area, rather than the full extent of both host properties.
459	.014	Magnificent brood frog	Section 4.5.2.2 As stated in this section: "Habitat loss and degradation appear to be the greatest threats to the Magnificent Broodfrog. 97 of known sites are located on unprotected land." "Roads and cuttings can alter the water quality and hydrology, and may affect seepage areas and first order streams. Regrowth forest uses more water than old growth and therefore has the potential to reduce seepages (McDonald et al 2000)." The Magnificent Broodfrog Working Group therefore recommends a "No Action" decision on this project.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting one of the key objectives of the National Recovery Plan).
459	.015	Magnificent brood frog	Section 4.5.2.3 The Magnificent Broodfrog Working Group is indeed compiling survey guidelines for this species. This is another valid reason why the Project should not proceed until proper survey methodology with proper survey effort is carried out. The Proponent states that 140 person hours of survey effort was conducted surveying the frog. This conflicts with Section 4.2.2 where survey effort was only conducted in December 2021 and January 2022. The lack of clarity over the dates and survey effort for this species introduces doubt for the entire survey methodology and credibility. It is extremely concerning that even with such minimal survey effort one observation was made further south of its known range highlighting the fact we are still learning where this species is. This is another indication there should be a "No Action" decision and disallow this Project from proceeding.		No	The working group is compiling NEW survey guidelines. Until these are available, the existing survey guidelines for this species (a dedicated section in the Survey Guidelines for Australia's Threatened Frogs (DEWHA 2010c) have been followed, as is appropriate. As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Section 4.2.2 also mentions the March 2021 survey, in contradiction to the claim in this submission. The June 2021 survey has unintentionally been omitted from Section 4.2.2 and this omission will be corrected in the final PER. Additional surveys in areas of potential habitat have been underway since late December 2022, are ongoing and will also be reported on in the final PER.
459	.016	Magnificent brood frog	Table 8-3 The Magnificent Broodfrog is now listed as Endangered under IUCN criteria. Its major threats are logging, road works, clearing and development. All of these actions are proposed for the Chalumbin Wind Turbine Development. The Magnificent Broodfrog Recovery Plan 200 0 2004 has not been enacted upon. None of the objectives have been fulfilled. To proceed with the Project without achieving any of the goals of the Recovery Plan is contrary to recent statements from the Federal Environment Minister to halt the decline of species extinction.		No	The proponent is hardly responsible for the fact that the National Recovery Plan has not been enacted upon. The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected.
459	.017	Magnificent brood frog	Section 8.4.2 In this section the Proponent states, "The area of habitat within the broader Study area has not been estimated in the absence of the detailed LiDAR data for this extent. The Project will require the clearing of 67.9 ha of habitat for Magnificent Broodfrog during Stage 1 and 52.6 ha during Stage 2. This is 120.5 ha in total across the two Stages. This is primarily associated with access tracks crossing spring lines and minor watercourses that cannot be avoided in order to access Project infrastructure along the ridgelines." The Magnificent Broodfrog Working Group recommends a "No Action" decision and disallow this Project from proceeding.		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species. The clearing estimate of 120.5ha is considered "worst case". Nonetheless, the PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected.
459	.018	Magnificent brood frog	Sedimentation is discussed by the Proponent as thus, "The methodology determines that there is approximately 39 ha of potential magnificent brood frog habitat within the Stage 1 Project area "at risk" from offsite sediment runoff and a further 26.4 ha in the Stage 2 Project area; however, the Project is not expected to impact these areas with appropriate installation of erosion and sediment control measures. These soil loss calculations demonstrate that the rate of soil loss during construction and operation of the Project is not expected to be elevated above existing levels." The Magnificent Broodfrog Working Group response to this is contrary. There is no discussion whatsoever on how these roads will become physical barriers to the movement and migration of the species. Hydrology flows will be greatly modified by increased water flow velocity by either rock revetment, culvert drains under roads, hard road pavement areas and the ultimate introduction of weeds that will colonise road verges. No amount of remediation can eliminate the quick succession of weeds that will colonise the road verges in wet tropical forests. These weeds will transplant seasonal creeks and moist gullies, crowding out the species conditions the frogs require for breeding.		No	A preliminary Weed and Pest Management Plan has been prepared (Appendix F of the PER) and includes management of weed spread, management of pest infestations (including specific advice for amphibian chytrid fungus) and monitoring effectiveness of control measures. This plan will be further developed by CWF and/or the Construction Contractor prior to works commencing on site. A Species Management Plan for the magnificent brood frog will be prepared for review and approval by DCCEEW prior to works commencing on site. This will provide further detail on mitigation measures such as the design of culverts under access roads through potential habitat. A system of adaptive management will be implemented to continually improve the performance of mitigation measures. It should be noted the species persists in the Project area in close proximity to existing powerline easements (minimum 60m wide disturbance area) and the Project will implement a rehabilitation program that exceeds that which was done for these easements.
459	.019	Magnificent brood frog	The revegetation of cleared areas purported by the proponent can be considered a farce. To revegetate 73% of cleared areas would be an undertaking of epic proportions and would be one of Australia's largest revegetation projects ever. There is no mention whatsoever in the Public Environmental Report (PER) how this will be achieved. No costings are mentioned, nor any nurseries nor land rehabilitation services have been consulted on how this is to be achieved. In any case, revegetation would not restore the habitat requirements for Magnificent Broodfrog, whose reproductive strategies depend on maintaining a delicate balance of soil moisture, seepage and runoff. This demonstrates a lacklustre commitment and investment in this outcome by the Proponent. It could be considered as an afterthought to gain approval. Revegetation and remediation may never occur due to logistical challenges and vast monetary cost to the Proponent.		No	The commitment to the rehabilitation program is hardly an afterthought, as it was presented in the development application under State legislation and forms a condition of approval received from SARA in June 2022. The proponent has initiated discussions with a range of stakeholders in relation to the rehabilitation program and this engagement will increase through the first part of 2023. In acknowledgement of uncertainties regarding the success of the rehabilitation program for certain MNES (including the magnificent brood frog), the proponent will still offset the full impact area.
459	.020	Erosion and sedimentation	Appendix J – Part 1 The entire Sediment Management Plan of Appendix J Part 1 can be completely discredited. Section 2.2 says, "The soil loss modelling found that the Project footprint under operational conditions has a sediment yield 0.45 kt/year less than current conditions. This assumes that the soil loss equation has a C-factor of 70% cover which is the Reef 2050 WQIP target (year 2025) for grazing land, end of dry season, cover. " How can there be less sediment under operational conditions with dirt haulage roads than at present being heavily vegetated? The entire assumption is that there will be LESS sediment after the site has been revegetated by 70%. It is assumed the finished project will maintain 70% ground cover (which includes gravel, dirt, bitumen, hard stand areas which is the same percent as the surrounding forest. Therefore, their sedimentation control measures make it even better! Worst case scenario has also not been addressed adequately whereby multiple high rainfall events during the construction phase could cause multiple erosion measures to fail (this can happen anytime of the year – especially April). This causes the Magnificent Broodfrog Working Group to doubt the competence of the Proponent and causes one to place no confidence in any of the Public Environmental Report (PER) delivered by Ark Energy (Chalumbin Wind Farm Pty Ltd and Korea Zinc).		No	Same as response 445a
459	.021	Community consultation	I assume there are plenty of other submissions lodged to this Draft PER regarding lack of community consultation and false reporting by the developer. Community members, traditional owners and scientists have repeatedly raised issues with this development. The Queensland State Planning Code 23 for Wind Farms has no capacity to enforce any form of consultation which has led us into this predicament. These two letters below were sent to the developer by Queensland's two leading conservation groups; Cairns and Far North Environment Centre (CAFNEC) and the Queensland Conservation Council (QCC). Attached to this email is a document sent to the state Environment Minister showcasing issues with this project and suggesting alternatives. **Note full submission includes letters from CAFNEC and QCC to Ark Energy and email includes documents sent to the Minister for the Environment.		No	The submitter has highlighted a number of points in relation to the community consultation of the Project. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
459	.022	Rehabilitation	The entire Rehabilitation Plan is comical. Ark Energy intends to revegetate cut and fill batters with some batters comprising of rock rubble. The Mount Emerald Wind Farm have experienced serious setbacks in their rehabilitation attempts on rock batter slopes. I am a board member of Rainforest Reserves Australia and have had the pleasure of being involved with an organisation that has been responsible for planting approximately 1 million trees. It costs on average $50,000 per hectare to revegetate with an additional three-year maintenance program for seedlings to survive. In Table 3.1 Ark Energy estimates 963ha will be replanted. This would equate to $48.1 million excluding the three years of plant maintenance. This maintenance would involve a team of at least 50-75 employees working full time for three years. This will not happen. At Rainforest Reserves Australia, gearing up for this type of revegetation work would be impossible and no nursery in northern Australia could gear up for this scale of revegetation quickly. This would be considered one of the biggest revegetation projects in the most complex environments ever undertaken. There is no certainty whatsoever Ark Energy have the skills, the finances, or the inclination to be serious about any revegetation. From my experience, revegetation at this scale on steep cut and fill batters is near impossible - 120km of new road x 2 road edges. Therefore, 240km of road verge consisting of rock batter, cut and fill.		No	The options used for the revegetation and stabilisation of cut and fill batters will depend on a wide range of factors including the operational requirements, the size and slope of the batters, nature of materials. An estimate of $50,000 per ha for the cost of revegetation would be a very intensive approach. The Project will be used a combined approach using strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A low cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. For construction, cut and fill batters will be required in steep terrain, but this will only be where required and not over the entire road length.
459	.023	Project proponent	Environmental Bond It seems there is no requirement for an Environmental Bond. As part of the application an Environmental Bond of $47.3 million should be paid to Government in trust. Cost estimates are $550,000 per turbine to dismantle, decommission and remove off site at the end of each turbine's life. Additional money is required for rehabilitation. Considering the operational life of the turbines is only 20-25 years, Chalumbin Wind Farm Pty Ltd could go into receivership or liquidation at this time to avoid responsibility for the removal or replacement of turbines. The cost to remediate the site will be borne by taxpayers. I urge the Federal Government as a condition of the development to have an Environmental Bond placed on the development.		No	The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning. At this stage, no financial bonds are required for this.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
460	.001	WTQWHA	I am very concerned about the proposed Chalumbin wind "farm"development as it is completely in the wrong place. The site is heavily timbered, and certainly the Wooroora Station section would have been part of the Wet Tropics World Heritage area, but that it was leasehold land and so was a political no-go area for inclusion given the political delicateness of the establishment of the World Heritage concept in Far North Queensland at that time (how wrong the opponents proved to be). Thus the Wet Tropics World Heritage Area (WTWHA) is no complete system. In reality it merely consists of the left-over fragments of ecologically-important land that still remained in public ownership prior to 1988. This is to say WTWHA was a political compromise and that, in a different better land-tenured world, vast swathes of extra buffering land - like Wooroora - would have been included. Wooroora, at some time in the future, could be purchased and included within the Wet Tropics Management Plan as long as its forested habitat is maintained. It would be a worthy inclusion, as the Station directly to the south, Yourka, was purchased by Bush Heritage Australia some decades ago for its ecological significance. Yourka Station is now free of cattle and managed as a showcase of the environmental transitions between the wet rainforest environs to the east and dry forest types to the west. Wooroora station, comprising about 1000 hectares of the proposed 1200 hectares of clearing for the wind "farm", is at present likewise relatively undisturbed environmentally and subject to only light grazing pressure. But once destroyed by its carving up into a mosaic of roads, turbine sites and electrical infrastructure it will never be able to be incorporated back into the greater Wet Tropics ecosystem, or serve in any capacity as a buffer. The Wooroora/Yourka/Kirrama (now Badubulla run by the Girrigun Aboriginal Corporation) stations, in a North to South corridor, form an intact bio-region on the western edge of this part of the Wet Tropics rainforest area. It is technically called Wet Sclerophyll (a term that the authors of the PER do not seem to even remotely understand). Such areas are called ecotones, meaning a region between different landscapes – in this case between the very wet and the very dry. Such rare areas often host a disproportionate abundance of plant and animal species adapted to that ecotone. A Wet Sclerophyll ecotone strip between Ravenshoe to the north and the Herbert River Gorge to the south (contained within the three properties mentioned above) hosts an abundance of vulnerable gliders, rare plants, birds and animals. This strip is unique and should not be compromised under any circumstances. More information on the importance of Wet Sclerophyll can be found at the Wet Tropics Management Authority web site at : https://www.wettropics.gov.au/wet-schlerophyll		No	The WTW Periodic Report to the World Heritage Committee (WTMA 2011) identified that there was no buffer zone around the property at the time of its inscription and that a buffer zone was not considered necessary, with the boundaries of the property being adequate to maintain the property's Outstanding Universal Value. The fact remains that Wooroora Station does not form part of the WTQWHA and there appears to be no immediate plan (either on the part of WTMA or the current leaseholder) for it to be incorporated into the WTQWHA. The values of the WTQWHA (including wet sclerophyll forests) are described in the PER as are the potential impacts.
460	.002	Emissions	I am a firm supporter of renewable energy, and wind renewables are a very good way of harnessing non-polluting energy. At the moment the concept of wind energy is sold to the voting-public as turbines in grassy paddocks or out to sea. However a new concept is emerging, in Queensland particularly, of that of huge multi-turbine wind farms being built in hitherto remote timbered regions. Such proposals require extensive clearing of intact vegetation and lead to the release of vast amounts of carbon through land clearing (and also of the fuelling of the heavy equipment that is required to do the clearing and road-making and the reshaping of the earth for foundations and a vast infrastructure of interconnecting wiring). In any other development sector an instant public scandal would ensue if 1200 hectares of land were cleared in Queensland. This is what is planned for Chalumbin. A birth to death carbon accounting for the man-made components of a wind turbine is hotly contested, involving as it does elaborately transformed materials, which themselves have to be initially mined with much energy, transported with much energy, and then lastly transformed using much energy. Does 'pay back' occur during the life time of a turbine? I am prepared to concede that it does, but no one really knows with any degree of certainty how many years this takes. However, if that turbine placement involves 1200 hectares of land clearing then the equation changes dramatically. At the 2021 Glasgow Climate submit Australia put forward the claim that the nation had reduced its greenhouse emissions by 20%. Where did this huge reduction come from? As is publicly known, a full 17% of this gain was achieved just through the slowing down of land clearing. Wouldn't it be an irony if wind-farm land clearing begins to destroy these hard-won gains. The issue is too important to ignore. What an embarrassment and set back it would be for the whole renewable energy sector. Therefore a proper form of scientifically rigorous Carbon Accounting needs to be included in any submissions for wind energy - firstly for the birth to death of the components used, and secondly for the effects of large scale land clearing to accomodate remote and mountainous wind farms. This would include the months of on-site work required by huge carbon-belching equipment required in first destroying and then shaping the land to requirements.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
460	.003	WTQWHA	3)Protection of the 'brand' of the Wet Tropics World Heritage Area: Since its inception the Wet tropics has evolved in public perception as a place with high "wilderness" values. This is despite the fact that in reality it is just a narrow and disjointed strip of rainforest, ring-fenced nearly at every point by human habitation and agriculture, from just north of Townsville to just south of Cooktown. But the spending-public, eager for wilderness experiences do not know that. To the spending-public the Wet Tropics is a Wilderness - and it is true the in many places one can feel a million miles from the industrial intrusions/benefits of present human existence. This is a unique experience. By ring-fencing the western escarpment of the Wet Tropics area south of Ravenshoe with easily visible turbines, the proposal has the very real potential to do great harm to the public perception of the Wet Tropics World Heritage Area (WTWHA). From the road and walking-track access into the WTWHA south of Ravenshoe, the Chalumbin wind farm turbines will be easily visible. The spending-public wanting a 'Wilderness' experience are unlikely to appreciate this intrusion. Why are we as a community visually degrading our most saleable environmental assets?		No	A Landscape and Visual Impact Assessment has been undertaken as part of the PER. In that assessment, it is noted that the experience of views is a hugely subjective issue, with some people appreciating wind farms and others not. This is a well documented phenomenon.
460	.004	Project viability	4)The perverse (distorted) outcomes of present economic incentives to rapidly establish wind energy projects: It is a given that if a society discovers the urgent need to push into new directions then government encouragement and subsidy is vitally important. However rapid unguided change underwritten by too much government enthusiasm can cause much harm. The Pink Bats scheme, to stave off the worst outcomes of the Global Financial Crisis of 2008/9, is a prime example. A fantastic concept to insulate houses while also maintaining the circular flow of money in the economy. But due to poor regulation and non-accountable cash incentives three people died, 130 houses burnt down and every single installation had to be rechecked for safety and compliance. It was a disaster in the end. Chalumbin is a prime example of a perverse economic outcome. The site is one of high ecological significance nestled in the shadow of a World Heritage Area. This industrial intrusion thus assaults the environment and the adjacent World Heritage area. But to add insult to injury, the site is not a particularly good wind site!!!!! It has only been chosen because there is an existing High Voltage Line right next to the proposal. What a gift to a foreign owned multi-national company! Freebies all the way and with no accountability!! Free high voltage lines. Freedom from the restraint and accountably of planning regulations via the Code 23 from the Queensland Government, allowing development in just about any area as long as there is some tenuous connection to renewable energy. Is it any wonder that instead of a scheme that captures the best wind resources we get a marginal scheme that will hardly ever produce its rated output and destroy some of Queensland's best environmental assets in the process. Better wind resources are available at other sites, but the proponent would have to pay extra for new high voltage lines and connections. It would be better that the public purse help pay for these connections if it must, than to lose these precious ecological assets now at risk.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
460	.005	Project viability	Examples of wind farms that better utilise their resources: Example 1: See Photo 1(below, P7) as an example of a good wind development – the Musselroe wind farm in far North East Tasmania. It is situated appropriately for the best wind yield on already cleared land, and a new transmission line was built from the Farm to the main grid. Situated on already cleared land ecological impacts were much lower across a range of flora and fauna. Perhaps the worst outcome is that about 2 Wedge Tail eagles die each year due to blade strike. At present this, while regrettable, is not severe enough to cause alarm. This site delivers an average wind speed of 9.1 metres per second (or 33Km/h) . Photo 2 (below, p.8) shows the power curve of each of the 56 in total, 3,000KW (3MW) turbines. Thus at average wind speed each would produce about 1,300KW (1.3MW). Photo 3 (below, p9) is a graph of average wind speed at Ravenshoe. Compare the Musselroe output with that of Chalumbin, where the average Ravenshoe wind speed of 3m/s would produce no power at all – only wind above the average would produce power. This low wind speed average should be no surprise. The western edges of the Wet Tropics are in a wind shadow from the prevailing coastal winds. That's why the site is not rainforest, as the wind cannot bring enough moisture to the area compared with the rainforest areas. If this is combined with the "doldrums" effect that a tropical pre-monsoon summer produces, then it is likely that Chalumbin will hardly produce any power at all for half the year. We are likely to say of Chalumbin in years to come: "we gave up so much public wealth in environmental and ecological terms, and yet got so little in return for this sacrifice which, in an overall sense, has made us all poorer". Pink bats which cause house fires and kill people; wind farms built at great ecological cost yet harvesting only marginal wind resources are the outcomes of a badly thought through incentive regimes of government.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
460	.006	Project viability	Example 2: The Kennedy Energy Park at Hughenden. https://kennedyenergypark.com.au/wp-content/uploads/2018/02/Financial_close_report.pdf Or put into a search engine : "Kennedy Energy Park report to part funders" and one will find a report to the Australian Renewable energy agency (ARENA). This Park is a combined wind/solar with smallish battery scheme. It is situated along the proposed HV "Copper String 2.0" line from Townsville to Mount Isa. It demonstrates a high degree of focus on the harvesting of available wind and solar resources. The following summary is from page 8 of the document: In summary, knowledge from the Kennedy project can serve as a useful test case for the state of QLD, and indeed for the entire National Electricity Market (NEM). It can demonstrate the complementary nature of a combined wind and solar project. It can also demonstrate the importance of getting an optimal mixture of wind and solar in order to reach a high renewable penetration rate while minimising grid storage requirements, which shall be critically important as QLD progresses towards its 50% renewable target. On the data presented it would seem logical to any rational person that Chalumbin is not a good wind site per sea and could better harvest renewable resources in a more westerly location in an upland corridor running approximately from Hughenden in the south to Georgetown in the North. Both centres are connected to Townsville by electricity lines. Hughenden will get an upgrade to 133KV as part of the CopperString 2.0 upgrades. Likewise the line from Georgetown to Townsville could also be enhanced. None of this is cheap, but the Kennedy Energy Park success tells us that it would be seem that the harvesting of both wind and solar is a better proposition, and one without the huge environmental cost that Chalumbin now demands.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
460	.007	Cumulative impacts	5)The cumulative effect of wind turbine harvesting all along the western edge of the Wet Tropics: Little known by the general public is that there are also well-advanced plans for even bigger wind farms to the south at Mt Fox and at Upper Burdekin along this western edge of the World Heritage estate. These, like Chalumbin will ring-fence that western boundary of the WTWHA and form a truely industrial scale assault on the values inherent in a World Heritage zone of protection. These other schemes, like Chalumbin, will likewise be in marginal wind harvesting territory. But with the perverse incentives like Code 23 operating as discussed above, the schemes will still seem financially attractive. If Chalumbin goes ahead it will not only clear 1200 hectares of tropical forest, it will set a precedent for the clearing of many thousands more hectares of irreplaceable tropical forest habitat further south. And all in the service of marginal harvest wind farms. Indeed a truly perverse outcome overall.		No	Section 5.5 of the PER provides a cumulative impact assessment that considers the cumulative impacts of a number of proposed and committed wind farm projects in the broader region - as required by the PER Guidelines. Construction footprints for wind farm projects typically occupy 3-4% of the total host property - this allows ongoing coexistence of land uses (generally agriculture/grazing and wind farm operations) and the ongoing operation of the wind farm typically does not render the site a "major industrial" land use, but rather an efficient use of resources and example of land use complementarity. The wind farm projects considered in the cumulative impact assessment and those mentioned vaguely by the submitter will form part of a strong push to decarbonise the Queensland and Australian economy, which in turn will have a bearing on halting the effects of climate change and associated impacts to the rainforests and Great Barrier Reef. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.

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460	.008	Project viability	6)The role that the pressure to ignore present environmental externalities plays in creating problems for future generations who must eventually pay the cost. The proponents of the Chalumbin wind project on the western edge of the WTWHA have acted rationally in minimising money costs and utilising perverse incentives in order to get the best financial returns. But in doing so they have maximised the ecological cost or "externality" of the project Should this proposal succeed other, even bigger, wind proposals are likely to follow the same least-cost economic logic, while maximising worst case environmental outcomes and cost. But as we know ecological cost is an economic externality to the process of producing goods and services, and as such is not counted in economic equations determining the price of those goods and services. But this externality cost does not disappear. Someone has to pay the real full price in the long run. It is shared across the community (local, regional, global as the case may be) who will eventually pay. The very existence of the problem of carbon (CO2) in the atmosphere is a great example showing that the externality-cost of pollution to the global commons, has never been factored into economic equations and price. Hence our climate crisis today and the money needed to mitigate it. This money input to fix the problem is 'yesterday's' invoice to 'today' for the cost of the externalities that were previously ignored. Wind farming in these heavily forested intact areas which buffer the Wet Tropics produces huge environmental externalities which will have to be paid for by future generations. In colloquial parlance, all we do by ignoring environmental cost is to kick the can down the road for someone else to pick up. The proponents's PER does not address any of the real issues of the proposed development. Its standard is of a low quality with the assumption that any outstanding issues can be fixed as the project proceeds. Well we know from bitter past experience that such good-faith promises cary no weight after approval is given. The proposal has a terrible cost to precious environmental assets. It conflicts with existing State mapping of significant bioregions. It is not integrated into existing state planning policy except via a tenuous, but still evolving, "Regional Energy Zone"concept. Its emergence has an add-hoc and on-the-run feel about it. It is wholly without merit as a renewable energy harvesting site, and as the Kennedy Energy Park attests to, there are better wind and solar harvesting sites available in less biologically dense regions. The proposal should be rejected.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.
461	.001	Adequacy of the PER	Submission in regard to Chalumbin Wind Farm Public Environment Report Friends of the Koalas Inc. is a voluntary conservation group based on Phillip Island, Victoria; one of our objectives is to comment on any development proposals that adversely impact koalas. Friends of the Koalas has become aware of the Chalumbin Wind Farm Public Environment Report. We have examined the 70+ attachments of the Public Environment Report - and found them to be unnecessarily voluminous and repetitive, while still not adequately advancing the case for the destruction of koala habitat.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The document is necessarily large due to the content requirements of the PER Guidelines. The Executive Summary at the front of the document provides the reader with a concise summary of the main body of the report.
461	.002	Koala	FRAGMENTATION One of the threats to the continued existence of the koala is fragmentation of habitat. The proposal, if proceeded with, through its reliance on the clearing of swathes of vegetation for wind farm infrastructure and roads is an example of FRAGMENTATION of habitat, and should be avoided. The local Northern koala population is deserving of a better fate than to have its habitat destroyed and fragmented, with all the consequences for that population.		No	The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy. This includes the impacts of fragmentation, which will be mitigated through the implementation of a detailed Rehabilitation Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated. Fauna crossing infrastructure will be installed across the widest access roads to facilitate animal movement while the rehabilitated vegetation is becoming established.
461	.003	Project alternatives	ALTERNATIVES The proponent has not adequately addressed the consideration of alternative wind farm locations, on already cleared land. This is a major deficiency of the proposal, and substantial grounds for refusal.		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project.
461	.004	Opposition to project	CONCLUSION For the reasons stated above, the proposed Chalumbin Wind Farm SHOULD NOT proceed.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
462	.001	MNES	The Public Environment Report (PER) for the Chalumbin Wind Farm has caused me great concern, and after considering the impacts, I don't believe that the impacts to Matters of National Environmental Significance are acceptable. I have provided a comprehensive list of recommendations for the proponent to ensure the Final PER has properly assessed impacts and provided better transparency. However, our assessment of this proposal is that the impacts to Matters of National Environmental Significance (MNES) are unacceptable. The project is poorly cited, development of this scale and impact does not have place in such close proximity to the Wet Tropics World Heritage Area (WTQWHA). The complete lack of consideration of biodiversity in the siting of the project is not acceptable. These impacts can not be avoided effectively or offset. Lastly, it is not a strategic necessity for the transition to renewable energy, and there is currently not enough capacity in the grid for the energy produced by the Wind Farm.		No	This position is noted. The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. The Project is not assessed as leading to the extinction of any species. Powerlink has confirmed that there is sufficient thermal capacity in the existing network to accept the full energy outputs from the Project without the need for duplication of any transmission lines.
462	.002		I support the comprehensive recommendations that have been submitted by the Cairns and Far North Environment Centre as listed below. The inclusion of these recommendations are essential for a PER that properly assesses impacts, and provides transparency. However, even with these recommendations included, it is unlikely that the impacts to MNES will be acceptable: **Note full submission lists matters from 1-40 as per submission 80.002-80.028.		No	Responses to this submission are as per the responses to 80.002-80.028.
445c	.001	Magnificent brood frog	I reserve the right to make more than one submission. With reference to EPBC 2021/8983 Chalumbin Wind Farm as a Ravenshoe community member and naturalist specialising in amphibians. The Magnificent Broodfrog is under considerable threat from the Chalumbin Wind Farm development. In the following paragraphs I would like to explain why this is so, by providing information about the species and its fragile habitat. It is habitat that will be irreparably damaged on the Chalumbin site from the construction of haulage roads, turbine pads, rock and earth batters, culverts and turbine noise. Considering all I know about this species and the lack of credible mitigation processes in the Draft Public Environment Report I do not consent to the construction of the Chalumbin Wind Farm.		No	Noted -this is providing context for further parts of the submission.
445c	.002	Magnificent brood frog	The Magnificent Broodfrog was first described in 1994 by Glen Ingram and Chris Corben of the Queensland Museum. The specimens described were from Millstream Falls (the type locality) and Ravenshoe, Queensland. Prior to this time specimens from far northern Queensland were regarded as isolated populations of Pseudophryne major (Ingram & Corben 1994). The name 'broodfrog' comes from the habit, common to many members of the genus, of male frogs constructing breeding chambers and looking after (brooding) the eggs.		No	Noted -this is providing context for further parts of the submission.
445c	.003	Magnificent brood frog	Distribution The Magnificent Broodfrog has a small and localised habitat, with a restricted distribution in open woodland in the Ravenshoe area on the western edge of the Wet Tropics, at altitudes over about 700 metres on Glen Gordon Volcanics, almost completely within the Wet Tropics bioregion. Since the 2000 recovery plan (McDonald et al 2000) further populations have been discovered, extending the range north to near Herberton and nearby Mt Baldy, Queensland. Several sites west of Paluma have extended the range about 160 km to the south (Zozaya & Hoskin 2015), located similarly in high altitude sclerophyll forest at the western edge of the Wet Tropics. Up until the discovery of further populations, the species was considered to only occur in a total area of about 50 hectares. Although it has not been calculated, the known area of occurrence may now have approximately doubled, taking into account the abovementioned discoveries along with further observations made during recent fauna surveys for the planned windfarms in the Ravenshoe area. Within its range it has only been recorded from suitable ephemeral soaks and streams that make up only a fraction of their range. Individual populations (nodes) cover small areas with the largest approximately 0.5ha in area, although most sites are less than 0.1ha (McDonald et al 2000). Most seepage areas support tussocks of the perennial Kangaroo Grass (Themeda triandra). Where cattle grazing has reduced this cover, the frogs have been located in leaf litter build-up within first order streams. Along the streams that it inhabits it has only been observed at specific nesting/calling sites along these watercourses during breeding activity. There can be a number of these sites in each population node and the calling site may vary from year to year within each node. This variation could be due to the relocation of leaf-litter build ups by large amounts or velocity of rain events. Frogs of either gender are rarely observed in the open being small (28mm), highly cryptic and almost always only able to be located from its calls. Thus, it is critically important during surveys for these frogs to correctly identify the call. Once the call is correctly identified, it then takes considerable patience to locate the frog itself. It is virtually impossible to locate the frogs unless they are calling; it is not known where they hide during the dry season and until very recently, females had never been observed. It is this restricted distribution that gives this species its conservation listing as Vulnerable under the EPBC Act and the NC Act. 1994 IUCN criteria indicate that the species is Endangered. The parameters used in determining this listing include small known distribution, fragmented populations, and low population density.		No	Noted -this is providing context for further parts of the submission.
445c	.004	Magnificent brood frog	Breeding Biology - it's all about the timing Male frogs call from about September to June depending on the characteristics of each wet season. It is only after sufficient rain has fallen to first soak the ground after it has dried out during the tropical 'dry season', creating seepage, then to create enough runoff to get the creeks flowing, that actual breeding takes place. This is believed to begin at the onset of the tropical 'wet' season usually December, lasting to about April. Further rain events provide water to maintain seepage and keep water in the streams, allowing tadpoles time to develop into frogs and for further breeding events to take place. Male frogs call at night and sometimes also on overcast days, from the vicinity of the specially constructed brooding chambers, at seepage sites near the edge of the creeks, attracting females to approach to lay their eggs that are then fertilised by the males. Males have also been observed calling from amongst rocks, rock crevices, above ground level on grass tussocks, on the stream bed, amongst leaf litter and Casuarina sp. pine needles. Rock crevices with seepage are also utilised as brood chambers. Male frogs mostly remain with or near to the developing eggs and are known to have multiple clutches under their care with clutches of various sizes having been observed (from 6-82 eggs). In the case of the larger clutches, eggs at various stages of development were noted, indicating that the eggs result from various mating events; whether this is from the same female or several females returning to the site to deposit eggs is unknown. The eggs take about 10 to 11 days to hatch, by which time the water levels in the creek are hopefully sufficient for the tadpoles to be able to enter the water to complete their development. The hatching of tadpoles from eggs may be staggered amongst a clutch; whether this is a result of a pause in egg development or a delay in hatching is unknown – this, along with having multiple clutches at egg sites may help to ensure that hatching of tadpoles can coincide with there being enough water in the creeks to support the survival of tadpoles. This 'bet-hedging' is described for another member of the genus, the Red-crowned Toadlet (Mahony & Thumm 2002, 2005) that has similar habits; we do not know if the same mechanisms are used by the Magnificent Broodfrog. From hatching to tadpoles metamorphosing into frogs takes approximately 37 days.		No	Noted -this is providing context for further parts of the submission.
445c	.005	Magnificent brood frog	Finding the frogs During optimum conditions, after sufficient rain, larger numbers of males can be heard, while at other times it seems that only males located next to more substantial pools of water continue to call. Thus, it is difficult to estimate the numbers of frogs within their habitat, requiring multiple visits to a site to ascertain populations or even confirm presence or absence. Results from visits to a particular site may range from nil frogs calling to up to about 40, depending on the amount of recent rain and the time since the last rain. Zozaya and Hoskin 2015 put it more succinctly - 'P. covacevichae has specific habitat requirements, making it highly localised, and appears to call only when conditions are suitable. Therefore, it is easily missed if surveys are not conducted at the right place and at the right time'. Even when there are large numbers of frogs calling it is difficult to estimate the numbers – during one survey carried out by 2 people along 200 metres of stream estimates for the total number of frogs heard were 35 and 60 respectively. Considering the difficulties inherent in finding Magnificent Broodfrogs, can the proponent justify 10 days survey effort for such an elusive species as sufficient to assess the status of the Magnificent Broodfrog over an area of 31,000 hectares?		No	As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Additional surveys in areas of potential habitat have been underway since late December 2022, are ongoing and will be reported on in the final PER. Surveys have naturally focused on areas of mapped habitat rather than the full extent of the host properties.
445c	.006	Magnificent brood frog	Threats Threats to amphibians in tropical regions are listed as habitat loss, invasive species, pollution, infectious diseases and climate change (Hero & Kriger 2009). The paper also presents the possibility of multiple factors working in concert to produce synergistic effects to exacerbate individual threats. Specific threats to the Magnificent Broodfrog in the Chalumbin project area and access routes are many and varied and considered below.		No	Noted -this is providing context for further parts of the submission.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
445c	.007	Magnificent brood frog	The most potent and insurmountable threat is that of disruption to the breeding process through habitat modification. Considering the critical timing of the tadpoles hatching, any modification to the delicate watercourses and seepages that the species inhabits may irreparably disrupt the process. Modification of the habitat through increased sedimentation will be highly detrimental to the fragile soaks and small watercourses necessary for the survival of frogs and particularly their reproductive strategies. Any excess sediment will block and/or divert water from the seepages and narrow watercourses making these uninhabitable for the frogs, damaging their egg chamber sites and pools for tadpoles. It is entirely likely that individual adult frogs may survive drastic changes to their environment but destroy their delicate reproductive processes. While the lifespan of the Magnificent Broodfrog is unknown, other members of the genus are known to live up to 13 years so it would take many years to determine the long-term survival of this species. Roads and cuttings can alter the water quality and hydrology of the frog habitat of seepage areas and first order streams. There have been recent observations of larger groups of frogs in disturbed habitat, for example along the cleared transmission lines. These groups consist of calling males but considering the specific breeding requirements it is unlikely that these groups are able to reproduce, at least at the disturbed site. These groups have likely resulted from tadpoles being washed down from the breeding sites upstream and metamorphosing into frogs. At best these might be considered as a 'bank' of frogs that may return to the specific breeding sites, but as with many things about the Magnificent Broodfrog we don't know how far they travel. It is also likely that the clearing and flattening of land under the transmission lines may have created a barrier, diverted flow from or caused excessive sedimentation in potential breeding sites downstream. One example of such a situation was observed along a bush track at Mt Pandanus – a group of frogs were calling at the edge of the track where water had accumulated. From here water here was diverted to flow down along the road, bypassing the creek below the road which was devoid of frogs (and water) despite their being suitable breeding habitat. Changes to the direction or velocity of water flow along the streams may also result in erosion of the seepages used for the egg chambers or cause the eggs or tadpoles to be washed away further downstream where the species does not occur and will not survive. Leaf-litter required for cover for the frogs may be washed away by increased water velocity in modified streams. How does the proponent propose to maintain current water flows and velocity of Magnificent Broodfrog habitat?		No	Areas of potential habitat modification, at areas at risk of potential sedimentation impacts, are identified in Appendix S of the PER. The risk of this potential sedimentation impact is highest during the construction phase of the Project. The methodology for determining areas of greater risk is provided in Appendix S. This methodology determines that there is approximately 39 ha of potential magnificent brood frog habitat within the Stage 1 Project area "at risk" from offsite sediment runoff and a further 26.4 ha in the Stage 2 Project area; however, the Project is not expected to impact these areas with appropriate installation of erosion and sediment control measures, as identified through the potential soil loss calculations contained within Appendix J of the PER. These soil loss calculations demonstrate that the rate of soil loss during construction and operation of the Project is not expected to be elevated above existing levels. Some hydrological flows may be interrupted during construction;however, this is expected to be short-term and the Project's stormwater design will seek to ensure that no adverse impacts (e.g. worsening of flows) will occur off the Project footprint. Specific measures for habitat protection will be identified in the MNES Management Plan and within the Rehabilitation Plan for the Project.
445c	.008	Magnificent brood frog	While some of these threats cannot be confirmed for the Magnificent Broodfrog, there have been published observations of the effects of siltation on breeding sites for the Red-crowned Toadlet, another broodfrog with similar habitat and breeding biology to the Magnificent Broodfrog. Like the Magnificent Broodfrog, Red-crowned Toadlets are habitat specialists. Red-crowned Toadlets show a strong geological association, occupy upper topographic areas with ephemeral watercourses of gentle gradients, occur predominantly in areas of higher precipitation and milder temperature regimes compared to averages representative of their region, are dependent on natural vegetation with a complex structure and show strong site fidelity (Stauber, 2006). There is a considerable amount of evidence that shows the Red-crowned Toadlet is a habitat specialist, relying on a combination of substrate and landform - siltation entering a nesting area has been seen to displace Red-crowned Toadlets from a preferred nest site. One site visited on eight occasions over a period of two years, and where the Red-crowned Toadlets were frequently observed to be present and to lay eggs under a particular rock, was no longer used for breeding, after large quantities of silt entered the site and surrounded the rock. A combination of observations made at the long-term study site and the 56 sites examined for habitat features indicated that disturbance to breeding sites or their hydrology is likely to significantly affect recruitment and hinder the recovery potential of populations of this frog by disturbing the finely balanced breeding strategy which has evolved. On two occasions the flow of water through the water course from heavy rain was so strong that all tadpoles were swept out of the ponds to be stranded in the leaf litter and die. Watercourses affected by stormwater adjacent to pristine watercourses supporting Red-crowned Toadlet populations are not used by this species. It therefore appears likely that the decline in water quality associated with stormwater leads to the loss of this species. It is suggested here that the change in flows created by the redirection of stormwater may affect levels of recruitment. Even slight alterations to the hydrology of a breeding site due to sealing of the catchment or diversion of flows within a development, are likely to alter the balance of conditions within which a terrestrial nest site will be successful (Thumm and Mahony 1999). Considering the above, I can see no possible mitigation actions that can prevent tiny seepages and streams less than about 40 centimetres wide from being adversely affected by 20- to 70-metre-wide roads. What specific actions are the proponents planning to protect broodfrog habitat from habitat modification?		No	Areas of potential habitat modification, at areas at risk of potential sedimentation impacts, are identified in Appendix S of the PER. The risk of this potential sedimentation impact is highest during the construction phase of the Project. The methodology for determining areas of greater risk is provided in Appendix S. This methodology determines that there is approximately 39 ha of potential magnificent brood frog habitat within the Stage 1 Project area "at risk" from offsite sediment runoff and a further 26.4 ha in the Stage 2 Project area; however, the Project is not expected to impact these areas with appropriate installation of erosion and sediment control measures, as identified through the potential soil loss calculations contained within Appendix J of the PER. These soil loss calculations demonstrate that the rate of soil loss during construction and operation of the Project is not expected to be elevated above existing levels. Some hydrological flows may be interrupted during construction;however, this is expected to be short-term and the Project's stormwater design will seek to ensure that no adverse impacts (e.g. worsening of flows) will occur off the Project footprint. Specific measures for habitat protection will be identified in the MNES Management Plan and within the Rehabilitation Plan for the Project.
445c	.009	Magnificent brood frog	Pathogens and weed seeds are spread by vehicles using the roads. If weeds are to be controlled with herbicides this may have detrimental effects on frog populations, especially glyphosate-based herbicides. How does the proponent intend to minimise the introduction of weed seeds into the site and then control any weed infestations that occur?		No	A preliminary Weed and Pest Management Plan has been prepared (Appendix F of the PER) and includes management of weed spread, management of pest infestations (including specific advice for amphibian chytrid fungus) and monitoring effectiveness of control measures. This plan will be further developed by CWF and/or the Construction Contractor prior to works commencing on site.
445c	.010	Magnificent brood frog	Ideally all vehicles entering the site should be thoroughly washed down each time they enter, effective immediately. Regrowth forest uses more water than old growth and therefore has the potential to reduce seepages near areas that have been cleared for development, even if regenerated. This would also contribute to general drying out of vegetation increasing the incidence and intensity of fire. Correct fire management is important to maintain the sclerophyll forest, i.e., low intensity burns to discourage rainforest regrowth. Thickening of vegetation from introduced plants or regrowth of rainforest due to inappropriate burning will also modify habitat in favour of both feral animals and incursive rainforest species – it has been noted at some sites where Magnificent Broodfrogs have been recorded in the past appear to have rainforest vegetation taking over and rainforest frog species now calling (Cophixalus australis) and the Magnificent Broodfrog absent. How does the proponent intend to manage fire on the site?		No	The following measures will be implemented to mitigate and manage impacts from bushfire risks as much as practicable during the construction phase: •As part of the construction planning a Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. •For "hot-work" activities, a risk assessment will be completed considering forecast weather, fire hazard ratings and site conditions. •Vehicles may not idle or be parked in areas of long grass. •Access tracks and fence lines will be used as firebreaks within the Project area and regularly maintained during construction and operation of the Project. •Smoking will not be permitted on site. •Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management.
445c	.011	Magnificent brood frog	The various locations for the Magnificent Broodfrog are widely separated so the loss of frogs at any one population node may be unable to be repopulated, especially if there is development nearby creating habitat modifications creating barriers to the frog's movement. We do not know if frogs travel from one site to another or whether their current distribution is a result of the contraction of suitable habitat over time due to climate variation or the effects of fire or cattle grazing. Will the proponent allow for habitat corridors between population nodes?		No	Additional surveys have been undertaken since the PER was released for public comment; these are ongoing and will be reported on in the final PER. A Species Management Plan will be developed for review and approval by DCCEEW prior to works commencing on site and this will detail the sympathetic design of culverts across access roads to maximise use-ability by the magnificent brood frog. The proponent agrees to allow for habitat corridors between population nodes and would welcome the opportunity to work with the submitter to ensure these corridors are effective.
445c	.012	Weeds and pests	Pathogens Numerous activities proposed for the development of the site carry the risk of importing weed seeds and pathogens not previously occurring in the area. Any vehicles entering the site have the potential to bring in pathogens via dust or mud on the vehicles and machinery. Equipment and materials brought in from elsewhere also have the potential to bring in pathogens. This could be especially serious in the case of materials being brought in from other countries. What quarantine arrangements or processes are in place for importation of equipment and materials? How does the proponent intend to prevent introduction of new pathogens to the property?		No	The Preliminary Weed and Pest Management Plan in Appendix F of the PER includes control measures for a number of pathogens which may present a risk to biodiversity within the Project area. The intention is for the Contractor to develop this plan further, which will include details around biosecurity controls at the port of Cairns, for example.
445c	.013	Magnificent brood frog	Pathogens can have devastating effects of frog populations. Infection by the chytrid fungus (Batrachochytrium dendrobatidis) resulting in chytridiomycosis is responsible for the declines of seven local species of frogs. The fungus only survives at low temperatures, with declines affecting high altitude stream-dwelling frogs. Three of the seven frog species are now regarded as extinct - the Sharp-snouted Day Frog (Taudactylus acutirostris) is listed as extinct, last seen 1997; Northern Tinker Frog (Taudactylus rheophilus) is listed as Critically Endangered, last seen 2000 and the Mountain Mistfrog (Litoria nyakalensis) last seen 1990. All high-altitude stream-dwelling frogs. Infection of amphibians with chytrid fungus resulting in chytridiomycosis is listed as a key threatening process under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) https://www.dcceew.gov.au/environment/biodiversity/threatened/key-threatening-processes/chytridiomycosis-due-to-amphibian-chytrid-fungus Has this recognised threatening process been considered by the proponent in relation to Magnificent Broodfrogs? Could the clearing of large areas on the site increase heat loss from the ground into the atmosphere creating localised cooler conditions that favour chytrid fungus?		No	Infection by chytrid fungus is identified as a potential threat to the magnificent brood frog in Section 4.5.2.2 of the PER. The Preliminary Weed and Pest (Appendix F of the PER) includes specific advice for amphibian chytrid fungus. This plan will be further developed by CWF and/or the Construction Contractor prior to works commencing on site.
445c	.014	Magnificent brood frog	Predators Presumably the Magnificent Broodfrog has predators but there are no records of predation on the species. Small-eyed Snakes (Cryptophis nigrescens), Rough-scaled Snakes (Tropidechis carinatus), Common Black Snake (Pseudechis porphyriacus) and the Keelback (Tropidonophis mairii) all share the habitat and are known predators of frogs. Feral Pigs (Sus scrofa) are also known predators of frogs. How will modification of the habitat affect populations of these native and introduced predators and resultant predation pressure on Magnificent Broodfrogs?		No	Feral pigs are already established across both host properties. The Project will implement a feral pig control program which will aim to remove this threatening process, to the benefit of the magnificent brood frog.
445c	.015	Magnificent brood frog	Introduced feral animals Cane Toads (Rhinella marina) actively select human-modified (degraded) habitats (Shine 2010), such as what will result at Chalumbin. Therefore, numbers of toads in the area will increase (they are currently very few in Magnificent Broodfrog habitat generally) and because both Cane Toads and Magnificent Broodfrogs are terrestrial amphibians, there is likely to be at least indirect interaction. Cane Toads attain high population densities and eat frequently, thus have the potential to cause declines in the abundance and diversity of invertebrates that they prey upon. Cane toads are known to consume terrestrial beetles, termites and ants; as previously mentioned we do not know what Magnificent Broodfrogs eat but if they have similar dietary requirements the increase in toad numbers may result in increased competition for food. The presence of Cane Toad tadpoles is known to have a deleterious effect on the development of native frog tadpoles. There are no studies on the interaction between toad tadpoles and Magnificent Broodfrog tadpoles. Cane Toads are known to usurp native vertebrates from their burrows. Although there is a large size difference between adult toads and Magnificent Broodfrogs, younger toads may utilise Magnificent Broodfrogs refuges and breeding chambers and larger toads may use these locations as a dry season refuge. Consumption of toad eggs and tadpoles is almost 100% fatal to native tadpoles; it is unknown whether Magnificent Broodfrog tadpoles are likely to feed on cane toad eggs tadpole carcasses (this habit is known amongst Australian tadpoles). Cane Toads carry parasites and pathogens that are not native to Australian frogs. While there is no evidence so far to suggest detrimental population level effects on native frogs from Cane Toads, once again we have no data on interactions between toads and Broodfrogs. Toads were likely to have already been present when Magnificent Broodfrogs were first known to science, so we don't know if there have been any past effects. How does the proponent intend to monitor and control Cane Toads on the site?		No	There are already established populations of cane toads across the full extent of both host properties. As effective control mechanisms for cane toads are yet to be identified, the proponent will not be attempting to monitor or control the species.
445c	.016	Magnificent brood frog	Feral Pigs can also find degraded habitats to their liking, with clearing of vegetation creating easier access to the soil. A small group (or even a single feral pig) could cause substantial damage to a small seepage or stream in a short space of time. Pig activity could wipe out a population of Broodfrogs overnight through their habit of rooting up damp soil. This activity carried out upstream can also root up and destroy vegetation, destabilising the soil, leading to higher rates of erosion and nutrient and sediment resuspension into the water column. (Waltham & Schaffer 2017). Pigs also directly consume frogs - one example is a record of over 150 freshwater frogs found in the stomach of a feral pig in Cape York (Australian Government 2017). How does the proponent intend to monitor and control Feral Pigs on the site?		No	Feral pigs are already established across both host properties. The Project will implement a feral pig control program which will aim to remove this threatening process, to the benefit of the magnificent brood frog. The details of this program will be developed by CWF and/or the construction contractor prior to works commencing on site.
445c	.017	Magnificent brood frog	Turbine noise and Infrasound In depth analysis between the interplay of turbine noise and infrasound on amphibian reproduction has yet to be demonstrated. This is a major issue not only on amphibian survival but for bird song and certain mammals that require sound to attract a mate such as koalas etc. It would seem obvious that for such a small frog the call from the male is critical for attracting a mate. The constant audible and inaudible infrasound would have to be a major hindrance to the survival of this species. There is no mention of this as a key threatening process in the Public Environmental Review (PER) document.		No	The PER does not list infrasound as a key threatening process for the magnificent brood frog as it has not been identified as such in the scientific literature. The proponent would be willing to fund research into this potential issue and to make the results publicly available.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
445c	.018	Magnificent brood frog	Protection for the Magnificent Broodfrog The vast bulk of the frog's distribution is located on unprotected land. At the time of the recovery plan this was 97%. This has barely changed since, with the bulk of the populations located on state forest or forest reserve. One of these areas has been recently gazetted as National Park; however only one of the 3 known sites for the Magnificent Broodfrog have been confirmed to be still in existence on the property. A small population by the roadside in Tumoulin Forest Reserve (recently gazetted national park) appears to no longer be in existence with no frogs sighted there since 2014 since simple maintenance of the narrow access road. There are two other sites on the outskirts of the town of Ravenshoe where Magnificent Broodfrogs appear to be no longer in existence, in one case the result of construction of a haul road to a quarry. Another population, at the Ravenshoe rubbish tip, has declined and they have not been observed there for some years. As pointed out in the recovery plan 'As the total population size is likely to be very small, all of the known habitat is considered to be critical for survival'. The recovery plan outlines conservation actions required to further study and protect this species. The actions proposed for implementation of the recovery plan should be completed in full prior to consideration of any further development in its habitat. The planned Chalumbin Windfarm as outlined in the Draft Public Environment Report is completely incompatible with the ongoing survival of Magnificent Broodfrog and its fragile habitat. If any of this development were to proceed, the only acceptable offset, considering the small distribution of the frog, would be to protect an area equal to the total area used for the development and any area affected by access roads. Such area should be set aside for the conservation of Magnificent Broodfrogs and the other flora and fauna that shares its habitat and converted to National Park.		No	Direct offsets have been proposed for the magnificent brood frog at a minimum ratio of 10ha per every 1ha of potential habitat impacted. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The locations and configurations of the proposed offset management areas have been revised since the PER was released for public comment and the new areas will be presented in the final PER. Taking on board feedback received from various stakeholders, the offset management areas in the far south and far north of Wooroora Station are no longer intersected by project infrastructure. Specific management arrangements for the offset areas are still to be finalised however the proponent has initiated discussions with a range of stakeholders to this effect, including with Bush Heritage Australia regarding the possibility of incorporating the offset areas into the neighbouring Yourka Nature Reserve.
445c	.019	Magnificent brood frog	A further sum should be set aside to identify, monitor and protect other Magnificent Broodfrog populations on private or state-owned land where multiple land uses are undertaken, in equal number to those sites known to support Magnificent Broodfrog on the project area. The only way to guarantee the survival of the Magnificent Broodfrog is halt all development above 2nd order streams. The sum offered to study the Magnificent Broodfrog should be provided prior to any development at the site and in no way be tied to the project proceeding.		No	The proponent has agreed to make a proportion of the voluntary $250,000 contribution to research available now, prior to and untied to the project receiving approval.
458	.001	Opposition to project	As per Submission 21		No	See response to Submission 21.
463	.001	Opposition to project	As per Submission 21		No	See response to Submission 21.
464	.001	Opposition to project	I hereby reserve the right to make more than one submission, due to the grave impact this project may have on the environment. Be advised, that I do not consent to the destruction of my country, to construct an industrial installation adjoining the Wet Tropics Rainforest. I do not consent to the displacement of native wildlife, and I do not consent to Ark Energy using precious underground water for this project. I do not consent for my country to be filled with cement, which will cause serious damage to the underground soil ecology.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
464	.002	Project proponent	Ark Energy, a subsidiary of Korea Zinc, has taken over from Epuron, (who have exhibited a poor record of caring for the environment), this is reason enough for a 1-billion-dollar environmental bond, to be imposed should this project be approved. Our environment should not be collateral damage for Korea Zinc whilst they use Chalumbin Wind Farm as an offset, for their green hydrogen industry.		No	The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning. At this stage, no financial bonds are required for this.
464	.003	Biodiversity general	No amount of money can compensate for the possible environmental destruction that this project may cause. Extinction of entire species cannot be reversed; the purpose of an environmental bond may go some way to ensuring that some care is taken. Operators undertaking wind farm construction require site specific environmental rules. These requirements need to be in force for the 'life of wind farm plan' that will include binding and enforceable milestones for rehabilitation.		No	There is currently no requirement for wind farm proponents to provide environmental bonds. The Contractor will be required to undertake all work on site in accordance with a detailed Construction Environmental Management Plan (including sub-plans such as Erosion and Sediment Control Plan, Traffic Management Plan, etc.). Species Management Plans will be prepared for individual MNES, for review and approval by DCCEEW prior to works commencing on site. In an industry-first, the proponent has prepared a Preliminary Rehabilitation Plan, the adherence to which is a condition of the State approval received in mid-2022 and is likely to also be a condition of approval under the EPBC Act.
464	.004	Alignment with government policy	A regulatory regime will need to be introduced to support 'life of wind farm plan' including: • a new definition of when land will be considered to be rehabilitated. • a definition of when land is considered available for rehabilitation. • the opportunity for public comment on the life of wind farm plan and any significant changes to the 'life of wind farm plan'; and • the life of the wind farm plan will identify the post-wind-farm land use for the land. These requirements should be the very minimum to ensure that catastrophic damage is not done to our environment by a foreign company.		No	The Project is being assessed against the legislation in effect at the time of the proposal.
445d	.001	MNES	The North Queensland Natural History Group Inc. has many concerns both with the proposal and with the draft PER. Fundamentally we believe that any industrial development of any area of remnant vegetation is unacceptable, let alone unique and unspoilt remnant habitat, adjacent to the World Heritage Wet Tropics and within a catchment flowing down to the World Heritage Great Barrier Reef. The cumulative effects of previous and planned wind farm development of high altitude sites bordering the western edge of the Wet Tropics will be severe on species restricted to this region and a huge loss of important remnant vegetation and the habitat it provides for a wide range of species.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
445d	.002	Biodiversity general	The PER itself describes an area rich in biodiversity; one could be excused for thinking that the document was recommending the properties for conservation listing rather than industrial development. We note the following with regard to the natural values of the site: • The project area contains a long list of Of Concern and Endangered regional ecosystems, bioregion corridors of State Ecological Significance and Vulnerable and Endangered plants and animals. The proposed Wind Farm will impact EPBC listed threatened species and potentially other listed species not yet recorded on the property. • Mapped remnant vegetation comprises 10588.9 hectares on Glen Gordon and 19785.9 hectares of Woowoora Station. • Essential Habitat for a range of threatened species makes up large portions of Woowoora and Glen Gordon Stations.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
445d	.003	Magnificent brood frog	Significant impacts will undoubtedly occur on the species which have localized populations, including the critically endangered plant Prostanthera clotteniana and the vulnerable Magnificent Brood-frog Pseudophryne covacevichae that could contribute to their extinction.		No	The Project has been designed to avoid all known populations of Prostanthera clotteniana hence impacts are not anticipated. The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
445d	.004	Mitigation and management measures	We believe the risks are too great and the control measures too inadequate to protect the integrity of the project site. The clearing and modification of this irreplaceable habitat will directly impact and reduce available habitat for threatened species. Further to this, the edge effects of erosion, sedimentation, changes to the hydrology and weed incursion will further degrade the site.		No	Your submission has been noted. A full impact Assessment is outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna; when these are unavoidable significant offsets are to be provided to mitigate these impacts.
445d	.005	Weeds and pests	We consider that the following Listed Key Threatening Processes apply or have the potential to apply to this project: • Competition and land degradation by rabbits - rabbits are present in the area and will be likely to increase in numbers in the modified habitat, as will Feral Pigs, Cats and Cane Toads • Invasion of northern Australia by Gamba Grass and other introduced grasses – modification of habitat favours introduced grasses and weeds • Loss of biodiversity and ecosystem integrity following invasion by the Yellow Crazy Ant (Anoplolepis gracilipes) – these are known to favour rainforest margins and are found nearby, in the Cairns area • Predation by feral cats • Predation, Habitat Degradation, Competition and Disease Transmission by Feral Pigs • The biological effects, including lethal toxic ingestion, caused by Cane Toads (Bufo marinus) • The reduction in the biodiversity of Australian native fauna and flora due to the red imported fire ant, Solenopsis invicta Weed invasion from roads and turbine areas. We note that the Weed management plan "is not intended for implementation purposes" (App. F: 3). Has a plan been considered to implement to reduce introduction of and control infestations of weeds?		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intended that these "Preliminary" documents act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept. Fine-scale weed mapping will be undertaken by the Contractor when developing these plans further. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary. The proponent has a Duty of Care towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval. Control measures relating to yellow crazy ants have been added to the Preliminary Weed and Pest Management Plan, the updated version of which is included in the final PER.
445d	.006	Magnificent brood frog	We consider that the following Listed Key Threatening Processes apply or have the potential to apply to this project: Infection of amphibians with chytrid fungus resulting in chytridiomycosis – this is particularly relevant to the Vulnerable Magnificent Broodfrog		No	A preliminary Weed and Pest Management Plan has been prepared (Appendix F of the PER) and includes management of weed spread, management of pest infestations (including specific advice for amphibian chytrid fungus) and monitoring effectiveness of control measures. This plan will be further developed by CWF and/or the Construction Contractor prior to works commencing on site.
445d	.007	Mitigation and management measures	Further issues: • Rehabilitation of the site will never restore such a complex ecosystem. • Is there any provision for independent monitoring of environmental standards? • Offsets are wholly inadequate		No	Independent monitoring will only be undertaken if DCCEEW include this as a condition of approval. Standard conditions of approval under the EPBC Act typically require the proponent to undertake monitoring and annual compliance audits, and to provide these reports to the Department within a defined timeframe. Compliance reports are also required to be published on the proponent's website. Independent audits may also be required if requested in writing by the Minister. Offsets have been developed in accordance with the Offset assessment guide provided by DCCEW and work is continuing on this.
465	.001	Opposition to project	As a resident of the Tablelands, I urge that the Chalumbin wind turbine project must not be approved because it will turn in conjunction with already existing and proposed developments of its kind into what Bob Katter MP has called an "industrial wasteland". With Windy Hill as the first turbine facility in Queensland, Mount Emerald as its first large scale operation, and more recently Kaban, devastating damage has already been done to this area. The Chalumbin turbine facility will turn the Ravenshoe area hostile to human habitation and induce irreparable damage to fauna and flora far beyond the immediate vicinity of the the projected site. Furthermore, the state agenda for 'renewables' will have extremely devastating effects for Central and North Queensland (most likely to occupy the ridges of the Great Dividing Range), setting the Chalumbin facility up as a most perilous precedent. My objections to the turbine facility are definitely beyond the remit of the the Public environment Report EPBC 2021/8983. I hold the objections within its realm will have been addressed exhaustively by other submissions, including false claims made by the project owner Ark.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
465	.002	Indigenous Cultural Heritage / Engagement	Firstly, although I am in no way entitled to speak on behalf of the Jirrbal people, the original inhabitants of this piece of land, I nevertheless have to express my concern how they have been dealt with within the process so far. Jirrbal people are simply lumped in as 'Traditional Owners' on the same level as wildlife as a domain of concern. In fact, their understanding of their connection to the land is not that of ownership but that they belong to the land. It is more than cynical to reduce this connection to the identification to some fragments of territory characterised as '"pockets", "story places", walking tracks and campsites, and "supermarket ecosystems". This attitude may well be within the parameters of the applicable legal framework, but it shows nevertheless the same ignorance and arrogance towards aborigines alive in this country for centuries. What this implies is denying these people their identity for the umpteenth time. How can their heritage be maintained? By visiting sacred sites underneath a forest of 250 metres high technology?		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.

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465	.002	Social impacts	Secondly, there has been so far zero consideration of the health damaging emissions from wind turbines in operation. Of course the 'visibility' of these emissions is less obvious than the effects of bulldozing remnant vegetation for humongous roads and towers. Electro magnetic frequencies as well as infra sound is damaging for human and animal life alike. Especially, electromagnetic radiation is known for extremely damaging effects on health, comparable to exposure to nuclear radiation (e.g., leukaemia). It would mean for the project owners as well as for the authorising government agents that they wilfully assault humans in the concerned area with the consequence of them suffering irreparable damage. Eventually, the Ravenshoe area will become uninhabitable due to the health risks emanating from the turbine facilities. The 'highest town in Queensland' will be depopulated, cease to exist. Moreover, should current turbine projects be endorsed, there will be five industrial sites within the southern part of the Tablelands (Chalumbin, Kaban, Windy Hill, High Road and Mt Emerald), amounting to 212 turbines within close proximity.		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
466	.001	Loss of carbon stores	The Chalumbin wind farm should not be approved because , this will be a case of environmental vandalism , the bulldozing of "Habitat" , this is an area I visit often, an area sequestrating CO2 at a phenomenal rate . Biological carbon sequestration happens when carbon is stored in the natural environment. This includes what are known as 'carbon sinks', such as forests, grasslands, soil, oceans and other bodies of water. This Wind farm - Excavation and removal of trees will show the tremendous damage in reducing the human "carbon footprint." There are two main types of carbon sequestration: biological and geological, the ecology damaged forever, deceased animals , the decimation of local indigenous land , that should show what government really think of indigenous affairs.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
466	.002	Biodiversity general	Where I work , we carry out wildlife surveys that take up a minimum of two people but usually four people, that took a minimum of two days and that barely scratches the surface . They mostly survey the trees that we have had as long term habitat , plus the tree boxes installed for Possums, Birdlife , Owls and each survey has to have a day as well as a night time survey done. Add to that , that my staff may monitor certain breeding trees , throughout the year .. This barely scratches the surface , we have 1112 trees on one campus alone , plus , we only climb some if these trees , at known trees that we find Gliders., they are extremely difficult to find .. Over the last 10 plus years , it made me realize how much wildlife live in trees that we actually never see , add reptiles and native bees to that list , we have snakes living in hollows near certain trees that we see on a regular basis. Now animal surveys is not our main job , it's a part of it but has increased with injured fauna rescue , relocating snakes on the rare occasion. When we have to bring down a tree for whatever reason , we survey the tree to make sure there is no wildlife , some trees will be reduced but we leave the habitat.. Now this all takes place on one University campus , I have two ,plus the Ecology Facility at Samford , which would be impossible to survey the thousands of trees. As this would take years to survey.		No	The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. There will be a team of fauna spotter catchers engaged throughout the vegetation clearing stage, to find and relocate wildlife.
466	.003	Survey effort	This Ark survey is a farce , I would like to see the organisation's named who conducted these surveys and contact those people to see how they actually managed over 2800 hectares and possibly over 70,000 trees ,surveying the tree canopies, creeks and waterways , not forgetting the ground dwellers and transient or migrating fauna. There would be Koalas , Cassowary , Wallabies , Gliders , Reptile and Amphibious wildlife. There is absolutely no way they could , no political gloss could convince me otherwise. I bush walk regularly , even near home , we have koala colonies , they're hard to find but there are plenty. The local Koala rescue are pretty busy , plus we lose maybe (only a guess) 6 to 12 a year when run over on local roads , especially when their usual trees are removed , they go searching and this puts Koalas at risk. Example: Council approved the removal of four gums next to a road for a walkway project locally , which should never have happened, well our well known Koala who was tagged and monitored by the group , was run-over last week. All this says to me , is ,that a massive team would be needed for a survey , thermal imaging cams , drones, climbers and people on the ground with telescopic cameras to scratch the surface of this farcical fauna survey by Ark . .		No	The organisation's name is clearly listed on the front page of the PER document. Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
466	.003	Emissions	"The QLD Government web page , the peak carbon accumulation rate is likely to be between 6 and 30 tonnes of carbon dioxide equivalents per hectare per year." How long would it take for a turbine to reach neutral CO2 ,after all the mining , transport , smelters and manufacture , earth moving , shipping and deforestation? ANSWER ? Is never ? Especially if they cut down forest and even if the Turbines manage to spin even for 50 percent of a year , that's hard to believe it will ever reach CO2 negative in their 20 year life span.. This should not go ahead, it's hypocrisy.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
467	.001	Opposition to project	As per Submission 21		No	Response as per Submission 21.
269b	.001	Opposition to project	In summary, as shown below: Minister, the PER does not properly or fully address ALL the issues required by the EPBC Act (1999) referral 2021/8983: - Government objectives will not be met, nor those of the community - No social licence - Report is flawed and objectives cannot be met; - Allows destruction of the Rainforest-Dry Rainforest-Wet Sclerophyll forest continuum; - Allows a cumulative impact on and adjacent to the Wet Tropic World Heritage Areas; - Destruction of the local environment; - Destruction of local animal/ bird and aquatic habitat; - Interference with migratory bird travel; - Does not meet the requirements of national environmental legislation; - Reduction or increased risk to identified threatened and endangered species; - No measurable benefit to the regional and local community either measured or assumed; - Damage [without any monetary restitution by proponent] of local roads and main roads; - No [or at best], a handful of jobs after completion of construction; - Reduction and impact on available accommodation in the region; - No improvement in local [within 50km] skills levels;		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
269b	.002	Opposition to project	If Kaban is used as a yardstick, which was approved on similar terms to that sought by Epuron/Ark/Korea Zinc, we can expect: - Sedimentation of waterways - Reduction in local housing - Minor spending in Ravenshoe - Traffic chaos - Broken roads - Industrial scale destruction - Raptor death - Interference with bird migration - Separation of local fauna paths - Poor revegetation - Security that prevents locals using normal raods and access points - Noise - Interference with visual amenity - No reference to the local community in process - Will not meet the community vision See Appendix No social licence Minister, DO NOT approve.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
468	.001	Social impacts	I reserve my right to make more than one submission The Chalumbin wind farm should not be approved because: The PER and WTG proposal do not meet the needs of the Ravenshoe community. Our Community Vision for 2021 [2011 base] The question that Epuron/ Ark Energy and Korea Zinc fail to ask is: Why did people come to/or stay in Ravenshoe or the Tablelands? In 2021, imagine the Ravenshoe community is friendly and safe for families who enjoy a holistic healthy lifestyle in a sustainable, non-polluted natural environment. We value our Indigenous heritage and celebrate cultural harmony. Community projects actively involve all generations from youth through to the elderly. Ravenshoe is a major service centre for outlying western towns and benefits from the mining sector in the district. The strong and diverse local economy comprises agriculture, thriving niche industries and eco-cultural tourism. Small businesses are well-supported and provide sufficient job opportunities. Education programs from public and private providers offer quality outcomes to pre-primary, primary, secondary and tertiary age-groups.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.

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468	.002	Social impacts	A TRC survey in 2011, forming the basis of a 10-year [2021 Plan]: Survey found that the most highly valued aspects of the Tablelands are: • The tropical highland climate • The rural, relaxed lifestyle • The rural, farm landscape • The natural environment, especially the Wet Tropics World Heritage Area • The farming economy and way of life • The small country town atmosphere • The sense of community AND: That it is a good place to raise children The most common response to the question: "What kind of place would you like the Tablelands to be in 20 years time?" was: "the same but with better infrastructure and services". Themes identified from the responses: In rank order: 1. A place very similar to how it is now 2. A place with better infrastructure and services 3. A self-sufficient, green, clean and sustainable place 4. A place with a prosperous, vibrant, rural economy 5. A place with a strong community spirit 6. A place that is not overdeveloped and not like Cairns 7. A place with good cultural, recreational and entertainment facilities and a lively arts culture, 8. A community that is more open-minded, equitable, diverse, cosmopolitan, progressive and inclusive 9. A place that keeps and attracts young people Keep your hands off our community assets		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.
469	.001	Opposition to project	To whom it may concern, The Chalumbin wind farm should not be approved because We need the trees that provide us with carbon dioxide to have clean air, if you can put your winds higher than the trees you have to protect Queensland wild since the thousands of animals live there and you destroy it, find a way to protect and create electricity without damaging another environment, it is about caring for the earth, not killing it by removing thousands of trees and depriving the inhabitants of the forests of their habitat. Do the right thing and think of a way to keep the earth clean with its natural resources and for the good of the world find a way.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
470	.001	Opposition to project	Note submission has been summarised to extract key points requiring response. I completely oppose the Chalumbin proposal to locate a windfarm (of nearly 100 wind turbines, including the recently reduced number) in this specific site in the of Woowoora and Glen Gordon Stations of Jirrbal Country. Never before have I seen a windfarm being proposed for such a high value natural ecosystem as that present at Chalumbin. My reasons for opposing this unacceptable proposal are multiple and are summarised in sections B and C below. This proposal needs to be rejected in its entirety. Based on my previous experiences with windfarms and knowledge of the current site, I anticipate that the windfarm would impact multiple threatened species with an unacceptable cumulative impact on populations and local ecology, and the Great Barrier Reef. There is no way of mitigating for these impacts.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
470	.002	Biodiversity general	Impacts to habitat integrity, corridors and sequences The proposed Chalumbin windfarm area comprises mainly non remnant including primary (old growth) stands of rainforest and wet sclerophyll habitat in a near-natural condition. This particular area provides natural corridors and seasonal habitat alternatives for a wide diversity of flora and fauna. It links two national parks – Tully Gorge and Koombooloomba National Parks. The applicant has only superficially quantified this biodiversity present in the target area. The proposed clearing of forest for the windfarm and its very wide access roads and associated works (including the over 100 m tall turbines) will have totally unacceptable impacts on to the biodiversity of the area. These high altitude, rainforest and wet sclerophyll mosaics are extremely important, and they are underrepresented in protected areas. Being adjacent to the Wet Tropics WHS, the area will be an integral part of the seasonal home range of many vertebrate species spanning mammals, birds, reptiles, amphibians and even fish. Impacts will extend beyond to the Great Barrier Reef WHS, which is already struggling from the impacts of on-land development. This suite of vertebrate fauna in the target area also includes many, specialist, high-altitude species, whose continued existence is dependent on quality high altitude habitat. The destructive development proposed for Chalumbin places the continued existence of these most sensitive species and their habitats at risk. There is no way of mitigating for the severe impacts that this development would bring. These impacts include extensive habitat loss, erosion, siltation of aquatic habitats, and migration barriers. The only way to maintain viable ecosystems in this area is to keep the habitats intact, in other words, no development.		No	The Chalumbin Project area comprises mainly remnant vegetation but the vast majority of this is dry open eucalypt woodland. There are minimal areas of rainforest vegetation (none of which are proposed to be cleared) and some areas of wet sclerophyll forest (which have been avoided to the extent practicable). The Project area does not sit between Tully Gorge and Koombooloomba National Parks, it is located to the west of these parks. It does not link these two parks. As described in Appendix O of the PER (Offsets Strategy), the proposed offset areas have been selected to incorporate large areas of wet sclerophyll forest. These areas will be legally protected in perpetuity; without these offset areas, none of the wet sclerophyll forests across the Project area would be protected.
470	.003	Biodiversity general	Impacts to specific threatened species Recent surveys of the proposed Chalumbin windfarm area (including the PER report) have documented a number of threatened species including IUCN Critically Endangered (CR), Endangered (EN) and Vulnerable (VU) species as follows: Greater Glider Petauroides volans (CR) Northern Quoll Dasyurus hallucatus (EN) Koala Phascoclarctos cinerea (EN) Red Goshawk Erythrotriorchis radiatus (EN) Sarus Crane Grus antigone (VU) Magnificent Brood Frog Pseudophryne covacevichae (VU, likely to be reclassified as EN) Threatened Shrub Prostanthera clotteniana (CR). It is likely that seasonal and targeted surveys by independent and qualified researchers will reveal several additional threatened species, e.g., Masked Owl (Tyto novaehollandiae) and quolls (Dasyurus spp.), so no there is definitive assessment of the total impact. The species that I have listed above would be affected by combinations of habitat loss (likely all species), habitat degradation (brood frog, Zozaya and Hoskin 2015), noise pollution (brood frog and quoll), introduction of chytrid and other pathogens (brood frog), improved access for invasive species such as Feral Cats, Feral Pigs, European Rabbits, Cane Toads and invasive ants (Wasmannia, Anoplolepis), potentially impacting all threatened species, plus collision impact (Sarus Crane). Other aerial species, including owls and migratory species, could be directly impacted as per research and concerns at other sites (e.g., Robbins Island, Tasmania). The long and fast-rotating blades proposed for Chalumbin, could be a death knell for bats and birds.		No	Seasonal and targeted surveys by independent and qualified researchers (i.e. the ecologists engaged to undertake the assessments reported in the PER) confirmed the presence of a number of listed threatened species as reported in the PER. This includes the masked owl, incidentally. The sarus crane is not a listed threatened or migratory species under the EPBC Act and therefore is not required to be assessed in the PER. Nonetheless, it has never been recorded in the Project area. Nor has the red goshawk, the northern quoll or the koala - all as described in the PER. The Project area is not located within the migratory pathway of the swift parrot and therefore is not going to result in the type of impacts predicted for the Robbins Island project. The PER provides a comprehensive assessment of potential impacts associated with the Chalumbin project, generally (Section 5) and in relation to each specific MNES (Section 8). Mitigation measures (including extensive rehabilitation of the site on completion of construction) and offsets have been described in the PER, in accordance with the requirements of the EPBC Act.
471	.001	Biodiversity general	To whom it may concern, The Chalumbin wind 'factory' should not be approved because, Chalumbin is a vast wilderness that is a refuge for native wildlife and native vegetation. Its remote location has ensured native wildlife and vegetation have been protected from human interference. It is an extremely valuable biodiverse area, and it would be a crime against the planet to touch it. The wind 'factory' proponent claims that 1700 acres are to be bulldozed and will then be restored to previous condition. This is entirely impossible. Remnant vegetation encompasses untouched biodiversity that has evolved over countless millennia. The suggestion mature forests can be bulldozed and returned to their former condition by seed or tube stock planting is farcical. Last year the federal government committed to modernise Australia's environment laws to reverse the decline of Australia's environment. The changes are to include protections for areas of national environmental significance. Chalumbin is an area of national environmental significance. The Chalumbin wind 'factory' should not be approved because, it will destroy more of Australia's precious natural environment, and a wind 'factory' will definitely not leave Chalumbin in a better state than it is for future generations.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
470	.004	Project location	The Chalumbin evaluation process has initially considered simply the physical nature of the site for generating wind power and the proximity to the southern transmission lines, i.e., value for money. I strongly recommend that the industry must consider other more important overlays for sustaining biodiversity before applying for a license to develop a site. These would include overlays for threatened habitats, habitat type, presence of threatened species, species migration pathways, cultural values and more, and criteria set for acceptability. The industry (under government direction) should focus its initial physical evaluations on sites that are non-remnant (developed) habitats that are also well-removed from high value habitats like this altitude site, and including wetlands and migration pathways. It is inappropriate and time-wasting that professional and amateur people alike are having to react and comment on seemingly endless applications like these that are proposed for highvalue natural sites . These high-value natural sites should never ever be considered as potential wind farm sites in the first place, and the Queensland Renewable Energy Zone scheme and federal government guidelines need to be revised accordingly.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
472	.001	Opposition to project	The Chalumbin wind farm should not be approved because it endangers our precious wildlife. and their habitat and ecosystem. We only have one Earth. I t should be saved at all costs. Please relocate this latest venture to somewhere else that's less of a threat to ecology.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
474	.001	Opposition to project	As per Submission 21		No	See response to Submission 21.
476	.001	Opposition to project	Having visited the area and having seen what a beautiful wilderness it is, we consider it a disgrace that this area is being proposed for a Wind Project. The associated land clearing and environmental destruction is unacceptable. Australia has an abundance of Arid areas where these projects could be built without conflict with this rich area of biodiversity and destruction of forests.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
478	.001	Project location	Note submission has been summarised to extract key points requiring response. The Chalumbin Wind Farm project establishes a damaging precedent by placing renewable energy projects in secondary and primary regrowth ecosystems. Renewable energy projects should not depend on the clearing of existing vegetation. The TWN acknowledge the need for renewable energy, but projects need to be in the right place given the large footprint of renewable energy projects, whether wind or solar.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
478	.002	Biodiversity general	Installation and maintenance of wind turbines require extensive road access. The biggest cause of loss of biodiversity is the fragmentation of habitat. Road networks are a major cause of the fragmentation of habitat.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
478	.003	Weeds and pests	Roads are vectors for feral and weed species.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area.
478	.004	Offsets	Offsets have not delivered on the promise of a net gain for biodiversity. The TWN supports Ark Energy's use of a significant net gain principle to guarantee a positive and successful outcome. Still, the TWN is unconvinced that this net gain will be delivered, given past failures with offsets.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
478	.005	Erosion and sedimentation	Erosion and sedimentation are significant issues for landscapes and coastal waters across Australia. The TWN does not consider that in this zone with rainfall of 4 metres or more, Ark Energy has sufficiently demonstrated an ability to eliminate the potential damage from the project.		No	The project has considered the rainfall and climate of the area and will stop works between January and March in response to increased seasonal risk of high intensity rainfall. Erosion and sediment issues are discussed in detail in the Sediment and Erosion and Management Plan contained in Appendix J of the PER .
478	.006	Project location	The project does not respect the necessary 5 km for the breeding of brolgas and sarus cranes. This lack of respect for essential breeding buffers reinforces a precedent in Western Victoria where transmission lines and turbine locations are within 5 km of nesting sites. Although the birds may be present and even nesting, the wind farm infrastructure prevents the young's successful breeding and maturation. Any turbines or infrastructure should not be located within 5km of breeding sites.		No	Brolgas and sarus cranes are not listed as either threatened or migratory under the EPBC Act. They are also not listed as threatened species under the Queensland NC Act. In two years of regular, seasonal bird surveys, neither species has been recorded within or flying over the Project area. The Sarus crane breeds primarily on remote pastoral land in northern Queensland but, along with brolgas, migrates 500km to spend the dry, non-breeding season on the Atherton Tablelands (Nevard et al 2019).
478	.007	N/A to PER matters	It is inappropriate as a matter of process for these submissions to be submitted through the developer of the project. That is a failure of governance.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
478	.008	Cumulative impacts	The project needs to be considered in the context of other proposed wind farms in the area and the cumulative impact of the projects collectively		No	Section 5.5 of the PER presents a qualitative assessment of cumulative impacts of the Project in conjunction with other existing or propose wind farms in the northern QREZ. There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
478	.008	Construction impacts	Installation of the wind turbines and the ongoing maintenance will damage water flows over the landscape and waterways.		No	The identification of waterways and watercourses across the site has been undertaken to assess the requirement for crossings. The installation of crossing of watercourses or waterways will be applied for under Queensland State legislation including the Water Act 2000 and Fisheries Act 1994. As part of the application and assessment process, appropriate management and mitigation measures must be demonstrated to avoid impacts to watercourses and waterways.
480	.001	Biodiversity general	Note submission has been summarised to extract key points requiring response.	The environmental impacts of this project are substantial, and will have a significantly detrimental impacf on native flora, fauna, waterways and their ecosystems. The clearing of pure and undisturbed sclerophyll forest at Chalumbin will also #fect the neighbouring properties; including a Wet Tropics Heritage Listed site in the Tully Falls National Park, and Yourka Nature Reserve, managed by Bush Heritage Australia.	No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
480	.002	Survey effort	Sclerophyll forests are home to hundreds of diverse species, so it is curious that no species of interest were observed in the project area, although there were numerous sightings surrounding the 78,000ha project land parcel. The Yourka Nature Reserve and Woororora Station (the grazing property on which the bulk of the wind turbines are to be located), are essentially the same forest and preferred haunt of several compromised species including, but by no means limited to the Magnificent Brood Frog, Red Goshawk and Koala (a11 sighted at Yourka). It is therefore within reason to suggest that whatever has been recorded at Yourka is highly likely to be found on Woororora also. If living in the tropics has taught us anything, it is that wildlife is incredibly difficult to see in its natural habitat.		No	The magnificent brood frog has never been sighted on Yourka Station, as confirmed through direct discussions with the station manager and members of the Magnificent Brood Frog Working Group. Bush Heritage Australia have also confirmed that the red goshawk has not been sighted there in over a decade (which is consistent with the scientific community's opinion that the species' range has contracted northwards). The koala has been sighted twice in a decade on Yourka Station and the PER has assumed that the species is also present in the Project area.
480	.003	Erosion and sedimentation	The clearing of vegetated land, especially at elevated positions such as Chalumbin Hill (804 metres above sea level), in high rainfall areas (average yearly fall of 2710mr1, will have a significant impact on surrounding waterways. The project site is within the Herbert River Catchment. This catchment as stated on the Terrain website (terrain.org.au) is 'a top-three priority catchment for seiliment reduction in Queenslnnd's Great Barrier Reef zone'. There is substantial funding from the Australian Government's Reef Trust IV programme helping graziers and landholders manage erosion on their properties. Any clearing at the Chalumbin site will hinder this programme and delay further the reduction of sediment runoff to the Great Barrier Reef and the Hinchinbrook Channel via Lucinda.		No	The project is committed to assisting to achieve the objectives in the State government Reef 2050 Water Quality Improvement Plan. The project will stabilise gully erosion directly impacted by the project and utilise land management strategies in line with the water quality objectives in the Reef WQIP. The construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP.
480	.004	Erosion and sedimentation	Sediment runoff into Blunder Creek is of particular concern for the platypi which are known to inhabit its waters. Surely it is best practice to protect and preserve these habitats whilst we are able, thus preventing the addition of any species to the critically endangered or even extinct index.		No	Water quality and protection of aquatic values are key issues considered in the PER and the construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP. Baseline water quality and soil erosion monitoring is also presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER).
480	.005	Erosion and sedimentation	Not only is the cleanliness of the Herbert River and its tributaries vital to the survival of flora, fauna and aquatic natives, it is essential to tlre livelihoods of numerous graziers, farmers and land holders, who utilise this system to water stock and crops, as well as for their own drinking water and general household use.		No	Water quality is a key issue considered in the PER and the construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP. Baseline water quality and soil erosion monitoring is also presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER).
480	.006	Social impacts	There are small scale tourism and camping operators within the vicinity of Chalumbin which will be impacted by this wind farm. Most visitors come to appreciate the area's natural beauty and tranquillity. Disruption to the landscape, pollution associated with all construction sites and use of heavy machinery, noise, increased trafic, oil and fuel spillages, heavy metal and plastic contamination, and general waste are all impurities and directly affect the appeal of this area. The threat to business is an important but largely neglected, aspect of all major development projects such as this, as these properties and small businesses provide full-time and seasonal employment in a low socioeconomic region.		No	Multiple studies nationally and internationally have shown that wind farms can boost tourism as they provide an additional point of interest for tourists.
480	.007	N/A to PER matters	The rapid rate which the proposed wind farm seems to have progresses through the state and federal approval process has much of the community very sceptical of the thoroughness and due diligence of firstly Epuron, and now Ark Energy's sincerity in all aspects of this scheme. Minimal time and effort made spotting threatened species, minimal effort to keep the public informed, lack of consultation with adjoining land holders and choice of an obviously unsuitable site has people questioning the transparency and integnry of this venture.		No	The surveys undertaken for the Project have been in accordance with Commonwealth and Queensland guidelines and requirements to the greatest practicable and safe extent. These surveys are listed in Table 4-3 of the PER. The assessment of cumulative impacts and the proposed offsets were considered by DCCEEW to respond appropriately to the PER Guidelines and therefore meet the adequacy requirement. The structure and content of the PER specifically responds to the PER Guidelines.
480	.008	Project location	Ark Energy claim the Chalumbin wind farm will generate 'enough clean energy to power 350,000 homcs.'Why then is such a large-scale plant proposed for such a low-denslty area? It would make more sense to locate this project elsewhere, as there are already two windfarms within 15 kilometres of Ravenshoe. Perhaps there is more development planned for the district that the community is unaware of.		No	The PER states that the Project will generate enough renewable energy to power 320,000 homes. This is based on a standard metric and is not a reflection of the need for power to 320,000 homes in the vicinity of the Project. The electricity generated by the Project will be transferred to the National Electricity Grid where it will be used by National Electricity Market participants and/or by entities with a power purchase agreement for the generated electricity. The Project is proposed in this location due to the reasons outlined in Section 1.5 and 3.0 of the PER.
480	.009	Loss of carbon stores	The hypocrisy of this enterprise is astounding. Destroying green space to create green energy. How is this justified? In a world whole-heartedly concerned with reducing carbon, carbon emissions, and our carbon footprinf why are we clearing trees which acfually store carbon; and prompting erosion when carbon is also stored in soil? Land holders are barely able to clear a fence line to protect their properties from fire and pests or to maintain infrastructure, yet green projects remain seemingly exempt.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.

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480	.010	Decomissioning impacts	We are all called to reduce our household waste by way of recycling and using recycled products thereby reducing landfil) and yet wind turbine blades are made of fibreglass which is non-recyclable, and buried at the end of their operational li[e.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
480	.011	Emissions	Turbines require synthetic oil for lubrication, and as per maintenance schedule, must be replaced every twelve months. The oil is crude based, and sourced overseas along with many components of wind turbines. Heavy machinery required for the construction of the wind farm and batching plants will rely on fossil fuels, all of this contributing to the carbon footprint of the Chalumbin scheme.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
480	.012	Decomissioning impacts	Wind turbines have a relatively short life span of twenty-five years, after which they are either refurbished, repowered with new infrastructure or decommissioned. Regardless of what happens at the end of Chalumbin's operational life, there will be more environmental disruption to the revegetated landscape; and in the case of repowering and decommissioning, more landfill and toxic leachate. Protecting the environment and going green is supposedly achieved by implementing sustainable practices and materials, and is clearly not the case here.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
480	.013	Opposition to project	The EPBC Act - Environmental Assessment Process was established to protect our endemic vegetation and wildlife itt "mntters of national enaironmental significance" . Sadly, this act seefirs to have been forgotten in Australia as politics, money and the rush for renewable energies overrides our duty of care to the environment. For all of the above reasons, I urge you to reconsider and reject the application to build a wind farm at Chalumbin.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
481	.001	Decomissioning impacts	Why we should NOT have windmills! 1. Firstly, we should not have windmills because they are not sustainable and are not ECO friendly. 2. Secondly, most of the materials used to build windmills are not biodegradable, so il a windmill falls down the materials will not dissolve into the ground. Also, it costs a lot of money to move the materials away from the site.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
481	.002	Opposition to project	3. Last but not least, we don't want big white poles in the middle of our backyard, we wont nature, beautiful gum trees lovely birds flying around, peace and quiet. Note drawing attached states "No windmills and that's final"		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
482	.001	Project design	❖ The developer has continually stated that the development has been reduced from 200 turbines due to community input. This is a lie. Ninety-five was the number of turbines submitted in the initial documentation to both state and federal authorities. The EPBC Act referral signed 08/07/21 which started the federal process states: "The project is a proposed wind farm that consists of up to 95 wind turbine generators". ^2 ❖ In late 2021 the number was reduced from 95 to 94 turbines. On the 5th Nov 2022, one day before the draft PER was released it was announced it had been further reduced to 86. A reduction of just nine in total not the 114 claimed. The developer has waged a media campaign on claiming the halving of the development on environmental grounds. This is a part of a deliberate campaign to deceive the public. This is repeated in the draft PER, and the developer needs to be called to account for this conduct. ❖ Section 2.4 (page 58) of the draft PER is the rare exception where the number of turbines was honestly represented in the report: "Reduction in proposed wind turbines from 95 to 86." ❖ This is contradicted in false claims made throughout the document, including notably page 21: "This commitment to ecologically sustainable development practice has resulted in tangible and significant changes to the Project, the most notable of which involves a reduction in proposed wind turbines within the Project area from 200 to 86." Put quite simply, this is a lie.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations. Section 2.4 of the PER was comparing the previously-proposed layout (i.e. proposed at the time of the EPBC Act Referral) to that which is proposed at this point in the EPBC Act assessment process.
482	.002	Social impacts	Employment post construction ❖ In the EPBC Act referral the developer stated that "Approximately 10-15 full-time jobs will be generated during operation typically 10 technicians, a project manager, administration and support roles."^3 ❖ The lack of employment post-construction generated significant community anger. As a result, the developer quickly changed the number to 15-30. Doing the math the low-end estimate equates to the same total of 15 positions outlined originally. The rest is just spin. Also, nowhere does it state these jobs will be concurrent or throughout the life of the development. The 10 technicians will require specialist skills and it is highly unlikely these jobs will be filled from within the local community.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.
482	.003	Rehabilitation	The EPBC Act Referral states (as per the MNES Report), that remnant vegetation accounts for 95% of the development area. ^4 "Rehabilitate" can be defined as to 'return something, especially an environmental feature to its former condition.'^5 ❖ The claim that 1667.22 acres (674.4 ha), of bulldozed land can be 'rehabilitated' does not stack up. The impression the developer is trying to create is that the land will be bulldozed then restored to previous condition. This is not going to happen and is entirely impossible. The suggestion that mature forests can be bulldozed and returned to their former condition by seed or tube stock planting is preposterous. By the time the site is decommissioned in 30 years, the area will again be bulldozed to remove the turbines and associated infrastructure. ❖ Terrain advise a cost of $60000 - $70000 per ha ^6 for revegetation and maintenance for 5 years. That equates to $47 million dollars to revegetate the area. Note the word revegetate not 'rehabilitate'. ❖ Is it believable that the developer is going to outlay this money? How long will this revegetation take? Does the capacity even exist for this scale of revegetation to be carried out in the local area? ❖ The developer states 'At the end of the initial operations phase, infrastructure may be repowered with new equipment.. or decommissioned, with the site rehabilitated to facilitate continuation of the current land use (agriculture) or an alternative land use'. [draft PER Executive Summary Description of the action page 16-17]. ❖ Attention must be paid to the above wording 'rehabilitated... for agriculture or an alternative use'. Cleared land and pastureland meet this definition. By using this wording, the developer creates a monumental loophole justifying the site being left as cleared land post-operation period. Likewise, the change of use means the site has the potential to be used for mining and other industries upon decommissioning. It is known that significant rare earths are highly likely to be found on and around the site of the development. ^7 Given Korea Zinc's status as mining behemoth, it is entirely likely that the mineral wealth of this area underlines the value of this area to the developer.		No	Refer to section 5.4 and the PER for potential decommissioning impacts - Impacts during decommissioning are likely to relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning. Terrain's cost of revegetation is a relatively intensive approach and hence the high cost. The Project will be use a combined approach using strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A low cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. From Section 11.1.2 of the PER: Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects', a voluntary commitment to engage respectfully with communities, be sensitive to environmental and cultural values, and make a positive contribution to the regions in which it operates. A Charter commitment includes: - We will demonstrate responsible land stewardship over the life of the project and welcome opportunities to enhance the ecological, cultural and/or agricultural value of the land.
482	.004	Traffic and transport	Alternative optional site entrance (page 49) ❖ The developer has faced fierce community backlash from residents in Wooroora road over the impacts the heavy haulage and construction vehicles will have on their amenity. The developer has only stated the 'consideration' ^8 and 'investigation' of an alternate route. There is no commitment nor any obligation within the draft PER to make use of the alternate route.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
482	.005	Construction impacts	Temporary Concrete Batching Plants ❖ This is a critical issue. 68,800m3 of concrete is required for the foundations for the turbines alone ^9. This is in addition to the considerable amount required for the other infrastructure outlined above. Where will the water for these batching plants come from? This is not detailed in the draft PER, nor has it been disclosed in any previous state or federal development submission. It is likely that the developer plans to extract water from the Herbert River catchment – most likely Blunder Creek. This cannot be allowed to occur. ❖ Similarly, water for other construction related purposes such as dust mitigation etc., must not be taken from local waterways.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
482	.006	Magnificent brood frog	It must be made a condition of development approval that no water is to be taken from local waterways nor aquifers given their vital role in the breeding cycle of the Magnificent Brood Frog (discussed elsewhere in this submission).		No	The source of construction water has not yet been identified. Development approval under State legislation has already been received and is available for public view from the SARA website. The proponent cannot really comment further on a requested condition of project approval as these are prepared by the Regulator rather than the proponent themselves.
482	.007	Adequacy of the PER	Detailed reports covering all the MNES listed species that inhabit this (Blunder Creek) and other waterways within the development area (as required under legislation), have been omitted from the draft PER. Endangered species of flora and fauna are found in this creek*, and the removal of water from this catchment will have a catastrophic impact that has not been properly assessed. (*Refer to page 24 of this submission RE: endangered fauna species omitted from this report).		No	The PER will be updated to include the Lake Eacham rainbowfish (Melanotaenia eachamensis) and address the potential impacts on this species from the Project. It is worth noting that the mapped distribution of this species (per DCCEEW's SPRAT database) does not overlap with the Project area, and there are no records of this species being within the Project area in any publicly-available databases. The 1997 CSIRO paper is the only reference of this species occurring in Blunder Creek so it is hardly surprising that it was overlooked. The majority of infrastructure associated with the Project will avoid direct and indirect impacts to Blunder Creek as per Section 4.1.5 of the PER. The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site.
482	.008	Social impacts	The stated construction workforce of 350 people cannot be housed in the area with existing accommodation. Period. The only way that accommodation can be made available is through displacing locals. The developer offering inflated rents is the inevitable outcome. The developer has only offered to 'consider' and to 'investigate' the construction of an accommodation camp in the PER. There are no details provided. There is not even a site identified. If it was going to be built the location and size of the compound certainly would have been included in the draft PER. It wasn't because it is simply an offer 'to consider' that looks good in submissions to approval authorities. It has been 18 months since the EPBC Act referral was lodged. In all that time no arrangements or commitments have been made to construct a compound.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
482	.009	Project alternatives	By no reasonable standard, could the 'No Action' option be described as having been assessed objectively, and therefore is not compliant with PER guidelines. ❖ A single paragraph underplays the benefits of this alternative. This is in stark contrast to the half page of 'lost opportunities' listed by the developer. ❖ A cost-benefit analysis has not been carried out in regard to this alternative. ❖ Significant benefits that counteract the stated 'lost opportunities' have been omitted. Example: 'Lost opportunity to access the land and resultant loss of annual benefits to landholders in relation to commercial agreements to sub-lease the land for the proposed wind farm.' Landholders of just two properties will benefit in the stated manner. By contrast, a large number or residents will be significantly impacted, and their loss of amenity negatively affected by the development. This has been completely omitted		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication.
482	.010	Magnificent brood frog	The catastrophic impacts Chalumbin will impose on this species are such that all known and potential habitats MUST be avoided. In the absence of this being 'practicable' as the developer claims, the development must be deemed manifestly unsuitable for this location. As such, the development must not be allowed to proceed, and approval should not be granted.		No	This appears to be directed at the Regulator rather than the proponent, and hence a response cannot really be prepared.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
482	.011	Wet sclerophyll forest impacts	In light of significant concerns raised by the Wet Tropics Management authority, and in consideration to preserving both habitat and wildlife corridors, as well as the huge value of Wet Sclerophyll forest as a buffer against bushfire, all areas of Wet Sclerophyll forest must be protected. In the absence of the avoidance of these areas, development approval should not be granted.		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
482	.012	Project alternatives	Alternatives that have not been assessed [3.0-3.4]: 1. Nuclear Although legislation including the EPBC Act currently prohibits the nuclear option, there is an increased awareness taking place about the advantages of this option in achieving net zero emissions. Namely, a substantially reduced construction footprint, 24/7 baseload power generation, and high output capacity. 2. Offshore wind developments outside of the Great Barrier Reef WHA 3. Solar on existing cleared pastureland Solar installations on the extensive existing cleared land around the Atherton Tablelands, (and elsewhere), is a potential feasible renewable energy option that has not been assessed. Why? 4. Wind Turbine developments beyond the Cairns-Townsville (Northern QREZ) region There are exceptional wind resources around Bowen QLD, and the wider Gladstone and Rockhampton regions, and there are ample potential locations available without significant impacts to MNES. (Extensive grassland areas north of Bowen and outside of Gladstone & Rockhampton population centres). Wind turbine developments in these regions, could have presented viable alternatives. A comparison between these areas and Ravenshoe shows the average wind speed on a month-to-month basis can be over double that of Ravenshoe* ^10 [*Note: comparison based at wind speed 10m above ground level]. Why were areas outside the Nth QREZ excluded as alterative locations? It is of note that coal in central QLD was listed as a feasible alternative, yet other wind turbine locations were ignored? Why? Could it be because it is not in the financial interests of the developer to show that viable, perhaps better locations exist for this development, without the biodiversity and WTWHA impacts? ❖ The Guidelines for the Content of a draft PER – Chalumbin Wind Farm (page 5) states: 'Describe any feasible alternatives.' Why were all feasible alternatives (including option 2-4) not considered? By failing to outline all feasible alternatives, the draft PER is in breach of the Guidelines. ❖ Furthermore, by failing to comply with being 'objective' in the assessment, the developer has also breached the objectivity requirement detailed in these Guidelines. In addition the guidelines (page 2) state: "The level of analysis and detail in the PER should reflect the level of significance of the expected impacts on the environment." Clearly, the omissions mean that this has not occurred.		No	Nuclear energy projects are not permitted under the EPBC Act (s140A). Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. It is contended that there are numerous proposed projects in the vicinity of the area described by the submitter; however, these areas are not characterised by extensive grassland communities as suggested.
482	.013	Erosion and sedimentation	❖ Blunder Creek is the largest waterway within the development area. ❖ There will be erosion, sedimentation and increased turbidity caused by this development. ❖ As acknowledged in the draft PER: • Water from Blunder Creek feeds into the Herbert River which ultimately discharges approx. 5.081 trillion litres annually into the coral sea near Lucinda. • The Herbert River is a known contributor of dissolved inorganic nitrogen and fine sediments being released into the Great Barrier Reef Marine Park. ❖ Sediment, siltation, pollutants, and other upstream impacts at Chalumbin will have a flow on effect downstream, with the potential to ultimately impact the GBRMP. Page 8 of 59 ❖ The developer is aware there is no way they can prevent significant levels of sedimentation and runoff from entering waterways during the wet season. They are also aware that as flooding prevented survey work from being carried out, it will also severely impact on construction. As such Ark Energy state they will not construct in the wettest months. This is framed as being environmentally conscious when in reality it is because the logistics of doing so would not be feasible. ❖ However, this undertaking does not solve the problem. There will of course, be areas of disturbances upon the commencement of construction that will be exposed in the wet season. This WILL cause a significant and potentially catastrophic sediment load entering the headwaters to the Great Barrier Reef.		No	The construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Progressive rehabilitation will be undertaken during the construction phase of the project. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Relevant standards will be used in the development of the monitoring program and a specific focus will be on the potential fine sediment transport that could impact on the GBR. The project is unlikely to significantly change the dissolved inorganic nitrogen levels in waterways.
482	.014	Mitigation and management measures	❖ Water used for dust mitigation and other construction related purposes, in addition to concrete batching, must not be drawn from local waterways. This must be made a condition of approval.		No	The point source of the construction water has yet to be decided.
482	.015	Contamination	❖ Hydraulic fluid, oils and contaminants are at risk of being washed into the waterways.		No	It is noted that controls are necessary to ensure that any spill of hydrocarbons is managed appropriately so as to avoid and minimise potential impacts to the environment. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8.
482	.016	Survey effort	❖ Extremely limited hours were spent on surveys. ❖ Survey work for the aquatic plant, North Queensland lace is listed in table 4.3 page 101 draft PER as being conducted over a 7-day period in Feb 2022. The draft PER page 105 states 6 days, page 125 of the same document states 5 days. If the duration of survey work cannot even be accurately represented, what hope is there that the survey work undertaken was of the standard required for the assessment of MNES listed species?! ❖ Regardless, this is a shockingly short duration to survey this species. Rainfall in Feb 2021 was 293mm. Jan 2022 was 289mm (table 4-4). It is exceptionally difficult (near impossible) to spot North Queensland Lace plant in areas of turbidity, particularly during periods of increased water levels, following heavy rain. ^11		No	There are no formal survey guidelines for this species. Surveys were undertaken during the flowering season in order to maximise chances of positive identification. From the author's own experience, underwater viewing is not absolutely necessary for observation. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
482	.017	Survey effort	❖ Targeted Magnificent Brood Frog Surveys were conducted over just 4 days in Dec and 4 days in Jan (Table 4-3 draft Per page 101). This is an astonishingly short duration for this elusive species, with a large area of potential habitat. It is worth noting that the Magnificent Brood Frog Working Group were denied return access to the site by the property owner.^12 ❖ This prohibition significantly undermined the survey work. The decision to deny access can only be viewed as an attempt by the land owner to circumvent due process. This decision was made in order to reduce the likelihood of the Magnificent Brood Frog becoming an impediment to their financial windfall.		No	As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Additional surveys in areas of potential habitat have been underway since late December 2022, are ongoing and will be reported on in the final PER. Surveys have naturally focused on mapped areas of potential habitat within the Project area, rather than the full extent of both host properties. To be clear, the landowner denying access to the magnificent brood frog working group is nothing to do with the project; in fact, the Project team has invited members of the working group to participate in Project field surveys and shared all survey data.
482	.018	Survey effort	❖ Method outlined is of insufficient duration to accurately identify Microbat species over such a large area.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. It is worth noting that BBUS (Bird and Bat utilisation surveys are ongoing).
482	.018	Survey effort	❖ The integrity of the spot lighting survey method utilised is manifestly. It was not fit for the intended purpose of enabling the accurate identification of target species. The inadequacies apply both to the scale of the surveys carried out, and to the operational procedure utilised. ❖ 'Fauna Survey Limitations' draft PER page 115 states: 'Night-time survey work was targeted towards vegetated areas that were safely accessible. Due to the terrain and the target species, most of the spotlighting surveys were undertaken from a vehicle on existing access tracks that were considered safe to drive at night.' ❖ Spotlighting was limited to tracks which has the least likelihood of bearing results, due to their proximity to areas of disturbance. ❖ Surveys were undertaken in a vehicle generating mechanical and road noise, and that is deemed an acceptable surveying technique? All this on a 2646.74-acre (1071.1ha) development area?! ❖ Target species are notoriously timid and elusive. Noise and lighting generated by vehicle operation, will by any reasonable assessment, have significantly reduced the number of individuals and target species being seen. This is particularly the case with notoriously difficult species to observe, such as the Koala. ❖ Spotlighting surveys totalling just 103 hours, conducted from a vehicle, from defined tracks are so manifestly inadequate as to be farcical. These surveys should be dismissed. They do not meet the standard required to be used in the EPBC approval process. As such development approval cannot be granted.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.019	Survey effort	❖ Method as outlined is manifestly inadequate. It is insufficient in scale, in duration (just 20 minute periods), in personnel, and in total hours undertaken. It cannot be relied upon for accuracy. It fails to meet the standard required for assessment purposes for development approval.		No	Bird surveys undertaken to date amount to a total effort to date (as at January 2023) of 530 person-hours and are still ongoing. Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. They do in fact meet the "standard required for assessment purposes for development approval" as the Project has already been granted development approval under State legislation. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.020	Survey effort	❖ For the developer to submit that the equivalent of 1 person performing just over 3.5 weeks work (based on a 38hr week), could adequately conduct sufficiently detailed surveys at 21 sites is unbelievable. ❖ To compound that by selecting only 21 locations on a development site totalling 2646.74 acres defies belief! ❖ Bird utilisation surveys are manifestly inadequate and do not meet the threshold required to be relied upon for assessment purposes.		No	Bird surveys undertaken to date amount to a total effort to date (as at January 2023) of 530 person-hours and are still ongoing. Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. They do in fact meet the "standard required for assessment purposes" as the Project has already been granted development approval under State legislation. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.021	Survey effort	❖ Photo of a potential Red Goshawk nest was sent to four recognised Red Goshawk experts for positive identification. Of those four, three responded. One of those a QPWS positively Identified the nest as belonging to the Red Goshawk. Both other experts advised it was 'possibly' a Red Goshawk nest. From that position, and without explanation, the developer wants us to accept that actually, it is not a Red Goshawk nest, it is in fact a Grey Goshawk nest! As discussed elsewhere in this document (pages 14-18), the reason for this becomes clear later in the draft PER. ❖ There is no doubt there was a deliberate attempt to discredit the initial identification of the nest, thereby removing habitat critical to the survival of this species from the assessment process. Given the peril of this species, the impact of having a nest found on the development site would have be significant. Fabricated versions of events have been provided in the draft PER designed to deceive DCCEEW and the Federal Minister. ❖ Three different version of events are recorded two of which are in this same PER document! [Refer to page 17 of this document]. ❖ Based on the precautionary principle, and in line with best practice under the EPBC Act in protecting MNES, the nest must be regarded as belonging to red goshawk for assessment purposes. ❖ The recommended survey effort guide is stated as 50 hours per 50ha area. The development site is 1071.1ha. Therefore, by that calculation 1071.1 hours of survey should have occurred. Instead, the developer states just 443 hours of surveying, in total was performed. ❖ A 2010 report titled Distribution, status and habitat of the Red Goshawk in Qld states 'These raptors are difficult to locate.' ^13 The Australian government's Survey Guidelines for Australia's Threatened Birds states the species is 'Very secretive. Generally silent..' and ' Presence most likely detected by location of nests.' ^14The National Recovery Plan for the Red Goshawk states: 'The red goshawk is a solitary and secretive bird that is generally silent. Even when nesting, red goshawks are inconspicuous; they do not usually reveal themselves by flying off in alarm when approached.'^15 ❖ The assumption clearly, therefore, cannot be inferred, that because this notoriously secretive species was not observed, that it does not inhabit, and breed within the development area.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
482	.022	Survey effort	❖ Survey work is stated in table 4.3 (page 101 draft PER), as being conducted over a 7-day period in Feb 2022 by 2 people. Page 105 of the draft PER states 6 days. Page 125 says 5 days. ❖ The watercourses with potential habitat are stated to be 40km long. Surveys were conducted from the banks (where this was even possible) due to lantana preventing access. This species is not readily seen. It typically occurs in moderate to fast flowing water, with turbidity levels increasing significantly in periods of faster flow. Surveys were conducted in Feb 2022. Feb 2021 had the highest rainfall of any month over a one-year period 293mm – more than double any other month. While Feb 2022 figures are not provided, Jan 2022 is stated to be 289mm. High rainfall results in increased flow, increased volume and increased turbidity. It is near impossible that this species could have been observed under these conditions. ❖ In order to properly survey this species, the investigation would need to be conducted when water levels are at the lower end of normal, and water visibility is clearest. Access to the waterway is required – commonly this species is only seen from being in close proximity, and often a mask / snorkel is needed to confirm its presence. It can resemble other species from above the water – particularly with turbidity. It does not have a rigid leaf structure, so leaves move in line with currents. It is not a plant that sits upright in the water, the only exception being very small plants at the margins of the waterway (uncommon), and in times of substantially impeded flow due to natural cycles or man-made intervention. ^11 ❖ In addition, it is worth noting that presumptions are inferred from the study method that are false. The following statement is made in the draft PER [4.4.1.3]: • 'As the species flowers between the months of Sept and April (Calvert 2016), this survey period is considered appropriate.' (Draft Per page 124). ❖ This statement is concerning for a number of reasons. Firstly it infers that flowers observed from the creek bank could be used as the key species identifier. Whilst flowers, at times can be used as a part of the identification process, this would not have been the case in the month the survey work was undertaken in. This is due to the significant rain fall, increased water volume and turbidity that would have resulted from the amount of rain which had fallen over previous months. It is also worth noting that flowering does not occur throughout this entire period. Secondly, it implies that the plant flowers above water level, which is incorrect - it commonly flowers under water.^11 ❖ The survey work conducted is manifestly inadequate and was performed at a period where it would be near impossible to impossible to observe this species even if it was prevalent in the waterways surveyed. As such, no credibility can be attributed to the survey work undertaken to date. ❖ Survey work fails well short of the standard required for MNES assessment, and as such must not be used for development approval assessment purposes. In the absence of proper survey work into this endangered species being undertaken, development approval must not be granted.		No	There are no formal survey guidelines for this species. Surveys were undertaken during the flowering season in order to maximise chances of positive identification. From the author's own experience, underwater viewing is not absolutely necessary for observation. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
482	.023	Survey effort	❖ The denial of access by the landowners to the Magnificent Brood Frog Working group has undermined the survey results. The decision to deny access can only be viewed as an attempt by the land owner to circumvent due process, and by doing so, increase their likelihood of securing a financial windfall. This obstruction must be properly condemned, and approval rejected. ❖ Survey work undertaken for this species has been extremely limited, and with experts denied access, the quality of the survey work conducted has been compromised. ❖ The fact that a relatively large number of frogs were found in surveys, despite the impediments, and the fact that relatively little is known regrading this species, clearly shows that the development area supports a significant population of this species that must be preserved.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment, Brood Frog surveys are ongoing.
482	.024	Magnificent brood frog	❖ The fact that a relatively large number of frogs were found in surveys, despite the impediments, and the fact that relatively little is known regrading this species, clearly shows that the development area supports a significant population of this species that must be preserved. ❖ The fact that vegetation clearing, and re-planting will BOTH likely lead to a reduction of the seepages critical to the survival of this species, means that the deforestation and re-planting are incompatible with the ongoing survival of this species.		No	The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. A proportion of these funds is being made available to researchers now, prior to Project approval.
482	.025	Offsets	❖ A $250000 offset payment is being used as justification for the irreparable damage this development will inflict on the Magnificent Brood Frog. The damage that will be done to this species, with an extremely limited known range, can not be offset in any way, shape or form by the payment of $250000.		No	The $250,000 towards research into the magnificent brood frog is a voluntary commitment made by the proponent over and above the requirement for direct offsets which are also being proposed. Nonetheless, the EPBC Act Environmental Offsets Policy does allow for a proportion of indirect offsets in the form of research and there are many examples of other projects where research has successfully formed part of the offsets program.
482	.026	Survey effort	MASKED OWL ❖ Spotlighting survey work carried out of just 103 hours is manifestly inadequate and cannot be relied upon for assessment purposes.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.027	Survey effort	RED GOSHAWK ❖ The recommended survey effort guide is stated as 50 hours per 50ha area. The development site is 1071.1ha. Therefore, by that calculation 1071.1 hours of survey should have occurred. Instead, the developer states just 443 hours of surveying, in total was performed.		No	Additional nesting surveys were undertaken in December 2022. Additional BUS have also been undertaken since release of the PER for public comment. The survey guidelines indicate the preferred method is to search for nests, i.e. during the nesting period of October to January. To date, 382 person hours of survey (a combination of BUS and nest searches) has been undertaken during the 2021 and 2022 nesting seasons, for an area of potential nesting habitat of 265ha within the Project footprint. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.028	Adequacy of the PER	❖ Despite not being included with the draft PER, habitat critical to the survival of the species was mapped in the MNES report (22nd June 2021) and a copy of that map is provided below. ❖ According to the National Recovery Plan: 'Habitat critical for red goshawk survival needs to contain all known sites for nesting, food resources, water, shelter, essential travel routes, dispersal, buffer areas, and sites needed for the future recovery as defined by the EPBC Act.'^15. ❖ With consideration to the above, the critical habitat map prepared in the MNES report, needs to be re-assessed to cater to these criteria. That should result in the entire development area being classified as habitat critical to the survival of the species.		No	The red goshawk has never been definitively recorded within the Project area and therefore the definition of critical habitat as "all known sites for nesting, food resources, water, shelter, essential travel routes, dispersal, buffer areas and sites needed for the future recovery as defined by the EPBC Act" has not been met. The map included in the EPBC Referral was precautionary (as was made clear in that document) and since the referral was made, additional surveys for red goshawk have been undertaken. The species typically shows high site fidelity to nesting territories and in two consecutive nesting seasons, it has not been observed. It is therefore no longer believed that there is critical habitat for the red goshawk within the Project area. This is how impact assessment works - you take a precautionary approach until such time that the necessary survey work (in this case, surveys during the nesting season) can confirm or deny species presence.
482	.029	Survey effort	❖ So, to summarise by the first account photographs were sent to recognised Red Goshawk experts. That story is maintained in the second account though is expanded on from 'a number' of experts to four. By the third version of events the photos were no longer sent to recognised Red Goshawk experts, but rather 'recognised bird specialists.' ❖ One of the few details that remains unchanged throughout is that the occupation of one of the four was a QPWS ranger. However what he said markedly changes. In the initial version he 'confirmed the nest as belonging to the Red Goshawk.' In the 2nd version he stated the nest was 'likely to belong to the red goshawk'. By the third version he'd 'agreed the nest resembled that of a red goshawk'. ❖ In version one we have one confirmed Red Goshawk nest ID and two possible. In version two we have one likely, and two possible. (In the 2nd version it is advised that the fourth expert did not respond with an opinion). Then miraculously - in the same document, we have a completely different version! In version three one expert said it resembled a red goshawk nest, two said it was a possibility and one was certain that it was not a red goshawk but instead belonged to a non-threatened species! How wonderfully convenient for the developer!		No	The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
482	.030	Southern cassowary	❖ As the nearest Chalumbin wind farm infrastructure is to be located just 600m from the WTWHA boundary, this development will likely have a significant impact on this species, and by default on the Mabi forest that relies on it's presence for survival. ❖ Any assessment of the impacts on this species must therefore also include the impact on the rainforest, both within the WTWHA, along with the precious small, isolated pockets of rainforest that remain. ❖ It is highly likely that the noise, construction disturbance, increased heavy and light vehicle traffic, human interference and dogs, – both brought onto the development site by workers, and via feral animals attracted to the area, (particularly given inevitable turbine mortality), will have a catastrophic impact on the Southern Cassowary, also impacting on the values of the WTWHA. This has not been adequately assessed in the draft PER.		No	Proximity to the WTQWHA does not automatically result in a significant residual impact to the southern cassowary. An assessment of potential impacts on this species is presented in Section 8.5.4 of the PER which concludes there is unlikely to be a significant impact, in part due to the small amount of cassowary habitat within the Project area (none of which is proposed to be cleared) and due to the lack of records of the species outside the WTQWHA in this region. Construction workers will not be permitted to dogs to site. It is worth noting there is already a sizeable population of wild dogs in the Project area (as evidenced through innumerable camera trap photos and direct observations) and both landowners have dogs.
482	.031	Survey effort	WHITE-THROATED NEEDLETAIL ❖ It is a damning indictment on the ineffectiveness of the surveys used, that only a single specimen of this species was observed – albeit a dead one found on the ground. This graphically illustrates how the BUS surveys utilised were manifestly inadequate. The small number of BUS locations (21) over such a large area (2646.74 acres / 1071.1ha), were insufficient to gain an accurate depiction of MNES species that inhabit the area.		No	Bird surveys undertaken to date amount to a total effort to date (as at January 2023) of 390 person-hours and are still ongoing. Surveys undertaken within the project area have been undertaken in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Furthermore, the PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy and methodology of the field assessment.
482	.032	Fauna mortality turbines	❖ As wind turbines are stated to be the biggest threat to this species, and given the migration of the entire population from the northern hemisphere*, it is likely to be a significant casualty to turbine blade strike. As signatories to international conventions that cover migratory species, a cumulative assessment of the impacts of existing & all planned wind turbine developments needs to be undertaken before development approval is granted. (*Draft PER page 158). ❖ The corpses of dead birds will attract large birds of prey, that will in turn be at risk of being killed by the blades. In addition this carrion will increase the presence of feral animals in the area, to the further detriment of native species.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects on the white-throated needletail for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
482	.033	Survey effort	❖ The survey method utilised involved just 103 hours of spotlighting, from a vehicle to cover 2646.74 acres (1071.1ha). Koalas are notoriously secretive, and it would not be expected that in an area such as this with a low population density, that the results would be anything other than as published. ❖ The developer likes to say in briefings that 'in spite of all the investigation' over 2 years no Koalas have been found. A more accurate way to put it would be a little over 4x (24hr) days, no Koalas were found – because that is what this survey figure equates to.		No	A 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.034	Koala	❖ The suggestion that there in one lone Koala in the wider area is preposterous. The Chalumbin development area is within the northern known limit of their range. The guidelines for the conservation of this species outlined in the draft PER state that for conservation of the listed koala, it will be imperative to maintain populations that are geographical or environmental outliers within the species range. (Draft PER page 167). ❖ The habitat within the development area combined with Yourka reserve and surrounds should be regarded as key to the ongoing survival of this outlying geographical population. ❖ The statement that both the land holders report never having seen koalas on their properties, is highly subjective and should not have been included as evidence. The inclusion of this information breaches the Guidelines for the Content of a Draft Public Environment Report – Chalumbin Wind Farm which state the 'Information provided in the PER should be objective.' ❖ There is a significant financial incentive to the developer for Koalas not to be found in the area. That incentive also very much applies to the landholders who face the financial windfall, associated with having turbines and infrastructure built on their properties. ❖ Koala expert Roger Martin is states: "The fact that most of the koala populations on the western edge of the Wet Tropics are in low abundance does not mean that they are not viable populations or that they are unimportant. On the contrary, in the current scenarios of increasing temperatures…they are extremely important populations. The modelling suggests that with + 2 deg C rise in temperature the higher altitude (900 metres and above) eucalyptus forests will be the only habitats in which koalas will survive in the far north." ^19 ❖ The draft PER acknowledges and shares this view stating 'For conservation of the listed koala, it will be imperative to maintain populations that: exist in areas of climatically suitable refugia during periods of environmental stress, including droughts, heat waves and long-term climate change.' (Draft PER page 167). ❖ It is clear therefore, that the preservation of this habitat is absolutely critical in ensuring the survival of the Koala in northern QLD, as rising temperatures associated with climate change dramatically constrict, and ultimately eliminate its ability to survive elsewhere.		No	At no point has the PER or the proponent suggested that there is one lone koala in the wider area. Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. We disagree that information provided by the landholders is subjective; both individuals have lived on their current properties for many years and spend a considerable amount of time outside working the land. The presence of koala or not makes no financial difference to the landholders, particularly given that the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that suitable habitat for the species exists within the Project area. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the inclusion of landholder information. It is worth noting that most of the Project area is below 900m in elevation and that published models (including Briscoe et al 2016) appear to show that climate refugia in 2070 will more likely be located at higher elevation sites to the east, within the WTQWHA.
482	.035	Offsets	❖ The trees that are bulldozed for the Chalumbin development cannot be offset by planting new trees. There are 260+ years of reasons why. The draft PER details very specific requirements regarding the type and size, that habitat trees are required to be – including that this species prefer hollows 8m above the ground. It could be inferred part of this would be in an attempt to avoid predators such as feral cats.		No	A range of mitigation has been committed to in order to minimise impacts on the northern greater glider. The most significant of these is the retention of hollow-bearing stags during the site clearing phase which will be installed in adjacent areas of undisturbed vegetation at the same height and aspect as their original location. The proposed offset management areas already support mature vegetation with suitable nesting habitat for northern greater gliders, and the intention is to manage these offset areas to remove existing threats (such as feral cats) and thus improve the habitat quality for the species. The revegetation program is a voluntary commitment to improve connectivity for fauna and to provide forage. The PER has never claimed that the revegetation will provide nesting hollows in the near future.
482	.036	Survey effort	NORTHERN GREATER GLIDER ❖ Despite the highly dubious survey techniques of just 103 hours of spotlighting conducted from a vehicle, 64 gliders were observed. The developer tries to play down this figure and claims the population would not be considered 'large'. Immediately after making this statement there is a disclaimer: 'Surveys to date have focussed on lower lying parts of the site as ridgelines were difficult to safely access at night due to the poor condition of access roads across the two properties'. (Draft PER page 180). This is a claim often repeated as justification for deficient survey procedures. Confining surveys to access tracks to begin with is a fundamental flaw. The more inaccessible areas are, by design the preferential habitat for most shy, elusive species.		No	The PER has confirmed the presence of northern greater glider across the Project area and has fully assessed impacts in Section 8.6.7. As significant residual impacts have been predicted, offsets have been proposed, in line with the EPBC Act Environmental Offsets Policy. It is not a requirement of the PER Guidelines to produce a population estimate for this or any other species.
482	.037	Northern greater glider	NORTHERN GREATER GLIDER ❖ The destruction of 902.6ha / 2230.37 acres of habitat, that includes habitat trees that require up to 260 years to regenerate cannot be compensated for with the use of offsets. Fake hollows chain sawed into trees (draft Per page 321), and fake nesting boxes, along with the other measures outlined), are manifestly inadequate, and the cautionary principle must be applied to ensure the ongoing survival of the species. This critical habitat, which encompasses ancient trees so vulnerable to land clearing must be preserved. ❖ The habitat map and intersection with the development is truly shocking. By any reasonable assessment, the risk posed to this species is too great, and the development must not be approved.		No	The PER acknowledges the time that hollows take to form and makes a clear commitment to retain existing hollow-bearing tree trunks for re-use in the rehabilitation program. Artificial nest boxes will also be used in the rehabilitation program (these have recently been proven to be successfully used by greater gliders in the aftermath of the 2019-2020 bushfires) so that any hollows will be relocated or replaced at a ratio of 2:1.
482	.038	Fauna mortality turbines	❖ Hidden away in fine print in a footnote elsewhere in the document, (draft PER page 264), is the following comment not made in this section: "There is potential for the Project to have a significant residual impact on the spectacled flying-fox through turbine collision and/or barotrauma." Barotrauma causes death in bats by rapid air-pressure reduction near turbine blades causing tissue and lung damage due to the expansion of air in the lungs that cannot be expelled. A study found that 90% of bat fatalities involved internal haemorrhaging consistent with barotrauma, and that direct contact with turbine blades only accounted for about half of the fatalities. ^20 ❖ The PER page 502 outlines the mitigation proposed in the event of turbine strike: "if the Project does result in death to individual spectacled flying-foxes due to collision with a turbine during operation, offsets may be required. In accordance with the EPBC Act, these may take the form of payment into a fund to support research on the species". This 'we'll see how it goes' approach, flies in the face of sound scientific study. ❖ This species is already under significant threat through habitat loss and urban encroachment. Any additional impacts that compound existing threats need to be fully and independently assessed prior to development approval being considered. ❖ The fatality of the Spectacled Flying Fox around turbines would attract birds of prey, potentially compounding the issue with raptor turbine strike. In addition, it will attract ground dwelling scavengers to the site, notably including feral species such as cats and wild dogs, which is likely to increase their presence in the area.		No	There has been very little research undertaken specifically on flying-foxes in relation to the risk of barotrauma. One paper (Lawson et al 2020) performed computational fluid dynamics simulations of a wind turbine and analytical calculations of blade-tip vortices to estimate the characteristics of the sudden pressure changes bats may experience when flying near a utility-scale wind turbine. The paper concluded that barotrauma is unlikely to be responsible for a significant number of turbine-related fatalities, instead impact trauma (i.e. direct collision) is the likely cause of the majority of wind turbine-related bat fatalities. The statement relating to a contribution to research in the event of spectacled flying-fox fatalities during operation was added at the specific request of the Regulator.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
482	.039	Spectacled flying fox	❖ Although the term is notably omitted from the draft PER document, the Spectacled Flying Fox is in fact a Keystone Species ^21. Keystone species play a critical role in defining their entire ecosystem. They disperse seeds when feeding and through their droppings. It is estimated that larger seeds may be dispersed over a range of 80km ^22. ❖ The importance of this species is so great that it directly contributes to maintaining the World Heritage Values of the WTWHA which border the Chalumbin development site. "Pteropus conspicillatus contributes to the dispersal of seeds within rainforest and between patches of rainforest. Because it moves freely across ecological boundaries both within and without the WTWHA, it also contributes to the dispersal of seeds from rainforest into other vegetation communities and land uses'. ^23 ❖ With this species in clear conflict in heavily built up urban areas, it is incomprehensible that a critical population such as the colony of up to 9999 individuals at Malan, east of Ravenshoe - well outside of population centres would be put at threat. ❖ The development area is within the feeding zone of this colony, and this habitat must be protected to ensure the survival of the species. ❖ The fact that this species is critical to the survival of fauna species found within the WTWHA, and to precious rainforest fragments has not been adequately addressed. Not only should the habitat at Chalumbin be deemed critical to the survival of the Spectacled Flying Fox, it's presence must also be acknowledged as critical to the survival of rainforest species on the development properties, and indeed within the WTWHA area itself. A rigorous assessment in this regard has not occurred. Therefore, under no circumstances, can the draft PER be regarded as being thorough in regard to this species. Owing to the clear deficiencies in the draft PER assessment, development approved must not be granted.		No	Spectacled flying-fox has not been definitely recorded within the Project area. Nonetheless, Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
482	.039	Adequacy of the PER	The Guidelines for the content of a draft Public Environment Report - Chalumbin Wind Farm clearly state: 'The PER must provide information of the impacts to any MNES identified as potentially being significantly impacted by the proposed action' (page 8). ❖ The draft PER has failed to identify, evaluate, analyse and assess the impacts on all listed MNES species likely to be significantly impacted by the development. ❖ The Lake Eacham Rainbowfish Melanotaenia eachamensis is listed as endangered under both the IUCN Red List and the EPBC Act. It has been listed as endangered under the EPBC Act since 16th July 2000. In addition it is profiled on the Species Profile and Threats (SPRAT) database. There is no justification whatsoever, on why this species has been omitted from the report. ^26 ❖ This is not an obscure species. In fact, it is comparatively well known as it was the first Australian freshwater fish to be declared extinct in Australia. Originally known only from Lake Eacham, it fortunately was later discovered in a limited number of Tableland creeks and swamps including Blunder Creek, and was subsequently re-classified as endangered.		No	The PER will be updated to include the Lake Eacham rainbowfish (Melanotaenia eachamensis) and address the potential impacts on this species from the Project. It is worth noting that the mapped distribution of this species (per DCCEEW's SPRAT database) does not overlap with the Project area, and there are no records of this species being within the Project area in any publicly-available databases. The 1997 CSIRO paper is the only reference of this species occurring in Blunder Creek so it is hardly surprising that it was overlooked. The 1997 CSIRO paper does not confirm the precise location that the species was caught in Blunder Creek and notes that the Lake Eacham rainbowfish was caught in much lower numbers than the closely related (non-threatened) eastern rainbowfish. The paper also states that where the eastern rainbowfish was the dominant species (as with Blunder Creek), specimens allocated to the Lake Eacham species were done so with reduced probability (primarily due to interbreeding and hybridisation between the two species, which is also mentioned as a challenge for this particular species in the Survey Guidelines for Australia's Threatened Fish). The paper concludes that the Lake Eacham rainbowfish is widespread throughout the Johnstone River and present in the upper reaches of the Tully River and in the Herbert River.
482	.040	WTQWHA	❖ The impact the development will have on keystone species such as the Southern Cassowary and Spectacled Flying Fox have not been adequately assessed. This includes the secondary and tertiary (etc)., impacts the displacement of these species will have on fauna species and the World Heritage Values of the WTWHA. ❖ The impact the Chalumbin wind Farm development will have on keystone species the Spectacled Flying Fox and the Southern Cassowary, (and by default the Outstanding Universal Values of the WTWHA), are such that the development threatens World Heritage Value criterion 'x'.		No	Neither of these species have been definitively recorded within the Project area. The Project is not anticipated to have a significant residual impact on the southern cassowary, as discussed in Section 8.5.4 of the PER. The PER acknowledges that the Project may have a significant residual impact on the spectacled flying-fox (see Section 8.6.10) and offsets have been proposed in line with the mitigation hierarchy. The PER has concluded that the Project is not likely to have a significant residual impact on the OUV of the WTQWHA (Section 8.10.3)
482	.041	Lumholtz tree kangaroo	❖ Lumholtz's Tree Kangaroo is a species under enormous pressure on the Tablelands. Wildlife carers regularly upload photos of deceased animals which have been struck by vehicles or attacked by dogs. ^28 ❖ In addition to two individuals being captured on camera in a rainforest section of the development area, an individual was photographed on the adjoining Yourka station on the 23rd April 2022. ^29 This photograph is important owing to the presence of this animal in an area of a vegetation type common on the Chalumbin development site. The impact of Chalumbin Wind Farm on this species has not adequately been assessed in any way, including in relation to WTQ values.		No	I have checked the Facebook post (reference 29 in this submission) and it is the second Lumholtz tree-kangaroo to be recorded on Yourka (timescale not provided). This would indicate that the species' presence is not common (the Hales live on the property year-round and undertake comprehensive surveys and monitoring across the property). It is likely that this is a young male looking to establish his own home territory. The species was recorded in the Project area via camera trap. The Project undertook an 11-month camera trap campaign that recorded in excess of 9,000 camera trap nights; this cannot be considered insufficient survey effort by any standards. Potential impacts on the Lumholtz tree-kangaroo and relevant mitigation measures are discussed in Section 8.10.2 of the PER. The Project will not result in direct impacts to the species' core habitat type, rainforest. This combined with the mitigation measures described in Section 8.10.2 of the PER will ensure that the Project does not result in a significant residual impact to the species.
482	.042	Community consultation	❖ Jirrbal people including Elders with significant knowledge and input have been excluded from the consultation process. Videos of community members including Elders outlining their views can be accessed here: https://stopchalumbinwindfarm.com/traditional-custodians (For more details please refer to consultation [section 11.0] of this submission).		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately.
482	.043	Adequacy of the PER	NORTH QUEENSLAND LACE ❖ In summary, the survey work carried out, and by definition the understanding of what is required to survey this plant are manifestly inadequate. The survey was undertaken at the wrong time, by an unsatisfactory method, over too short a duration - for the presence of this species to be identified. The approval of this development must not be granted on the basis that the threat to the MNES listed Endangered plant North Queensland Lace has not been accessed to any reasonable standard.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
482	.044	Survey effort	❖ The level of contradiction outlined in relation to the identification of the nest, can only be interpreted as a deliberate attempt to deceive the Australian government. The fact is, a nest was found in in Jan 2021 which was confirmed by photos sent to a Red Goshawk expert (a QPWS ranger) as belonging to the species. Two other experts who were sent the photos stated it 'possibly' belongs to the species. ❖ It is certainly the case that the nest found in Jan 2021 indeed likely belongs to the Red Goshawk. It may have been abandoned (temporarily or permanently) for a variety of reasons, including but not limited to the increased movement of people on and around the development area including in the vicinity of the nest. ❖ According to the draft PER (page 261) the area of habitat to be impacted is 2549.49 acres / 1031.74 ha. The recommended survey time is stated as 50hrs per 50ha area making the survey time 1032 hours. Instead, just 443 hours of surveying in total was carried out.		No	The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
482	.045	Adequacy of the PER	❖ Charts provided in the draft PER [table 5.3] are subjective with contradictory terms used, and with no actual analysis carried out on the cumulative impacts. The Guidelines for the Content of a draft PER – Chalumbin Wind Farm state: "The PER should enable interested stakeholders and the Minister to understand the environmental consequences of the proposed development. Information provided in the PER should be objective, clear, and succinct". The lack of analysis and contradictory terms used mean the draft PER fails to comply with the guidelines.		No	The PER has been assessed by DCCEEW as meeting the PER Guidelines.
482	.046	Cumulative impacts	MAGNIFICENT BROOD FROG ❖ Given the extremely limited range of this species and the fact that all known habitat is regarded as critical to the survival of the species, the cumulative effect of the loss of habitat at both Kaban Wind Farm and Chalumbin Wind Farm need to be properly analysed and considered as part of the Chalumbin Wind Farm approval assessment.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
482	.047	White throated needletail	WHITE THROAT NEEDLETAIL ❖ This largest threat to this species is stated to be collision with wind turbine blades. The species has been identified as occurring at Kaban, Mt Fox, Mt. Emerald and the site of the Chalumbin wind farms. It is further listed as having the potential to occur at Upper Burdekin. With this in mind, the cumulative impact of all proposed wind turbine developments needs to be considered, as part of the assessment process on this species. The failure to do so risks catastrophic consequences for this species during it's southern migration to Australia.		No	As noted in Section 5.5 of the PER, there is insufficient information available in the public domain to quantitatively assess the cumulative impacts of the proposed Chalumbin Wind Farm with the other wind farms proposed for the Tablelands. Collision monitoring reports for the currently operational wind farms (Windy Hill and Mount Emerald) are not publicly available either. It is therefore not possible for an individual developer to accurately assess cumulative impacts to the white-throated needletail from potential collision with wind farms, this would need to be coordinated by the Regulator.
482	.048	Cumulative impacts	KOALA ❖ The combined area of habitat loss of Chalumbin and Upper Burdekin is 1704.8ha / 4212.65 acres. There is further potential habitat loss at Mt. Fox. ❖ This is a significant area of habitat to lose by any assessment. The size of the habitat to be destroyed nearly doubles the significant residual impacts posed on these developments in isolation. With elevated habitats providing critical refuges with the impacts of climate change and global warming, the importance of these populations cannot be overstated. The cumulative effect of this habitat loss must be assessed as part of the approval process for Chalumbin Wind Farm.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
482	.049	Cumulative impacts	NORTHERN GREATER GLIDER ❖ The combined area of habitat loss of Chalumbin and Upper Burdekin is 1741ha / 4302.11 acres. ❖ This is a significant area of habitat to lose. The size of the habitat to be destroyed nearly double the significant residual impacts of looking at these developments in isolation. With elevated habitats providing refuges with the impacts of climate change, the importance of these populations cannot be understated. Furthermore the very specific requirements for tree hollows 8m above the ground in trees ages 150-260 years means the destruction of these habitats simply cannot be offset. The cumulative effect of this combined habitat loss must be assessed as part of the approval process for Chalumbin.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
482	.050	Cumulative impacts	SPECTACLED FLYING FOX ❖ The PER states the destruction of 976.1ha of habitat for this keystone species is not a significant residual impact. This is despite the development being within the known foraging range of the colony of up to 9999 individuals at Malan (4.7.10.4 draft PER page 202). This defies belief. The species was listed as endangered in 2019, however that did not take into account the mass death estimated at 23000 individuals in Cairns in 2018. ^24 & ^25 ❖ The cumulative impact on this species of all existing and proposed Wind Turbine developments must be taken into consideration as part of the approval process for Chalumbin Wind Farm. This must also specifically assess the cumulative impacts of turbine strike and barotrauma on this species.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
482	.051	Indigenous Cultural Heritage / Engagement	❖ Jirrbal community members have stated that significant areas of Cultural Heritage have not been recognised, mapped, and are unknown to the developer. The failure to consult with all Jirrbal people has created a scenario where Sacred Sites and other areas of immense Cultural importance are not known or recognised in the PER. ^30		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
482	.052	Red goshawk	❖ An avoidance area of just 1000m surround the potential Red Goshawk nest is manifestly inadequate. It poses a significant risk of bird strike and other disturbance to a species already under enormous pressure for its ongoing survival.		No	The National Recovery Plan for the red goshawk identifies buffer zones of 300-400m from a red goshawk nest; the Project has voluntarily increased this buffer to 1km.
482	.053	Biodiversity general	❖ ALL areas of Wet Sclerophyll Forest must be avoided, with suitable buffers retained around these areas. This must be made a condition of the development approval of Chalumbin Wind Farm. ❖ The environmental significance of these habitats is outlined in the Wet Tropics Management Authorities submissions as is their value, including but not limited to their buffering effects against bushfires. ❖ Wildlife corridors must be preserved to prevent further fragmentation and disruption to animal movement.		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
482	.054	Mitigation and management measures	❖ It is manifestly inadequate that a single fauna spotter is being tasked with trying to locate fauna in areas to be cleared. It is absurd to suggest that one spotter will be able to identify potentially impacted individuals prior to the demolition of vegetation. ❖ A sizable team of spotters would be required, all suitably qualified in understanding the species they are targeting. This applies for all MNES listed species. Of note, due to the size and difficulty in locating Magnificent Brood Frogs, experts in this species must be involved at all times leading up to the clearing, when destruction to habitat areas occurs, and afterwards. This must be made a condition of development approval.		No	The PER does not claim that only a single fauna spotter catcher will be used, it refers to the role in singular rather than the number of individuals who will fill that role (generally one per individual machine clearing vegetation). The sizeable team of fauna spotter catchers will be suitably qualified and experienced in this line of work, with the preference for engaging local staff as much as possible.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
482	.055	Mitigation and management measures	❖ The installation of artificial nesting boxes do not compensate for the destruction of 150-260 year old hollow trees used for habitat by Northern Greater Gliders and other species. ❖ The installation of rope crossings in insufficient in offsetting the damage done by fragmenting areas that prevent the normal movement of species in particular the Northern Greater Glider which is restricted in the distance it is able to glide. ❖ There are no details provided by the developer on the what, when and how in relation to weed and pest control relative to reducing the impacts of fragmentation.		No	The PER acknowledges the time that hollows take to form and makes a clear commitment to retain existing hollow-bearing tree trunks for re-use in the rehabilitation program. Artificial nest boxes will also be used in the rehabilitation program (these have recently been proven to be successfully used by greater gliders in the aftermath of the 2019-2020 bushfires) so that any hollows will be relocated or replaced at a ratio of 2:1. Nest boxes are a recommended management action outlined in the Commonwealth Conservation Advice for Petauroides volans. In efforts to assist gliders and small arboreal species installation of glider rope crossings and glider poles in areas of confirmed glider will be undertaken, and canopy connectivity will be maintained whenever possible and restored following construction. The "Preliminary Vegetation Management plan" & "Preliminary Weed and Pest Management Plan" located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intention of these "preliminary" documents are not intended for implementation purposes however are intended to act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor in their responsibilities. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed status (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary.
482	.056	Contamination	❖ It is a fact that spillages will occur. The rupture of hydraulic lines are a relatively common occurrence on construction machinery. Contaminants will ultimately end up in surrounding waterways, which are headwaters for the GBRMP. ❖ In addition, the impact to the MNES listed endangered species, omitted from the draft PER could be catastrophic (page 24 of this submission).		No	It is noted that controls are necessary to ensure that any spill of hydrocarbons is managed appropriately so as to avoid and minimise potential impacts to the environment. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8.
482	.057	Weeds and pests	❖ The introduction of chytrid fungus could decimate frog populations – including the Magnificent Broo Frog already facing catastrophic consequences if this development is approved. This would also have far-reaching consequences for the natural heritage values of the WTWHA.		No	The Preliminary Weed and Pest Management Plan in Appendix F of the PER includes control measures for the chytrid fungus which may present a risk to the magnificent brood frog; this risk has yet to be confirmed (Magnificent Brood Frog Working Group meeting minutes, December 2022).
482	.058	Mitigation and management measures	❖ Collision monitoring must be carried out by independent, suitably qualified persons, such as a local environmental organisation. Given the dishonesty exhibited by the developer throughout the process, it is beyond belief, that any confidence could be placed on recorded strike data without independent observation and confirmation. Use of camera devices with live feed to record strike data should be listed as a condition for development approval. Wildlife organisations and the public should be able to access this live feed to both act on injured animals (former), and for transparency (former and latter). ❖ The use of any and all available deterrent devices should be made conditions on Chalumbin Wind Farm development approval being granted. ❖ The PER states monthly targeted inspections to search for carrion that may attract species vulnerable to turbine strike such as raptors. This is manifestly inadequate, and a regulated regime must be stipulated as a condition of development approval. The failure to do so will have catastrophic consequences for species such as raptors, and will make the area a haven for feral animals, placing further pressure on species like Northern Greater Gliders, etc.,		No	Collision monitoring will be undertaken by a suitably qualified and experienced individual or organisation who will be engaged specifically for this purpose. The proponent has agreed to commit to the use of detection dogs for carcass searches in response to feedback recently received from stakeholders. The proponent has further agreed to make these reports publicly available, which is not typically a requirement of approval. Monthly carcass detection searches are currently industry standard. At this time, the proponent is not considering installing cameras with live feed on turbines.
482	.059	Rehabilitation	❖ As such there is no way to rehabilitate Magnificent Brood Frog sites. If revegetation causes existing breeding sites to no longer function, due to the depletion of water and deletion of seepages, this habitat functionally no longer exists. As Magnificent Brood Frog habitat, by definition cannot be rehabilitated, all known and potential habitat must be avoided in the development. [A seepage is a moist to wet area where water (usually groundwater) reaches the soil surface from an underground aquifer].		No	Revegetation will mostly be the same vegetation that was present prior to the Project. The Magnificent Brood Frog habitat is unlikely to be impacted through the reduction of seepage areas as there is likely to be less vegetation (due to the operational project footprint) using water and therefore it could be argued that there will be a greater potential for seepages. However, this will depend on the hydrogeomorphic conditions in specific Magnificent Brood Frog habitat. Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems.
482	.060	Rehabilitation	NORTHERN GREATER GLIDER: ❖ As stated in the draft PER: Once habitat trees are lost from the system, the length of time required for the development of replacement habitat trees appropriate for the species is prohibitive*. Therefore it is by definition impossible to rehabilitate the Northern Greater Glider habitat in less than 150 years. Claims that the developer will rehabilitate the area within 30 years are demonstrably false. (*4.7.7.1 draft PER page 178)		No	There are detailed rehabilitation principles within norther greater glider habitat outlined in Table 3-2 of the Preliminary Rehabilitation Plan (Appendix K of the PER). These include the use of artificial nest boxes and relocated hollow-bearing stages combined should provide a minimum density of 4 per every 2ha. The project rehabilitation program has a key focus for rehabilitating habitat as documented in the Preliminary Rehabilitation Plan.
428	.061	Rehabilitation	❖ By definition it is not possible for any of the habitat at Chalumbin to be rehabilitated. The habitat includes all intertwined ecosystems including soil microbes that all play a critical role in the function, make up, and inter-connectivity of the area as a whole. Revegetation can occur – rehabilitation cannot. You can restore a car. It will never be exactly the same as original, but it can be close. The greater the amount of money spent the closer it can be. That is because the core of the car still exists. The inner and outer layers are just being restored. In contrast, the bulldozing of habitat removes all core elements. Buying a new car is not restoration, and similarly revegetating is not rehabilitation. ❖ The cumulative impacts of the loss of habitat for food, shelter and breeding will have a significant impact on MNES and non-MNES listed species, and a flow on effect throughout the wider environment. The 20-30 years before some types of vegetation reaches maturity leaves a significant gap in the requirements of MNES and non MNES listed species alike. In some cases, MNES listed species will simply not survive - Magnificent Brood Frog.		No	The environment is always changing and evolving and in a constant state of flux when viewed in detail. The purpose of the Preliminary Rehabilitation Plan (Appendix K of the PER) is to facilitate the re-establishment of native ecosystems that are self-sustaining in the long-term and provide comparable habitat value to the pre-construction ecosystems. Cumulative impacts for the project are discussed in Section 5.5 of the PER.
482	.062	Alignment with government policy	❖ Despite claims to the contrary, the Chalumbin Wind Farm is inconsistent with international obligations under both these conventions. This primarily relates to the destruction of habitat critical to the survival of the Magnificent Brood Frog. It is without a doubt that article 5 of the Apia convention relating to giving fauna in danger of extinction as complete protection as possible, is incompatible with the Chalumbin Wind Farm development. CWF is also incompatible with one the main objectives under The Biodiversity Convention - The conservation of biological diversity.		No	Table 8-2 of the PER describes how the Project meets the 10 National Targets for Biodiversity Conservation as outlined in the Biodiversity Convention. Section 8.1.3 of the PER describes how the Project is consistent with the Apia Convention.
482	.063	Significant impact assessment	NORTH QUEENSLAND LACE ❖ The Significant Residual Assessment is fundamentally flawed: It states the SRI criteria's of 'reducing the range of occupancy of the species' and 'adversely affect habitat critical to the survival of the species' as unlikely. Yet the survey work carried out was manifestly inaccurate (as described elsewhere in this submission) – to the point of having no survey value. In addition, the population at the bridge crossing at the proposed alternative route, has not been included in this assessment.		No	The population of North Queensland Lace at the Herbert River has not been included in the assessment as the alternative access route is not part of the project definition at this stage. There is an existing bridge over the Herbert River and this would be used in the event that the alternative route is chosen, subject to further assessment. Pre-construction surveys for North Queensland Lace will be repeated at each waterway crossing that comprises suitable habitat prior and additional mitigation measures will be implemented as necessary.
482	.064	Significant impact assessment	MAGNIFICENT BROOD FROG SIGNIFICANT IMPACT CRITERIA: Lead to a long-term decrease in the size of an important population of a species. Developer: Unlikely. It is incomprehensible that the developer has assessed this as unlikely. The reduction in seepage that will be caused by this development will have a direct impact on the habitat suitable for breeding. Due to the limited range and very small area in total occupied by this species, every population is critically important in ensuring its survival. It is likely therefore, that the cost in not preserving all known habitat is likely to lead to a long-term decrease in this important population. This is compounded when taking into consideration the cumulative impacts of the Kaban wind farm on this species. ❖ SIGNIFICANT IMPACT CRITERIA: Fragment an existing important population into two or more populations: Developer: unlikely. The population will without doubt be fragmented by land clearing, construction and infrastructure. As all populations are considered important due to the limited range of this species, the development will indeed fragment the population of the species. ❖ SIGNIFICANT IMPACT CRITERIA: Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. Developer: unlikely. The clearing of habitat described in the PER will, without doubt modify, destroy, remove, and decrease the availability and quality of habitat to the extent the species is likely to decline. ❖ SIGNIFICANT IMPACT CRITERIA: Interfere substantially with the recovery of a species. Developer: Unlikely. At present there is NO RECOVERY of this species – the opposite is occurring. Developments are encroaching on the species extremely restricted known habitats putting its ongoing survival at risk. The Magnificent Brood Frog Working Group was denied repeat access to the site. The inference being the landowner did not want impediments to the financial gain of development approval. The Chalumbin development will cause serious damage to a significant population of Magnificent Brood Frogs, and by default, therefore interfere substantially with the recovery of the species.		No	The PER concludes that the Project could have a significant residual impact on the magnificent brood frog.
482	.065	Significant impact assessment	RED GOSHAWK ❖ SIGNIFICANT IMPACT CRITERIA: Reduce the area of occupancy of an important population. Developer: unlikely. As outlined previously in this submission, the precautional principle must be applied. The level of deception on the part of the developer regarding the nest compounds and aggravates this factor. There is no doubt that using the precautionary principle, it is highly likely that the area of occupancy of an important, breeding population will be substantially impacted by the development. ❖ SIGNIFICANT IMPACT CRITERIA: Adversely affect habitat critical to the survival of the species. Developer: unlikely. As outlined elsewhere in the PER and taking into consideration known breeding populations recorded within the bioregions of the development, a species that can travel for up to 200km from within its home range, the development is likely to adversely affect habitat critical to the survival of this species. ❖ SIGNIFICANT IMPACT CRITERIA: Disrupt the breeding cycle of an important population. Developer: unlikely. In addition to the above, the work carried out in surveys may have already disrupted the breeding cycle of an important population – either by accident or design. Using the precautionary principle that the nest found is a Red Goshawk Nest, it is highly likely the development will disrupt the breeding cycle of an important population. All known populations of this species are important as stated in the National Recovery Plan.^15 ❖ SIGNIFICANT IMPACT CRITERIA: Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. Developer: unlikely. For all the reasons outlined above and elsewhere in this draft PER response, it is highly likely the development will modify, destroy and decrease the availability of habitat to the extent that the species is likely to decline. ❖ SIGNIFICANT IMPACT CRITERIA: Interfere substantially with the recovery of a species. Developer: unlikely. As detailed elsewhere in this submission and using the precautionary principle taking into account the nest, this development is likely to interfere substantially with the recovery of the species.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
482	.066	Significant impact assessment	KOALA ❖ SIGNIFICANT IMPACT CRITERIA: Interfere substantially with the recovery of a species. Developer: unlikely. The cumulative impacts of climate change need to be taken into consideration. Dire predictions on the contraction of areas where this species will be able to survive, means that high elevation habitats are of critical importance to the species recovery, and long term survival. This elevated habitat is therefore critical for the future survival of the species. The bulldozing of land for this development will have a significant residual impact by interfering (substantially), with the recovery of the species.		No	The PER concludes that the Project could have a significant residual impact on the koala.
482	.067	Significant impact assessment	NORTHERN GREATER GLIDER ❖ SIGNIFICANT IMPACT CRITERIA: Lead to a long-term decrease in the size of an important population of a species. Developer: Unlikely. The development areas contains habitat critical to the survival of the species, including of note 150-260+ year old trees with hollows of the size and type used for the species. The destruction of that very specific habitat along with a reduction in the inter-connectivity between trees (accessible through gliding), will result in significant deterioration to the quality of the habitat. The installation of nest boxes does not offset the damage done by this clearing, which is exacerbated taking into account the specific height and size of the trees this species is known to favour. Taking into consideration the up to 260 year time frame for replacement for lost denning trees, it is likely the development will lead to a decrease in the size of this important population of the Northern Greater Glider. ❖ SIGNIFICANT IMPACT CRITERIA: Fragment an existing important population into two or more populations: Developer: Unlikely. By removing trees of the size, type and age required by the species, and reducing the space between trees within the distance it can glide, this has a real likelihood of fragmenting the population. The use of the rope crossings proposed cannot be assumed in order to mitigate the loss of the destruction of this critical habit. The development therefore is likely to fragment the population. ❖ SIGNIFICANT IMPACT CRITERIA: Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline. Developer: unlikely. For the reasons outlined above, and in addition taking into account the loss of foraging habitat, the destruction of 150-260+ year old trees and associated clearing is certain to remove and decrease the availability of the quality of habitat. The artificial nest boxes proposed are not comparable to the quality of the original habitat. ❖ SIGNIFICANT IMPACT CRITERIA: Result in invasive species that a harmful to a vulnerable species becoming established in the vulnerable species habitat. Developer: unlikely. The removal of 150-260+ year old trees of the height and size favoured by the species, combined with understorey clearing and a reduction in the density of trees from which the species can glide, is likely to make it significantly more vulnerable to predation by feral cats. Mitigation measures proposed are insufficient to address this issue, and therefore it is likely that the development will result in invasive species becoming more established around the Northern Glider Habitat due to their vulnerability and easy targeting as prey.		No	The PER concludes that the Project could have a significant residual impact on the northern greater glider.
482	.068	Significant impact assessment	SPECTACLED FLYING FOX ❖ SIGNIFICANT IMPACT CRITERIA: Interfere substantially with the recovery of a species. Developer: unlikely. This species is under immense pressure from human encroachment and loss of habitat. The destruction of 976.1 ha of foraging habitat, which should be regarded as critical to the survival of the species, along with construction development related impacts are likely to interfere substantially with the recovery of the species.		No	The PER concludes that the Project could have a significant residual impact on the spectacled flying-fox.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
482	.069	Significant impact assessment	WET TROPICS OF QLD WORLD HERITAGE AREA ❖ Significant Impact Criteria: Biological and ecological values. Reduce the diversity or modify the composition of plant and animal species in all or part of a World Heritage are property. Developer: Unlikely. It is my submission that this development is likely to modify the composition of plant and animals species in a part of the WTWHA. This will affect flora biodiversity by the impacts of construction and operation impacting the Spectacled Flying Fox. As this species is the only known seed disperser for 14 rainforest species, and given its perilous status, this could have catastrophic impacts on this species and by default the WTWHA. ❖ Further to the above, the carrion around turbines will attract feral species within just 600m of the WTWHA border. Predation will cross over into the WTWHA impacting on a host of marsupial, bird and reptile species. The impact on species including the Southern Cassowary has not been adequately assessed. ❖ Significant Impact Criteria: Introduce noise, odours, pollutants or other intrusive elements with substantial, long term or permanent impacts on relevant values. Developer: Unlikely. It is my submission that the development is likely to introduce noise and dust into the WTWHA throughout the construction period. This could have a substantial impact on heritage values.		No	The spectacled flying-fox was not observed on site during the targeted surveys for the Project. A camp for the species is known to exist at Millaa Millaa approximately 30km from the Project area. The species has therefore been given due consideration as outlined in Section 8.6.10 of the PER. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. The habitat within the Project footprint constitutes foraging habitat for the species but its ubiquitousness throughout the broader area suggests that the Project will not significantly impact seed dispersal. Introduced pest species have been regularly observed within the Project area, and along Tully Falls Road within the WTQWHA. Pests are therefore abundant within the nearby protected area estate and the Project's implementation of the Preliminary Weed and Pest Management Plan (Appendix F of the PER) will help to reduce these impacts. Mitigation measures will be employed during the construction phase of the Project to avoid and minimise impacts associated with dust emissions, noise and vibration, and light emissions as described in Section 6.2 of the PER. An Environmental Management Plan Outline (See Appendix H of the PER) has been prepared for both State and Commonwealth approval processes in support of the Project's environmental management framework. These plans are generally preliminary, however, they provide important principles for the management of potential impacts during future design, construction and operational phases of the Project. These plans are the foundations upon which the more detailed plans will be based. The Contractor will develop the more detailed plans prior to construction commencing. The PER identifies that noise may have an impact upon species occurring within the area and as a result construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy. Dust emissions and overall air quality will be managed in accordance with the requirements of the Subordinate Legislation No. 153 Environmental Protection (Air) Policy 2019 (EPP Air) made under the Environmental Protection Act 1994 (EP Act). Construction will largely occur during daylight hours, with exceptions being where specific activities such as turbine lifts, etc. must occur after hours during favourable weather conditions. Construction lighting will only be utilised during low-light daytime conditions and during these infrequent out-of-hours events. Where construction lighting is utilised, it will be directed away from retained vegetation.
482	.070	Indigenous Cultural Heritage / Engagement	❖ Jirrbal community members have made it clear, that they have been excluded from the engagement process. That began at the Sept 16th, 2021 'community information session', and the damage inflicted on Jirrbal attendees including Elders since then has been profound. ^30 ❖ The developer made it crystal clear at the Sept 16th, 2021 'information session' that the concerns and input of Jirrbal Elders was not welcome, and they were treated with disdain. In the context of the Australian First Nations peoples being denied their rights repeatedly for over 200 years, the compounding trauma of this event cannot be understated. The view has been expressed by many that Wabubadda does not represent their interests and they have not been consulted. ^31 https://stopchalumbinwindfarm.com/traditional-custodians ❖ It has further been stated that there are Sacred Sites, and areas of Cultural Significance that overlap the Wet Tropics of Queensland Natural Heritage Place. ^30 ❖ As the developer acknowledges in the PER (page 248), further information about Cultural Heritage values are still being revealed. How then, can a development be allowed to proceed, that will impact upon not only upon places of immense cultural significance to Jirrbal people, but that are so important they are on the Wet Tropics of QLD Natural Heritage Register? ❖ The development cannot be accurately assessed for approval until all sites of Cultural Heritage significance to Jirrbal people are known, recognised and are mapped. As the developer acknowledges that this process is ongoing, the development can't even be assessed by the Minister as it is incomplete. Therefore the Chalumbin Wind Farm development must not be approved.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
482	.071	Community consultation	The developer has knowingly provided false, and misleading information in the draft PER regarding the consultation that has occurred, the nature of that consultation and the willingness of the developer to actively engage in consultation. This includes: 1. Failing to engage in open consultation by refusing to facilitate or attend open community consultation meetings. 2. Providing false, misleading and incomplete information in photo montages, press releases and photos. 3. Providing false information in briefings to individuals and organisations including making the claim that Koalas had not been seen at Yourka Reserve for a decade. 4. The 'Chalumbin Wind Farm local 'Information Hub' being routinely closed during the extremely limited published opening hours. 5. Treating community members including Jirrbal Elders with complete disrespect and utter disdain at the Sept 16th, 2021 'community information session'. 6. Providing a fictitious, fabricated account of what occurred at the Sept 16th, 2021 'Community information Session'. 7. Using the fabricated account of the Sept 16th, 2021, meeting as justification for not holding any open community meetings. This is as a blatant attempt to deceive the federal government. 8. Making misleading statements regarding the so-called 'Community Advisory group', including: a. Failing to declare the chair of this declared 'voluntary' organisation is being paid. b. Failing to declare the business interests of the chair, as founder and managing director of a company that provides 'tailored services' to renewable energy clients including 'Strategic advice to fast-track project approvals.' As such: ❖ The developer has not adhered to the principles of the framework they claim to rely on in the consultation process. ❖ The developer has not complied with and is in breach of with the Clean Energy Council Best Practice Charter. ❖ The developer by their own definition has no social license to operate nor to proceed with the development. ❖ The developer in a sustained, and deliberate manner, has avoided consultation to protect their own interests - development approval. ❖ Chalumbin Wind Farm PTY LTD / Epuron / Ark Energy have all clearly failed to meet the threshold required for community consultation based on their own and prescribed definitions. ❖ The Australian government defines fraud as: 'Dishonestly obtaining a benefit, or causing a loss, by deception or other means.' ❖ To deceive by dishonestly misrepresenting the facts of the development, in order to gain community support, and development approval, potentially likely reached this threshold. As such a complaint is being lodged with the Australian Federal Police in relation to this matter.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. CWF is committed to avoiding, minimising and mitigating potential environmental impacts through the development of its renewable energy project portfolio. CWF's projects have a history of responsible environmental management. There are no past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment, or the conservation and sustainable use of natural resources against CWF. CWF aims to ensure that all of its developments meet industry best practice, and that development practices are continually improved. CWF is a leader in the renewable energy industry's best practice endeavours; contributing to the development of various government and industry guidelines, and taking a lead on project commitments
482	.072	Community consultation	The Developer has not adhered to the principles on the framework on which they claim to base their consultation approach. Specifically, relating to the above points: ❖ The developer has failed to hold a single open consultation meeting. Far from seeking out, and facilitating the involvement, community members have been excluded from the process by the sustained and deliberate campaign by the developer to avoid proper, open community consultation forums. ❖ The developer has refused to organise, or even attend a single open community consultation forum throughout the entire process. This is despite being invited to attend a community organised meeting in an attempt to have community concerns addressed.^32 Requests for meaningful, and transparent consultation through open forums have been declined. Therefore, the developer has prevented the participation of a significant percentage of the community ❖ The developer has failed to provide the community, organisations, and other parties with complete, honest, and transparent information enabling them to be informed as required for participation in the process. ❖ The developer has not been genuine in seeking meaningful consultation with the community. Instead of engaging in open forums, the developer has elected to hold private small group meetings. This has excluded a large section of the community from participation. Information published by the developer is often spin, incomplete, misleading, and deceptive. The developer, by withholding information and misrepresenting facts, is in effect denying the community their right to participate in the consultation process. ❖ By refusing to participate in open consultation, the developer has excluded a sizable percentage of the community. The developer has breached the consultation framework they claim to adhere to.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments.
482	.073	Community consultation	"Ark Energy advocates a social licence to operate based on the accepted industry definition: A level of acceptance or approval continually granted to an organisation's operations or Project by the local community." (11.1.2 draft PER) By their own definition, the developer clearly has no social licence to operate. A level of acceptance cannot be assumed when: 1. Consultation in an open, inclusive, transparent manner has not occurred at any stage of the process. 2. By deceiving the community through misrepresentation, omission and lies, the community has not had the ability to provide acceptance. In the absence of truthful information, approval for a social licence to operate cannot be claimed. Furthermore, any tacit approval given based on false information is therefore invalid and void. 3. Widespread rejection of the development has been clearly, and continually exhibited within the community.		No	CWF is committed to transparent and meaningful consultation to understand local community views, feedback and concerns and provide informed responses to issues raised. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. Section 11.1.2 summarises the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' to which CWF are a signatory. This charter demonstrates CWF's voluntary commitment to engage respectfully with communities, be sensitive to environmental and cultural values, and make a positive contribution to the regions in which it operates.
482	.074	Community consultation	Epuron has lied and deceived the community by providing false, misleading, and deceptive information. This includes, but is not limited to: ❖ Creating and publishing photo montages, through their website, heading all advertisements in local newspapers, as well as in the window of their Ravenshoe office, that suggest the land at the development site is highly degraded, and largely cleared grazing land. No mention is made accompanying these montages, in press releases nor in PR spin that the sites are comprised of 95% remnant vegetation. ^4 ❖ In the MNES report it is clearly stated that "The Project area is predominantly characterised by remnant vegetation with existing impacts generally limited to agricultural activities and electrical infrastructure."^38 This is in stark contrast to numerous advertisements placed in The Express newspaper simply referring to the sites as 'cattle grazing properties'. ^39 ❖ Publishing a full two-page advertisement in The Express newspaper 2nd Nov 2022 sub-headed PROJECT FACTS that provides a photo montage and three photos showing cleared, degraded land with little to no trees ^40. Thereby falsely creating the impression that these photos are indicative of the development area. This has been carried out in a deliberate, and sustained manner in order to deceive the community. This information is clearly inaccurate, and incomplete. It therefore breaches three of the four principles of 'Openness' the developer claims to adhere to. ❖ Deceiving organisations and individuals during information sessions, providing knowingly false information. Example Ark Energy's Communications & Community Engagement manager XXXX telling attendees at the Ravenshoe Chamber of Commerce 'project briefing' (Sept 20th, 2022), that Koalas had not been seen in the area for over a decade. "I think one Koala was found on Yourka the property just to the south of the site maybe 10 years ago".^41 This is despite well-known evidence existing of a male Koala photographed on the adjoining Yourka station not ten – but just two years ago (8/10/20). This Koala is specifically referenced in the developer's MNES report dated 22nd June 2021,^42 and as such is well known to senior Epuron staff (now re-branded Ark Energy), involved with the Chalumbin development. ❖ There is significant community awareness surrounding Koalas, with widespread concern for their ongoing protection. This was amplified following extensive media attention regarding the change in their status to endangered in Feb this year ^43. The Ark Energy representative who made this claim, holds a key senior position as Communications & Community Engagement Manager, with 20 years' experience working for large/multinational companies. This Manager is in charge of community consultation. This manager is the person Ark Energy specifically refers to in the draft PER when they state: "the Project team includes community engagement specialists". (11.0 draft PER page 593). ❖ It is beyond belief that a manager in this key role, and having given many prior briefings on the development, could have made this claim inadvertently, or as a once-off mistake. Was this a deliberate, wilful attempt to deceive the public in order to allay rising concerns about the impact to potential Koala habitat posed by Chalumbin? What other lies have been told behind closed door briefings, one-on-one and small group private meetings? That's just it the public will never know unless the information leaks – that's the point by design!		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
482	.075	Community consultation	❖ The developer has failed to inform a significant proportion of the community, by failing to facilitate or attend an open community consultation forum. As there has been no open forum, it is impossible that all concerns and issues could be identified let alone addressed. By refusing to participate in the most basic, open form of communication, the developer chosen avoidance over connection. To claim the developer has been proactive is beyond belief. ❖ The developer has deliberately and in a sustained manner, deceived the community by publishing misleading photos, making misleading and incomplete statements, and by avoiding disclosing the full nature of the impacts posed. The developer has actively sought one on one and private meetings, in an opaque manner. In bypassing the transparency required to ensure due process, this has raised suspicions surrounding the motivation of the developer. There is no doubt, the developer has sought to carry out the absolute minimal amount of so-called consultation, so they could 'tick the box' on legislative requirements, whilst at the same time actively avoiding doing so. Epuron / Ark Energy have elected to do so in an attempt to: 1. Hide the true extent of community opposition, including limiting negative publicity fallout from media. 2. Control the narrative, actively and in a sustained manner misleading the public.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
482	.076	Community consultation	ARK ENERGY quote draft PER 11.3.16 page 604: 'The animated reactions of a small group of people put the safety of other attendees at risk and their behaviour also prevented all attendees from having the opportunity to speak, hear or be heard. Based on learnings from the first information session, the approach to the second round of information sessions was adjusted and these were offered as multiple smaller sessions with a presentation. The sessions were attended by key members of the Project team and specialist consultants. This format was welcomed as more inclusive.." ❖ The above statement is a blatant attempt to re-write history and in no way, presents an accurate depiction of what happened on the day. In fact, so far removed is this account from reality, that it would appear to be a blatant attempt to deliberately deceive the Hon. Ms. Plibersek and DCCEEW. ❖ To summarise what actually occurred: At 3:00 when the doors were unlocked (the venue being a council owned public hall), attendees entered the room to find that not even a single chair has been setup! Community members took it upon themselves to bring out chairs so that everybody could have a seat, starting with the elderly. 2. By 3:20 not a single word had been spoken by Epuron. Community members, by now a sizeable crowd, (in a large building), were seated and waiting for the community consultation meeting to begin. There were no microphones – there was no PA. At 3:24 an Epuron representative, who turned out to be the General Manager of QLD Development, but who refused to even provide his name, addressed the attendees. With anger brewing at the delays, the development manager very rudely stated there would be no presentation – it was simply an opportunity for people to look at information brochures and posters. It would be fair to say that the development manager (later identified post-meeting as being John Sadler), exhibited a shocking level of hostility towards Traditional Custodians, including Elders and did not want to answer their questions. ❖ The developer's claim that small information sessions were held as a consequence of attendees putting the safety of others at risk is an utter fabrication. ❖ An email from Paul Stangroom, Epuron's Development Director dated 27th Jan 2022 states: "The decision to hold a series of smaller information sessions is a response to the current health and safety risks related to COVID. Unfortunately this is out of our control and although a single event would be easier logistically, we are of the view that it would not be responsible to host a larger public gathering as you describe in Ravenshoe at this time." The email concludes by saying: "We will of course revert to holding public information sessions at a later, more appropriate time."* This never occurred. (*Refer to page 49 of this submission). ❖ In addition, in briefings the developer has been apologising for what occurred at the Sept 16th meeting. I have an audio recording from a 20th Sept 2022 briefing that I am happy to pass directly onto DCCEEW where XXXX, (Ark Energy's Communications and Community Engagement Manager), states: "Community engagement - um we got off to a really rocky start (laughs). I don't know if anyone here went to the September 2021 information session which by all accounts, and we'll be the first to admit was a shit show, um and we apologise very much for that". ^47		No	CWF is committed to transparent and meaningful consultation to understand local community views, feedback and concerns and provide informed responses to issues raised. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. Section 11.1.2 summarises the Clean Energy Council's 'Best Practice Charter for Renewable Energy Projects' to which CWF are a signatory. This charter demonstrates CWF's voluntary commitment to engage respectfully with communities, be sensitive to environmental and cultural values, and make a positive contribution to the regions in which it operates.
482	.077	Community consultation	❖ At the Ravenshoe Chamber of Commerce 'project briefing' on the 20th Sept 2022, Ark Energy admitted the so-called 'independent' chair of the declared 'voluntary' group is in fact being paid.^50 ❖ The 'Community Advisory Group' is nothing more than a blatant attempt to tick the box on consultation. It offers no meaningful purpose other than how to spend grant money which is contingent on development approval being obtained. This $500000 grant is therefore a lever, being used to attempt to buy favour within the community. The advisory group is not representative, has met just twice, and no weight should be attributed to it as a consultative body. ❖ The independence of the chair is highly dubious, given her position as founder and managing director of a company that provides 'Strategic advice to fast-track project approvals', to renewable energy companies.		No	As set out in Section 11.3.2 the project established a Community Advisory Group, based on the Community Consultative Committee model where this is a requirement of the assessment regime, with a Terms of Reference, Charter and Code of Conduct. The group has an independent chairperson and eight members including five community representatives, two representatives for the Traditional Owners and a representative for Tablelands Regional Council. The group meets every few months and provides an important forum to discuss topics of interest and collaborate on building greater community awareness and participation in the Project.
482	.078	Loss of carbon stores	❖ The assumptions made in the calculation of carbon sequestration are on oversimplification and cannot be relied upon as a definitive assessment. It is beyond my ability to supply specific calculations though I would urge the DCCEEW and the Hon. Tanya Plibersek to utilise the extensive resources available to the department to independently assess the claims made.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Carbon sequestration potential within the below-ground biomass will not be lost during the construction and operation of the Project. The leaf litter, organic matter and soil (which is noted as potentially containing almost 80t of carbon per hectare) will be stockpiled and respread during construction. This carbon will not be lost; it will form an important part of rehabilitation efforts. The figure of 21 per hectare of carbon - adopted in the GHG assessment within the PER - was taken from material prepared by Australia's Chief Scientist (2009) - "Which plants store more carbon in Australia: forests or grasses?". This figure is considerably different from the 100t to 500t of carbon per hectare within the "Wet sclerophyll forest: regrowth benefits management guideline". The diameter at breast height (DBH) of the vegetation is noted as a key determinant of the carbon sequestration capacity of the vegetation (this increases exponentially as the DBH increases). Taking a median average of the quoted carbon sequestration potential of the wet sclerophyll forest (of which 117ha is within the Project footprint) and applying this to the value of all of the Project footprint (1,071ha) is a conservative approach for discussion and comparative purposes. Calculations with such a conservative approach indicate that the Project would still be carbon positive; it would take 3.2 years to be carbon neutral and over the 30 year operational life would pay back the costs 9 times over.
484	.001	Opposition to project	Submission raises substantially similar issues to Submission 482 (albeit a more summarized version).		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
486	.001	Survey effort	Note submission has been summarised to extract key points requiring response. "Wet season surveys were planned for late January 2021 in accordance with the Queensland Terrestrial Vertebrate Fauna Survey Guidelines (Eyre et al 2018). That year's wet season brought a number of cyclones / tropical storms to the region. Although there was little rainfall during the field surveys, there was considerable rainfall leading up to the surveys and conditions across the Project area were very wet. Flooding across the low-lying parts of the site cut off access to many of the ridgelines, limiting the amount of survey work that could be undertaken in proximity to proposed turbine sites. In response to this, some additional survey work was undertaken in March 2021 at the end of the wet season, specifically targeting potential habitat for northern and spotted-tailed quoll, magnificent brood frog and a number of rainforest stream frogs in areas that had not been accessible earlier in the season." "Night-time survey work was targeted towards vegetated areas that were safely accessible. Due to the terrain and the target species, most of the spotlighting surveys were undertaken from a vehicle on existing access tracks that were considered safe to drive at night." It is quite clear from above that wet season surveys should have been carried out late January 2021 in accordance with the Queensland Terrestrial Vertebrate Fauna Guidelines (Eyre et al 2018) however it is clear from above that "Flooding across the low-lying parts of the site cut off access to many of the ridgelines, limiting the amount of survey work that could be undertaken in proximity to proposed turbine sites. In response to this, some additional survey work was undertaken in March 2021 at the end of the wet season. Due to many Fauna Studies not being carried out in the wet season, Ark Energy may have missed critical threatened species including migratory birds and bat populations. With the wet season it brings an abundance of food sources as most trees are flowering, fruiting or seeds. Also, an abundance of insects, frogs and reptiles. It is quite apparent also that "most of the spotlighting surveys were undertaken from a vehicle on existing access tracks that were considered safe to drive at night." It is therefore possible to say that essential surveys of Threatened Species have been limited to access, missed or not carried out according to Surveying Guidelines and therefore proposes a huge problem for the Minister to make a decision regarding this project based on the Ark Energy's Information gathered in the PER. The PER looks to me as if is a 'Copy and Paste' from other wind farm projects and then tailored towards a particular area. However, in the case of Chalumbin, the area to be tailored is far too Complex due to the unique terrain, habitat and threatened species therefore this has resulted in huge problems for the Proponent.		No	The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
486	.002	Project location	The area for the Proposed Chalumbin Wind Farm is of a High Environmental Value (HEV) area of Critically threatened and endangered species. When studies were carried out in the late 1980's for the Tully-Millstream Dam an experienced environmental team was commissioned by QEC to report on the area of HEV as shown above specialising in their field of work. However even with the above specialised team the Tully-Millstream Dam was still stopped due to the "The project cannot be built without significant damage to the environment, including to World Heritage Value" (see Hon. Paul Keating statement attached). Hon Paul Keating Prime Minister states also that his government had spent 13 years of work to put in place the fabric of environmental protection, in the national interest to protect Australia's rich environmental heritage for the future. All this was work was achieved, and tax payers' money spent to protect this area of the proposed Chalumbin Wind Farm approx. in 1988; yet we are now seeing a return of proposed destruction to the same area in 2022/23.		No	The Keating statement refers to the fact that the Tully-Millstream Dam was proposed within the WTQWHA. The Chalumbin Wind Farm is not proposed within the WTQWHA.
486	.003	Rehabilitation	restoration of vegetation that is cleared for construction purposes and a separate plan includes measures to manage, re-use and salvage cleared vegetation. There is NO POSSIBLE WAY THAT THE 70 PER CENT OF IMPACTED VEGETATION WILL BE RESTORED OVER THE LIFETIME OF THE WIND FARM. THE TARGET IS UNATTAINABLE NONE OF THE FOLLOWING HAVE BEEN TAKEN INTO CONSIDERATION WHEN STATING THIS TARGET AND I AM SURE THERE WILL BE OTHER ISSUES THAT HAVE NOT BEEN COVERED IN THIS SUBMISSION TOO: The following is evidence and comparing issues relating to the nearby Windy Hill Wind Farm. Maintenance and Replacement of Blades After construction according to the Qld Government State Approval 70% vegetation has to be restored, thus leaving minimum footprint required only for safe operation, what then happens then if one of the blades is faulty like what happened at Windy Hill wind farm. When one of the blades over 12 years ago flew off a turbine, shattering into hundreds of pieces (it was lucky that it was not one of the turbines near the main highway). All the blades on every single turbine were replaced. I ask if in the event of this happening at Chalumbin, how does the 70% vegetation restored sound now when it all has to be cleared again to fit new blades in the event of faulty parts. Also being in a high cyclone area it is very highly possible that these blades could blew off in the event of a cyclone and have to be replaced yet again, this not good for the 70% revegetation targets, as access tracks will have to be cleared of any new revegetation to replace the blades.		No	Preliminary Rehabilitation Plan (Appendix K of the PER) has the intention for rehabilitated vegetation communities to have reached remnant status by the end of the operational lifetime of the proposed wind farm (approximately 30 years), as determined by comparing the rehabilitated vegetation communities with published benchmarks for the relevant regional ecosystems. Construction of the project involves a greater footprint that will be rehabilitated than will be disturbed when turbine parts including blades need to be replaced. If blades do need replacing then a new swept path analysis will be undertaken to identify if any vegetation will be impacted. Impacts during decommissioning (refer to section 5.4 of the PER) are likely to relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning.
486	.004	Hazard and risk	Windy Hill Turbine Fire What happens to the so called 70% revegetation targets now! Not only have you got a potential fire hazard in a remote area and difficult terrain to attend too, this could lead to uncontrolled fires in the World Heritage area, the vegetation is so dense in some areas it has the potential to burn fast especially if this happens during the extreme dry periods it could create a large wildfire covering thousands of acres, which results in a massive risk to threatened species and a hazard to people's lives and homes nearby. The area of the proposed Chalumbin is at least 45 minutes for wind turbines near rural residential areas and will be up to 2 hours or more for other turbines in more remote areas bordering World Heritage and Bush Heritage areas. Correct me if I am wrong but I see no Fire Management Plan in the PER only to say basically the developer will deal the event if it happens, well wake up Ark Energy it does happen! You could potentially burn down the whole of Ravenshoe and the surrounds just look at the bush fires that happened in the Ravenshoe area in approx..2012. All threatened species of Flora and Fauna that have been killed during the construction of the site are in a constant state of threat of a potential bush fire too, which will have a further decline of critically endangered species.		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
486	.005	Decommissioning impacts	I have to ask the question to Ark Energy, after construction the goal is to rehabilitate the land at least 80% spectacled flying-fox, magnificent brood frog at least 70% and a further goal of 70% of all other areas. The land had to be cleared re: 75m wide access tracks to get the Massive Turbines onto the site, so I have to ask when decommissioning of the site goes ahead, how do Ark Energy propose to remove the Massive Turbines without having to clear 75m access roads again to get the Massive Turbines out. Just doing the maths, this means; 100% vegetation cleared for construction of the 75m access roads and then 70% revegetation carried out after construction. Which will leave a 30% overall clearing of vegetation. However, what happens when the 70% of revegetation has to be cleared again on decommissioning therefore revegetation program amounts to ZERO % of the land. Or do Ark Energy propose to leave the Massive Turbines there to pollute the area of the toxic components? As stated in the Public Environment Report it has not referenced in the decommissioning section on HOW Ark Energy is proposing to remove the Massive Turbines. "At the end of the Project's operational life, infrastructure will be decommissioned and the site rehabilitated to facilitate continuation of the current land use (i.e., grazing). Decommissioning involves the removal of all above-ground infrastructure such as turbines, overhead transmission lines, switch stations, etc. Removal of buried infrastructure is not normally undertaken as this typically causes additional disturbance and environmental impacts. Once aboveground infrastructure is removed, the land is rehabilitated in line with specific approval conditions and landholder agreements. Impacts during decommissioning are likely to relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning." What a 'laugh' it states "Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment". What about the Massive Turbines?? "Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning." "Rehabilitated again" The above statement reads to me that rehabilitation process is ZERO! A 70% target is extremely unrealistic and the Queensland Government is relying on the 70% revegetation! Wow!		No	Aboveground infrastructure will be removed from site during decommissioning. Large pieces of infrastructure will be broken down at site and removed in smaller pieces to reduce and avoid the need to reclear vegetation and widen roads. Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment which cannot be removed in smaller pieces. This is to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
486	.006	Spectacled flying fox	SPECTACLED FLYING-FOX Ark Energy's goal to rehabilitate the land at least 80% spectacled flying-fox, how do they propose to do this when most species of flowering trees or fruit bearing trees take up to 8 years to mature. The Flying-fox have a built-in radar that enables the species to return to its natural habitat year after year, feeding off certain trees, depending when they are flowering, seeds or bearing fruits. So, what happens if these trees are removed that the flying fox relies on for an essential food source? They also rely on these trees for roosting. Habitat destroyed during construction will have a massive impact on the flying-fox species. They will travel to their normal feeding habitat only to find there is nothing there, this would mostly likely result in starvation. They are not going to wait around for 8 years! Any further decline in this species is critical, and it runs the risk of extinction in a significant species. Without the spectacled flying-fox the rainforest dies. The species is imperative to the life of any Forest. The risks to bats are forest clearing, deaths from wind turbine collisions and deaths from extreme pressure of turning blades. A triple impact for an already critically endangered species. Australia's Spectacled flying-fox species is currently at critical danger levels as over the past few years their numbers have declined significantly, do we want to see a further massive mortality? Chalumbin is a REFUGE, please do not clear this area of their habitat and lesson their numbers further. If this species dies the whole wet tropics dies as they are natural pollinators and seeding species for the forests. Evan Quartermain, Head of Programs at Humane Society International Australia said: "The spectacled flying-fox went from being considered non-threatened to Vulnerable to Endangered under Australian law in less than 20 years. That we've already been able to state the case for a Critically Endangered listing demonstrates an alarming decline—it is no exaggeration to say that these bats are at the last stop before extinction in the wild. We cannot delay further protections any longer or we will be witnessing the end of a keystone species." "We're at the point where major investment in spectacled flying-fox habitat restoration and camp protection is the only reasonable response. It's clear dispersal and land clearing decisions are not being made in the best interests of the spectacled flying-fox—for the future of the species and the ecosystems that rely on them, that must change fast," Mr Quartermain concluded. The area of Chalumbin cannot be used as an industrial wind power station, the area is so significantly important, it goes beyond words. Unique High Altitude Wet Tropics, please save the spectacled flying fox and all the other unique bat species such as the that reside here. Bats and Wind Turbines do not work, the outcome is high mortalities of bats. This is the wrong site for a wind power station.		No	Spectacled flying-fox has not been definitely recorded within the Project area. Nonetheless, Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
486	.007	Vegetation clearing	Wooroora Station has many complex areas of biodiversity, in some areas of Wooroora within the wet sclerophyll forest there are many sub-bioregions mainly in "gully areas" that have very complex eco-systems as pictured below, altitude approx. 800m. Also note pictured below the rare Kauri Pine trees in these Gullies as well. Among the world's mightiest trees growing over 50m tall, and living over 2000 years old. Is the Kauri Pine tree not better for climate change than a wind turbine that lasts for 25 years? What will happen to these Kauri Pine trees when the access road is cleared through here?		No	Kauri Pine or Agathis robusta is not listed as a rare plant and is considered Least Concern. Nonetheless, micrositing of access roads will be used avoid the need to clearing individual trees within gullies to the extent practicable.
486	.008	Survey effort	Surely before blasting of access tracks occur areas such as these should be studied rigorously for such a rare species of mammal before it is too late, along with other species, they are hidden valleys of fragile eco-systems. The access roads 75m wide proposed by Ark Energy have mapped a direct line through these Gullies. Like the Spotted-tailed Quoll; Fauna survey sites appear to correspond with more easily accessible areas. A number of areas, particularly within the more southern parts of stage 1, with proposed infrastructure were not surveyed. The QEC feasibility study; trappings and sightings of the Atherton Antechinus are at Dinner Creek, Charmillin Creek, Koomboolooomba Creek, Koolmoon Ebony Road and other areas at Koolmoon. These areas are in very close proximity to the project site of Chalumbin, where there have been no studies carried out by Ark Energy for the Atherton Antechinus; and no suitable studies for any other endangered species in these Gullies either.		No	The Project has been informed by a full suite of desktop studies and field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their duration and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
486	.009	Adequacy of the PER	Some of the pictures of Greater Gliders taken on field study 15 November and 18 November 2022, as stated before in my previous submission we observed 12 greater gliders, 3 yellow-bellied gliders, approx. 3-4 sugar-gliders. The reason why the figure is 3-4 sugar gliders is because one could possibly have been a mahogany glider. Therefore, for Ark Energy to say there are insignificant numbers in the PER report is an understatement and just proves how poor Ark Energies studies have been all Endangered and Vulnerable within the project site. It really shows that the Minister cannot rely on Ark Energy's Public Environment Report for informed information regarding threatened species. The area is full of all species of Gliders (see my previous submission on Yellow-bellied Gliders for more information re: P&E Law).		No	The PER categorically does not state that there are insignificant numbers of gliders.
486	.010	Northern greater glider	The distance a greater glider will cover from gliding between trees is up to 50m if the access tracks are cleared for 75m, there is no doubt the fragmentation of the forest will cause major problems for all glider species not only loss of habitat but the gliders will be prone to predation from wild pigs, wild dogs, dingoes and birds of prey. The whole area is alive and thriving with Glider populations.		No	Not all access tracks will require a 75m-wide clearing, this is the maximum width that may be required in areas of particularly steep topography. Many of the access roads will be considerably less wide than this. In locations where a wider area is required to be cleared, the majority of this clearing will be rehabilitated as soon as possible on completion of construction, using tree species preferred by the northern greater glider. Where necessary (i.e. for the sites with widest clearing), glider poles and rope bridges will be installed as soon as construction of the road is complete, to assist in fauna movement while the rehabilitated vegetation is developing.
486	.011	Survey effort	With regards to the above statement by Ark Energy "The Project area is not a stronghold for any koala population and if koalas are present within the Project area, it is likely to be on a very sporadic basis and/or in low numbers." Surely this is more of a reason not to destroy their habitat so they can increase their numbers. Especially as in February 2022 the status of the koala has recently changed from vulnerable to endangered. However, there are Koala's on both Glen Gordon Station and Woorooora Station, it is local knowledge that there are Koalas along the Blunder Creek near the Glen Gordon Homestead and at the back country of Woorooora Station. A Station Worker at Blunder Park had seen a Koala on the Station there. The reason the owner of Woorooora Station has probably never seen a Koala is because he works away a lot and owns a heavy earthmoving business and would not be on the station most of the year. Studies from Ark Energy into to Koala populations on the proposed project site are inadequate, as with all endangered species on the Public Environment Report, it obvious it is in the best interest of Ark Energy not to provide adequate studies and reveal exactly what Endangered Flora and Fauna is on these Properties.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones – but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment
486	.012	Fauna mortality turbines	Photographed below on Glen Gordon Station, could these photos taken 19/12/22 be a Red Goshawk? Where these photographs were taken was not far off the Blunder Creek and nearby Woodlands as stated above being perfect territory for the Red Goshawk. The possible Red Goshawk here was flying over the proposed access roads for the Wind Turbines and also in an area near proposed wind turbines, direct collision of such a rare bird is inevitable. Glen Gordon Station is reportedly being stated as not so 'significant' due to the army being based there in the second world war and it was used as a training ground, yet the second world war was over 77 years ago and vegetation would have regenerated quite considerably since then.		No	Based on the tail shape, small head and neck projection, and very long wings we believe your observation is a square-tailed kite, not a red goshawk.
486	.013	Non-indigenous cultural heritage	Both proposed access roads Wooroora Road and Innot Hot Springs, are wildlife corridors and are just as much part of the eco-systems of the Chalumbin area. An example of this is Wooroora Road. Originally Aboriginal Tracks and an Old Drovers Route from Glen Gordon Station, Glen Ruth, Wooroora Station etc droving cattle to Tumoulin or Tully was used by the first European settlements. The Wooroora Road Drovers Route is rich in history and mentioned in the locally famous book "The Bushman" a True Story told by Glenville Pike about the legend Bill Toohey. There is so much in the book "The Bushman" and the historic value, it portrays a glimpse of what life was like in the 1930 around Chalumbin, it shares stories of Woorooora Station, Glen Gordon, Mt Ronald Homestead, Vine Creek, Tumoulin and much, much more. As stated in the book, Stoney Batter has hard rock and is a massive hill side, the only way you could get huge turbine parts through this way would be to blast Stoney Batter all together or Ark Energy would have to build a massive bridge. The water coarse that flows from the bottom of Stoney Batter follows a route that flows direct to the famous Millstream Falls which is the widest Waterfalls in Queensland and is located in a National Park. Any disturbance at Stoney Batter would have an impact on National Park Water Fall. The Millstream Falls is a known tourist attraction not to mention the eco-systems around the falls. There are lots of Rock Wallabies that live in this area of Stoney Batter. Please do not industrialise a rural area and roads that hold so much history, including cultural heritage.		No	Appendix C of the PER provides a summary of the cultural history of the area - from both an indigenous and non-indigenous perspective. The potential use of Wooroora Road for access to the site is under consideration; however, no decision has yet been made by the proponent about the selected access. Should Wooroora Road be selected as the access to the site, and Stony Batter require upgrades at the pinch point identified in the Transport Route Study (Appendix R of the PER), care will be taken to ensure that there are no detrimental impacts upstream or downstream as a result of the activities.
486	.014	Traffic and transport	Wooroora Road the proposed access road is also a school bus run, emergency services route for Ambulance, Police and Fire. Concerns are for the safety of children in the construction process. The delays with the massive haulage trucks from the transportation of wind turbine parts and the number of concrete trucks, aggregate and gravel trucks using the road. Dust for the local resident is a major issue as part of Wooroora Road is not sealed. Residents would have problems associated with dust and noise pollution. All this would have the same impacts on the wild life in the area. Known wildlife in particular is the Red Goshawk, Masked Owl, Northern Bettong, Rock Wallabies, Pretty Faced Kangaroos, Gliders, Spectacled Flying fox, Emu, Cassowaries, Echidnas, Blue Tongue Lizards, Tawny Frogmouth, Platypus. Wooroora Road is a located rural and rural residential, we do not consent to any permits or changes to the road to be reclassified to heavy industrial.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
486	.015	Biodiversity general	There are massive trees along Woorooora Road that house many vulnerable and endangered species. Leave Woorooora Road alone as a nature corridor. Even if heavy vehicles end up not using the road, the road will be used heavily by light vehicles too. Noise, dust and light pollution will all have a massive effect of the breeding grounds of many species. There is no doubt that the increase in traffic will kill lots of wildlife. Ark Energy have taken No consideration in the Public Environment Report for the Masked Owls living along the proposed access road. There is also a breeding pair at the Stoney Batter Creek too.		No	Any upgrade works (causeways/bridges) for either transportation route option (Woorooora Road or Innot Hot Springs) will be undertaken in accordance with the requirements of the Fisheries Act 1994, Vegetation Management Act 1999, Water Act 2000 and the EPBC Act. As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River.
486	.016	Northern bettong	Northern Bettong Woorooora Road has a breeding colony of Northern Bettongs, that regularly use the side verges and pockets of trees for foraging for sources as it always has the wetter softer soils, if the road is widened for access of turbines, these food sources will be destroyed and is a threat to the species which is already listed globally as endangered and listed on the IUCN Red List.		No	Information relating to a colony of northern bettongs on Woorooora Road does not appear in any publicly available databases or literature that the Project team can find. Well known biodiversity databases (Wildnet and the Atlas of Living Australia) were searched during preparation of the PER and there are no records of northern bettong within 10km of the Project area (which encompasses Woorooora Road) since 1988. In accordance with the species Recovery Plan and the Survey Guidelines for Australia's Threatened Mammals, an 11-month camera trap programme was undertaken across the Project area and no northern bettong were recorded (Section 4.7.6 of the PER). Section 8.6.6 of the PER assess potential impacts to the northern bettong in the event that it is present, and recommends mitigation measures to ensure the Project does not result in a significant residual impact to this species.
486	.017	Lumholtz tree kangaroo	Ref: QEC Feasibility Study During the fauna surveys undertaken as part of the feasibility study, Lumholtz's Tree-kangaroos were observed: • In upland rainforest to the west of Koomboolooomba Reservoir • In riverine vegetation along Blunder Creek some 3.5km from the rainforest edge, and • In lowland rainforest in the Tully Gorge" With regards to point 2 above, "In riverine vegetation along Blunder Creek some 3.5km from the rainforest edge", the buffer zone from the World Heritage Wet Tropics Rainforest Is only 600m to the proposed Chalumbin wind power station, the Lumholtz's Tree-kangaroo was clearly observed 3.5km from the rainforest edge according to the QEC Feasibility Study. This means that the project site forms a large amount of the Lumholtz's Tree-Kangaroo habitat. Especially as I understand, correct me if I am wrong according to the SARA application there was a mother and baby observed in the application by the Proponent to the Queensland Government, however clearly missed from the Public Environment Report to the Federal Government. Although only one has been photographed in PER. Why I have included the Lumholtz Tree-kangaroo under Access Roads, is because I would like to make an important point regarding the recently constructed Kaban Wind Farm site. The Kaban Wind Farm Construction workers, a large number of workers reside in Atherton and Yungaburra, they have been travelling everyday over the past year or so, to and from the site at Kaban. The construction workers and heavy haulage trucks have been speeding on the country roads and cutting through along the Upper Barron and East Barron regions and have now killed approximately over 5 Lumholtz's Tree Kangaroos including a mother and baby over the past year. It is extremely sad; this high biodiversity area is not use to this sort of Industrialisation and traffic, and these types of impacts have not been accounted for in the PER, they are the 'unknown factor' of an accumulated impact. I'm not sure how the general public, conservation groups and tourists would feel about this sort of story if the local news groups got hold of this type of reckless carnage, especially the Tree-kangaroo being an Icon of Australia, the 'Green Energy Label' is not looking so 'Green' with this amount of killing. These sorts of projects have impacts on the whole of the Atherton Tablelands not just restricted to site specific. Does Australia want to kill all species before it wakes up to protecting them.		No	We cannot comment on the Kaban Green Energy project. Section 4.11.1 of the PER describes how habitat for Lumholtz tree-kangaroo has been mapped across the Project area (see Figure 4.46), including riparian habitat associated with Blunder Creek and other waterways. The record by camera trap of an adult and a juvenile is also discussed and included on Figure 4.46. Section 8.10.2 of the PER assesses the potential Project impacts on this species (including relating to the proposed access roads) and describes the mitigation measures to be undertaken.
486	.018	Traffic and transport	Below are pictures of the two main roads that lead into Ravenshoe, over the past 2 years while the construction process was taking place for the Kaban Wind Farm, local residents have had to endure road conditions that are extremely bad. They are dangerous, unsafe and we are lucky the state of the roads did not cause a major fatality. The residents of Ravenshoe have been treated like second class citizens regarding the roads, it has taken Roadtek over a year to 'patch up' the Tumoulin Road. If this is the damage to roads in the construction process for the Kaban Wind Farm, what is this going to be like for the construction of proposed Chalumbin wind farm which is 3 times bigger. The pictures above are sealed roads and the heavy haulage has done this much damage, what will happen to the proposed access roads that are unsealed for Chalumbin. Constant emissions associated with heavy vehicles, noise, dust and mass killings of wildlife. Ark Energy in the Public Environment report have not provided any of these issues to be assessed by the Minister regarding Access Routes.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
486	.019	Construction impacts	During construction of the 86 wind turbines, Ark Energy propose to have 2 concrete batching plants. One will be situated near Oaky Creek the other near the Blunder Creek. In order to produce the concrete needed for the footings of 800 cubic metre footings. Water resources will have to be taken from these creeks. One concrete truck which hold 9.6 cubic metres of concrete takes approx 600 litres of water, therefore 800/9.6 = 83.33; 83.33 x 600 = 50,000 litres of water for one footing of a wind turbine to produce the concrete, then times this by 86 turbines equals 4,300,000 litres of water to be taken from a rare fragile equatic eco-system, including platapus, rainbow fish, fresh water crocodiles, fresh water mussels, black bream, turtles.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
486	.020	Social impacts	Living close to the Glen Gordon and Wooroora Stations proposed turbines I do not consent or my family and the property owner and their family I am writing this submission for too, to be assaulted by Electronic Magnetic Frequency or subject to noise associated with the proposed Chalumbin wind turbines.		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
486	.021	Loss of carbon stores	Every action has a reaction and if this project goes ahead in an area of such outstanding beauty there is no doubt that this will become an international environmental disaster on every scale. The damage will have a far greater impact on climate change, if the trees that regenerate for thousands of years in this forest are cut down. The climate will change opening up the forest and the temperature will rise. The hot Australian sun will then dry the wet sclerophyll forest and the dry sclerophlly forests and they will die. Fragmentation of forests have massive consequences for Threatened Species and will have a massive impact on World Heritage Wet Tropics.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. As described in Table 14-1 of the PER, central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
486	.022	Survey effort	It is clear that the surveys carried out by the Proponent fail on all areas, to really understand such a complex area of Biodiversity such as Chalumbin you really do need to live it. That means getting on the ground level and being amonst the Flora and Fauna, not being restricted to landowners access tracks. Years of study are required to really understand an area such as Chalumbin. As stated by Reserve Manager Paul Hales of Yourka Reserve, regarding Koala's "They're a hard thing to find, even when you know they're there,". In the QEC Feasbility study, Field investigations for the Yellow-bellied Glider, 630 observer hours were carried out on one Threatened Species. This is quite a considerable difference to the Proponent survey hours on a single species. Chalumbin has 35 Threatened Species, Communities and Heritage & National Values if you base this on 630 observer hours that is the equivalent to 22,050 Observer Hours at least and that should not include Cultural Heritage, which needs to have an independent study and survey.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
473	.001	N/A to PER matters	Thank you for the opportunity to provide a submission in response to the Chalumbin Wind Farm – Public Environment Report (PER). Terrain Natural Resource Management (NRM) is an independent, not-for-profit and community-based environmental management organisation, and one of 54 designated NRM organisations across Australia. Our vision is for a thriving and sustainable Wet Tropics region. We think innovatively and act collaboratively, combining the latest science with local knowledge to develop sustainable solutions that increase the resilience of forests, reefs, landscapes and local communities in Australia's Wet Tropics region of Far North Queensland. We use our knowledge of the region's land and waterscapes, industries and people to co-design effective programs that deliver multiple economic, social and environmental benefits.		No	Noted
473	.002	N/A to PER matters	Terrain NRM has a position on renewable energy, which is included in Attachment 1. In summary, the transition to renewable energy represents enormous opportunities for regional Australia but if we don't act strategically - considering all land uses and impacts - we will be addressing the climate crisis while greatly worsening the biodiversity loss/nature crisis. Both renewable energy and nature have vital roles to play in reducing and mitigating the impacts of climate change. Any actions need to be undertaken with a net gain to biodiversity that properly implements the mitigation hierarchy of avoid, then mitigate, with offsets as a last resort. We believe the current proposal for the Chalumbin Wind Farm does not meet the requirements for a Nature Positive project, and instead represents a significant net loss. **Note attachment 1 includes Terrain Renewable Energy Position Statement		No	The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
473	.003	N/A to PER matters	We have recently seen the advent of large-scale renewable energy projects in the Wet Tropics region such as the Kaban wind farm, which we believe has resulted in a net loss of biodiversity. We are concerned that projects are proceeding without due consideration of the cumulative impacts of these developments by all levels of government, and without the development of planning schemes to guide appropriate development. This is an old way of doing business which has led to our climate and environment crisis. We have the skills and knowledge to look at a much bigger picture and to avoid perpetuating the cycle of perverse unanticipated outcomes.		No	The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. The Chalumbin project will be assessed on its merits and is no way connected to other projects in the locality.
488		Opposition to project	As per Submission 484		No	See response to Submission 484.
473	.004	N/A to PER matters	Australia is biologically rich and diverse, and is one of a limited number of countries globally that is classified as biologically megadiverse. But it has the worst mammal extinction rate of any country in the world. Queensland Government data shows that more than 400,000 hectares of land was cleared in 2019-20 and more than 1 million hectares cumulatively in 2014-19. The Wet Tropics region has the highest levels of biodiversity in Australia. However, biodiversity is in a state of decline and under increasing threat. The Australian Government has recognised the value of this region and recently declared the Eastern Forests of Page 2 of 8 Far North Queensland a Priority Place. The proposed location of the Chalumbin wind farm is within the Eastern Forests region.		No	The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. The Chalumbin project will be assessed on its merits.
490	.001	Weeds and pests	The Chalumbin wind farm should not be approved because of: 1. The detrimental and negative impact this development will have on endangered forests, waterways and animals. We have volunteered many hours over the last two decades, engaged in volunteer community efforts to clear introduced weeds and replant native species		No	This feedback is noted. In recognition of the points you raised the "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area.
490	.002	Biodiversity general	2. In particular, the negative impact upon rare and critically endangered species of animals, through the destruction of their habitat. These animals include yellow bellied gliders, which our children have volunteered their time in the field to support community and scientist efforts to conserve		No	Baseline information relating to the yellow-bellied glider is provided in Section 4.7.12 of the PER; impacts on this species and proposed mitigation measures are discussed in Section 8.6.12. The Project is not anticipated to have a significant residual impact on the yellow-bellied glider.
473	.005	N/A to PER matters	At the United Nations Convention on Biological Diversity COP 15 in Montreal, which Terrain NRM attended, 196 nations signed the Global Biodiversity Framework. The landmark agreement has a global goal of halting and reversing biodiversity loss by 2030 through changes to our society's relationship with nature and the way our global economy operates. This agreement also acknowledges that we must address the twin crises of climate change and biodiversity loss together. Terrain's view is that, in line with this public commitment, our government and the renewable energy industry need to undertake better strategic planning of new renewable energy projects to place projects at locations that will address these twin crises, such as where land has already been cleared and there is community support. Models such as The Nature Conservancy (TNC) Site Renewables Right approach developed in the USA (Site Renewables Right) need to be considered, along with assessments that consider the cumulative impact of all projects within the region.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER). The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999. The Chalumbin project will be assessed on its merits.
490	.003	Fauna mortality turbines	3. The loss of life to birds who flight paths already exist in this area, and who will be killed by the turning blades of wind turbines, such as the beautiful cranes we see each year, and which we have also volunteered our time to count and conserve.		No	Sarus cranes have not been recorded in the Project area, despite two years of regular, seasonal surveys. There is no suitable foraging habitat for this species within the Project area compared with the cotton farms to the west, where the Project team have observed large numbers. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
490	.004	Emissions	4. The unsustainable nature of wind turbines - their manufacturing, installation, and non-recyclability.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
490	.005	Opposition to project	5. The widespread community opposition to this project, especially given the efforts our local Tablelands community has gone to to protect our ecologies. 8. The opposition Traditional Owners have for this project.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Wooroora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. The Project will seek to maximise the involvement of Traditional Owner knowledge in the rehabilitation, revegetation and offset management aspects of the Project.
490	.006	Visual impacts	6. The loss of visual amenity by the eyesore these proposed turbines would create, visible for many, many kilometres. This is socially irresponsible, and unfair to our Tablelands communities.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
473	.006	Project location	Terrain NRM has welcomed the interaction and dialogue with Ark Energy and Copenhagen Infrastructure Partners about the proposed project. However, we would like to make the following comments as we believe they need to be satisfactorily addressed before any relevant approvals are provided to enable the project to commence. These comments are as follows. Chalumbin is adjacent to the Wet Tropics world heritage area and comprises undisturbed forest, which will need extensive clearing for a renewable energy project. We note that one of the criteria for selection of the site was proximity to grid infrastructure. We also note that both the Queensland and Australian Governments have committed significant funding for new electricity grid infrastructure to expand the existing grid. Are there other suitable locations further to the west of the proposed site that have previously been disturbed, have similar wind resource as the Chalumbin site and would be a suitable hub for other projects with additional government investment in new grid infrastructure?		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
490	.007	Indigenous Cultural Heritage / Engagement	7. The destruction of sacred sites for Traditional Owners.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
473	.007	Rehabilitation	Ark Energy is a signatory to the Clean Energy Council's Best Practice Charter for Renewable Energy Projects. Item 9 of that Charter indicates a commitment to '...enhance the ecological, cultural and/or agricultural value of the land'. However, Ark Energy has so far committed to rehabilitate only 'at least 70%' of the cleared land and to provide strategic land-based offsets against other land that will not be cleared within the site. This commitment does not appear to align with the commitment within the Charter. We would strongly encourage Ark Energy to commit to developing a project that regenerates the site, providing a net positive impact on biodiversity and waterway health without using the proposed offsets - as the existing forests to be used as offsets are currently protected from clearing through State legislation. The current approach outlined in the PER does not appear to pass the 'pub-test' for establishing a nature positive project. There is some generic information contained within the PER and we would appreciate further clarification on Ark Energy's plans for rehabilitating the site and delivering a net positive impact on nature.		No	The Project has made an industry-leading commitment to rehabilitate up to 70% of the temporary construction disturbances and to retain only the minimum footprint required for safe operations (e.g. 5.5 m wide access tracks). This operational footprint is 107.2 ha (0.3% of the Project area). The Preliminary Rehabilitation Plan is included in Appendix K.
473	.008	MNES	Planning approval must not adversely impact the following: a. Matters of National or State Environmental Significance – There will be significant residual impact on five Matters of National Environmental Significance (MNES): the magnificent brood frog, masked owl, northern great glider, koala and spectacled flying-fox. The strategy and the resources allocated appear insufficient to manage this risk.		No	With respect to biodiversity, the PER identifies potential residual impacts of the Project to Matters of National Environmental Significance (MNES) after the avoidance, minimisation and mitigation measures are considered. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome.
492	.001	Biodiversity general	The Chalumbin wind farm should not be approved because: It will encroach upon World Heritage area, which our family enjoy visiting. It is entails large-scale clearing of critically endangered ecosystems It threatens the viability of critically endangered, and endangered, animal species which our family has volunteered time to protect and conserve.		No	The Project does not encroach on the Wet Tropics World Heritage Area. It also does not require clearing any critically endangered ecosystems. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
492	.002	Fauna mortality turbines	It entails fast rotating blades which will kill endemic animal species which already live or travel through this area, such as bats, birds and insects		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. Due to their height above ground level, turbine blades are not anticipated to significantly impact insects.
492	.003	Indigenous Cultural Heritage / Engagement	It wil destroy sacred sites for Traditional Owners.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
492	.004	Opposition to project	Our Traditional Owners do not consent to this proposal		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
492	.005	Visual impacts	The loss of visual amenity across a huge area, a negative impact experienced by all local and visiting peoples.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
492	.006	Social impacts	For a proposal that has such an enormous, detrimental ecological and social impact, the project lifespan is so short - only 30yrs at most - and will only generate a few long term jobs. I do not support or consent to this proposal.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.
473	.009	MSES	Planning approval must not adversely impact the following: Threatened species habitat – Extensive amounts of habitat will be cleared and the area will take decades to recover.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
494	.001	Biodiversity general	The Chalumbin wind farm should not be approved because: 1. My family have always lived in this area because of the quality and complexity of our local ecosystems, flora and fauna. This proposal threatens the viability of endangered forests, which do not exist anywhere else on earth 2. Within these forests, many critically endangered animal species would be negatively impacted, or even driven into extinction. Animals such as the yellow bellied glider, or various birds and frog species. As a child, I would volunteer to work in these forests, helping efforts to conserve the yellow bellied glider. 3. The Herbert River catchment would be negatively impacted by this proposal, which extends its negative footprint even further afield.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
494	.002	Visual impacts	4. This proposal suggests ruining the visual amenity of our entire Tablelands community, visiting a negative impact upon residents and tourists alike, every single day.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
473	.010	Water resources	Planning approval must not adversely impact the following: Aquatic ecosystems or water sources – The wet season in Far North Queensland is becoming more variable. A comprehensive strategy is needed to avoid impacting protected waterways and creek crossings for the life cycle of the project.		No	The Project is committed to avoiding ground-disturbing construction activities in the highest-risk months of January, February and March. It is acknowledged that there is variation in the onset and duration of each wet season. Construction activities will be managed in accordance with best practice ESC techniques and in accordance with a project ESCP. Operation of the Project is anticipated to result in notably less risk to the waterways within and surrounding the Project area, as the site will be stabilised and rehabilitation undertaken.
494	.003	Opposition to project	5. Despite its proposed enormous, negative impact, this project has a short life span - only 25-30 years at most. It is wrong that a company with no ties to our community,or history of conserving our environment should propose to come in and destroy our forests, waterways and animals. This proposal needs to be scrapped.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
494	.004	Fauna mortality turbines	6. Flying animals, such as bats, birds and insects would be killed by the turning blades. Our family have supported volunteer efforts to conserve saurus cranes, a species which would be killed in this manner.		No	Sarus cranes have not been recorded in the Project area, despite two years of regular, seasonal surveys. There is no suitable foraging habitat for this species within the Project area compared with the cotton farms to the west, where the Project team have observed large numbers. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
473	.011	Rehabilitation	We are not aware of any project in the Wet Tropics region undertaking vegetation restoration at the scale proposed on this site. If this project is approved, it is essential that sufficient planning and time is allowed before tree clearing works commence to: a. survey the vegetation and wildlife; b. confirm the most appropriate restoration methods to be used; c. develop and implement a monitoring and evaluation framework; d. establish the necessary revegetation infrastructure (soft and hard) and ensure traditional owners and the local community receive maximum benefit from the project (see item 8 below); e. demonstrate that collecting areas have been identified and necessary approvals obtained (e.g. QDES/QPWS requires permission to collect seeds and propagules from their lands); and, f. collect the seeds and 'cuttings' to be propagated, noting that collecting seeds and cuttings from existing species within the site will maximise the likelihood of success and that seed collection is seasonal and differs depending on the species. What has been done to address these concerns in planning this project, how will these considerations be addressed and what time has been allowed in the project schedule for these activities to occur before clearing commences?		No	The considerations raised in points a. to f. have been addressed in the PER and most of this information is contained in the Preliminary Rehabilitation Plan (Appendix K of the PER).
494	.005	Social impacts	It is ridiculous that this company proposes to drive into extinction our critically endangered animal species for a 25/30 year project, especially considering very little local jobs would be gained long term for our community.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project. The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. This is also fundamental to intergenerational equity.
473	.012	Rehabilitation	It takes 3-5 years for trees to establish to the point of being 'self-sustainable', during which time regular watering and weed management is essential. Depending on prevailing weather conditions, this timeframe may need to be significantly extended, i.e. in times of low rainfall, bush fires and cyclones. Significant water resources will be needed for both construction works and revegetation. The PER indicates that it is the responsibility of the contractor to source water for the construction phase. What assessment has been undertaken to identify the amount and quality of water needed for both the construction phase and over 675 hectares of vegetation rehabilitation works, and to ensure sufficient and sustainable reserves remain available for other users during and on completion of the project?		No	Trees that establish through natural regeneration do not need watering. This is the preferred approach. There maybe some additional management where tubestock is used depending on the weather and site conditions. Weed management measures will be required at all Project sites before, during and after revegetation activities, generally in accordance with the Preliminary Weed and Pest Management Plan prepared as Appendix F to the PER. Water for construction will only be used from approved sources and licensed if required. Detailed analysis of construction water requirements and sources will be assessed prior to construction.
473	.013	Hazard and risk	The fire management plan does not appear to consider the risk to the Wet Tropics Rainforest during the construction, operation and decommissioning of the project. What risk assessment has been undertaken and what strategies have been developed to avoid, reduce and mitigate this risk during construction and over the life of the project considering the impacts of a changing climate?		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
180h	.001	Opposition to project	Submission repeats Submission 180b		No	See response to Submission 180b.
496	.001	Opposition to project	The Chalumbin wind farm should not be approved because: the incredible wildlife in the area will be severely effected with the destruction of the habitat. This is pristine land. You only have to see the devastating results of what has happened already and the joke is that turbines are supposed to save the area and it patently creates more havoc and destruction everywhere they are erected. These turbines must not go ahead. Please listen to the Chalumbin people!		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
498	.001	Biodiversity general	The Chalumbin wind farm should not be approved because: It will put animals on the verge of extinction by eradicating large amounts of forest. Even if they don't become extinct, it will put pressure on them by destroying their homes. The animals threatened include koalas, yellow bellied gliders, frogs and birds. The project only has a 25 year life span, compared to the forest which has been here undisturbed for centuries. It doesn't make sense to make animals extinct for a short-lived project.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
498	.002	Visual impacts	It will ruin the view for everybody, which unfair for residents who have chosen to build their lives here for the beauty.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. While there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values.
498	.003	Indigenous Cultural Heritage / Engagement	It will destroy sacred and historical sites for our local Traditional Owners. Their culture has been here for thousands of years and they deserve respect. I don't support this project		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
473	.014	Fauna mortality turbines	Operational matters need significant attention, and there has been a volume of recent research undertaken on the impacts of wind turbines and blades on wildlife, including a number of important papers published in the past few years, but not included in your reference lists. Wind turbines are known for killing birds and bats. Recent studies have shown that deaths can be in the order of thousands per year over the lifetime of the turbines. The PER pays little attention to mitigating such impacts and we recommend that the proponent and their advisers obtain the relevant literature and professional advice on means of mitigating these impacts over the lifetime of the project.		No	Appendix G (Bird and Bat Management Plan) describes the mitigation measures that are proposed in order to minimise collision risk with birds and bats. An adaptive management framework is proposed (which is an industry-standard approach), as well as impact triggers and a decision-framework in the event that a significant collisions are recorded.
500	.001	Community consultation	Note submission has been summarised to extract key points requiring response. We recommend the Proposed Action not be approved because: No social license exists for the proposed Chalumbin wind farm The proposed Chalumbin wind farm faces widespread community opposition. Rainforest Reserves Australia have hosted 5 community information events in Ravenshoe, Cairns and Tully, Far North Queensland informing the community about the ecological impacts of the proposed Chalumbin wind farm since November 2021. Many attendees expressed shock at the wind farm as they had not been properly notified of the plans of the wind development, either by the proponent or the Tablelands Regional Council. Although awareness of the plan to construct the proposed Chalumbin wind farm has grown, there are undoubtedly still members of the community who remain unaware. We have fielded countless questions and emails from distressed community members who do not want the Chalumbin wind development to proceed, wondering why there has been no opportunity for genuine consultation before initial planning and development for the wind farm was undertaken.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
473	.015	Fauna mortality turbines	Curtailing wind turbine operation and speed at times critical to flying species such as birds, micro-bats and macro-bats. The modelling for these curtailments will depend on studies of the potentially affected species and their behaviours, such as determining when bats fly out from their roosts and return, and when affected birds are likely to fly and be affected, as well as monitoring specifically for bat and bird mortality. The project should commit to best practice curtailment, including recommended blade and wind speeds that trigger blade activity and curtailment. At present the commitment is vague ('may be considered' S8.1.2 Bird & Bat MP).		No	The Project team has taken on board this advice, initially received during a project briefing with the Spectacled Flying-fox Recovery Team, and has revised the Bird and Bat Management Plan to make a clear commitment to best practice curtailment where this is considered to be appropriate through the BBMP's adaptive management framework.
473	.016	Fauna mortality turbines	Making a more specific commitment to adapting to findings from ongoing studies of birds and bats to minimise the impacts of the blades on the affected species.		No	The Project team has taken on board this advice, initially received during a project briefing with the Spectacled Flying-fox Recovery Team, and has revised the Bird and Bat Management Plan to make a more specific commitment to adapting to findings from the ongoing studies of birds and bats, in order to minimise the impacts of the blades on these species.
500	.002	Social impacts	Saying that it will create 20-30 jobs when commissioned and over the life of the project is laughable. Our bakery and supermarkets employ more than that. One thing that hasn't been explained by these project proponents is "Will those 20-30 employees be employed at Chalumbin alone, or will they be working for all the turbine projects in the area?" So pretty much, yet again, are they cumulative or just another alleged fact that no-one questions? I don't know?		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. Section 13.0 of the PER describes the considerable economic benefits that are predicted for the local and regional economies, as a result of the Project.
473	.017	Fauna mortality turbines	Cont. of issue 473.016 Considering specific measures such as including one black blade among the three blades. (This simple step has shown promise in some situations and should be investigated and implemented, or information should be presented to demonstrate that it is not effective in this situation.) Considering high-technology deterrents and detectors such as flock monitors (e.g. Identiflight) that can detect approaching flocks of birds and bats and immediately curtail the turbines' operation, and hyper-sound devices that can deter certain species from approaching. Using a combination of active searches and conservation detector dogs to detect, monitor and account for impacted animals (birds and bats). Detector dogs have been shown to be significantly superior to even experienced human wildlife experts in detecting carcasses and injured animals.		No	The Project team has taken on board this advice, initially received during a project briefing with the Spectacled Flying-fox Recovery Team, and has revised the Bird and Bat Management Plan to make a clear commitment to the use of detection dogs for carcass searches. The Bird and Bat Management Plan provides a framework for adaptive measures based on observations and risk. Part of this adaptive management may be the use of deterrents in the future.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
473	.018	Fauna mortality turbines	Cont. of issue 473.016 Making the data available in raw form to either the public or to regulators or researchers (possibly under licence and IP restraints) so that future wind farms, including the proponent's, can benefit from research into improvements of wind turbine operation. In the PER, reporting on monitoring is currently committed for only 2 years. This should be extended to at least 5 years to provide more robust data that covers a range of seasons and years, which can be variable in the tropics. Committing funding to wildlife carers in the region where injured animals are to be delivered, as the carers depend on grants and donations.		No	The monitoring period will be in line with Project approval conditions; these typically are two years with potential for extension based on the results of the first two years. The Project team has taken on board this advice, initially received during a project briefing with the Spectacled Flying-fox Recovery Team, and has revised the Bird and Bat Management Plan to make a clear commitment to make survey and monitoring data available in raw form to researchers (in the same way that data has already been shared with the Magnificent Brood Frog Working Group). The proponent welcomes the submitter's identification of an opportunity to partner with the project to support conservation efforts for the Endangered spectacled flying-fox and will continue those discussions to further explore that opportunity.
473	.019	N/A to PER matters	This project is anticipated to have a lifespan of at least 30 years, and project ownership may change during this time. Item 7 of the Clean Energy Council's Best Practice Charter for Renewable Energy Projects indicates that "the Project Owner will offer communities the opportunities to share in the benefits of the project, and consult them on the options available, including relevant governance arrangements". As the project will be completed in a remote location, the community needs to have confidence and relevant information to demonstrate that no matter who owns the project: • it will be completed to the relevant standards; • the benefits of the project will be shared fairly		No	CWF has committed to a generous and industry-leading Community Benefit Program. This is intended to follow a 'hybrid' model funding multiple initiatives and will be co-designed with the community and local stakeholders to ensure it meets local needs and priorities. Funding streams that have been identified through initial consultation include a fund to support community-based initiatives, a social housing program to address housing stock sustainability issues, and funds for emergencies and natural disaster recovery in the region (see Section 13.1.3 of PER).
500	.003	Community consultation	The Clean Energy Council, in their Best Practice for Renewable Energy Projects Charteri state "1: We will engage respectfully with the local community, including Traditional Owners of the land, to seek their views and input before submitting a development application and finalising the design of the project." The proponent states they are an adherent to the Best Practice for Renewable Energy Projects Charterii. However they were in breach of this code when they did not sufficiently engage with the Jirrbal Traditional Owners, nor the wider community before publishing the Public Environment Report Draft for the proposed Chalumbin wind farm. The proponent held only one Community Information Session for the wind farm, and this was at a late stage of the process when much initial groundwork and surveying had already been done. This Session took place at the Ravenshoe Town Hall on the 16th September 2021 at the eleventh hour presumably before the development application was sent off to Government, (but this remains unconfirmed as the proponent stated on the 6th of September 2021, "onsite technical studies required for the environmental assessment are nearing completion"iii.) At the Community Information Session no formal presentation about the proposed Chalumbin wind farm was given by the proponent. No seating was laid out for the community. Representatives for the proponent stood to the side and did not want to engage with the community as a whole, as questions were raised. Jirrbal Traditional Owners asked questions but felt disregarded by proponent representatives.		No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). The other grievances set out in this submission are not relevant to the PER or EPBC process.
473	.020	Rehabilitation	Appropriate governance arrangements will be established for the duration of the project's lifecycle. Clarification needs to be provided on the following proposed governance arrangements, as a minimum, to provide the necessary confidence and level of accountability to ensure a social licence to operate: a. Independent oversight of the construction and landscape rehabilitation works (post-construction and post-decommissioning) to ensure the works are completed to the necessary approved plans, standards, regulations and conditions.		No	From Section 11.1.2 of the PER: Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects', a voluntary commitment to engage respectfully with communities, be sensitive to environmental and cultural values, and make a positive contribution to the regions in which it operates. A Charter commitment is: - We will demonstrate responsible land stewardship over the life of the project and welcome opportunities to enhance the ecological, cultural and/or agricultural value of the land. Reports are prepared and submitted to the regulator on a range of issues including annual rehabilitation reporting for the first 5 years and bi-annually reporting until it can be demonstrated that the rehabilitated vegetation communities are self-sustaining. Refer to Section 4.0 of the Preliminary Rehabilitation Plan (Appendix K of the PER)
500	.004	Community consultation	We note the proponent's initial ecological surveys commenced from September 2020. We question why no initial community consultation had taken place before this to determine whether there was genuine social license for the proposed Chalumbin wind farm. Covid is no excuse not to consult with the community. The proponent should have sought other means to communicate and consult.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project.
473	.021	Rehabilitation	It will take many decades for the site to recover its current levels of vegetation cover and biodiversity, if at all, after construction of the project. Furthermore, it is anticipated that large areas will need to be cleared again to decommission the project - just as the site is beginning to naturally regenerate. What investment and governance arrangements will be established for the decommissioning fund to rehabilitate the site following decommissioning of the infrastructure at the end of project life?		No	Potential decommissioning impacts are presented in section 5.4 of the PER and impacts relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning. Refer also to response 473.021.
500	.005	Community consultation	Jirrbal Elders and Traditional Owners were not consulted about the proposed Chalumbin wind farm Jirrbal Elders have related the absence of consultation and information. They have also indicated that they did not give permission for the proposed Chalumbin wind farm. Of concern is the language throughout the Public Environmental Report that reflects a total disconnection from the land, the irreplaceable flora, fauna and the cultural heritage values. Chalumbin is the lifeblood of Ravenshoe, including the Jirrbal custodians, who have a spiritual connection and culture to country. There is no reference to the Ancestors and acknowledgement of those who have gone before. There is no mention throughout the PER of 'healing Country' that shows respect for Aboriginal cultural heritage. Pastoral land use is compatible with Jirrbal custodians being able to access and work on Country. If this vast swathe of critical habitat was industrialised, then it would be an industrial electricity site, inaccessible for the Jirrbal people and the broader community. This signifies an entirely different land use that is incompatible with cultural heritage values.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. The Project is entirely compatible with the surrounding agricultural land use. Once construction is complete, grazing will be able to continue in and around Project infrastructure.
500	.006	Indigenous Cultural Heritage / Engagement	It is feared that cultural heritage will be lost forever if the proposed Chalumbin wind farm goes ahead. The 1600 page PER document refers to cultural heritage and the significant impacts to various wildlife yet the developer is still undeterred and continues the push to develop Chalumbin. We have witnessed crying and genuine despair from Aboriginal elders and custodians of the land and the threat that their heritage and culture hangs by a thread if this proposal goes ahead. We see the tears about how the wind towers of Kaban are affecting them. There is stress and a great sense of loss that money and the offers cannot buy. The global sell out of nature and cultural heritage, of our vast ancient landscapes of national and state significance, has not been given consent by the wider community, including the Jirrbal custodians who are opposed to the development of the last frontier mountains that remain.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
500	.007	Community consultation	Considerable documentation has been amassed by Rainforest Reserves of Jirrbal Traditional Owners stating that they were not consulted about the proposed Chalumbin wind farm and that Wabubadda's Indigenous Land Use Agreement meeting for Chalumbin was inadequate. Statements have been made indicating the Jirrbal community was unaware of the ILUA meeting, that there was subsequent low attendance, no transportation provided and a concerning absence of discussion of the spiritual and cultural significance of clearing Chalumbin for a wind farm. Statements also indicate the Jirrbal community were unaware of the proposed Chalumbin wind farm, indicating a failure of consultation by both the proponent and Wabubadda. CE: Did you feel free to speak your mind on the 7th of May last year (at the Chalumbin ILUA meeting?) GW: No. Mostly because you're in a room full of people who've spent hours and hours hearing about money. The financial benefits. The financial gain rather than - I don't think there was once where it was mentioned about what we stand to lose. What we could lose with this going ahead. It was a one-sided meeting and you could have talked but no one would have listened because the whole entire thing was about the financial benefits. CE: Were cultural and spiritual aspects covered? GW: No. They said that there were a team of people that were going to go out and mark sites but these people don't have the knowledge to go and mark sites. They don't know the walking tracks. They've never sat down and spoke to the old people and learned the stories, you know.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
500	.008	Indigenous Cultural Heritage / Engagement	About Chalumbin, all along there where they're going to put the wind turbines, all that along there is sacred sites, all the way along there. Right back behind Yourka, from Wooroora Station, to Blunder Park, to Yourka station and so forth right back around behind Curra. All up there is sacred sites, all the burial grounds along those tracks. And the reason why we don't want that to go ahead, is because of the flora and fauna. There are species there in that Rainforest that have never been found. Only by the Indigenous owners. That's the only reason why we're standing up to fight all this. Because we do not want that to go ahead. All we ask is that you leave the Rainforest alone, that it's going to be there for future generations and life after life after life after life. "…with the cultural significance, there's the Creation story there. There is, and I don't know how Wabubadda doesn't know this, there is a Rainbow Serpent trapped in Koombooloomba dam. That is one of our stories. So it's not only that, and then you've got, you've got the trees-the scar trees that have shields marked into them. There's another one with a little fella which was probably initiation, I don't know. That's men's business. So you've got them. There's tool quarries, there's camps. It's endless. Where do you stop? They'll be birthing places, they'll be burial places. They'll be, you know, there was a practice of burying the placenta after birth. Burying the placenta on Country. That's what the old ladies did. I was the first one to do that with my son in 40 years, 40 odd years, when my son was born 7 years ago. So there's those kinds of things you've got to consider. Because bringing that placenta back on Country and planting it means this child will never lose it's way. It will always come back to home, no matter what, you know. And it's that spiritual connection to Country that they will always have. And you take away that Country, you're taking away the essence. And the essence is what teaches us how to be Jirrbal people. Because it doesn't talk to our person, it talks to our spirit. You know, you take that away then what do we have left?" I am really concerned about the future, because I want to go on country for the future, to walk on country I do not want to be denied, to have people say that I "what are you doing here". I want to see the land out there, to connect with country. I don't want to be asked if I have permission to go on country. I have deep spirutal connections, for me it is like a calming, a big relief when I am out there on Chalumbin. I can forget about things. I need the land to give us the stories, our culture, our land, that is us. Without the land, we would be nothing. No Jirrbal land, no culture. The respect for the land, the people, the culture, the animals, it's just fading and soon it will just disappear.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
473	.022	Indigenous Cultural Heritage / Engagement	What will the financial, training and employment opportunities and benefits be for Traditional Owners and the local community and how will this be provided through the Indigenous Land Use Agreement, economic development, project procurement and capacity building strategies?		No	The CWF Project proposes to work in partnership with Tablelands Regional Council and the local and regional community to help maximise the projected economic local and regional benefits whist minimising potential impacts. In this respect, a range of general economic impact mitigation and management measures are proposed. Including, employment of local and regional residents preferentially, including traditional owners and gender diversity, where they have the required skills and experience.
500	.009	Koala	If approved, the proposed Chalumbin wind farm will result in a total of 843.8 ha of koala habitat destruction. The Koala is now a priority species, recognised as an iconic and culturally significant Australian animal. In February 2022, the Koala was upgraded to Endangered in ACT, NSW and QLD. It's appalling that due to a legal technicality, the koalas that will be impacted by the proposed Chalumbin wind farm are not classified as Endangered. Chalumbin contains critical Koala habitat and is considered a climate refugia.		No	The PER acknowledges that the koala is now listed as Endangered under the EPBC Act 1999; however, the species is assessed per its former Vulnerable listing as required by the PER Guidelines.
473	.023	N/A to PER matters	A $500,000 per year Community Benefit Program and a separate decommissioning fund are proposed. We request that transparent and independent audits are provided of the following: i. Revenue projections and actual revenue being generated from the project once operational. ii. Calculations to demonstrate that the community is appropriately sharing in the benefits of the project through the Community Benefit Program and that adequate funds are allocated for decommissioning the project. iii. Details of how the Community Benefit Program and decommissioning fund will be appropriately governed and future-proofed against inflation and poor investment decisions over the life of the project. iv. The Australian Government has produced a Nature Positive Plan which addresses 'conservation payments' as the last option in a hierarchy of 'avoid', 'reduce' or 'mitigate' and 'offsets'. Is it intended to align this annual payment with the developing Nature Positive Plan, and is there an intention to identify priorities through consultation with organisations such as Terrain NRM?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. However, as set out in the PER, CWF has committed to a generous and industry-leading Community Benefit Program. This is intended to follow a 'hybrid' model funding multiple initiatives and will be co-designed with the community and local stakeholders to ensure it meets local needs and priorities. Funding streams that have been identified through initial consultation include a fund to support community-based initiatives, a social housing program to address housing stock sustainability issues, and funds for emergencies and natural disaster recovery in the region (see Section 13.1.3 of PER).

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
473	.024	N/A to PER matters	Is there confirmation of a circular economic strategy having been considered to further minimise the environmental impact of the project?		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
473	.025	Alignment with government policy	We believe that locally informed strategic planning and good governance and implementation will deliver a successful renewable energy sector in Queensland that provides quality jobs for our communities and genuine nature positive environmental outcomes. In the rush to get ahead in the renewable energy boom, it is essential that we don't make environmental problems worse or rely on unsustainable shortcuts such as mitigating impacts through offsetting. A new way of thinking, planning and delivering is demanded, and Chalumbin provides the perfect opportunity for Australia to demonstrate its December agreement to the UN COP15 Global Biodiversity Framework. We congratulate Ark Energy for committing to establishing leading practice standards for this project. However, because of the values of this site and the precedents that this project sets, we strongly encourage you to be even more ambitious in your goals to deliver sustainable outcomes for our community before proceeding with this project.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
500	.010	Biodiversity general	The landscapes of Chalumbin are anticipated to be a key wildlife refugia during the next 50 years as the climate warms. The cool, intact high-elevation forests of the Southern Tablelands FNQ including Chalumbin land parcel should be protected and conserved as they will serve as an ark for species like Greater Gliders, Koalas, possums and other wildlife that can only survive in cooler climbs. Protecting this critical habitat from destruction will provide a crucial buffer from the Wet Tropics "escalator to extinction."vii		No	The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting anticipated climate change effects.
500	.011	Survey effort	The proponent states no koalas were found at Chalumbin. But the spotlighting conducted on behalf of the proponent at Chalumbin was woefully insufficient to determine this. According to the proposed Chalumbin wind farm draft PER, spotlighting for nocturnal fauna including koalas was undertaken only for a total of 103 person hours and spotlighting was only conducted from a vehicle and not on foot. This is far too little time to conduct a thorough survey of the land parcel for koalas, a notoriously cryptic and hard to spot species. It is also an insufficient method to determine if koalas are onsite. Recommended approaches for koala surveys include looking for scratch marks on food trees, looking for fecal pellets below food tree, using koala detection dogs and thermal drones.viii Spotlighting is a lower cost alternative, however researchers of Australia National University in the 2021 publication "A Review of Koala Habitat Criteria and Assessment" state of this method : "Some areas may not be suitable to survey at night", "that the rate of detectability is still low, producing false negatives and underestimating density, especially in low density populations", and "observer bias possible if there are large differences in the detection capabilities/experience of observers."ix The Review also states that spotlighting is only a suitable survey approach in high to medium density koala populations. Thus, the approach undertaken by surveyors at Chalumbin was inadequate.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
475	.001	Opposition to project	As per Submission 21		No	Response as per Submission 21
500	.012	Koala	Currently Far North Queensland's Koala population are in a perilous position. Central, Northern and Far North Queensland Koala populations are completely ignored at a State Government level, while resources are poured into protecting and conserving SE Qld Koala populations under the "South East Queensland Koala Strategy", with funds of some 4.38 million dollars already dedicated to a habitat restoration program, and 7.5 million dollars granted to South East Queensland Wildlife Hospital, and 90,000 trees planted across 100 hectares.xi Little scientific literature has been published on Far North Queensland's Koala populations, placing them in a tenuous position when critical decisions are made that will impact their habitat. The precautionary principle holds that the proposed Chalumbin wind farm should not be approved. Far North Queensland's Koala population is only just now being researched, belatedly. As mapping is now being conducted to determine key Koala habitat, there is a danger Far North Queensland's Koala populations could fall through the cracks and critical habitat be lost until research catches up to confirm the existence of critical FNQ Koala populations. Conservation advice states: "Increasing the total area of protected, connected quality koala habitat in priority areas will be important to protect and recover koala populations. As koalas occur across different land tenures, notably private land, this will require a range of incentive mechanisms, including direct land purchases."xii Chalumbin is sadly afforded few protections as the land parcel consists of freehold and leasehold property. It's now a pastoral zone, however if the wind development goes ahead, the land instead becomes an industrial energy zone. The landscape will become fragmented, thus impacting connectivity between sites. The proposed Chalumbin wind farm, if approved, will clear, fragment and degrade koala habitat, negatively impacting koala populations that may inhabit the area. Landscape configuration changes disrupt metapopulation processes for the koala. Clearing and fragmentation directly decreases population sizes and may cause localised extinction through reduced carrying capacity within the landscape via reduced resource availability. This increases the isolation of populations, reduces connectivity between populations and increasing mortality risk from dogs and vehicle strike, disrupting social systems and influencing movement patterns. Koalas can suffer chronic stress from these factors which is thought to increase their susceptibility to disease and mortality.		No	The PER acknowledges that the Project could result in a significant residual impact on the koala despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the presence of their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected.
500	.013	Koala	Wind turbines also emit a substantial amount of low frequency sound, and my fear is that this will mask the bellows of male koalas and disrupt the koala breeding season. Low frequency sound can be heard from a long distance away and these turbines are abutting the most biologically diverse forests in Australia. No consideration has been given to the impact of this noise pollution on koalas or on any of the other wildlife species living here."		No	Infrasound / low frequency sound is not listed as a key threatening process for the koala in the National Recovery Plan 2022. The PER identifies that noise may have an impact on species occurring within the area and, as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
500	.014	Adequacy of the PER	The Draft PER failed to detail all threatened species that may be impacted by the proposed Chalumbin wind farm. The Wet Tropics White-footed Dunnart was not included as a threatened species. This little-known species wasn't detailed in the PER as a potential inhabitant of Chalumbin, indicating a major failing. The Lake Eacham Rainbow Fish was also not included. It is has been confirmed to exist in Blunder Creek, which flows through the Chalumbin land parcelxiv. Listed as Endangered via the EPBC Act, it's failure to be included is a major oversight.		No	The Wet Tropics white-footed dunnart is not listed as threatened species under the EPBC Act and therefore is not required to be addressed in the PER. The PER will be updated to include the Lake Eacham rainbowfish (Melanotaenia eachamensis) and address the potential impacts on this species from the Project. It is worth noting that the mapped distribution of this species (per DCCEEW's SPRAT database) does not overlap with the Project area, and there are no records of this species being within the Project area in any publicly-available databases. The 1997 CSIRO paper is the only reference of this species occurring in Blunder Creek so it is hardly surprising that it was overlooked. The 1997 CSIRO paper does not confirm the precise location that the species was caught in Blunder Creek and notes that the Lake Eacham rainbowfish was caught in much lower numbers than the closely related (non-threatened) eastern rainbowfish. The paper also states that where the eastern rainbowfish was the dominant species (as with Blunder Creek), specimens allocated to the Lake Eacham species were done so with reduced probability (primarily due to interbreeding and hybridisation between the two species, which is also mentioned as a challenge for this particular species in the Survey Guidelines for Australia's Threatened Fish). The paper concludes that the Lake Eacham rainbowfish is widespread throughout the Johnstone River and present in the upper reaches of the Tully River and in the Herbert River.
500	.015	Magnificent brood frog	Magnificent Broodfrog at risk of extinction if the proposed Chalumbin wind farm proceeds The Magnificent Broodfrog (Pseudophryne covacevichae) is now facing a new threat in the form of the proposed Chalumbin wind farm. Concerns: • If approved, the proposed Chalumbin wind farm is expected to clear up to 120.5ha hectares of habitat critical to the broodfrog's survival • Magnificent Broodfrogs live mainly on unprotected land around FNQ where logging and cattle grazing take place. • The cumulative impacts from both Kaban Green Power Hub (28 wind turbines, under construction) and the nearby proposed Chalumbin wind farm (86 wind turbines, proposed) may be catastrophic to tiny populations of Magnificent Broodfrog around Ravenshoe. • The Magnificent Broodfrog is impossible to relocate. If the proposed Chalumbin wind farm goes ahead, they will be driven out of their critical habitat and may be killed by rock blasting and heavy machinery. Petrochemicals may spill impact soaks and streams, contaminating the water. • The Magnificent Broodfrog is a highly cryptic species that takes years of experience to identity. They may have been confused with frogs in the genus Uperolia by inexperienced surveyors, so it is likely that population numbers on the site of the proposed Chalumbin wind farm have been over-estimated. • Magnificent Broodfrogs primary threat is now wind farms on the Atherton Tablelands, specifically the habitat clearance caused by newly created haulage roads (can be up to 125 metres wide). • Magnificent Broodfrog Action Group are in the process of applying to upgrade their classification to Endangered. • It's possible we can lose significant populations of this species if the proposed Chalumbin wind farm goes ahead, on top of likely losses at the nearby Kaban wind farm. • This species is in a very sad situation. The proposed Chalumbin wind farm is a major encroachment on their habitat. To conserve the critically imperilled Magnificent Broodfrog, the proposed Chalumbin wind farm should not be approved. The Magnificent Broodfrog is already being impacted by nearby Kaban Green Power Hub, under construction, so the proposed Chalumbin wind farm is a firm No.		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species, which tends to undergo "boom and bust" population cycles from year to year (MBF Working Group, pers. comm.) The clearing estimate of 120.5ha is considered "worst case". Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on in the final PER. Members of the working group have participated in surveys with the Project survey team and have confirmed that the surveyors are adapt at identifying this species (MBF working group meeting minutes, December 2022.) The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. A proportion of these funds is being made available to researchers now, prior to Project approval.
500	.016	Southern cassowary	Cassowary impacts posed by the proposed Chalumbin wind farm If the proposed Chalumbin wind farm is approved, the ecological impacts will be irreversible. The Draft Public Environment Report (PER) could not be more removed from the Ravenshoe community, the cultural heritage, and the region in which we live. The PER has detailed some of the habitats and distribution of the cassowary. The proponent states that "The Project area does not align with any of the above areas and therefore is not considered to constitute an important population" . This statement is patently incorrect. The short periods of surveys that may have been conducted by the proponent does not give a license to destroy any further Cassowary habitats, on top of what has already been cleared in the Wet Tropics. The proposed Chalumbin wind industry poses an irreversible threat to our big birds. The proponent has listed the main threats to Cassowaries (and this is what this proposal will do): • habitat loss from clearing, • fragmentation, • habitat degradation, • roads & traffic, • dog attacks, • hand feeding, • diseases. There are more direct threats to Cassowaries if this proposal goes ahead. This includes the drying out effects to the weather and the land by the wind turbines, reduction in insects and biodiversity that cassowaries need and depend on.		No	As addressed in Section 8.5.4 of the PER, the Project has been designed to avoid clearing of any habitat critical to the survival of the southern cassowary (that is, patches of RE that are listed as essential habitat in the Recovery Plan for the Southern Cassowary). Potential impacts are also discussed in this section, along with a suite of mitigation measures which will ensure the Project does not result in a significant residual impact to the species.
500	.017	Southern cassowary	The Mitigation Tables above are disconnected weasel words that underestimate the true cost of what is at stake for our region, for we who cherish and respect the largest flightless vulnerable bird in Australia. The mitigation tables are insensitive to the conservationists who have worked so hard to recover this species. As outlined, Cassowaries have many threats. Should the proposed Chalumbin wind farm be approved, the proposed wind industrialisation of critical habitats and waterways of Chalumbin poses a far greater threat than any mitigation promises. 25 The potential death of cassowary chicks, their food sources, the damage by haulage trucks during construction is unacceptable. The Chalumbin highland forests, including other habitats, are a very necessary Cassowary refugia. This refugia may be required in case of cyclones, storms, and a home for chicks and sub-adults that may become displaced when they're kicked out by the father. There are claims in the Draft Public Environmental Report about wildlife that conveniently does not exist, from just 130 hours of monitoring, perhaps from a car? Wildlife is very difficult to spot. I can attest to even having trouble finding a Cassowary that is in our care, let alone the vast landscapes of varying eco- systems of Chalumbin. To conclude - if the Chalumbin industrial wind proposal is approved it will send a very dangerous message to the cassowary. Chalumbin Wind Farm Pty Ltd will then have 'a license to kill' – the project will have the capacity to increase their threat levels and displace and injure our cassowaries. Cassowaries are a keystone species. They do not deserve to become extinct.		No	As documented in Section 4.6.4 of the PER, Project ecologists have collectively undertaken in excess of 600 person hours of survey across the Project area in addition to nearly 6,000 camera trap nights. No evidence of cassowary has been observed within the Project area but the species has been routinely observed in rainforest habitats along Tully Falls Road while travelling to and from site. The PER makes a clear commitment that no construction vehicles or plant will use Tully Falls Road (south of its intersection with Wooroora Road) to access the Project area. The Project will not widen or upgrade Tully Falls Road. As addressed in Section 8.5.4 of the PER, the Project has been designed to avoid clearing of any habitat critical to the survival of the southern cassowary (that is, patches of RE that are listed as essential habitat in the Recovery Plan for the Southern Cassowary).

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
500	.018	Decomissioning impacts	The pollution and waste from the proposed Chalumbin wind farm poses unacceptable risks to the local landscape Now Ravenshoe is host to the waste from industrial wind developments. Community members alerted Rainforest Reserves Australia to the presence of dumped turbine blades at the Ravenshoe dump. We ask where the waste from the proposed Chalumbin wind farm will go? Wind turbine blades are rarely recycled. They are also very difficult to relocate, particularly from a mountainous and remote location like Ravenshoe. What will become of the turbine blades and infrastructure from the proposed Chalumbin wind farm when it is decommissioned? At this point, the wind farm may have been onsold. What then of its environmental responsibilities? The uncertainty surrounding just where and how the wind farm will be dismantled is concerning. There is no guarantee the proponent will clean up after themselves.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
500	.019	Weeds and pests	Habitat degradation and fragmentation of Chalumbin cannot be undone, despite proponent's promises to revegetate. Once clearing is done on that scale, invasive weeds are impossible to remove. The owners of the properties will be left responsible for landscape management including removal of weeds. A near inhuman task.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intended that these "Preliminary" documents act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept. Fine-scale weed mapping will be undertaken by CWF and/or the Contractor when developing these plans further. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary. The proponent has a Duty of Care towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval.
500	.020	Rehabilitation	Species such as the threatened Northern Greater Glider and Yellow Belly Gliders need mature trees with hollows to den in. Newly planted saplings will not provide habitat for these threatened species.		No	There are detailed rehabilitation principles within Northern Greater Glider habitat outlined in Table 3-2 of the Preliminary Rehabilitation Plan (Appendix K of the PER) and the same would apply to Yellow Belly Gliders. These include the use of artificial nest boxes and relocated hollow-bearing stages combined should provide a minimum density of 4 per every 2ha. The project rehabilitation program has a key focus for rehabilitating habitat as documented in the Preliminary Rehabilitation Plan.
500	.021	Offsets	Offsets don't work. Landscapes are not interchangeable. Ecosystems cannot be transposed to new environments, nor can wildlife who've lost their lives from turbine blades or habitat clearance be bought back to life. All intact remnant landscapes of the Atherton Tablelands must be permanently conserved – this is best practise.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
500	.022	Cumulative impacts	Cumulative impacts of other nearby windfarms on wildlife has not been considered. The Atherton Tablelands is already host to Mt Emerald wind farm, Windy Hill wind farm and nearby Kaban wind farm. The cumulative impact to bats and birds, specifically raptors, as well as increased habitat loss and fragmentation will impact threatened species in multiple ways.		No	Cumulative impacts of the Project in conjunction with the other existing or proposed wind farm projects in the Northern QREZ has been undertaken in Section 5.5 of the PER.
502	.001	Vegetation clearing	Note submission has been summarised to extract key points requiring response. Nevertheless, we have serious concerns regarding the construction phase and siting of the wind farm. We believe that wind farms must produce a net gain for the environment and that this cannot be achieved when such large amounts of remnant native vegetation must be cleared for infrastructure. We support wind farms in the right place and consider that to meet best practice they should be sited in places that avoid the clearing of native vegetation. We have concerns that Chalumbin Wind Farm is too close to the boundaries of the Wet Tropics World Heritage Area and will have impacts on the vegetation community, particularly the Wet Sclerophyll forest, endangered regional ecosystems and bioregion corridors of State Ecological significance and wildlife that cannot be mitigated, including the endangered spectacled flying-fox and other threatened species, such as the Magnificent Brood Frog and the Lumholtz Tree Kangaroo and the critically endangered plant Prostanthera clotteniana and may contribute to their extinction.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
502	.002	Biodiversity general	The wind farm is the biggest in the area and will affect landscape values as well as biodiversity. The Wet Tropics World Heritage Area is a fragile place and the second-most irreplaceable world heritage place. It is threatened by climate change and protecting the buffer zone surrounding its boundaries is essential to its continued existence. Vegetation clearing for access roads will fragment the vegetation community and may allow weed and feral animal access to the Wet Tropics as well as directly reduce habitat for many species, including essential habitat for localised species.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
502	.003	Rehabilitation	While the proposed rehabilitation of the site after clearing for access roads is commendable, it will not restore such a complex ecosystem in the 25 to 30 years of operation of the wind farm, after which it will presumably be cleared again to remove the turbine infrastructure.		No	Construction of the project involves a greater footprint that will be rehabilitated than will be disturbed when turbine parts including blades are removed. If there are long items to be removed at decommissioning then a new swept path analysis will be undertaken to identify if any vegetation will be impacted.
502	.004	Cumulative impacts	Cumulative impacts of this wind farm on both vegetation community and fauna must be considered with the impacts of existing windfarms, at the construction and operational phase.		No	Section 5.5 of the PER presents a qualitative assessment of cumulative impacts of the Project in conjunction with other existing or propose wind farms in the northern QREZ. There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
502	.005	Offsets	We are concerned that the environmental impacts of this project cannot be adequately offset.		No	Your concerns are noted. The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. Additional work on the offsets program has been underway since November 2022 and will continue until an Offset Area Management Plan has been prepared and submitted to DCCEEW for review and approval.
502	.006	Offsets	The Community Benefit Fund could provide some mitigation of the detrimental environmental effects caused by the wind farm, provided the fund is targeted towards priority areas in need of funding. The Australian government's Nature Positive Plan has flagged the proposal to allow 'conservation payments' as the last option in a hierarchy of environmental impacts attention, which run from 'avoid', 'reduce or mitigate', to 'offsets'. Conservation payments therefore are intended to provide some reparation for those matters that cannot be avoided, reduced, mitigated or offset. Will the Community Benefit Fund proposed in the PER be equivalent to or substitute for the proposed 'conservation payments'? A number of species could benefit from such a fund, including the priority Endangered Spectacled Flying-fox, which has been recorded in the area of the Chalumbin wind farm site. Depending on the funding available from the Chalumbin project, the money could be used to take urgent action on assessing and describing the roost sites of the Spectacled Flying-fox on which they depend for breeding and feeding. Funding could be staged over some years. A budget of $300,000 to $500,000 would allow us to undertake this vital work, and it would lead to prioritizing protection and recovery of the roost sites so that the Spectacled Flying-fox might have a greater chance of surviving the anticipated extreme heat events that killed 23,000 animals in a few days in late 2018. This was in the order of a third of the rapidly declining population. The fund could then be used to develop a climate model to characterize sites across the range if another $300,000 or so could be found. The Recovery Team could develop a model of sites to set priorities after the vegetation and condition of sites have been described. This modelling would be done by the Recovery Team lead scientist in collaboration with researchers from James Cook University and the Australian National University. We are already developing the scope of the study, but it needs funding. After the detailed mapping and description of the roost sites, another $250,000 - $500,000 would provide funding to improve the condition of roost sites after we have done the work above.		No	The proponent is open to working with the spectacled flying-fox stakeholders in the finalisation of an appropriate offset that meets DCCEEW requirements.
502	.007	Fauna mortality turbines	We are concerned that operational matters that relate to the impacts of the turbines on bats and birds have not been given sufficient attention in the PER and draft management plans. There is considerable recent research on the impacts of wind turbines and blades on wildlife, and the records show that they are responsible for many thousands to millions of birds and bats, especially over the life of the turbines, causing a large cumulative effect. The PER and operational plans should pay a lot more attention to mitigating such impacts. While the impacts of wind farms on smaller bats and mitigation methods have been well studied, there has been little work on monitoring impacts on flying-foxes. Recent monitoring (Biosis 2020) has identified 13 Vulnerable grey-headed flying-fox carcasses at a Victorian wind farm between August 2019 and April 2020. Mt Emerald wind farm in FNQ recorded seven collisions of the endangered spectacled flying-fox between August 2018 and February 2019 (personal communication). Flying-foxes are nomadic animals and forage in response to food resources. Mortality can be localised in time and vary considerably between years. There is potential for a mortality of at least 50 for the Spectacled Flying-fox across Chalumbin and the existing wind farms. A total of 75 carcasses were found at Mt Emerald, 67 bats and 8 birds. This is consistent with other monitoring showing mortality is greater in bats than birds. The other bat species killed included 36 Northern Freetail bats, 7 Myotis or northern long-eared bats, and 16 Little Red Flying-foxes, all of which are species of least concern. However, over 25 years of operation, least concern species may suffer a great enough reduction in population to become threatened.	1. Curtailing wind turbine operation and speed at times critical to flying species such as birds, micro-bats and macro-bats can have a significant mitigating effect on bats and birds (Adams et al., 2021; Arnett et al., 2011; Bennett 2022.; Behr et al., 2017; Good et al., 2022; Hayes et al., 2019; Hise et al., 2022; Smallwood and Bell, 2020). Smaller bats do not fly at wind speeds above 7m/s. Curtailing wind turbines to cut in at 4.5m/s instead of 3m/s can reduce mortality by over 50% with less than 0.16% energy reduction and 0.99% lost revenue. Having turbines cut in at 7 m/s will reduce mortality by over 90% (Bennet 2022). Modelling for curtailments will depend on studies of the species that could be affected and their behaviours, such as when bats leave their roosts and return and when affected birds are likely to be affected, and monitoring specifically for bat and bird mortality. We understand that ecologists have been studying species in the project area for some time and that the information derived from these studies could inform curtailment proposals. The project should commit to best practice curtailment, including blade speed and wind speeds. At present the commitment in the Bird and Bat Management Plan is vague ('may be considered' S8.1.2 Bird & Bat MP). This curtailment practice should be a commitment, not a 'consideration' and mandatory for all Australian wind farms; 2. The PER should commit clearly to ongoing studies of bird and bat behaviour and impacts, and not just the two years proposed at the moment. These studies and monitoring should be used to inform best practices for the species encountered on site. This is particularly important for species such as the endangered spectacled flying-fox that have highly variable movements from year to year; 3. The PER should investigate measures such as installing one black blade among the three blades as this has been found to be effective in some situations (May et al., 2020); 4. We understand that high-tech detectors, such as flock monitors (e.g. Identiflight), can detect approaching flocks of birds and bats and curtail the turbines' operation (Hayes et al., 2019). Sound-emitting devices that can deter certain species from approaching (Good et al., 2022; Romano et al., 2019; Smotherman et al., 2019) should be investigated and reported on the revisions of the PER and included in the management and operational plans for future inclusion as the technology improves; 5. We are concerned that we could find no mention of the use of conservation or detector dogs in undertaking active searches to detect and account for impacted animals (birds and bats) – detector dogs are known to be superior to experienced human-wildlife experts in detecting carcasses and injured animals (e.g., Bennett et al., 2022). Monitoring of carcasses and injured animals is essential to improving the operation of the wind farm. The data should be made available to at least the BatSoc and the SFF Recovery Team. Other farms in the area provide reports to some of our members. Funding for the wildlife rescue facilities in the district should also be included as part of the 'wind farm' operational budget as the facilities have limited resources and no recurrent funding, yet are vital to help injured animals recover, and would help the reputation of the Chalumbin wind farm; 6. The data gained from monitoring should be provided to not only the regulators but also BatSoc, the recovery team and researchers so that the proponents and the community can learn from the studies to improve the operation of Chalumbin and future wind farms. Reporting on monitoring is currently committed for only two years in the PER which we consider inadequate for building a robust picture of impacts. This should be extended to at least five-10 years to provide better information over several years.	No	see response to submission 473
477a	.001	Adequacy of the PER	I am a community member of Ravenshoe and surrounds and I do NOT consent to the proposed Chalumbin Wind Farm going ahead. I do not consent to the whole Draft Public Environment Report EPBC 2021/8983. The Report shows very little care, concern or respect for the residents, both human and animals, for the traditional custodians of the land, or for the unique, high elevation, forest environment which is of world value. Additionally, this report fails to meet the statutory requirements set out under the EPBC Act, specifically the omission of a declared endangered species, thus rendering the document invalid.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines.
477a	.002	Project location	My assessment of this proposal is that the impacts to Matters of National Environmental Significance (MNES) are unacceptable. The project is poorly sited, especially considering its location in such close proximity to the Wet Tropics World Heritage Area (WTQWHA). A development of this scale and impact is completely out of place The complete lack of consideration of the biodiversity in the siting of the project is simply not acceptable. These impacts can not be avoided effectively or offset. Lastly, this project is not a strategic necessity for the transition to renewable energy, as there is currently not enough capacity in the grid for the energy produced by this Wind Farm.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Powerlink has confirmed with the proponent that the existing grid currently has the capacity to accommodate the electricity proposed to be generated by the full Project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
477a	.003	Project viability	Feasible Alternatives: Site selection criteria for the proponent included proximity to transmission lines and wind resources, but no clear consideration of biodiversity has been demonstrated during site selection. The proponent has provided no justification for their lack of consideration of alternative sites in the context of biodiversity conservation or loss. This is contrary to the key finding of the joint workshop hosted by the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Panel on Biodiversity and Ecosystems Services (IPBES) in 2021 which stated: "Technology-based measures that are effective for climate change mitigation can pose serious threats to biodiversity. They should be evaluated in terms of their overall benefits and risks."1 The proponent has not provided information about the biodiversity crisis that our nation and the world are experiencing, and the potential exacerbation the development poses on this specific region. The proponent must include information regarding the high biodiversity, the economic setting and social setting of this region. The proponent has not provided enough detail to support their claims, especially considering the lack of reference to the Sustainable Development Goals (SDGs), or triple bottom line of sustainability. As Section 3.2 has identified, the areas surrounding the transmission line between Townsville and Cairns is almost completely surrounded by remnant vegetation, which can be considered a proxy for MNES values. The Queensland State of the Environment Report (2017) describes regional ecosystems and maps the remnant forest across these ecosystems. The majority of the Chalumbin Wind Farm (CWF) project sits in the Wet Tropics Bioregion, with the north western quarter reaching into the Einasleigh Uplands. The proponent has stated that the financial cost of developing the project in the Einasleigh Uplands or Gulf Plains is too high to consider, but it has not shared an analysis on the increased cost to biodiversity associated with development in the Wet Tropics Bioregion. When comparing the Einasleigh Uplands and the Wet Tropics bioregions for remnant vegetation impacts, it can be seen that 89% of the Wet Tropics Bioregion is either endangered or of concern, compared to 41.7% in the Einasleigh Uplands, or 51% in the Gulf Plains (Table 1). In fact, as Table 2 demonstrates, the proponent has selected the bioregion containing the highest percentage of endangered or of concern regional ecosystems of any bioregion in Queensland.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.
477a	.004	MNES	The proponent has provided no mapping of potential wind resources in the Gulf Plains or Einasleigh Uplands, or any of the other bioregions of Queensland, and has additionally made claims that an alternative location scenario can be conservatively expected to have at least 30% greater impact on MNES, but has not provided any clear evidence of how this was calculated. The EPBC Act calls for feasible alternatives to consider: (a) the location where the action is to be taken; (b) the time frames within which the action is to be taken; (c) the activities that are to be carried out in taking the action.		No	An alternative location within the Northern QREZ will necessarily involve the placement of wind farm infrastructure within remnant vegetation within either the Einasleigh Uplands Bioregion or the Gulf Plains Bioregion. Considering the driver of proximity to existing grid infrastructure, it is considered that the alternative location should be assessed within the Einasleigh Uplands Bioregion. It is conservatively assumed that an alternative renewable energy project capable of generating the Project's 1,985GWh of electricity per year is likely to involve 30% more WTGs requiring 30% greater clearing footprint. This is to account for siting the wind farm in an energy with lesser wind resource as well as the energy losses associated with the additional transmission between the site of energy generation and the site of energy requirement. If remnant vegetation is used as a proxy for presence of MNES species (which is an entirely reasonable assumption), then the Alternative Location scenario would have 30% greater impacts on MNES as there appear to be few cleared areas of sufficient size that are also sufficiently windy. The MNES species may well be different to those associated with the current Project but that doesn't make them any less valuable.
477a	.005	Biodiversity general	The proponent has not sufficiently demonstrated the consideration of alternative locations for this wind farm. To be prioritising the development of the bioregion with the most endangered and "of concern" regional ecosystems, without first demonstrating that this development can not be achieved elsewhere, is unacceptable. The expectation should be that the proponent has considered other locations in Queensland, with wind resources available, and with less endangered/of concern regional ecosystems and proximity to, or future proximity to, transmission.		No	The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the assessment of alternatives.
477a	.006	N/A to PER matters	The aforementioned IPBES/IPCC co-sponsored workshop concluded that: "Solving some of the strong and apparently unavoidable trade-offs between climate and biodiversity will entail a profound collective shift of individual and shared values concerning nature – such as moving away from the conception of economic progress based solely on GDP growth, to one that balances human development with multiple values of nature for a good quality of life, while not overshooting biophysical and social limits." In the locating of the CWF, the proponent has weighed economic cost over environmental cost, which does not align with the triple bottom line for sustainability, the SDGs or the guidance of the IPBES/IPCC to create development that balances human development with multiple values of nature for a good quality of life, while not overshooting biophysical and social limits[1].		No	The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. This document sets out the information required to be provided in the PER about the action and its relevant impacts under section 3 of the Environment Protection and Biodiversity Conservation Act 1999.
477a	.007	N/A to PER matters	The Queensland State Planning Laws include a number of different pieces of legislature for assessing wind farms, including State Code 23. State code 23 in Queensland is outdated, and has not been reviewed since its creation in 2017, a time in which renewable energy development was at a different scale, and had a different development profile. The code means that wind farm development is Code Assessable. As a result, wind farm developments in Far North Queensland are not thoroughly assessed under the Nature Conservation Act, and there is no requirement for community consultation. This means that the impacts to several matters of concern under state legislation have not been properly examined, including impacts to: Biodiversity Planning Areas for the Wet Tropics Regional Ecosystem and the Core Area and Corridor remnant vegetation; • Cultural Heritage Boundaries which are present across the entire site; • Remnant Regional Ecosystems Vegetation Management Status (of least concern – present across the whole footprint; of concern – present at 31 of the turbine sites; endangered – present across the Major Road Access; and Corridor Buffers – present at 64 turbine sites); • Vegetation Management Category B Area - remnant vegetation shown on a regional ecosystem or remnant map as an endangered regional ecosystem, an of concern regional ecosystem or a least concern regional ecosystem - Across the entire site.		No	The structure and content of the PER specifically responds to the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. Approval has been granted by the Queensland State Government under State Code 23 and is not relevant to this process.
477a	.008	Cumulative impacts	The cumulative impacts of renewable developments proposed for high biodiverse North Queensland habitat have not been considered by any State or Federal Government policy. Approval for this project would be risking entire species by clearing habitat for wind and solar farms. Biodiverse landscapes will be desecrated for large scale industrial renewable developments. Corporations will have access to onsite natural resources for exploitation. This is simply not OK.		No	Cumulative impacts of the Project in conjunction with the other existing or proposed wind farm projects in the Northern QREZ has been undertaken in Section 5.5 of the PER.
477a	.009	Erosion and sedimentation	"Projects like the proposed Chalumbin windfarm lie on the head waters of the river catchments of the Wet Tropics Area. Hundreds of kms of unsealed 70 metre-wide roads that cross waterways have the potential to dump sediment and other pollutants down rivers through areas of World Heritage Rain Forest and cane farms out to the Great Barrier Reef. Farmers fear they will be blamed. There is no provision under the EBPC Act to consider any type of off-site impact. Water quality is not considered." - Pamela Jones, environmental scientist.		No	Water quality - and potential impacts of the Project on this - is considered in the PER. Appendix J of the PER contains a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks including risks to the GBR. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Potential impacts to water quality are considered as part of the Construction Environmental Management Plan and Erosion and Sediment Control Management Plan, developed as part of the development application under the State's Planning Act 2016. Water quality is to be assessed in accordance with the water quality guidelines and the prescribed water quality objectives for the Herbert River Basin as per the State's Environmental Protection (Water and Wetland Biodiversity) Policy 2019. The As per the management plan, the ESCs will be regularly monitored and modified as required to achieve water quality objectives.
477a	.010	MNES	Large areas of the high-elevation Wet Tropics World Heritage Area along the Dividing Range remain untouched and inaccessible. These areas have historically provided a safe haven for our most vulnerable wildlife such as Red Goshawks, Sharman's Rock- Wallabies, Koalas and more. The conservation of cool, high elevation climbs of the Great Dividing Range is crucial in the bid to prevent species extinction from a warming climate. These areas are Matters of National Environmental Significance. To sacrifice high altitude pristine landscape for windfarms is unconscionable.		No	Upland rainforests of the Wet Tropics are vulnerable to the impacts of climate change and it is known that many endemic forest species are already reduced in both distribution and population, primarily as a result of climate change (see Appendix T). These species are a highly valued component of Wet Tropics biodiversity due to their high conservation and evolutionary value. The Project area is located adjacent to, but outside, the WTQWHA as illustrated in Figure 4-44 and there is limited rainforest habitat within the Project area. The Project area contains habitat for species that use habitat within the WTQWHA and are therefore considered values of the WTQWHA, above and beyond those described in Section 4.11.1 of the PER. Appendix T provides an overview of species that have been identified as values of the WTQWHA through extensive literature review, and describes the recorded or likely presence of these species or their habitat within the Project area. In addition, the final PER Guidelines required the specific assessment of a number of species that are particular values of the property, along with wet sclerophyll forest. The Project area supports large areas of remnant vegetation dominated by open eucalypt woodland with small pockets of scattered rainforest communities close to the eastern boundary comprising a total of approximately 7.4 ha. The Project has been designed to avoid any clearing of rainforest vegetation therefore threatened species specifically associated with these communities are not expected to be directly impacted. The Project area is not untouched, pristine wilderness and it is not as high altitude as sites within the nearby WTQWHA. A significant, strategic offset is proposed involving more than 7,400 ha across three areas, primarily located immediately adjacent to the WTQWHA, including the largest patch of intact wet sclerophyll forest adjacent to the Tully Falls National Park, and the creation of formal connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge.
477a	.011	MNES	Additionally, this Draft PER is completely compromised by its failure to survey and report on a declared endangered species (under the EPBC Act) that has been known to inhabit the area since a CSIRO scientific report published in 1997.3 The proponent has failed to survey an endangered aquatic species, the Lake Eacham Rainbowfish, that inhabits Blunder Creek, the very waterway to be impacted by the Chalumbin Wind Farm development. There is a huge impact facing this freshwater species in the form of sedimentation, pollution, runoff, increased turbidity, decreased water flow, changes to water chemistry, and more. At one point this fish held the title of being the first native freshwater fish to be declared extinct in Australia. Fortunately, this species was later discovered in a very limited number of Tablelands waterways including Blunder Creek. This species was not mentioned, surveyed, risk assessed, evaluated or discussed in any way in the entire PER document. It is as if it never existed. This omission raises many questions and one may ask what else has been omitted? It is easy to see why the presence of this endangered fish may jeopardise the CWF project and why it may have been judiciously "forgotten".		No	Your submission has been noted and the PER will be updated to include the Lake Eacham rainbowfish (Melanotaenia eachamensis) and address the potential impacts from the Project. It is worth noting that the mapped distribution of this species (per DCCEEW's SPRAT database) does not overlap with the Project area, and there are no records of this species being within the Project area in any publicly-available databases. The 1997 CSIRO paper is the only reference of this species occurring in Blunder Creek so it is hardly surprising that it was overlooked. The 1997 CSIRO paper does not confirm the precise location that the species was caught in Blunder Creek and notes that the Lake Eacham rainbowfish was caught in much lower numbers than the closely related (non-threatened) eastern rainbowfish. The paper also states that where the eastern rainbowfish was the dominant species (as with Blunder Creek), specimens allocated to the Lake Eacham species were done so with reduced probability (primarily due to interbreeding and hybridisation between the two species, which is also mentioned as a challenge for this particular species in the Survey Guidelines for Australia's Threatened Fish). The paper concludes that the Lake Eacham rainbowfish is widespread throughout the Johnstone River and present in the upper reaches of the Tully River and in the Herbert River.
477a	.012	Survey effort	Given that just 103 hours of spotlighting was carried out to attempt to identify elusive fauna species like Koalas, Masked Owls and Northern Gliders, (surveys conducted from moving vehicles no less), the surveys relating to this PER were designed to fail and indeed they did.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
477a	.013	Adequacy of the PER	Unfortunately for Epuron, Korea Zinc, and Ark Energy this PER which is filled with omissions, lies, deception, and unprofessional and possibly fraudulent claims, the one thing that cannot be bypassed is the requirement for the PER to cover ALL Matters of National Environmental Significance – that is all listed threatened species with the potential to occur at Chalumbin. This failure to do so would of course render the document unfit for submission to the federal government approval authorities. This document fails to meet the statutory requirements set out under the EPBC Act.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The range of MNES addressed in the PER is a function of those MNES considered known, likely or with potential to occur within the Project area.

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477a	.014	MNES	In Euperon's advertising the question is asked: "does this project include any part of the Wet Tropics World Heritage Area?" and it answers its own question in the negative. The fact is that in Section 2.1 of Eupuron's Environment Protection and Biodiversity Conservation (EPBC) Act referral it states: "'The Project area is located adjacent to the Wet Tropics World Heritage Area... The nearest proposed project infrastructure is approximately 500m from the edge of the WTWHA boundary.'4, yet in Section 3.8 it states that: "The Wet Tropics World Heritage Area (WTWHA) is adjacent to, and partially within the Project area". Epuron has not provided any explanation for this discrepancy. This discrepancy requires further investigation.		No	There is no discrepancy, rather a progressive refinement of the Project which is entirely standard during the project development phase as more information is gathered. The boundary of the WTQWHA overlaps the property boundary of Wooroora Station in one small area. Between submission of the EPBC Referral and development of the PER, this part of Wooroora Station was specifically excluded from the Project area. As illustrated in Figure 4-44 of the PER, the Project area is located adjacent to, but outside, the WTQWHA.
477a	.015	MNES	There are numerous animals listed as endangered and critically endangered that will be impacted by this development. I have discussed a number of these in previous submissions, but I would like to highlight the fact that that two cassowaries have been sighted on two separate occasions on Tully Falls Road very close to the border of the Chalumbin development just in the last two weeks. I have been active in raising awareness about these amazing creatures for decades, and I cry every time I hear of another unnecessary death of these magnificent creatures. They are necessary for the germination for some endemic rainforest plant species. Also my daughter is the mail contractor for Australia Post and she does deliveries to Kaban, Tumoulin, Evelyn, Sluice Creek, and Windy Hill. She has sighted Cassowaries on many occasions. They are not "everywhere", but we all get excited when one is seen on these high elevation plateaus. They are more commonly seen in the lowland rainforests between the Daintree and Mission Beach areas, but to know they are also here around Ravenshoe in significant numbers is very important. There is a continuous corridor between the forests around Ravenshoe through to the Mission Beach area via the Tully Gorge. Our regional biodiversity is crucial to the whole planet. The high elevation forests are home to exquisite species found no where else in the world. That this development proposal borders the Wet Tropics World Heritage Area makes it untenable. Endangered species cannot differentiate between this invisible boundary. This area must be protected forever. It is no place for an industrial wind farm, let alone one on this grand scale.		No	The PER makes a clear commitment that no construction vehicles or plant will use Tully Falls Road (south of its intersection with Wooroora Road) to access the Project area. The Project will not widen or upgrade Tully Falls Road. The location of your southern cassowary observation is within rainforest habitat which is well known to be the preferred habitat for this species. There is very little rainforest within the Project area and no rainforest vegetation will be cleared as a result of the Project. Other vegetation types that are known to be habitat for the southern cassowary have also been avoided through Project design.
477a	.016	Fauna mortality turbines	Impacts to listed threatened and migratory bird and bat species associated with wind turbines Bats are prone to being killed by windturbines in high numbers. Raptors use the same wind currents that propel windturbines to hunt, soar and glide, prompting turbine strike.		No	Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
477a	.017	Spectacled flying fox	The Spectacled Flying Fox (Pteropus conspicillatus) is listed as endangered. This keystone species is under significant threat due to habitat loss and urban encroachment. It plays a critical role in defining entire ecosystems. The importance of this species is so great that it directly contributes to maintaining the World Heritage Values of the WTWHA: "Pteropus conspicillatus contributes to the dispersal of seeds within rainforest and between patches of rainforest. Because it moves freely across ecological boundaries both within and without the WTWHA, it also contributes to the dispersal of seeds from rainforest into other vegetation communities and land uses'. "Some of the plant species it is known to include in its diet, and therefore probably disperses or pollinates, are themselves listedspecifically as having World Heritage value." "Seed dispersal in general also contributes to the maintenance of other World Heritage values including plant diversity and distribution, population and genetic structuring and the ongoing evolution of community structure".		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
477a	.018	Spectacled flying fox	The Spectacled flying fox is part of a national recovery plan. The recovery plan states that the species: • Regularly cross and feed in modified habitats meaning that they may have an important role in seed dispersal in isolated and/or small rainforest fragments. • As with seed dispersal, pollination may be most significant in small and/or isolated rainforest fragments. • Foraging records suggest that the species feeds on the fruits of 14 rainforest plants for which no other disperser is currently known. A mass die off during a heatwave in Cairns in 2018 killed up to 23000 Spectacled Flying Foxes equating to a third of the population of the entire species in Australia. CAFNEC states: "Spectacled Flying Foxes are a very special part of Far North Queensland and are a key pollinator for our beautiful rainforests. They are currently under threat from loss of habitat, climate change and urban development. In 2019 they were listed as Endangered, however, the recent mass death in November 2018 were not considered in this listing. Experts tell us the numbers indicate Spectacled Flying Foxes should be listed as Critically Endangered." With this species in clear conflict in heavily built-up urban areas, it is incomprehensible that a critical population such as the colony of up to nearly 10000 individuals near Chalumbin would be put at threat. The development area is within the colonies feeding zone and this habitat must be protected. The fact that the Spectacled Flying Fox is also critical to the survival of flora species found within the WTWHA, and to precious remaining rainforest fragments has not been properly addressed in the draft PER. Therefore, under no circumstances, can the assessment provided in the draft PER be regarded as thorough or objective, and as such development approval must not be granted.		No	Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change.
504	.001	Social impacts	Note submission has been summarised to extract key points requiring response. The Report 's magnetic field measurements At page 21 of the Report the Windy Hill windfarm irradiated a magnetic field of 130 uT at peak with a minimum of 106 uT. At Kaban windfarm it peaked at 172 uT with a minimum of 111 uT. The Chalumbin windfarm site peaked at 149 uT with a minimum of 119 uT. While the residences peaked at 130 uT with a minimum 95 uT. Already the exposure in the environs far exceeds the .3uT causative link to leukaemia. These figures are extremely alarming, especially since the Chalumbin site and Kaban had not become operational (except for the high voltage powerlines). The Windy Hill Wind Farm was operational The amount of magnetic field radiation is cumulative in effect. But there is even more alarming news. Wind turbine magnetic fields – 1.4 million uT Rare earth magnets, like neodymium magnets, are used in some of the largest wind turbines in the world. These magnets, made of neodymium, iron and boron, are the strongest type of commercially available permanent magnet. Neodymium magnets provide efficient electricity generation. One would expect that the Chalumbin wind turbines which are some of the largest turbines manufacted would have these powerful magnets installed. Grade N42 magnets emit 1.32 million uT whilst N52 magnets can be as high as 1.48 million uT. This is extremely concerning, considering that the WHO has declared that children should not be exposed to a magnetic field of over .3 uT as there is a consistant association between that exposure and childhood lymphatic leuakaemia. The Draft PER does not mention this alarming insight and I would stringly suggest the Draft PER address this as matter of urgency.		No	The National Health and Medical Research Council in 2015 determined that individual perceptions of human health effects from wind turbines are highly variable. The NHMRC concludes that there is no consistent evidence that wind farms cause adverse effects in humans. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999. Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
504	.002	Social impacts	Compliance with strict noise limits must be demonstrated before approval is granted and via a noise monitoring program during operation. For host lots the noise level at a residence must not exceed 45dB or the background noise by more than 5dB at night (10pm-6am). For non-host lots it must not exceed 35dB or the background noise by more than 5dB at night (10pm-6am) and 37dB or the background noise by more than 5dB during the day (6am -10pm). The technical noise assessment has been done using predictive modelling by leading independent acoustic specialists and the project is predicted to be well within the noise limits. What I alarming is that the current measurements as recorded in the ReThe technical noise assessment has been done using predictive modelling by leading independent acoustic specialists and the project is predicted to be well within the noise limits. What I alarming is that the current measurements as recorded in the Report far exceed the 35 to 37 dB(A) threshold as raised in the PER Section 15 of the Draft PER does not reference the 'technical noise assessment' nor can it be found in the Draft PER.port far exceed the 35 to 37 dB(A) threshold as raised in the PER Section 15 of the Draft PER does not reference the 'technical noise assessment' nor can it be found in the Draft PER.		No	Background noise monitoring undertaken by suitably qualified acoustic consultants for the Project determines that the Project will readily comply with noise standards and relevant noise criteria when the background noise levels are included in the assessment.
504	.003	Cumulative impacts	It could be said that the cumulative effect of noise and electromagnetic radiation from existing windfarms and future projects would combine and increase radiation and noise levels with the operation of Chalumbin Project. Would such cumulative emissions increase and add to existing levels? What impact would the cumulative emissions have on the residents living in the area? And what impact would such a cumulative effect have on world heritage values and matters of national environmental significance (MNES)? The draft PER does not adequately address these questions, and in particular directly on point with the concerns I have raised in this advice.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999. Multiple scientific peer-reviewed studies on wind farm noise have found that infrasound from wind farms does not cause impacts to human health. This includes the Victorian Department of Health which states that "...sound can only affect health at sound levels that are loud enough to be easily audible. This means that if you cannot hear a sound, there is no known way that it can affect health. This is true regardless of the sound.", and the South Australian EPA which states that "...the contribution of wind turbines to the measured infrasound levels is insignificant in comparison with the background level of infrasound in the environment". The Noise Impact Assessment for the Project was presented in the application under the Planning Act 2016 and determined that there would be negligible noise impacts - noise levels associated with the wind farm would be well within relevant noise limits. The noise profiles of these wind farms within the region are localised to the extent that there is not a cumulative impact from these.
504	.004	Biodiversity general	The Draft PER at section 5.2.5 concedes that noise and vibration noise may adversely affect fauna by interfering with communication (e.g. territorial bird song), masking the sound of predators and prey, causing avoidance reactions and displacement from habitat. Construction noise will be generated by the Project through the use of machinery, plant and vehicles, and will vary from short intermittent noise from plant and equipment to more persistent noise from generators. However, the Draft PER fails to adequately address Barotrauma. Further, the Draft PER does not address the Helmholtz resonance or wind throb phenomenon of air resonance in a cavity, such as when one blows across the top of an empty bottle or one drives a car with a single window down and the pain it causes to the ears.		No	Barotrauma is addressed in Appendix G (Bird and Bat Management Plan) which includes a risk assessment to identify species potentially at risk of barotrauma, and the range of actions the project will take in the event that a signifcnt number of fatalities from barotrauma are recorded during the carcass searches.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

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504	.005	Social impacts	Ark Energy though silent on the issue, may attempt to say that exposure to EMR is completely safe if they irradiate and expose the public within the limits set by the ARPANSA standards. Ark Energy may need to reassess its Draft PER. It needs to provide calculated measurements of its proposed magnetic and electric field emissions from within the proposed site and the adjacent Wet Tropics World Heritage Site. It needs to address the risk of harm to health to both human and fauna and warn of the ELF EMF magnetic field issue surrounding the consistent association between ELF –EMF's above 0.3uT and childhood leukaemia as raised by the WHO, ICNIRP and the International Agency for Research on Cancer (IARC). The Draft PER is silent on this issue. One would assume that Ark Energy, The Queensland and Federal Governments are fully aware of the dangers to people being exposed to electric and magnetic fields. All have a duty to protect the community and the environment from exposure to potentially harmful magnetic fields and to warn and provide clear information as to the expected magnetic field uT exposure measurements they are irradiating into the environs from the proposed site. The cumulative effect of the radiation with other windfarm developments such as Kaban, Windy Hill and the like. I will not explain the intricacies of the duty of care in this advice. However, in my opinion Ark Energy and the Queensland and Federal Governments Draft PER have such a duty to provide such critical health related information to its stakeholders, and the general public.		No	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
504	.006	Indigenous Cultural Heritage / Engagement	As per section 5.3.9 of the Draft PER it states 'Once constructed, the turbines will be visible from certain locations beyond the boundary of the Project area. Landscape impacts include physical changes to the fabric of the landscape, as well as perceptual changes in the character of the landscape. Ark Energy admits at section 5.2.12 of the Draft PER under the heading 'Disturbance of Aboriginal Cultural Heritage' that 'the proposed site surrounds contains considerable Aboriginal cultural heritage values, as described in Section 4.10.2 of the Draft PER. Incorrectly managed, the proposed site has potential to disturb these tangible and intangible values through construction activities'. My argument is that Ark Energy has not addressed the 'Disturbance of Aboriginal Cultural Heritage' as far as Custodial obligations are concerned and the visual health impact such a development would have on those who are entrusted to protect the land. In my opinion this needs to be raised and addressed in the Draft PER.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones).
477a	.019	Wet sclerophyll forest impacts	Avoidance, Mitigation And Management Measures Proposed removal of wet sclerophyll forest: In this era, the year 2023, no wet sclerophyll forests whatsoever should be cleared for any purpose whether it is for coal or wind or solar. This forest type is very well documented as being habitat for a wide range of species including the northern Yellow-bellied glider amongst many other special and unique forest dwellers. In Figure 4.42 of the PER, Ark Energy explains: "to avoid wet sclerophyll forest would require the removal of Project infrastructure (or supporting infrastructure) that intersects this community, thereby eliminating: • 11 Wind Turbine Generators (WTGs) on the Wooroora property north of the existing Chalumbin to Woree high voltage transmission line (and associated access tracks and meteorological masts); and • 26 WTGs on the Wooroora property south of the existing Chalumbin to Woree high voltage transmission line (and associated access tracks and meteorological masts). A total of 37 proposed WTGs would require removal from the Wooroora property in order to avoid the wet sclerophyll forest. This alternative is effectively akin to a subset of the Lower Intensity Configuration Alternative (see Section 3.3.2) and is not considered feasible due to the identified drawbacks associated with that alternative. " Despite some avoidance measures adopted by the proponent, there is still considerable clearing of Wet Sclerophyll Forest being proposed: "It should be noted that the wet sclerophyll forest vegetation within the Project area could not be entirely avoided by the CWF. The large central patch of wet sclerophyll forest vegetation within Wooroora is located in a critically important part of the site from a Project design perspective".		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
477a	.020	Wet sclerophyll forest impacts	From the information provided in the PER, it is estimated that the development would still result in the clearing of 117.4ha of Wet Sclerophyll Forest. Wet sclerophyll forests are particularly important as an ecotonal community between the rainforests and savanna ecosystems. As well as being home to a unique suite of species, the wet sclerophyll forests are often used by rainforest and woodland species at different times of the year. They are also home to some special species, the endangered Northern or Tropical Bettong (Bettongia tropica), and the northern population of two other species of mammals restricted to this forest type - the Yellow-Bellied Glider (Petaurus australia reginae) and the Swamp Rat (Rattus lutreolus lacus). Ref: Wet Tropics Management Authority Website. The proponent has not properly described the potential impacts of losing this important ecotonal community for the species which are often found there. The proponent must clearly articulate the impacts of losing this Wet Sclerophyll Forest, particularly considering the fact that this ecotone is reducing over time across the bioregion. If this project was to proceed, the photography and video that will be captured showcasing wet forests being bulldozed will be beamed around the world by activists. This is not a good look for Copenhagen Infrastructure Partners (CIP), the project financiers. The conservation sector will not budge one bit on this issue. Therefore, the footprint needs to be reconfigured to avoid these areas.		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
477a	.021	Wet sclerophyll forest impacts	Buffer Zones The report resulting from the International Expert Meeting on World Heritage and Buffer Zone Davos, Switzerland 11 –14 March 2008 states that "A clear explanation of how the buffer zone protects the property should also be provided"7 . The proponent has provided almost no detail regarding how buffer zones were calculated or how they will be effective, and more information needs to be provided. The proponent must properly describe potential impacts of losing Wet Sclerophyll Forest in relation to its role as an important ecotonal community for the species which are endemic to it. The proponent must also provide detail regarding how buffer zones were calculated or how they will be effective. A feasable alternative would be to avoid all Wet Sclerophyll Forest, thus reducing the development to 49 turbines. The Draft Executive Summary however, on page 17, states this would be unfeasible.		No	As noted in Section 4.11.1.4 of the PER, the WTW Periodic Report to the World Heritage Committee (WTMA 2011) identified that there was no buffer zone around the property at the time of its inscription and that a buffer zone was not considered necessary, with the boundaries of the property being adequate to maintain the property's Outstanding Universal Value. A full review of species that are endemic to the Wet Tropics (irrespective of whether or not they are listed threatened) is provided in Appendix T of the PER. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
477a	.022	Construction impacts	Construction Concerns No information has been provided on where the water will come from for the temporary concrete batching plants. 68,800m3 of concrete will be required for the turbine foundations alone. I request that an approval condition be placed on the proponent that Blunder Creek and other local waterways not be used as water supply for the batching plants. Each turbine has 800m3 of concrete in the base – this equals 32 house slabs. This concrete will never be removed. How can site remediation at the end of life of this project be done. The terrain will be changed forever. With the proposed 145km by 75m wide roads throughout the site, once carved up for access roads, the forest will be vulnerable to invasive weeds, feral animals and disease. Wooroora Road, currently a quiet rural residential road about 9km long, is the proposed access route. The proponent plans to widen the road, build new bridges and blast Stoney Batter hill. This would entail 3 years of roadworks followed by construction. It is estimated that there would be an extra 350 vehicles on the road daily. This is not acceptable and will completely ruin the rural amenity of the landholders and residents who live there.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER. Following construction and decommissioning of the Project, the site will undergo extensive restoration and rehabilitation. This will be undertaken in accordance with the Preliminary Rehabilitation Plan (Appendix K of the PER). As per section 5.4 of the PER, decommissioning includes the removal of all above-ground infrastructure. A Weed and Pest Management Plan will be developed and implemented throughout the life of the Project. Appendix F of the PER provides an outline of that proposed management plan. In response to feedback from the community on the proposed access via Wooroora Road, the proponent is investigating an alternative access via Innot Hot Springs. A traffic impact assessment was undertaken in accordance with the Queensland's State Code 23 requirements. Approval 2112-26517 SDA was granted in June 2022.
477a	.023	Social impacts	Currently in Ravenshoe and the surrounding Atherton Tablelands there is a critical housing crisis with many people experiencing homelessness. There is no capacity to house workers. The only way to accommodate workers would be to displace locals by offering higher rents. We live in a low socio-economic area and this would place extreme duress on the most needy in our population. In the draft PER the proponent is only "considering" and "investigating" the feasibility of an alternative accommodation option (building a dedicated construction compound). There is no commitment nor obligation under the PER for them to do so.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.
477a	.024	N/A to PER matters	All government bodies, State, Federal and Local are willing to use our tax dollars to subsidise these projects to the tune of billions of dollars annually. It is not ok to plunder Nature with public funds. Governments have a duty of care to protect our environment for future generations. According to the 2015 Senate Select Committee report on wind turbines, subsidies were conservatively assessed at $500,000 per turbine, per year, whether they are working or not. Multiplied by 94 turbines this amounts to $ 47 million per year, to subsidise just one wind farm		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
477a	.025	N/A to PER matters	None of this makes sense until you factor in Carbon Credits. A carbon credit is a permit to pollute. 1 credit equals 1 ton of CO2 or the equivalent in other greenhouse gases. For example, landowners can earn carbon credits to grow trees in marginal areas where forests will not survive. They have received 8.2 million carbon credits worth more than $100 million annually of taxpayer's money. 9 There is no net reduction of greenhouse gases. These "green energy" projects (earning carbon credits) are not reducing emissions but are offset so that the government can continue to burn fossil fuel.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
477a	.026	N/A to PER matters	Additionally, the mining of rare earths and other minerals needed to run all electric cars, turbines, solar panels etc. leave horrendous carbon footprints. China does most of the mining, either in China or third world countries with corrupt governments, leaving poverty and disease in their wake. 10 This has not been factored into the "Green" nature of this project. The PER is full of "spin" to line the pockets of investors – just lies and deception and a total lack of care, concern or respect for the residents, both human and animals, for the traditional custodians of the land, or for the unique, high elevation, forest environment which is of world value. Cheaper power is a fallacy. The power generated by the CWF project will be exported.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.

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477a	.027	Project design	The Scale of the proposal The CWF covers a massive area comprising 311 square kilometers; comproses 94 wind turbines each 250 metres in height with 75 metre long serrated blades. By comparison, the tallest building in Cairns is 55 metres. These wind turbines once in the proposed location will be visible from Innisfail on the coast, some 60 kilometres away (via straight line) on the coast. It is an "over the top" proposal that has no place in this pristine high elevation forest area.		No	The Project now proposes 86 wind turbines. The landscape and visual impacts associated with the Project are investigated comprehensively in Appendix M (LVIA) of the PER.
477a	.028	MNES	Is this the future of our last remaining wild places? Habitat clearance is happening right now for the Kaban Green Energy Hub on Atherton Tablelands FNQ. Threatened wildlife includes the Northern Greater Gliders, Koalas, Red Goshawks, Magnificent Broodfrogs, Northern Quolls and more that live here. Habitat is cleared, fragmented and degraded. Material Change of Land Use irreversibly transforms the site from pastoral use to an industrial energy zone. WHAT DOES A NET POSITIVE OUTCOME FOR BIODIVERSITY MEAN AND WHAT STRATEGIES WILL BE USED TO ACHIEVE IT? EPURON: "securing and managing land exclusively to create or improve habitat for the particular species being impacted and contributions to new or existing research" FACT 1: Removing habitat critical to the survival of endangered species (again words taken from Epuron's EPBS submission), cannot be counterbalanced by ticking approval process boxes by purchasing parcels of land elsewhere and claiming they are 'creating habitat" for endangered species. This development site IS their habitat. No amount of spin can change that. FACT 2: Critical research has been commenced into the extremely restricted habitat of the Magnificent Brood Frog. This research began in Feb 2021 and is expected to take two years. (^3) Source: Ecologist Carly Starr 'Most Magnificent Broodfrog you've never heard of' Report, Bush Heritage Australia. (2021) Epuron stating they will contribute to research whilst destroying the very habitat Ecologists need to research is astounding.		No	Detailed studies across the Project area since 2017 have helped to inform the Project design. The Project is now less than 50% of its original proposed size, and avoids what the Project team determined to be "no-go" areas due to their high levels of ecological and cultural sensitivity. A significant increase in biodiversity offsets are proposed, to ensure a net positive impact, including three significant areas totalling more than 7,400 ha, primarily located immediately adjacent to the WTQWHA, including the largest patch of intact wet sclerophyll forest adjacent to the Tully Falls National Park, and the creation of formal connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge. This PER demonstrates how the Project design has evolved to avoid impacts on MNES to the extent practicable while balancing the need to access the wind resource as a replacement for fossil fuels to mitigate climate change. A significant focus will be placed by CWF on the rehabilitation of areas impacted by construction that are not required for operational activities (see the Preliminary Rehabilitation Plan in Appendix K); this will go a considerable way to addressing some of the permanent impacts associated with habitat removal and fragmentation. CWF has made an industry-leading commitment to rehabilitate 70 % of the Project footprint, to restore habitat and connectivity, a first of its kind. Rehabilitation will reduce the construction footprint from 1,071.1 ha (3.4% of the Project area) to an operational footprint of 107.2 ha (0.4% of the Project area) and a minimum rehabilitation area of 674 ha over time, with rehabilitation activities involving local community, traditional owners and nongovernment organisations. Consequently, in Section 8.0 the Project is assessed as having a significant residual impact on five individual MNES (the magnificent brood frog, the masked owl, the koala, the spectacled flying-fox and the northern greater glider). These significant residual impacts are unavoidable. However, the PER has shown that these unavoidable SRIs can be offset in accordance with, and beyond the minimum requirements of, the EPBC Act Offsets Policy. Sufficient suitable areas are available on host properties (i.e. within the Project site) for land-based offsets for the five MNES species. An additional voluntary contribution is also being committed towards research of up to $250,000 for the magnificent brood frog given there is little known scientifically about this species.
477a	.029	Biodiversity general	Remnant vegetation and dieback Risks The CWF is located within a "Susceptibility Zone" as described by Gadek et. al. (2001).12 The researchers noted the three environmental variables most strongly associated with the distribution of mapped dieback polygons were altitude (between 750 metres and 1050 metres), forest type (notophylls dominant) and geology (acid igneous rocks). They also noted associations with shallow slopes, proximity to water courses and proximity to existing and abandoned roads. Dieback was also mapped in other forest communities, and on other rock types, but always within the altitudinal range nominated above. The PER has detailed no mitigating actions in relation to this very real threat to the WTQWHA via its proximity to the CWF project. Refer to Figure 9 on Page 17 for details of the zones that the WTWHA has classified as having high susceptability to this invasive pathogen. The proponent has described the area in question as: "mostly open Eucalypt woodland". This in incorrect. There are actually has 4 broad habitat types identified in the project area: • Eucalypt Woodland • Rocky Pavement Shrub Complex • Riparian Zones • Notophyll Vine Forest.		No	The risks associated with the Phytophthora pathogen and proposed control measures are addressed in Section 5 and Appendix F of the PER.
477a	.030	Vegetation clearing	The vegetation was described in the EPBC as 'remnant vegetation covering the vast majority (95%) of the Project area and was generally observed to be in good condition'.14 What is "remnant vegetation?" According to a Government website: "Remnant vegetation or bushland can be defined as those patches of native trees, shrubs and grasses still left." It goes on to say: "Remnant vegetation is rapidly disappearing - due to clearing, dieback, overgrazing, inappropriate burning and weed infestation. The small remnants of native vegetation that remain are valuable" 15 With cleared pastureland abundant on the Tablelands, and deforestation a leading cause of climate change, one must ask how Epuron can try and justify the development of this site. Put simply; they can't!		No	The rationale behind the selection of site location (including the lack of alternative locations on cleared land) is addressed in Section 3 of the PER. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
477a	.031	Opposition to project	In Conclusion: Placing this project in perspective It cannot be disputed that green energy is the future. However, destroying habitat and ecology critical to the survival of endangered species is not green energy. It is acknowledged that deforestation is the leading cause of climate change. With ample cleared pasture land on the Tablelands, one must ask how in 2021 we can even be in the position of having to argue the merits of this development. The truth is with the huge subsidies available, and the profitability of installing 95 wind turbines on this site, this is not about green power. It is about corporate greed at the incalculable expense of the environment. No environmentally responsible company would consider placing this development on this site. This company must not be allowed to continue to mislead that this is about green energy. It is not. It is about profit. The World Heritage Wet Tropics is under threat from an increasing number of renewable energy projects proposed for the Great Dividing Range of North Queensland. If approved, numerous windfarms will create a "ring of steel" around one of the most ecologically unique, biodiverse regions in the world: the World Heritage Wet Tropics Area. This is what is currently proposed: • Chalumbin windfarm - proposed - 94 industrial-scale windturbines to be placed south west of Ravenshoe, Atherton Tablelands across a 78,000 acre land parcel adjacent to the Wet Tropics World Heritage Area. • Mt Fox windfarm - proposed - 57 industrial-scale windturbines proposed to be placed across 7,941 acres of land approximately 100km NW of Townsville, near Mt Fox. • Desailly Renewable Energy Park - proposed - Industrial-scale wind and solar farm to be located on the Northern end of Atherton Tablelands adjacent to Australian Wildlife Conservancy's Brooklyn Sanctuary. • Kaban Green Power Hub - under construction - Currently under-construction on the Atherton Tablelands, 28 industrial-scale windturbines are being installed on high biodiverse intact forest. • High Road wind development - proposed - 20 industrial-scale windturbines proposed for the Southern End of the Atherton Tablelands. • Upper Burdekin windfarm - proposed - 136 industrial-scale windturbines proposed to be placed on remnant vegetation. Located approximately 150km east of Greenvale and		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
477a	.032	N/A to PER matters	"The loss of forest on mountain tops will lessen rainfall and lead to more droughts and flooding. While one project may have almost negligible impact on weather, more and more wind farms are proposed. A major failing of the EBPC Act is the absence of assessment of cumulative impacts. The windfarm projects change the land use from forest to major industrial, permitting major extensions to each project being possible with much less assessment. This will impact on both our World Heritage listed Wet Tropical Forests and Great Barrier Reef while drying our inland agricultural lands to the west. High quality patches of remnant forest are rare and precious, and some windfarm project areas were being planned for inclusion in National Parks." Pamela Jones, environmental scientist		No	Construction footprints for wind farm projects typically occupy 3-4% of the total host property - this allows ongoing coexistence of land uses (generally agriculture/grazing and wind farm operations) and the ongoing operation of the wind farm typically does not render the site a "major industrial" land use, but rather an efficient use of resources and example of land use complementarity.
477b	.001	Opposition to project	I am a community member of Ravenshoe and surrounds and I do NOT consent to the proposed Chalumbin Wind Farm going ahead. I do not consent to the whole Draft Public Environment Report EPBC 2021/8983. I am appalled by the fact that anyone would even consider this precious, highly biodiverse, area suitable for industrial development. There is no doubt that with the rising temperatures brought about by climate change these unique high elevation forests will become the last refuge for our threatened species. That this area could be carved up for wind farms is an abomination. These forests need to stay intact. The dry sclerophyll forests adjacent to the World Heritage Wet Tropics are critically important to numerous endangered species.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
477b	.002	Adequacy of the PER	The proponent has presented an insultingly poor draft document, which contains very little research on the threatened species endemic to this area, nor have the surveys conducted on many of the threatened species been adequate. The method of monitoring and sampling as presented in the Draft PER is not adequate and is borderline negligent.		No	The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
477b	.003	Koala	The one done for koalas, Queensland's faunal emblem and a symbol of Australian wildlife throughout the world, is woefully inadequate. For example koalas have been found on adjacent properties at Yourka Reserve to the south, Kaban, Ravenshoe and Tumoulin to the west. As a mandatory pre-requisite, latest technology such as thermal imagery drones should be used to identify koala density and populations. For this project to proceed without conducting baseline surveys using latest technology is unprofessional. Additionally, the western edge of the Wet Tropics World Heritage area has been identified as a koala corridor. Any forest fragmentation or altered fire regimes would threaten this species that is facing extinction.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala including altered fire regimes have been fully assessed in the PER with mitigation measures outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. Furthermore, A Bushfire management Plan (BMP) will be developed to protect works, biodiversity and habitats, minimise potential damage or loss of machinery, equipment or infrastructure, minimise the risk of bushfire, control the spread of bushfire in the event of ignition, and to provide adequate response in the event of ignition (Queensland Government 2021). The BMP will be developed in accordance with the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), Environmental Protection Act 1994 (EP Act), Nature Conservation Act 1992, Work Health, Safety Act 2011 and State Planning Policy 2017. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.

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477b	.004	MNES	The EPBC Act protects matters of national environmental significance. The proposed Chalumbin Wind Farm will have a massive environmental and social impact on: • The World Heritage Wet Tropics; • National Heritage Places, including Cultural Heritage sacred sites; • Nationally threatened species; • The Great Barrier Reef; • Migratory bird species; • The environment where the actions proposed are on; • A severe social negative impact on the community. The Department of Environment has a "Duty of Care" to Protect Natural Heritage. No amount of planning will compensate for the destruction of High Biodiverse Remnant Wet & Dry Sclerophyll forests bordering the World Heritage Wet Tropics, and the Herbert River Catchment area pollution and erosion flowing into the Great Barrier Reef. Threatened Endangered Flora & Fauna are at risk of Extinction.		No	The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species and a full impact assessment has been undertaken as part of the PER. This has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna; when these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. Appendix J of the PER contains a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks including risks to the GBR. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. In terms of compensation for sclerophyll forests, eight wind turbines have been removed to reduce the clearing in wet sclerophyll forest with an associated reduction in access roads by 27 km and relocation of the southern substation and associated reduction in internal overhead transmission lines by 4 km. These significant changes further reduce the clearing in wet sclerophyll forest by 31%. A significant, strategic offset is also proposed involving more than 7,400 ha across three areas, primarily located immediately adjacent to the WTQWHA, including the largest patch of intact wet sclerophyll forest adjacent to the Tully Falls National Park, and the creation of formal connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge.
477b	.005	Opposition to project	Chalumbin is the wrong site for a wind farm. Wind turbines have a life span of 25 years; forest regeneration takes 1000's of years. Cutting down trees is NOT 'green'. The proposed Chalumbin wind farm will only add to climate change. There are enough other wind farm proposals in the pipeline to meet energy requirements without Chalumbin being desecrated. It is simply not possible to "offset" the destruction that will occur if this proposal goes ahead. Ravenshoe is a small country town and as a community member I want it to remain this way and for it not to become industrialised. I have witnessed the habitat destruction with the Kaban wind farm and the ugliness of the massive turbines on the skyline which have already ruined the natural beauty of the area. I say NO to Chalumbin, I say NO more wind farms in the Ravenshoe area. I do not consent to be assaulted by electrical and magnetic frequency emissions from wind turbines.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
479	.001	Opposition to project	We are truly blessed to live in such a region as the Wet Tropics of Australia with its enchanting forestt bushland and a unique and highly diverse rarlge of flora and fauna. A11 this is forlornly under threat by the proposed wind farr;;t, Chalumbin, at Ravenshoe Far North Queensland, REF: Comment Draft Public Environment Report EPBC 2021r8983-Chalumbin Wind Farm, and that is why I am in opposition to this proposal. My primary grounds for objection are: - Environmental impact - Impact on businesses - Lack of transparency - Hypocrisy of green energy		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
479	.002	Biodiversity general	The environmental impacts of this project are substantial, and will have a significantly detrimental impacf on native flora, fauna, waterways and their ecosystems. The clearing of pure and undisturbed sclerophyll forest at Chalumbin will also #fect the neighbouring properties; including a Wet Tropics Heritage Listed site in the Tully Falls National Park, and Yourka Nature Reserve, managed by Bush Heritage Australia.		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
479	.003	MNES	Sclerophyll forests are home to hundreds of diverse species, so it is curious that no species of interest were observed in the project area, although there were numerous sightings surrounding the 78,000ha project land parcel. The Yourka Nature Reserve borders Chalurnbin to the South and West and over two hundred species of fauna (including some identified as vul:rerable, threatened and critically endangered) have been recorded (wetlandinfo.des.qld.gov.au); not to mention the abundance of native flora (some species also at risk), and over 5ooo different species identified in the Tully Falls National Park to the East (wethopics.gov.au/threatened-species-and-communities). The Yourka Nature Reserve and Wooroora Station (the grazing property on which the bulk of the wind turbines are to be located), are essentially the same forest and preferred haunt of several compromised species including, but by no means limited to the Magnificent Brood Frog, Red Goshawk and Koala (a11 sighted at Yourka). It is therefore within reason to suggest that whatever has been recorded at Yourka is highly likely to be found on Wooroora also. If living in the tropics has taught us anything, it is that wildlife is incredibly difficult to see in its natural habitat.		No	The magnificent broodfrog has never been recorded on Yourka Nature Reserve, the red goshawk has not been recorded there in over a decade and the koala has only been recorded twice in the last two years (prior to that, it had not been observed for 10 years) (all Bush Heritage Australia, pers comm). The PER documents numerous species of interest recorded within the Project area, see Section 4. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their time and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
479	.004	Vegetation clearing	The clearing of vegetated land, especially at elevated positions such as Chalumbin Hill (804 metres above sea level), in high rainfall areas (average yearly fall of 2710mr1, will have a significant impact on surrounding waterways. The project site is within the Herbert River Catchment. This catchment as stated on the Terrain website (terrain.org.au) is 'a top-three priority catchment for seiliment reduction in Queenslnnd's Great Barrier Reef zone'. There is substantial funding from the Australian Govemment's Reef Trust IV programme helping graziers and landholders manage erosion on their properties. Any clearing at the Chalumbin site will hinder this programme and delay further the reduction of sediment runoff to the Great Barrier Reef and the Hinchinbrook Channel via Lucinda. Sediment runoff into Blunder Creek is of particular concern for the platypi which are known to inhabit its waters. Populations of this unique Australian monotreme are in steady decline across the country; even becoming extinct in some localities (South Australia). \ fhilst not yet endangered in Queensland, all possible efforts must be made to secure the future of this amazing creature. Surely it is best practice to protect and preserve these habitats whilst we are able, thus preventing the addition of any species to the critically endangered or even extinct index.		No	The Project is not located at Chalumbin Hill, which is located further east within the WTQWHA. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site specific construction Erosion and Sediment Control Plans (ESCPs) will be prepared and implemented for the construction of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site. Potential impacts on the platypus were assessed in the Ecological Assessment Report that was submitted as part of the DA (approved in mid 2022), which assessed that the Project will not result in a significant residual impact on this species.
479	.005	Construction impacts	Not only is the cleanliness of the Herbert River and its tributaries vital to the survival of flora, fauna and aquatic natives, it is essential to tLre livelihoods of numerous graziers, farmers and land holders, who utilise this system to water stock and crops, as well as for their own drinking water and general household use. There are small scale tourism and camping operators within the vicinity of Chalumbin which will be impacted by this wind farm. Most visitors come to appreciate the area's natural beauty and tranquillity. Disruption to the landscape, pollution associated with all construction sites and use of heavy machinery, noise, increased trafic, oil and fuel spillages, heavy metal and plastic contamination, and general waste are all impurities and directly affect the appeal of this area. The threat to business is an important but largely neglected, aspect of all major development projects such as this, as these properties and small businesses provide full-time and seasonal employment in a low socioeconomic region.		No	Water quality and aquatic species will be managed through the implementation of erosion and sedimentation controls (see Appendix I and J). The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Surrounding and sensitive land uses are considered in Queensland's State Code 23 approval, and impacts to other industries including tourism and grazing will not occur. Changes to the use of land will only occur where approved, on the hosting properties, as consented to by the landholders. Other potential construction impacts have been assessed and mitigated as per the application material prepared under Queensland's State Code 23, and approved in June 2022 (2112-26517 SDA). As discussed in section 13 of the PER, the project is expected to have a positive impact on the local, regional and State economy through employment opportunity and local spending.
479	.006	Adequacy of the PER	The rapid rate which the proposed wind farm seems to have progresses through the state and federal approval process has much of the community very sceptical of the thoroughness and due diligence of firstly Epuron, and now Ark Energy's sincerity in all aspects of this scheme. Minimal time and effort made spotting threatened species, minimal effort to keep the public informed, lack of consultation with adjoining land holders and choice of an obviously unsuitable site has people questioning the transparency and integnry of this venture. Ark Energy claim the Chalumbin wind farm will generate 'enough clean energy to power 350,000 homcs.'Why then is such a large-scale plant proposed for such a low-denslty area? It would make more sense to locate this project elsewhere, as there are already two windfarms within 15 kilometres of Ravenshoe. Perhaps there is more development planned for the district that the community is unaware of.		No	The Project obtained a development permit under the Planning Act 2016 through the standard assessment process for a wind farm in Queensland. The referral for the Project was lodged under the EPBC Act in July 2021. The Project is still being assessed through the EPBC Act process and this is standard for a project subject to the PER assessment process. Section 4.2 of the PER describes the ecological survey program and how this responds to relevant regulatory requirements for the individual species. Section 11 of the PER describes the extensive engagement processes undertaken by the proponent for this Project. The PER states that the Project will generate enough renewable energy to power 320,000 homes. This is based on a standard metric and is not a reflection of the need for power to 320,000 homes in the vicinity of the Project. The electricity generated by the Project will be transferred to the National Electricity Grid where it will be used by National Electricity Market participants and/or by entities with a power purchase agreement for the generated electricity. The Project is proposed in this location due to the reasons outlined in Section 1.5 and 3.0 of the PER.
479	.007	Loss of carbon stores	The hypocrisy of this enterprise is astounding. Destroying green space to create green energy. How is this justified? In a world whole-heartedly concerned with reducing carbon, carbon emissions, and our carbon footprint why are we clearing trees which actually store carbon; and prompting erosion when carbon is also stored in soil? Land holders are barely able to clear a fence line to protect their properties from fire and pests or to maintain infrastructure, yet green projects remain seemingly exempt. We are all called to reduce our household waste by way of recycling and using recycled products thereby reducing landfill and yet wind turbine blades are made of fibreglass which is non-recyclable, and buried at the end of their operational life.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
479	.008	Contamination	Turbines require synthetic oil for lubrication, and as per maintenance schedule, must be replaced every twelve months. The oil is crude based, and sourced overseas along with many components of wind turbines. Heavy machinery required for the construction of the wind farm and batching plants will rely on fossil fuels, all of this contributing to the carbon footprint of the Chalumbin scheme. Wind turbines have a relatively short life span of twenty-five years, after which they are either refurbished, repowered with new infrastrucfure or decommissioned. Regardless of what happens at the end of Chalumbirt's operational life, there will be more environmental disruption to the revegetated landscape; and in the case of repowering and decommissioning, more landfill and toxic leachate. Protecting the environment and going green is supposedly achieved by implementing sustainable practices and materials, and is clearly not the case here.		No	The amount of hydraulic fluid used for the safe and efficient operation of each wind turbine is dependent on the wind turbine itself, the operational model of the Project owner, and the specifics of the hydraulic fluid used. In the event of a spill, the procedures outlined in the Project's Construction Environmental Management Plan and the Operational Management Plan will be followed. This will include protocols for environmental incidents, such as a hydrocarbon spill. Strategies to manage these impacts are further discussed in Section 6.2.8. The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
479	.009	Alignment with government policy	The proponent of this windfarm is Ark Energy, which is owned by Korea Zinc, aSouth Korean energy company. South Korea is the second largest importer of liquified natural gas as they have no natural deposits of coal or oi1 for electrical generation (en.wikipedia.org). Their governmenthas raised the bar however, and aims to increase generation of renewable energy frorn6% 1n2019 to35Yoby 2030.It is a shame Ark Energy is not investing is its own country's future but the lucrative incentives offered in Australia ($500,000 per year for each turbine; The Senate Select Committee on Wind Turbines final report August 20L5, chapter 7.53) are obviously too good to pass up. The EPBC Act - Environmental Assessment Process was established to protect our endemic vegetation and wildlife itt "mntters of national enaironmental significance". Sadly, this act seefirs to have been forgotten in Australia as politics, money and the rush for renewable energies overrides our duty of care to the environment.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
481	.003	N/A to PER matters	This submission is on behalf of the Tree Kangaroo and Mammal Group (TKMG), an Incorporated community-based nature conservation organisation formed 25 years ago and very active in working for the conservation of mammals in northern Queensland. We have over 150 members, many of whom are landowners, scientists, naturalists, farmers, nature tourism and other business operators as well as members of the wider community. I make this submission as President of TKMG. Our organisation has worked with many others to implement on-ground works for the benefit of tree kangaroos and other mammals including gliders, bettongs and quolls. In addition, we undertake a program of activity to increase community awareness about nature conservation and the importance of habitat retention, recovery and repair. The work includes regular public presentations and some projects of citizen science. TKMG has many concerns about the proposed industrial development at Chalumbin. In general, TKMG supports the conclusions reached by CAFNEC in its analysis of the Chalumbin proposal. TKMG is appreciative of the work undertaken by CAFNEC in both the analysis and assessment of the proposed Chalumbin Wind Turbine development. Some TKMG concerns are particularly around a number of key elements that we highlight below.		No	Noted. Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
481	.004	Project location	1. The site location. The Queensland Government approach to alternative energy development is simplistic and disengaged. The Queensland Alternative Energy Northern Zone embraces a vast area including two World Heritage Areas and the critical habitat of many threatened species. It seems almost as though the maps were sketched using some simplistic algorithm with no thought whatsoever about the natural environment, or about biodiversity. The Chalumbin proposal includes critical habitat in a narrow wedge of country between the Wet Tropics World Heritage Area and a Private Conservation Property of long-standing biodiversity significance. With any awareness of biodiversity and other conservation elements, such an environment would have been immediately removed from consideration. Without doubt this is a completely inappropriate site for such industrial scale energy development. It is disappointing that so little care for biodiversity is exhibited by this broad-brush approach by the Queensland Government, especially given the extremely weak commitment to on ground conservation (protected areas) in Queensland compared with every other State and Territory. Given the commitment by the National Government for the nation to achieve 30% of terrestrial habitat protection by 2030, and the current figure of <9% in Queensland, the upland areas of the great dividing range and their remnant vegetation communities should have been excluded from any consideration for further clearing and destruction of habitat. These last remaining higher elevation undamaged habitats are crucial for so many species and must be protected, especially given the context of the many alternative opportunities for wind turbine developments. While TKMG understands the necessity of alternative energy developments as a means of addressing the serious threats to biodiversity from human induced climate change, the choice of location is critical and in this case the selection is seriously flawed from a biodiversity perspective. There is an urgent need for alternative energy to enable rapid retirement of fossil fuel energy systems, but not at the cost of high value biodiversity loss. It is disappointing that such considerations were not part of the initial recognition of an alternative energy zone.		No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project.
481	.005	Biodiversity general	2. Critical habitat loss and threats to mammalian biodiversity. TKMG is particularly concerned about the long-term survival of our unique mammals and this project threatens many species. In the light of such threats to biodiversity the project should not proceed. In addition, it is already clear that these cooler, moist upland areas will be critical biodiversity refuges in the already determined much hotter future we face. The survival of many species will require the protection of these future refuge areas, an issue that remains poorly addressed.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting anticipated climate change effects.
481	.006	Spectacled flying fox	a) Spectacled Flying Fox (Pteropus conspicillatus). This species is of utmost concern because of the already extreme reduction in its population (exacerbated by massive recent heat-related deaths) combined with its keystone roles in the Wet Tropics World Heritage Area. Previously the species has been protected under the EPBC Act even in adjacent locations outside the World Heritage Area because of its contributions to the Outstanding Universal Value of the World Heritage Area. Its conservation status today is even more parlous and the potential cumulative impacts of any further reduction in the population is severe. It would likely lead to significant undermining of the World Heritage site. The PER deals quite inadequately with this situation and the project should not be given approval on this basis alone.		No	Spectacled flying-fox has not been definitely recorded within the Project area. Nonetheless, Section 4.7.10 of the PER acknowledges that most of the Project area provides foraging habitat for the spectacled flying-fox and is within the species' foraging range from a known camp. Potential impacts have been assessed in Section 8.6.10 of the PER and a range of mitigation measures have been proposed. Large tracts of spectacled flying-fox habitat will remain within the Project area post-clearing which are connected to larger habitats in adjacent areas. These retained and adjacent habitats will support the species and provide connectivity. Rehabilitation activities over up to 70% of the cleared area will aim to restore habitats that will provide spectacled flying-fox forage over the short to medium term. Finally, the species has been included in the Preliminary Offset Strategy as required. Heat waves due to climate change are readily acknowledged as one of the biggest threats to the spectacled flying-fox (SFF Recovery Team, pers. comm.). It is worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting future climate change. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
481	.007	Koala	b) Koala (Phascolarctos cinereus). The national concern about the likely extinction of koalas is warranted and the potential importance of the northern Queensland population of koalas is increasingly recognised with projects underway to better understand this species occurrence in the north and potential threats to its survival. The apparent sparseness of northern koalas draws attention to the well-known communication systems of koalas, using low-frequency sound waves to communicate for mating purposes over long distances. The scientific literature suggests that these large wind turbines emit significant amounts of infrasonic and low frequency noise so there is strong possibility that koala contact calls will be dampened or totally overridden by it. It is likely therefore that the noise production of generating wind turbines may interfere with successful koala reproduction and this is a serious matter. The failure of the PER to record koala is likely related to inadequate survey techniques rather than absence of the species. This is potentially a serious oversight. The idea of a dense field of low frequency sound-producing turbines in an area of potentially critical koala habitat is antagonistic to long-term biodiversity goals.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, in a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER identifies that noise may have an impact on species occurring within the area and, as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy. Furthermore, infrasound / low frequency sound has not been identified as a threatening process for the species in the National Recovery Plan 2022.
481	.008	Lumholtz tree kangaroo	c) Lumholtz's Tree-kangaroo (Dendrolagus lumholtzi). This iconic species has a seriously restricted habitat and high site fidelity. Much of its original habitat has been destroyed and the consequence is that all areas of remnant vegetation suitable for the species must be protected. The species has been recorded in the site and this should be of sufficient concern to avoid any further disruption. There are other species also of conservation concern (identified as such under Queensland legislation) and given the failures of the Queensland State process of assessment of these alternative energy proposals these are warning flags for biodiversity loss. TKMG expect the relevant national authority to point out and take account of such state process deficiencies even when species involved may not yet meet the test of MNES.		No	This is noted, but does not appear to be a specific comment on the Project or the Draft PER.
481	.009	Northern greater glider	d) Northern Greater Glider (Petauroides minor). This species was listed as Vulnerable under the EPBC Act in July 2022 and a recovery plan is required (but not yet made). Its presence in the Chalumbin area is known and significant and the damage to habitat from aspects of the development has been identified in the PER. Once again, the absence of biodiversity consideration, or community consultation, means no concern was expressed when the Queensland system approved the development. Loss of habitat for this threatened species is unacceptable for a project claiming to be environmentally responsible.		No	Your concerns are noted. Potential impacts to the northern greater glider were assessed in detail in the Ecological Assessment Report that was submitted to SARA as part of the State approval process.
481	.010	Cumulative impacts	3. Failure of the system to account for cumulative impacts. Despite the significance of cumulative impact to the long-term destruction of Australia's natural ecosystems, the Queensland approach to alternative energy has failed to take the lessons seriously and continues the flawed system of individual proposals being assessed in isolation. It is almost as though the Government has decided to adopt an approach that would seriously limit the capacity of the community to object to alternative energy proposals. If it were not for the EPBC Act even now the Chalumbin industrial scale wind turbines would be authorised by the Queensland Government and become the next in a series of decisions to fail the community and biodiversity conservation. Further wind turbine proposals have already been indicated by private development interests with no sign that either the Queensland Government or the National Government is interested or capable of addressing cumulative impacts. The alternative approach, separate individual proposals, has often been described as death by a thousand cuts and that seems the most likely outcome given the present framework. TKMG objects and wishes to see a more thoughtful and detailed approach to the future of our alternative energy needs. The system now in place, implemented by the Queensland Government, seems almost designed to turn the highly valuable alternative energy developments we need into the new dark force in energy supply. Could this be deliberate - to try and create a more positive perspective on fossil fuels, much loved by the Queensland Government? The astonishingly poor system developed to assess these projects (the Queensland SARA system) is so laden with flaws it makes such a suggestion more believable.		No	This issue is a commentary on the process for assessing projects at the State and Commonwealth level. The proponent can only be expected to comply with the requirements of the prevailing legislation at the time of the proposal. Section 5.5 of the PER addresses cumulative impacts on MNES associated with wind farm projects (operational, in construction and proposed) within the broader region.
506	.001	Opposition to project	Refer to submission 80		No	Refer to response to submission 80
508	.001	Support for project	I, Geoff Thomas, of Malanda Qld, the man who wrote the Australian Renewable Energy Vision, - now known as the Labor Plan, received an invitation from Cafnec Cairns, the which I have supported for over 20 years, to write a submission re the Chalumbin Wind Farm, for which they provided a Template, as copied below, but including my specific refutations, as the Template seemed to me to consist of unproven assertions, would be opiniations, unfounded accusations, and indeed also untruths. In my humble opinion, Chalumbin is a very good site for a Wind farm, see below, and it would be a great pity to allow a small group of mainly Nimbies and Climate Deniers to use it as a block/precedent against the very important intention of the Labor party to change Australian energy generation from fossil fuels to Renewables.		No	Section 1.5 of the PER outlines the Background to the Development of the Action including how the Project contributes to the decarbonisation of energy generation, is located within the State identified Northern Renewable Energy Zone and aligns with the objectives and targets set out in the Queensland Energy and Jobs Plan.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
510	.001	Opposition to project	As it stands, the Chalumbin Wind Farm (CWF) Public Environment Report (PER), is in many respects a marketing document rather than a scientific assessment of the environmental and economic impact of the proposed Chalumbin Wind Farm (CWF). I found many examples of bias and value-weighted statements. Ark Energy's PER wants Australians to believe that they are contributing to the important work of greening being carried on "to save the planet". In fact, it is greenwash that is aimed squarely at rent-seeking for Ark Energy's investors and which proposes to clear valuable forested land in the name of "saving the planet". This project cannot work without the installation of HV transmission lines. This represents a cost that will actually be met by the people of Queensland. The cost of HV transmission lines has been estimated at $10 million per kilometre for the HumeLink. There is no reason to expect that the cost of transmission lines in far north Queensland will be any different and perhaps more. This is a hidden cost because the only costs quoted for wind farms are the establishment of the wind farm itself thereby underestimating the per kWh cost of the electricity to be provided. The cost of recycling the steel, concrete, rare-earth magnets, carbon-reinforced blades at the end of the project life (15-20 years – although quoted at 30 years in the PER) is not estimated. Presumably we are therefore led to believe that Ark Energy assumes that "technology will take care of it" in the next 20 years. The life of the CWF is estimated in the PER to be 30 years. The generally accepted life of wind farms is around 20 years. Recent data from wind farm studies in other parts of the world put wind farm MTBF at considerably less, perhaps even as low as 9 years. The variation around wind farm MTBF therefore put considerable doubt on economics of the CWF.		No	Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network. Therefore the existing network has the capacity to accommodate the generation of this Project. Additional transmission lines associated with the future development of the Northern QREZ are described in section 5.6.1 of the PER and section 1.5 of the PER. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials.Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades. Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium).The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
510	.002	Project alternatives	Section 3 of the PER mentions a coal fired plant as the only non – variable renewable energy (VRE) alternative. Coal-fired plants have a capacity factor approximately 3 times that of a wind farm so they would more reliably supply a greater output of electricity than the CWF. The objective of the Queensland government is to reduce greenhouse gas emissions in the electricity sector. And CWF purports to be taking steps to support that objective. The Queensland government has included in that objective the use of 'renewable' generation sources of electricity production. That means that the Queensland government will only accept wind and solar as viable alternatives. That restriction does not allow for viable alternatives that do not suit the government's picture of clean (low GHG) alternatives.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments.
510	.003	Project viability	The asset life of the CWF will be around 15-20 years, let's be generous and say 20. Although Ark Energy quotes a life of 30 years which is outside the life of similar wind farms in other parts of the world. That of a nuclear power plant whether that is a small modular reactor-type (SMR) or otherwise is 3 – 4 times that based on current licensing extensions for nuclear plants in the US and Europe reaching up to 80 years. Asset life of other generation sources lie between that of a wind farm and a nuclear power plant (US DOE, 2015). As mentioned, the capacity factor for the proposed Chalumbin Wind Farm is 0.38 based on the figures provided by Ark Energy. This compares poorly with alternatives available, including the only alternative put forward by Ark Energy – that of coal. The EROI measure was devised by the Stanford University in the Global Climate and Energy Program (GCEP) from 2002 – 2019. The following chart illustrates the EROI for a range of electricity generation sources. From the chart, wind and solar power barely reach the economic threshold and with an energy return around 4-5 times lower than an equivalent nuclear plant. With storage the measure is worse at around 18 times lower because of the energy required for the extraction of materials for the batteries, and the CO2 emitted in the mining of the materials and battery manufacture.		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Nuclear energy projects are not permitted under the EPBC Act (s140A). Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.
510	.004	Construction impacts	There is a huge difference in the energy density of wind and solar compared to nuclear. This is seen in the spatial footprint that is needed for each source. Considering just the land for the electricity generating source - and it is important to consider facilities generating the same electricity output – wind energy requires hundreds of times the amount land to generate the same electricity output as a nuclear power station. This does not include the area cleared for transmission lines to take the electricity to where it will be used. For North Queensland with its nature-loving values, the question must be asked and answered - how much nature will we destroy to have 'green' energy? This visual link demonstrates the typical destruction of native forests including that of wildlife habitat when constructing a wind farm in North Queensland:		No	Feasible alternatives to the project have been assessed in section 3 of the PER. Nuclear energy projects are not permitted under the EPBC Act (s140A).
512	.001	Vegetation clearing	The Chalumbin wind farm should not be approved because: Whilst wind is an excellent source of power, no new land should be cleared to facilitate these turbines. There is plenty of cleared land readily available for resumption. Clearing is counterproductive to the current actions required to address climate change and conversion to renewables. Lastly, the impact on native wildlife is unacceptable. The forests of Chalumbin are a refuge for a vast and invaluable array of wildlife . These forests must be protected at all costs and whilst the transition to renewables is essential, it must be achieved without any further deforestation or destruction of any habitat. Please consider the ramifications of this project and consider the many alternatives.		No	The rationale behind the selection of site location (including the lack of alternative locations on cleared land) is addressed in Section 3 of the PER. Wind energy companies do not have any legal rights to resume property (in the manner than mining or oil and gas companies do), all land agreements must be individually negotiated. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
514	.001	Biodiversity general	The Chalumbin wind farm should not be approved because our country has a biodiversity crisis. Wilderness in Queensland is being cleared at an unprecedented rate, and the wilderness of Chalumbin is a critical haven to wildlife. Chalumbin should not be destroyed for a wind farm. It is astonishing that a wind farm proposal is destroying wilderness and the home of our wildlife, some of which is critical refuge. The remote location ensures native wildlife and vegetation are protected from much human interference.These areas should remain free from degradation. The 2021 Stare Of Environment Report sounded a huge alarm on the Australian environment. Yet here we are with over one thousand hectares of this precious remnant wilderness set to be cleared for the proposed Chalumbin wind farm. Why is there a proposal to clear more trees and vegetation when we are in a climate emergency? Chalumbin should not be destroyed for a wind farm.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting the effects of climate change.
516	.001	Opposition to project	Refer to submission 21		No	Refer to response to submission 21
518	.001	Opposition to project	Refer to submission 21		No	Refer to response to submission 21
483	.001	Opposition to project	As per submission 80		No	See response to submission 80
485	.001	Project location	Overview Windfarms are an important component of Queensland's renewable energy future, but they need to be sited in areas that do not cause high levels of damage to our natural heritage. The Chalumbin Wind Farm is located in between the World Heritage Wet Tropics Area and the Yourka Nature Reserve. It is densely vegetated with wet sclerophyll and mixed woodlands, and contains critical habitat for a number of endangered species. The Chalumbin Wind Farm is potentially a good project, but it is in the wrong place. It would have unacceptably high environmental impacts and should not be approved in its current location. Wooraoora Station, based on its location, high biodiversity, presence of endangered species and critically important habitat, would ideally become a future addition to Queensland's National Park estate should that circumstance ever present itself to the Queensland government.	•Renewable energy production is essential as we move to reduce our use of fossil fuels. Alternatives to the exploitation of the high altitude forests of the Wet Tropics region exist. The Copperstring 2 line and other potential spurs lines to the west offer high quality wind and solar resources in landscapes that would have reduced impacts on our unique and world renowned natural heritage values.	No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Powerlink has confirmed with the proponent that the existing grid currently has the capacity to accommodate the electricity proposed to be generated by the full Project.
485	.002	Project design	The Wider Context - Overriding Issues One might reasonably ask how does a proposal such as the Chalumbin Wind Farm proceed to this advanced point in the development process. It is clear, because of its location that it will have unacceptably high environmental impacts and as such it has engendered widespread community opposition. Could planning and approval processes be upgraded to give better early advice to proponents, so as to avoid unnecessary and excessive expenditures, and similarly, to reduce the anxiety and trauma experienced by the communities that feel threatened by inappropriate developments? A broader set of issues, at the state and national level, underpin the framework within which renewable energy developments, such as the Chalumbin Wind Farm, are undertaken in Queensland. They set in motion outcomes that are very damaging to our natural heritage, including to critically important endangered species habitat. These issues need to be addressed if proposals such as the Chalumbin Wind Farm, and others in the future, are to deliver renewable energy with acceptable environmental impacts.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The proponent can only be expected to progress the Project through the prevailing legislation available at the time of the proposal.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
485	.003	Alignment with government policy	Queensland Government Issues -The Queensland government, in consultation with Australian Energy Market Operator (AEMO) has developed Queensland Renewable Energy Zones (QREZ's) across the state. Environmental planning and heritage values were not considered in the development of these zones, and for the Northern REZ, where environmental values are so high this can only be described as negligent. -The Queensland government's environmental oversight in this process is similarly negligent. The State Planning Code 23 for Wind Farms is the Planning Code for Wind Farm Development. This Code and its associated appendices fail to incorporate even a basic standard of environmental assessment into its guidelines. This failure encourages proponents to initiate and pursue developments in areas that will lead to high levels of environmental harm and degradation. -State Planning Code 23 for Wind Farms is essentially a tick and flick exercise to the Commonwealth governments notoriously inadequate Environmental Protection and Biodiversity Conservation (EPBC) Act process. The Queensland government, by not undertaking more rigorous environmental assessments at an earlier stage in the project development timeline, directs unsuitable projects to EPBC Assessment without applying any sensible level of environmental scrutiny. By this time proponents have often invested considerable effort and resources into their projects, and experience has shown that through the EPBC Act, only a small percentage of projects are subjected to any meaningful level of environmental protection. Project rejection, on environmental grounds is extremely rare. -By providing state approvals for wind farm developments, incorporating Material Change of Use over land use (eg to industrial energy production), the Queensland government greatly diminishes the capacity of future environmental protections operating on large properties where wind farms are to be located.	-The Queensland government needs to overhaul State Planning Code 23 for Wind Farms, and upgrade environmental assessments to include all provisions within the Nature Conservation Act. -The Queensland government needs to undertake proper heritage and biodiversity mapping across all Renewable Energy Zones in Queensland to clearly map out where renewable energy resources and areas with minimal environmental values overlap. As a matter of urgency this needs to be undertaken in the NREZ, pleases refer to Map 3.1 below.	No	The Nature Conservation Act 1992 remains relevant to the Project, despite the Development Permit being issued for the Project under the Planning Act 2016 and State Code 23. Permits for the Project are still required under the NC Act prior to the action commencing. It is acknowledged that there is merit in undertaking REZ-wide assessments of ecological and heritage values for future consideration in renewable energy project siting - noting that the main drivers for renewable energy project site selection are land access, renewable energy resource, and grid connection capacity. Sections 1.5 and 3.0 of the PER describe the reasons for the siting and current design of the Project. Section 6.0 describes how the Project has sought to avoid, minimise and mitigate potential impacts on MNES.
485	.004	Assessment methodology	Commonwealth Government Issues -At the Federal level the EPBC Act has been found to be ineffective and not fit for purpose (Independent Review of the EPBC Act 2020). Australia's special natural heritage, threatened species and critical habitats, continue to be subjected to a 'death by a thousand cuts' as project after project is approved under this dysfunctional mechanism. Accumulated impacts are not properly accounted for, and current offset policies largely result in failure, and loss of critical habitat.	-The Environmental Protection and Biodiversity Conservation (EPBC) Act needs to be reviewed and upgraded to make it fit for purpose (currently underway).	No	The proponent can only work within the legislation currently in place, and cannot really comment on this point.
485	.005		Transmission Line Corridor Issues -The placement of transmission line corridors in high altitude, high biodiversity areas, including the Wet Tropics World Heritage area and surrounding areas, is a legacy of previous poor planning decisions. -In order to minimise costs, wind farm proponents are incentivised to locate projects adjacent to existing corridors in areas that have disproportionately high impacts on critical habitats and endangered species. -Numerous renewable energy projects have thus far been proposed for sites that are concentrated along existing transmission line corridors. -There is limited spare MW carrying capacity on existing transmission lines resulting in more projects being proposed than there is available transmission line capacity to carry. -Current transmission line capacity will therefore limit the number of new wind farm developments, that will be able to gain access to the grid, both now and into the future. -Chalumbin Wind Farm is only viable if Stage 2 proceeds. Stage 2 is completely reliant on local transmission lines being upgraded, which governments have committed to doing. While this in situ upgrade is achievable it requires additional land clearing and demonstrates the high level of influence that corporate players have on government policy. There is a massive risk that corporate interests and profitability will lead government decision making in relation to the positioning of future transmission lines. This is a serious and totally unacceptable risk to our national heritage, and to the many threatened and endangered species that could be impacted by such flawed outcomes.	-Comprehensive planning processes should drive the placement of future transmission line corridors. These planned corridors will then in turn, drive the best overall positioning of future renewable energy developments. -Pressure from corporate interests should not dictate the location of future transmission line corridors. This would be a truly perverse outcome and lead to disastrous levels of damage to our environment to our high altitude, high biodiversity regions -Strategic planning for future transmission lines, such as that undertaken by the Australian Energy Market Operator (AEMO) must be upgraded to include proper environmental impact assessments at the earliest possible time within the planning process. -Next generation transmission line corridors should not be placed parallel to, nor duplicate existing lines in high altitude setting. This would result in ongoing destruction of critical habitats, and place threatened species at further risk. -The Chalumbin Wind Farm as a case in point, has not been subjected to adequate processes as listed above. It has unacceptably high environmental impacts and should not be approved in its current location and configuration. -As a future priority, and in order to avoid the mistakes of the past, the Queensland and Federal governments, and the Australian Energy Market Operator (AEMO) need to plan for new transmission line corridors in the NREZ that provide access to the vast renewable energy resources (wind and solar) found west of the Great Dividing Range. Please refer below to Map 3.1 Areas of Prospective Wind Resource in the Broader Region, Section 3 P 62 Draft PER Report (Invitation for comment - EPBC Act Draft Public Environment Report (arkenergy.com.au). Refer also to Diagram 2 below.	No	For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. The Project is proposed in 2 stages, either of which may or may not be developed in the future. It is not correct to state that the Project will only be viable if both stages are developed. Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
485	.006	Visual impacts	The Wet Tropics of Queensland is listed under all four natural heritage criteria, one of very few properties on earth to achieve this pinnacle of recognition. There can be little doubt that the following Outstanding Universal Values relating to World Heritage Criterion (vii) would be unacceptably impacted by the approval of the Chalumbin Wind Farm: (vii) to contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance Visual amenity of the quality that the Wet Tropics World Heritage Area offers is increasing rare in the modern world and should be treated as an important asset to be maintained and protected. It is so widely appreciated, so easily diminished, so often overlooked, and yet so rare. The natural beauty and aesthetic importance of the Wet Tropics World Heritage Area is of the highest quality. While many features contribute to this aesthetic across the region, the hilltops and ridgelines appear in almost every perspective from where this amenity can be appreciated. Wind farms by their very nature are highly visually intrusive. The proponent has undertaken considerable research and mapping into the impact the Chalumbin Wind Farm would have on this important Outstanding Universal Value of the Wet Tropics World Heritage area. Submission quotes extract from PER - Section 8.9.2.1 Criterion (vii) P555 On the one hand the proponent correctly identifies significant (ie high visual impacts - green) from a range of vantage points, at varying distances from the project area, and on the other hand largely dismisses these significant impacts in a couple of sentences (yellow). Turbines have been removed from the immediate vicinity of Arthur's Seat, to protect indigenous cultural heritage from unacceptable physical impacts, however the visual impacts from nearby turbines on the Arthur's Seat vista are overwhelming, see Figure 23: Viewpoint 10: View from 15225 Kennedy Highway looking southeast to Site, Appendix M Pt 5 – LVIA Appendix 2 – Visualisation Pt 1. Visual impacts from many other locations (Major's Mountain, Bally Knob, Millstream, Herbert River Road, Rhyolite Pinnacle, Lake Koombooloomba) all have unacceptably high visual and aesthetic impacts on the Wet Tropics Outstanding Universal Values re Criteria xii. The physical dimensions of the Chalumbin Wind Farm (86 towers 160m long, ground to blade tip 250m), directly impact what is otherwise a rare opportunity to see and appreciate large areas of pristine forests and wilderness views from many perspectives and distances. It is also important to recognize the cumulative impacts of existing and proposed wind farms (Kaban, High Road, Windy Hill, Chalumbin, Mt Emerald, Upper Burdekin, Mt Fox etc) and the reality that the visual amenity of the Wet Tropics will be severely compromised if these projects are allowed to proceed in the high altitude band of the Wet Tropics.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Whilst there will be some significant impacts for individual views obtained from selected locations within the WTQWHA, these locations are infrequent and typically difficult to reach. The dense foliage of the rainforest vegetation that is typical of the WTQWHA contributes to the fact that there are few publicly accessible vantage points providing views towards the Project from the WTQWHA. When considering the potential for the Project to impact the Outstanding Universal Value (OUV) of the WTQWHA, it is important to consider these values as they apply to the WTQWHA in its entirety. In this context, the Project will have a negligible effect on the OUV of the WTQWHA. Section 10 of the LVIA sets out the cumulative assessment for the CWF and establishes the projects in the surrounding are which have been considered as part of the assessment. Existing projects form part of the baseline so are not assessed in the LVIA, these include: - Windy Hill Wind Farm (comprising 20, 44 m high turbines built in 2000) is approx. 17 km from the site - Mount Emerald Wind Farm (comprising 53 148.5 m high turbines, built in 2018) is located approx. 62 km from the site, given the considerable distance from the Chalumbin Site , noting it will take around one hour to drive between the two sites, the potential for cumulative impact is marginal. Two proposed wind farms have been identified and included as part of the cumulative assessment being the Kaban Green Power hub (18, 225m high turbines, currently under construction) is located approx. 9km north of the site. High Road Wind Farm is location approximately 13km north of Ravenshoe and 23km north of the site (18, 150m high turbines), currently being assessed thought Queensland State processes. Overall, the LVIA found that potential cumulative impacts may arise due to the combined effect of the Project with other proposed wind farm developments located in the Study Area around the Site. The impacts experienced when travelling along the Kennedy Highway are likely to be experienced by a larger number of receptors in comparison with those experienced from Majors Mountain lookout or Bally Knob lookout. Although many other wind farms are proposed outside of the study area, the potential for cumulative landscape and visual impacts would be limited to successive impacts, however these impacts are likely to be minimal given the distance between the Project site and the location of these proposed (and existing/under
485	.007	Magnificent brood frog	The Magnificent Brood Frog (MBF) is an example of a species that could be virtually pushed to extinction by the number of wind farm developments proposed for the narrow high altitude habitat within which it exists. The Kaban wind farm was approved despite having a significant impact on it's known habitat. The Chalumbin wind farm, if approved would result in a huge loss (120ha) of known MBF habitat. The High Road Wind Farm, if approved would require transmission lines to be pushed through the Bluff State Forest likely resulting in further loss of MBF habitat. The Mt Fox Wind Farm, if approved may also impact MBF critical habitat. Other species such as the Northern Greater Glider and the Yellow-Bellied Glider face similar prospects, where cumulative impacts seriously damage the long term viability of these species. Habitat loss has been identified in the MBF Recovery Plan as the most serious threat to species survival and yet here we have wind farm project after project reducing critical endangered species habitat. As it currently stands only 3% of the known MBF habitat is protected. Failing to take opportunities to further protect MBF habitat will, over time, almost certainly lead to species extinction. As outlined above, by looking at just some examples of endangered species such as the Magnificent Brood Frog, it is clear there are a raft of cumulative impacts that need to be addressed as a tsunami of wind farms are being proposed/built in the high altitude habitats of the Wet Tropics region - see Diagram 1 below		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species. The clearing estimate of 120.Sha is considered "worst case". Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on in the final PER. The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. A proportion of these funds is being made available to researchers now, prior to Project approval. It is understood that Ratch have decided against an alignment through Bluff State Forest for the High Road Wind Farm transmission connection, however this is best confirmed by directly approaching Ratch themselves. There is insufficient publicly available information on the potential impacts from other windfarm projects on the magnificent brood frog for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
485	.008	Biodiversity general	•The recent review of EPBC Act found that it has continually failed to protect threatened species. So where does this stop? When do we undertake, as a priority, the protection of our unique natural heritage. When do we elevate natural heritage protection over development. The answer needs to be now! •The Chalumbin Wind Farm would have unacceptably high environmental impacts and should not be approved in its current location. •The high biodiversity and associated endangered species habitat of the Wooroora area are important from a state, national and international perspective. The addition of Wooroora Station to Queensland's National Park Estate would, if achievable, have many benefits including the urgent need to protect Magnificent Brood Frog habitat.		No	We note your concerns regarding the EPBC Act but the proponent is bound to act within the legislation in place at the current time. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
487	.001	Opposition to project	Hello my name's James and I'm writing this email in response to the proposed development of a windfarm at Chalumbin. I'm from that area and strongly believe this proposed site is the wrong location ethically, environmentally, and culturally.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
487	.002	MNES	I believe area's of such biodiversity need to be preserved both for the sake of the flora and fauna that are home to that are; including the critically endangered Red Goshawk, Magnificent Brood Frog, local Betongs, Possms, Wallabies, & other native animals that call this area home. Once any area like this is disturbed by development it's never going to be the same again so will be lost to future generations. This is the wrong area for such a large scale "development"		No	The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their duration and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts.
487	.003	MNES	I belhe Chalumbin is a wet scleriphyll forest that supports and is part of the world heritage rainforest that it adjoins and is also integral to an area that comprises approximately 30% of the water catchment area that supports the Great Barrier Reef .		No	Wet sclerophyll forests represent a tiny proportion of the overall Project area. Nonetheless, consultation and feedback from key local stakeholders including WTMA, Terrain NRM and CAFNEC since the EPBC Act referral and the advancement of the feasibility studies, have informed the importance of the wet sclerophyll forest to the OUVs of the WTQWHA. Subsequently, a further eight wind turbines have been removed to reduce the clearing in wet sclerophyll forest with an associated reduction in access roads by 27 km and relocation of the southern substation and associated reduction in internal overhead transmission lines by 4 km. These significant changes further reduce the clearing in wet sclerophyll forest by 31%. Construction involving earth disturbance activities during the peak wet season months of January to March will also be avoided. A significant, strategic offset is also proposed involving more than 7,400 ha across three areas, primarily located immediately adjacent to the WTQWHA, including the largest patch of intact wet sclerophyll forest adjacent to the Tully Falls National Park, and the creation of formal connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
487	.004	Indigenous Cultural Heritage / Engagement	I believe the business people who are proposing development of this area have lost contact with what's fundamentally right and decent behaviour in preserving an area that's culturally significant to the local indigenous community and critical to such a unique and biodiverse habitat. These "developers" brought off the aboriginal people with what amounts to 30 pieces of silver....		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
487	.005	Opposition to project	Please come and visit the area, make a connection with it and you'll see for yourselves that Chalumbin is the wrong area, Please I'm appealing to logic common sense and decency, extend windy Hill or find a suitable location, don't deprive the animals indigenous peoples and future generations of so rare and beautiful place as Chalumbin is...		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
489	001	Opposition to project	As per Submission 484		No	See response to Submission 484.
491	.001	N/A to PER matters	Thank you for the opportunity to provide comment on the Public Environment Report (PER) regarding the proposed Chalumbin Wind Farm, referral EPBC 2021/8983 (the Proposed Action), in response to your invitation under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act). Birdlife Australia is an independent non-partisan science-based bird conservation charity with over 300,000 supporters. Our primary objective is to conserve and protect Australia's native birds and their habitat. Our organisation is the national partner of Birdlife International, the world's largest conservation partnership. Birdlife Australia recognizes that climate change, and its direct and indirect impacts, is one of the greatest threats to both humans and many Australian bird species, now and in the future. Case studies from the Action Plan for Australian Birds 20201 demonstrate how climate change is already causing population declines and shifts in distribution for Australian birds including 17 species, such as the Golden Bowerbird, in the rainforests of Queensland's Wet Tropics.		No	Noted. Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
491	.002	Emissions	Therefore, Birdlife Australia strongly supports a rapid, just and ecologically sustainable transition from fossil fuels and other carbon-emitting energy sources to renewable energy including wind. It is critical that projects which address the global climate catastrophe do not in turn exacerbate the other existential crisis of our time: biodiversity loss through destruction of nature. Renewable energy projects can only obtain their social license on the understanding that this condition is met. The Australian Government reflects this community expectation by setting a target of zero extinctions and has reaffirmed its stance as a signatory to the United Nations Convention on Biological Diversity and the Global Biodiversity Framework launched this December in Montreal.		No	This position is noted. The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. The Project is not assessed as leading to the extinction of any species.
491	.003	Project location	In the light of this focus on biodiversity conservation the proposed Chalumbin Windfarm is an anachronism similar to the proposal to develop the Daintree and will meet with similar community opposition. Wedged between a World Heritage site and globally recognised Key Biodiversity Area (KBA) and a private reserve in one of the most biodiverse places on the planet, the Chalumbin windfarm would slice through Australia's 'thin green spine' and sever a vital connection to allow forest species to shift their distributions and adapt to climate change. So instead of ameliorating the effects of climate change, Chalumbin windfarm will make them worse		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.
491	.004	MNES	From a bird conservation perspective, the key issue of concern are (1) habitat destruction during the construction (including associated roads and infrastructure) and its legacy in terms of invasive species, hydrology etc.; and (2) effects of the operation of the windfarm which will likely have a significant impact on bird species both in terms of habitat use e.g. the EPBC Vulnerable Red Goshawks may avoid breeding or hunting in the vicinity of the windfarm and populations: windfarms are recognised in the conservation advice for the EPBC Vulnerable White-throated Needletail as a direct mortality threat and barrier to migration. White-throated Needletail are the EPBC-listed Bird species most often killed by wind turbine strikes.		No	There are a number of historical records of white-throated needletail within the Study area, to the north, south and east of the Project area (ALA). One white-throated needletail was observed during the March 2021 field surveys. The specimen was found deceased within the existing transmission line corridor. These records are mapped in Figure 4-24 of the PER. Potential roosting habitat for the white-throated needletail includes trees with dense canopies and hollow-bearing trees on ridgelines (SPRAT 2021). The Queensland Regional Ecosystem Description Database (REDD) includes a field for structure category which defines vegetation density as dense, mid-dense, sparse, very sparse or grassland. The majority of the Project area is mapped as open eucalypt forest of various REs; the REDD was reviewed for each of the REs ground-truthed within the Project area and all are categorised as sparse or mid-dense. There are no dense vegetation communities within the Project area and therefore no potential roosting habitat for white-throated needletail. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
491	.005	Red goshawk	Specifically, in relation to Red Goshawks, we disagree with the assessment that the proposal will not have a significant impact on this species and in particular the claim that it does not or will not utilise the area. The area is suitable habitat, there are historical records, and the surveys done by the proponent should not be regarded as definitive given the highly dispersed nature of the species. A precautionary approach should be adopted which assumes that the species does or may in the future occur in the area. Given the failure to recognise the likely threats posed to birds by the windfarm, it is no surprise that the proposed approach to managing impacts on bird species (The Bird and Bat Management Plan at Appendix G) is inadequate. This is particularly true when it comes to the Red Goshawk with its small globa l population where the death of even one individual would be unacceptable. Adaptive management triggered by mortality thresholds (assuming a bird strike victim is even discovered) is not an appropriate response for this species. Similarly, the proposal that Red Goshawk collision impacts could be offset by payments into a research fund (page 261) is an unacceptable response - the possibility of these impacts should be avoided by siting the project in a more suitable location.		No	The PER does not claim that the species will not utilise the area and in fact notes in Section 4.6.3.4 that dispersing juveniles may forage within the Project area whilst undertaking their extensive ranging. As noted in the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. The BBMP adopts an industry-standard approach to managing the risk of collision through monitoring and adaptive management.
491	.006	Biodiversity general	As the impacts of the climate catastrophe are happening, well-connected protected areas are becoming increasingly important to avert biodiversity collapse and ensure resilience and adaptability for threatened species. Restoration of degraded areas outside the boundaries of protected areas and increased connectivity is now required rather than the destruction of prime habitat, which is what the development of the Chalumbin windfarm will inevitably lead to.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting anticipated climate change effects.
491	.007	Project location	It is puzzling that, despite the Commonwealth Department's well-stated concerns with the earlier version of the PER, the report still has not holistically addressed the impact of the proposal on world heritage values of the adjacent Wet Tropics of Queensland World Heritage Area. While the proposal avoids development in the 600 m buffer and adopts other specific measures, the impact of such a significant development along a substantial stretch of the world heritage area boundary on the designated world heritage area values is unclear - for example on the movement of bird and bat species (threatened or not) to and from the world heritage area and the follow-on effects on seed dispersal.		No	The potential impacts of the Project on the WTQWHA are explored in Sections 8.10 and 8.11 of the PER, with an accompanying significant residual impact assessment. The PER was determined by DCCEEW to adequately respond to the requirements of the PER Guidelines.
491	.008	Opposition to project	Birdlife Australia joins the local community in opposing the Proposed Action due to its proximity to the Wet Tropics of Queensland World Heritage Area the Wooroonooran KBA and the Yourka Bush Heritage Reserve as well as its likely residual impacts on EPBC-listed bird species including the Red Goshawk, White-throated Needletail and Masked Owl.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
493	.001	Opposition to project	I am writing in objection to the proposed wind farm, Chalumbin, at Ravenshoe in Far North Queensland, REF: Comment Draft Public Environment Report EPBC 2021/8983-Chalumbin Wind Farm (also referred to as the 'Draft PER'). You have the power to veto, halt, or otherwise shift the location of the intended wind farm to a more suitable and advantageous location – and I urge you to use these powers to their full extent. This project presents clear and unavoidable detrimental impacts to our environment (including 18 threatened species and 2 threatened ecological communities), to Indigenous cultural heritage, and to our economy, and it should not proceed. Not only that, but the Developer has demonstrated questionable conduct that provides further justification against the project and raises concerns as to the suitability of their continuing to conduct business in Queensland. I have outlined the reasoning and evidence for this position below.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
493	.002	Project design	•The Developer has continually stated that the development has been reduced from 200 turbines due to community input. This is untrue, as 95 is the number of turbines submitted in the earliest documentation submitted to both state and federal authorities. In late 2021 it was reduced from 95 to 94. On 5 November 2022 it was reduced to 86 – i.e. a reduction of 9 turbines in total, not the 114 claimed.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations.
493	.003	Social impacts	•In the EPBC Act referral, the Developer stated that "Approximately 10-15 full-time jobs will be generated during operation". The Developer later changed this number to 15-30 – however, the breakdown and description of these roles remained unchanged. It is clear the increase in number is misleading at best. •Nowhere in the documentation does it state whether these jobs will be concurrent or throughout the life of the development. As such, the true economic value could be negligible while the environmental and Indigenous cultural heritage impacts remain large, sustained and severe. •The 10 technicians specified will require specialist skills; as it's unlikely the jobs will be filled from within the local community, the economic value for our community is once again negligible at best.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
493	.004	Rehabilitation	•The term 'rehabilitate' has been used incorrectly by the Developer throughout the Draft PER. In this context, to rehabilitate means to 'return something, especially an environmental feature, to its former condition' . To claim that 1,667.22 acres of bulldozed land can be 'rehabilitated' is entirely incorrect; it would be impossible to return mature, biodiverse and complex inter-connected ecosystems to their former condition via seed or tube stock planting, not to mention doing it within a timeframe that would ensure the continued safeguarding of the multiple endangered species living within that area. This is especially true, given that when the site is decommissioned the area will again be bulldozed to remove the turbines and associated infrastructure – meaning that the earliest the area will be able to begin true and lasting revegetation will not be for approximately 30 years.		No	The Preliminary Rehabilitation Plan (Appendix K of the PER) addresses Section 8 of the Guidelines for the Content of a Draft Public Environmental Report: Chalumbin Wind Farm, near Ravenshoe, Queensland (reference: 2021/8983) (PER Guidelines), issued by the Department of Agriculture, Water and the Environment (DAWE) under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), which relates to the rehabilitation requirements for the Project. Section 5.4 of the PER discusses potential decommissioning impacts. "Impacts during decommissioning are likely to relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning."
493	.005	Rehabilitation	•Terrain NRM have estimated a cost of $60,000 - $70,000 per ha for revegetation and maintenance for 5 years, which equates to $47 million to revegetate the area. Setting aside for a moment the improbability that the Developer will actually meet this cost, it is worth noting that the estimate is for 'revegetation' not 'rehabilitation' – a vastly different meaning and outcome for our environment. The Developer's consistent and continued use of the term 'rehabilitate' appears like an attempt to hide or downplay the long-lasting and severely detrimental effect of this project.		No	A cost of $60,000 - $70,000 per ha for revegetation and maintenance for 5 years would be a very intensive approach. The Project will use a combined approach with strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A low cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. The terms 'revegetation' and 'rehabilitation' are used where appropriate.
493	.006	Construction impacts	•With 68,800m3 of concrete required for the foundations of the turbines plus the considerable amount required for other infrastructure, the project will require a significant water source. Nowhere in the Draft PER, nor any previous state or federal development submission, does it mention the project's intended water source; without a doubt, the Developer plans to extract water from the nearby Herbert River catchment. This would be an environmental and ecological disaster – as outlined in further detail below.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
493	.007	MNES	•A report on all matters of national environmental significance (MNES) that listed numerous species that live in the waterways within the development area has been omitted from the Draft PER – an extremely questionable action. Endangered species of flora and fauna are found here, and the removal of water from this catchment will have a catastrophic impact that has not been assessed.		No	The Project team has been made aware, through the submissions process, of one endangered fish that potentially inhabits Blunder Creek that was omitted from the PER. The report has been revised to now include an assessment of the Lake Eacham rainbowfish. The majority of infrastructure associated with the Project will avoid direct and indirect impacts to Blunder Creek as per Section 4.1.5 of the PER. The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site.
493	.008	Construction impacts	•Ravenshoe and the wider Atherton Tableland area is experiencing a housing and homelessness crisis; it has one of the lowest rental vacancy rates in Queensland (0.2%) and many people and families being forced to live in cars and tents. The area simply cannot house the 250-350 construction staff within existing accommodation without displacing locals. •The Developer has only offered to 'consider' and 'investigate' the construction of an accommodation camp in the Draft PER, without providing any details whatsoever. Not even a potential site has been identified. This makes it appear like an attempt to appeal to approval authorities, without any real attempt to address this critical issue, and definitely with no commitment or obligation to resolve to do so. It has been 16 months since the EPBC Act referral was lodged, and in all that time no arrangements or commitments have been made regarding the construction of a compound. It is also worth noting that if accommodation were to go ahead, it would result in even more land being cleared and all the negative effects that such an action entails and therefore requires careful planning and consideration.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, the Project is committed to ensuring that the establishment of the facility will not have an impact on MNES. The Project will be required to obtain the relevant State and Council approvals and permits if an alternative accommodation facility is selected.
493	.009	Project alternatives	•The Guidelines for the Content of a Draft PER – Chalumbin Wind Farm state the applicant should 'describe any feasible alternatives', yet the Draft PER fails to include numerous feasible options. By failing to comply with being 'objective' in the assessment, the Developer has breached the Guidelines. Examples of feasible alternatives that could have been assessed include: oOffshore wind developments outside of the Great Barrier Reef World Heritage Area oSolar on existing cleared pastureland oWind turbine developments beyond the Cairns-Townsville (Northern QREZ) region (for example, grassland areas north of Bowen and outside of Gladstone and Rockhampton shows the average wind speed on a month-to-month basis can be more than double that of Ravenshoe) .		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. It is contended that there are numerous proposed projects in the vicinity of the area described by the submitter; however, these areas are not characterised by extensive grassland communities as suggested.
493	.010	Project alternatives	•In addition, although legislation including the EPBC Act currently prohibits nuclear energy as an option, it is the responsibility of the Australian Government to objectively assess all feasible alternatives for the betterment of its constituents and country – including changing legislation to do so, if necessary. There are clear and distinct advantages to the nuclear energy source, including but not limited to: producing carbon-free electricity, 24/7 baseload power generation, high output capacity, lower electricity costs for residents, providing long-term jobs, and longer-lasting infrastructure (with proper investment, lifespan can even reach between 70-100 years) .		No	Nuclear energy projects are not permitted under the EPBC Act (s140A).
493	.011	Adequacy of the PER	•The Guidelines for the Content of a Draft PER – Chalumbin Wind Farm state: "Information provided in the PER should be objective". This requirement is clearly not upheld, and therefore the Draft PER is not compliant. A single small paragraph is allotted within the 'No Action' Alternative segment to speak to the benefits of the alternative, which are seriously downplayed. In contrast, the Developer lists a half page of 'lost opportunities' – with no mention of the significant benefits that contrast such points. For example: the Draft PER states a 'lost opportunity' of loss of financial benefits to landholders – without mentioning there are only 2 landholders that would benefit from that situation, and further omitting that many residents who will be significantly and adversely impacted by the development.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The Project's Community Benefit Program of up to $500,000 per annum during operation of the Project will make a significant contribution to the local community, directed at initiatives that are important to the local community.
493	.012	N/A to PER matters	•Figure 4.5 in the Draft PER maps the intended location of each wind turbine. The turbine nearest to the Wet Tropics Queensland World Heritage Area is 600 metres – a small margin considering the importance of the WHA. But while this has been given consideration in the Draft PER, no consideration has been given to the turbines located on the western boundary of Glen Gordon connecting to Woodleigh Station. Given the turbines are located directly on the boundary (according to the map), it is likely that the Developer will require some access to Woodleigh Station during construction, including turbine clearance area. Yet the Developer has not had any formal contact with the owners of Woodleigh Station regarding this access, and Woodleigh Station has stated to third parties that they do not agree to allow access. Therefore, implementing the plan as it currently stands would likely involve trespassing – a clear indication that the project cannot and should not proceed.		No	Noted. As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council.
493	.013	Survey effort	•The lack of adequate surveys within the proposed development area is appalling, given there are known to be 2 listed threatened ecological communities, 18 listed threatened species (including 10 vulnerable, 6 endangered, and 2 critically endangered), and 6 listed migratory species, not to mention impacts to the WTO World Heritage Area and the WTQ National Heritage Place. Examples of this flawed and deficient work include, but are not limited to: oSurvey for the aquatic plant North Queensland lace (listed as endangered) taking place across a period of 'up to' 7 days in a period of high rainfall , when it is near-impossible to spot due to increased water levels. It is also worth noting that the survey time itself is in question – in different places within the Draft PER the survey time is listed as occurring over 7 days (table 4.3), 6 days (page 105), and 5 days (page 125). If the duration of the survey work cannot be accurately represented, it bears asking whether the quality of the actual survey work was of the standard required for the assessment of Matters of National Environmental Significance (MNES) listed species.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
493	.014	Red goshawk	oSurvey for the red goshawk nest (vulnerable – listed in the 100 Priority Species Threatened Species Strategy). Of the three recognised red goshawk experts, one positively identified the nest and the two others advised it was 'possibly' a red goshawk nest. Yet the Developer still insists it is not a red goshawk nest. In addition, the wording of the first expert, a Queensland Parks and Wildlife Service (QPWS) ranger, changed multiple times within the Developer's documentation (see below). This appears to be a deliberate attempt to discredit the positive identification of the red goshawk nest. ▯MNES Report Chalumbin Wind Farm, page 92, 22/06/2021 – QPWS ranger confirmed the nest as belonging to the red goshawk. ▯Draft PER Chalumbin Wind Farm, page 114, 03/11/2022 – QPWS ranger stated the nest "was likely" to belong to the red goshawk. ▯Draft PER Chalumbin Wind Farm, page 152, 03/11/2022 – "A QPWS ranger… agreed the nest resembled that of a red goshawk".		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk.
493	.015	Magnificent brood frog	oThe magnificent brood frog (listed as vulnerable) survey taking place across just 4 days in December and 4 in January – an astonishingly short duration for an elusive species across the large development area.		No	As per Section 4.5.2.3 of the PER, surveys for magnificent brood frog were undertaken in March 2021, June 2021, December 2021 and January 2022. Additional surveys have been undertaken since release of the PER for public comment and these are ongoing. Surveys have naturally focused on mapped areas of potential habitat within the Project area, rather than the full extent of both host properties.
493	.016	Survey effort	oMost of the night-time survey work being undertaken from a vehicle on existing access tracks. This is in no way acceptable, as areas of regular human activity (i.e. roads), in addition to the associated vehicle noise and lighting at night, dramatically reduces the chances of observing notoriously timid, shy and elusive species – for example the northern greater glider (vulnerable), and northern and spotted-tail quolls (endangered), just to name a few.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. Spotlighting was not targeting the two quoll species, an 11-month camera trap campaign (over 9,000 camera trap nights) was undertaken for these species.
493	.017	Survey effort	oThe recommended survey effort guide is stated as 50 hours per 50ha area. By that calculation, 1,071.1 hours of survey should have occurred across the 1,071.1ha proposed development area. Instead, only 443 hours of surveying was performed.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. Nesting surveys for the red goshawk were naturally focused on the areas mapped as potential nesting habitat, not the entire Project footprint.
493	.018	Survey effort	•The Draft PER relies on the outcomes of these inadequate surveys as evidence that the threatened species are not in danger from the project. However, numerous species have been sighted either within the development area or immediately outside of it, in instances unrelated to the Developer surveys. These sightings include but are not limited to: okoalas (vulnerable) – Yourka Reserve, October 2020 ored goshawk (vulnerable – listed in the 100 Priority Species Threatened Species Strategy) – Yourka Nature Reserve, 2007 owhite-throated needletail (vulnerable) – Woodleigh Station.		No	The observation of the first koala sighted on Yourka Station in a decade is clearly acknowledged in the PER. The red goshawk has not been seen on Yourka Station in over a decade, which correlates to the scientific community's concerns that the species' range has contracted northwards. White-throated needletail was observed during Project surveys, as noted in the PER.
493	.019	Survey effort	•The development of Chalumbin Wind Farm puts each of these vulnerable and endangered species at greater risk due to: ogreater loss of habitat from roadworks and clearing; including but not limited to: ▯1,031.74ha of habitat for the red goshawk (vulnerable – listed in the 100 Priority Species Threatened Species Strategy) ▯1,026.3ha of habitat for the masked owl (vulnerable) ▯887.9ha of habitat for the northern greater glider (vulnerable) ▯120.5ha of habitat for the magnificent brood frog (vulnerable). odamage to the environment and ecosystem; e.g. reduced water quality from the inevitable erosion occurring from clearing, earthworks, and lost vegetation. owind turbine blades killing numerous threatened bird species and spectacled flying fox (endangered). ▯It is worth noting that the flying fox does not need to come into direct contact with the blades for it to be lethal. Barotrauma causes death in bats by rapid air pressure reduction near turbine blades, causing tissue and lung damage due to the expansion of air in the lungs that cannot be expelled. A study found 90% of bat fatalities involved internal haemorrhaging consistent with barotrauma, which is an undetectable hazard and therefore unavoidable by the creatures. This also explains the comparatively lower death rate in birds, which are less susceptible. ▯It is also worth noting that the spectacled flying fox is an identified Keystone Species – i.e. they play a critical role in defining their entire ecosystem. Specifically, they are one of the most efficient pollinators and seed dispersers of native Australian forest trees. Any impact to their numbers would be extremely detrimental to the entire ecosystem.		No	There is very little published research available on the potential effects of barotrauma on bats generally, let along on specific species such as the spectacled flying-fox. One recent study (Lawson et al 2020) undertook computational fluid dynamics simulations of a wind turbine and estimated the characteristics of the sudden pressure changes that bats may be exposed to when flying near a utility-scale wind turbine. The study concluded that it was unlikely that barotrauma is responsible for a significant number of turbine-related bat fatalities and that impact trauma is the likely cause of the majority of wind turbine-related bat fatalities. Continual monitoring of bat fatalities would be undertaken during the operational phase of the Project and the results would contribute to an adaptive management strategy as required - this may require further consideration of measures such as curtailment of certain turbines that consistently result in collisions, curtailment at certain times of the year, etc. The adaptive management framework is designed such that these measures would be considered before a significant number of individual flying-foxes were lost due to collision. The PER has fully been assessed potential impacts to the red goshawk, northern greater glider, magnificent brood frog and spectacled flying-foxes. An offsets program has been proposed as required under the EPBC Act Environmental Offsets Policy.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
493	.020	Indigenous Cultural Heritage / Engagement	•The proposed Chalumbin Wind Farm lies within the traditional lands of the Jirrbal Aboriginal people. Jirrbal community members have stated that Significant areas of Cultural Heritage have not been recognised or mapped, and are unknown to the Developer. The failure to consult with all Jirrbal people has created a scenario where Sacred Sites and other areas of immense Cultural importance are not known or recognised in the Draft PER. As such, this development will likely result in the desecration of Cultural Heritage Areas.		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
493	.021		•Although the development area does not include the Wet Tropics of Queensland (WTQ) area, which is on the National Heritage List, it does sit immediately outside of it (approximately 600 metres). It must therefore be considered that the Indigenous values of the WTQ National Heritage Place are not definitively mapped; Indigenous people are the primary source of information on the value of their heritage, and should be consulted on a proposed action that may significantly impact on the listed Indigenous heritage values of the place and/or on a protected matter that has Indigenous heritage values (such as a listed threatened species).		No	Section 8.11.3 of the PER describes the indigenous values of the Project area and how these were determined, through engagement with the relevant traditional custodians of the Project area.
493	.022	Indigenous Cultural Heritage / Engagement	•There are two key cultural aspects of the National Heritage List criteria for the Wet Tropics of Queensland (WTQ) where both key values extend beyond the boundaries of the Wet Tropics World Heritage Area (WHA) and into the project area. oCriterion (f) relates to the permanent occupation of the rainforest, which was possible through the use of fire to alter vegetation communication and the development of a unique and specialised material technology to process toxic nuts. oCriterion (i) describes the traditions inscribed in the landscape by creation beings as they instructed rainforest Aboriginal people about the foods and how to make them edible.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
493	.023	Indigenous Cultural Heritage / Engagement	•A number of significant cultural site types that contain heritage values similar to those protected by the National Heritage List in the Wet Tropics WHA have been identified. These include but are not limited to: oPockets – large cleared grassy open Eucalypt woodland patches created and maintained by rainforest people for living, ceremonial, and other activities. oStory places – senior Jirrbal people described feeling and hearing the presence of the Ancestors in parts of the project area. In addition, 'The Last Stand' reportedly took place at Djgirrdjigirr (Arthur's Seat), where it's believed 90 Jirrbal people were massacred in colonial times. oWalking tracks and campsites – the pack track crossing Wooroora and Glen Gordon Stations on old maps is the extension of an Aboriginal walking track. The same track was used by Edmund Kennedy in 1848. oSupermarket ecosystems – areas that provide important Jirrbal resources (e.g. food, grasses for weaving etc.) and as such they have a high potential for archaeological remains.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
493	.024	Erosion and sedimentation	•Erosion in active construction areas cannot be eliminated, only controlled. The erosion from the project will have significant impacts on water quality as well as myriad aquatic species. In addition, these waterways ultimately lead to the Great Barrier Reef; the cumulative impact of increased sedimentation and nutrient load must be considered.		No	A Preliminary Erosion and Sediment Control Plan contained in Appendix I of the PER establishes the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. Baseline water quality and soil erosion monitoring is presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER). Relevant standards will be used in the development of the monitoring program and a specific focus will be on the potential fine sediment transport that could impact on the GBR and aquatic values.
493	.025	Mitigation and management measures	•The Developer has proposed the use of a single fauna spotter to locate species in areas to be cleared. It is unrealistic to expect one fauna spotter to be able to identify potentially impacted individuals prior to the demolition of vegetation across a broad development area, which demonstrates a clear lack of environmental care on the Developer's part.		No	The PER does not claim that only a single fauna spotter catcher will be used, it refers to the role in singular rather than the number of individuals who will fill that role (generally one per individual machine clearing vegetation). The sizeable team of fauna spotter catchers will be suitably qualified and experienced in this line of work, with the preference for engaging local staff as much as possible.
493	.026	Weeds and pests	•Similarly, there are no details provided by the Developer on the what, when and how in relation to weed and pest control relative to reducing the impacts of fragmenting areas that prevent the normal movement of species, once again indicating a lack of care.		No	The "Preliminary Vegetation Management Plan" & "Preliminary Weed and Pest Management Plan", located in Appendix E & F of the PER respectively, both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intended that these "Preliminary" documents act as the framework for the establishment of adaptable , mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities to ensure progressive records and observations of weed management are kept. Fine-scale weed mapping will be undertaken by the Contractor when developing these plans further. The establishment of performance indicators will help identify that the most efficient and effective methods of weed and pest management are being implemented throughout the construction and operational phases of the Project. Updates, amendments and corrections to the management actions will be made annually and reported upon accordingly to reflect changes to weed statuses (new threats or decreases in threats) on the wind farm, changes to legislation, and other relevant amendments as deemed necessary. The proponent has a Duty of Care towards the landholder to not cause any new weed outbreaks nor to worsen any existing outbreaks, and this is also a condition of Project approval.
493	.027		•The Chalumbin Wind Farm (CWF) is inconsistent with international obligations under the Biodiversity Convention and the Apia Convention. This primarily relates to the destruction of habitat critical to the survival of the magnificent brood frog. Article 5 of the Apia Convention, relating to giving fauna in danger of extinction as complete protection as possible, is incompatible with the CWF development. CWF is also incompatible with one of the main objectives under the Biodiversity Convention – the conservation of biological diversity. •The Developer has listed many of the significant residual impact (SRI) criteria of numerous threatened species as 'Unlikely'. This is absolutely incorrect, as the development work will unquestionably have an adverse impact on habitat and therefore on the ongoing wellbeing of the species. For example, due to the limited range and very small area in total occupied by the magnificent brood frog, every population is critically important in ensuring its survival. The Developer appears to be significantly and consistently downplaying the adverse impact that the project will have on the environment. It must also be noted that the Magnificent Brood Frog Working Group was repeatedly denied access to the site by the landowner – one can only speculate upon the landowner's motivations, financial or otherwise.		No	Table 8-2 of the PER describes how the Project meets the 10 National Targets for Biodiversity Conservation as outlined in the Biodiversity Convention. Section 8.1.3 of the PER describes how the Project is consistent with the Apia Convention. Section 8.0 of the PER provides a significant residual impact assessment of the Project against relevant DCCEEW requirements and in accordance with DCCEEW accepted approaches. The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication.
493	.028	Community consultation	•The Developer failed to engage in open consultation. Examples include: oNot holding or even attending a single open community consultation meeting, even when organised by the community, and instead choosing to hold private and small group meetings, which by definition excludes a large section of the community and denies their right to participate in the full consultation process. oProviding last-minute notification of community consultation, thereby preventing real community consultation. For example, the Community consultation regarding changing the access routes event notification letter was dated 1 November 2022, but many community members only received it on 8 November 2022 – hardly enough time to organise attendance, given the event was for the following day, 9 November 2022. oNot responding to community questions; community members have attempted to reach Ark Energy multiple times across multiple days, both via phone and email, yet no response from Ark Energy or their subsidiaries has been received. In addition, the 'Chalumbin Wind Farm local information hub' is routinely closed during the extremely limited published opening hours.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments.
493	.029	Community consultation	•Jirrbal community members have been excluded from the engagement process, starting from the 16 September 2021 'community information session'. The Developer made it clear at that meeting that Jirrbal concerns and input were not welcome. The view has been expressed by many that Wabubadda does not represent their interests and they have not been consulted. •The Developer has provided incomplete, false, and misleading information in photo montages, press releases and photos by publishing images that suggest the land at the development site is highly degraded and largely cleared. No mention is made in press releases and PR spin that the sites are comprised of 95% remnant vegetation. •The Developer has failed to declare how much the Chair of the so-called 'voluntary' 'Community Advisory Group' is being paid, and failed to declare the business interests of the Chair, as founder and managing director of a company that provides 'tailored services' to renewable energy clients including 'strategic advice to fast-track approvals'.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. The submitter's concerns associated with visual impacts are noted. The Project has included a comprehensive Landscape and Visual Impact Assessment as Appendix M to the PER. This assessment is prepared in accordance with recognised national and international guidelines and methodologies. This assessment also investigates the cumulative visual impacts of the Project in conjunction with the Kaban Green Energy Hub, the High Road Wind Farm and the Windy Hill Wind Farm. The assessment concludes that the potential landscape and visual impacts of the Project will be significant within the Project area and limited areas of the adjacent landscape. The assessment goes on to state that while there will be a significant change to the Project area's character due to the introduction of wind turbines into a rural and natural landscape, and significant impacts on some views towards the Project (typical for any wind farm development), the impacts are typically contained. It is also noted that people are likely to respond in different ways to the change, based on the subjective nature of landscape appreciation.
495	.001	Opposition to project	The proposed Chalumbin wind farm proponent advertised in our local newspapers for the Atherton Tablelands Region North Queensland (Cairns Post and Mareeba Express) with full page advertisements stating: "Comments in support of the project benefits outlined in the Draft PER can be submitted via….." I am unable to write any such letter of support sought for the project. If, at any time in the future, the proponent wishes to seek comments which may be less than supportive of the project, I can send a detailed response. So that there is no doubt, please find my unequivocal lack of support of any project benefits deriving from placing a wind farm in the Chalumbin area.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
495	.002	Opposition to project	The project proposal is contrary to the natural values of Queensland. The project proposal lacks respect for the flora and fauna insitu, the recent Indigenous past, the Ancestors who reside there, and of most importance – there is lack of respect for perpetuating the land of Chalumbin into the future. My red-headed Irish great grandfather trod the land when he came up to near Cedar Cree/Ravenshoe to settle. He was told to stay in the caves when he first arrived near the Evelyn scrub because of "the savages". After a few months he asked someone, "where are the savages? Because there are only blacks here". This was relayed to me by a Jirrbal person with much laughter. His young son, my great uncle, travelled with the Jirrbal on their regular treks through Chalumbin down to the Tully coast, his mother had not a worry, she knew he was in safe hands. We have grown up with much family folklore of the tribe who co-existed on the land, and we are friends with the relatives of those descendants today. I call on both our governments and Ark Energy to support the conservation of Chalumbin, now and into the future. I don't believe I need to spell out the value of landscape conservation and bush preservation. The growth and jobs that you so desire can still happen – but it will be a different focus, one underpinned by managing and protecting the ecological and cultural values of the area.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
497	.001	Opposition to project	This submission is on behalf of the BirdLife Australia Northern Queensland Branch (BLNQ), a community-based nature conservation organisation with a focus on birds in northern Queensland. We have many members and supporters, and work to achieve better conservation outcomes for our bird species. I am making this submission as the Conservation Officer of BLNQ. BLNQ has many concerns about the proposed industrial development at Chalumbin. BLNQ supports the conclusions reached by CAFNEC in its analysis of the Chalumbin proposal. Some BLNQ concerns are particularly around a number of key elements that we highlight below.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
497	.002	Project location	It is surprising to us that the proposed site is even being considered for such large scale industrial land use. These scarce upland remnant forests are extremely important for conservation and should never be cleared. They contain critical habitat for a range of species and in addition will become even more important as the impacts of human-induced climate change become more prevalent. Many upland bird species are already in a precarious position and all these remnant forests require protection for current and future conservation needs. BLNQ is quite opposed to the site being developed as proposed in the PER and is concerned at the apparent lack of interest in long term biodiversity protection, especially for the many species of threatened birds as identified in the PER.		No	The Project footprint represents a small proportion of the Project area: approximately 3.4 % for construction and 0.3 % for operations. The Project area will not be converted to large-scale industrial land use; operational wind farms are able to coexist with agricultural and grazing land uses such as those that presently occur within the Project area. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
497	.003	MNES	2. Critical habitat loss and threats to bird biodiversity. In the light of threats to avian biodiversity the project should not proceed. In addition, it is already clear that these cooler, moist upland areas will be critical biodiversity refuges in the already determined much hotter future we face (survival from thermal threats and from changed fire intensity and frequency). The survival of many species will require the protection of these future refuge areas, an issue that remains poorly addressed. The PER acknowledges the potential loss associated with the following bird species of concern: a) Northern Masked Owl (Tyto novaehollandiae kimberli) b) Red Goshawk (Erythrotriorchis radiatus) c) White-throated Needletail (Hyrundapus caudacutus) d) Peregrine Falcon (Falco peregrinus) The first two are so poorly known and understood that more effort is needed to understand potential threats. In the case of the Northern Masked Owl, its presence on the site raises significant concern about potential impacts. A number of other species found during the surveys conducted will suffer habitat loss and perhaps other impacts but are considered by the PER of limited concern. These species need to be considered in the context of potential environmental changes due to human-induced climate change. There is also concern about potential loss of habitat for crane populations already present in the area during the post-breeding season. The impacts of wind turbines on cranes is well known from other studies and the displacement likely may prove significant to these iconic species (Brolga and Sarus Crane).		No	The primary purpose of the PER is to assess potential impacts on Matters of National Environmental Significance, the PER does consider bird species that are not listed under the EPBC Act but they are not given the same level of attention as listed threatened species. This applies to the peregrine falcon in addition to sarus cranes and brolgas (which are not listed as migratory under the EPBC Act and hence are not subject to the protections of that Act). Additionally, neither sarus cranes nor brolgas have been recorded in or flying-over the Project area despite regular seasonal surveys for the last two years. These birds have been observed in large flocks feeding in the neighbouring cotton fields. Impacts to the northern masked owl, red goshawk and white-throated needletail have been fully assessed in the PER. The potential cumulative impacts of the Project in conjunction with anticipated climate change effects and subsequent bird collision risks are summarised in Section 4.1.9 and considered in Table 5-4 of the PER.
497	.004	Fauna mortality turbines	It is disappointing that the proposed bird management plan does not consider design elements in the construction and operation of the turbines that might be able to mitigate impacts on birds and other species.		No	The BBMP presents an adaptive framework. If considered necessary during operation, based on results of monitoring, deterrents and other mitigation measures may be considered by CWF.
497	.005	Opposition to project	The principle concern is the flawed process of site selection that allows this really important environment for biodiversity to be targeted for industrial development. There is weak assessment of alternatives and no consideration of biodiversity criteria in either the Queensland process of Alternative Energy Zone developments or the PER for this proposal. On either side of the development area are two highly important biodiversity conservation areas – the Wet Tropics World Heritage Area and the Bush Heritage Conservation Area (Yourka Reserve). Only a biodiversity blind process or proponent would even imagine such an area lacks biodiversity significance. BLNQ supports the analysis and conclusions made by CAFNEC in their submission on the PER and hereby records its opposition to the proposal and urges the Minister to reject the proposal. But also, given that this proposal is but one of many similar proposals in northern Queensland, BLNQ urges the Minister to take control of the process and bring a much more appropriate approach to ensure damage to biodiversity, current and future, is fully considered, including the cumulative impacts not currently assessed by the present processes.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
499	.001	Biodiversity general	The Chalumbin wind farm should not be approved because: It will involve the large scale destruction of endangered forests, which are the habitat for critically endangered and endangered species. It will destroy the visual amenity of our local community, for many kilometres. This is a negative impact we residents would have to live with every day, if approved It will drive to extinction many highly threatened species such as the yellow bellied glider and northern koalas. The turbines will kill flying animals, such as cranes, insects and bats. It will destroy ancient sacred sites, and sever the ongoing connection Traditional Owners have to their lands here. Our Traditional Owners don't support this proposal. My family have supported community efforts to conserve these animals for decades, through tree planting, counting species distribution and clearing invasive weeds from waterways. This proposal completely disregards and destroys the investment people such as our family have made for many years to conserve our local ecologies. It is morally bankrupt for this company to propose such complex devastation upon the environment and community, for a project which has a lifespan of 25-30 years. I do not support this proposal.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting anticipated climate change effects.
501	.001	N/A to PER matters	Thank you for the opportunity to provide a submission to the Chalumbin Wind Farm Public Environment Report. The Wet Tropics Management Authority (the Authority) is a statutory body established under the Wet Tropics World Heritage Protection and Management Act 1993. Under the primary goal of the World Heritage Convention, the Authority must provide for the implementation of Australia's international duty to protect, conserve, present, rehabilitate and transmit the Wet Tropics of Queensland World Heritage Area (the Area) to future generations. The Authority is aware of a number of windfarm developments adjacent to the Area, including Kaban (under construction), Chalumbin, Upper Burdekin, Mount Fox and High Road. In response, the Authority has developed a position statement on wind farm development adjacent to the Wet Tropics of Queensland World Heritage Area, which I have attached to this submission (Attachment 1). The Authority recognises that lowering emissions is one of the most critical actions to reduce climate change impacts on the Area. While the Authority strongly supports renewable energy projects, we believe that this should not occur where it will increase the risk of threats to the Area and its Outstanding Universal Value (OUV).		No	Noted. The PER determines that the Project will not have a significant residual impact on the OUV of the WTQWHA. Furthermore, the PER determines that the cumulative impacts of the projects listed in this submission will not have a significant residual impact on the OUV of the WTQWHA.
501	.002	WTQWHA	Ecological importance of the broader Chalumbin project area It is important to understand the landscape context of the proposed project site and its national and international significance. We note that the majority of the Chalumbin proposal is located within the Wet Tropics Bioregion. This bioregion has several unique characteristics that distinguish it from all other bioregions of Queensland and Australia. With almost 20 per cent of the flora and more than 10 per cent of the terrestrial vertebrate fauna largely endemic to the bioregion, at a global scale, the Wet Tropics is second only to New Caledonia in terms of number of endemic taxa per unit area. High-altitude forests (over 700 m) of the Wet Tropics Bioregion reflect the historically stable climatic conditions which have acted to create refugia. Invertebrate and vertebrate diversity is often highest at mid-elevations (400–800 m), with an overlap of assemblages from lower and higher zones. These altitudinal levels are reflected within the proposed site for the Chalumbin Windfarm. Many Wet Tropics endemic species are only found in the cooler, higher altitude parts (700 m and above) of the region. Many of these species played a key role in the World Heritage listing for the Wet Tropics. The proposed project site also intersects the Atherton Uplands — a Wet Tropics subregion. The Atherton Uplands possesses the highest level of vertebrate biodiversity in Australia.		No	Noted. The PER provides a detailed summary of fauna species that are endemic to the Wet Tropics (but not listed as threatened) in Appendix T, and determines that the Project is not anticipated to have a significant residual impact on these species.
501	.003	Wet sclerophyll forest impacts	Wet sclerophyll forests hold high significance as an ecotonal community between rainforests and dry woodland ecosystems, and which will be particularly affected by proposed windfarms, including Chalumbin. They are significant as part of an evolutionary continuum of rainforest and sclerophyll forests. Wet sclerophyll forests also form part of an interface or buffer between the drier parts of the project area, and the wetter rainforest environments within the Area. As well as being home to a unique suite of species, including species that form part of the World Heritage listing for the Area, the wet sclerophyll forests are often used by both rainforest and woodland fauna species seasonally and constitute an important climate change corridor and refugia. This vegetation community persists as a narrow band along the western margin of the Area, and will be heavily impacted by infrastructure, clearing and maintenance required for the eastern-most sections of the proposed project.		No	This background information into the importance and value of wet sclerophyll forests is provided in Section 4.11 of the PER.
501	.004	Project design	Our involvement with Chalumbin to date The Authority has been substantively engaged with the Chalumbin Windfarm proposal since the original EPBC referral in 2021, and the Authority has: • conducted two visits to the proposed site, and met with representatives of Ark Energy on several occasions to discuss possible impacts of the proposal on the outstanding universal values of the Area; • provided written submissions on possible impacts of the proposal to the State of Queensland (SARA) and Commonwealth (EPBC) assessment processes; and • provided ad hoc written advice to the Commonwealth on matters relevant to the OUV of the Area. The Authority acknowledges that Ark Energy has considered the issues raised by the Authority, including: - exacerbation of fire risk in the Area, which is already at an increased risk as a result of climate change. - exacerbation of weed and pest animal spread and contribute to ecosystem change within the Area. - impact on species listed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and other species of conservation significance (including all taxa that are endemic, or are of an ancient lineage, or are globally significant or ecologically rare) that utilise habitat within the project area and move between and beyond the project area and the Area (e.g. feeding, dispersal, genetic exchange etc). - impact on wet sclerophyll and adjacent vegetation communities which hold values similar to those found in the adjacent Area. the contribution of the Chalumbin Windfarm to cumulative impacts from multiple windfarm projects in the region; and - visual amenity impacts on the Area The Authority also acknowledges that Ark Energy has sought to address these concerns within the Public Environment Report, including some design iterations in October 2022 to further reduce impacts on the Area. However, the Authority has identified below a number of outstanding issues with the Chalumbin Windfarm proposal which may significantly impact upon the values of the Area.		No	The proponent has appreciated the opportunity to engage meaningfully with WTMA and to reappraise the Project to achieve design outcomes that take the factors important to WTMA into account.
501	.005	Wet sclerophyll forest impacts	The Authority remains concerned around the impact of fragmentation on wet sclerophyll and adjacent vegetation communities that provide a buffer to the Area and provide habitat for a range of fauna species of conservation significance, including (but not limited to) the magnificent brood frog, masked owl, northern greater glider and yellow-bellied glider. The Authority acknowledges that Ark Energy have proposed further design iterations (October 2022) to reduce impacts, including on wet sclerophyll forests (particularly in the far southern portion of the project area). However, it is noted that there still remains significant clearing and infrastructure proposed for the largest patch of wet sclerophyll in the middle of the project site. The Authority continues to be concerned about how the fragmentation of wet sclerophyll forests affects its values. Components of the project that substantively intersect with wet sclerophyll communities should not proceed unless the proponent can demonstrate that activities will not increase the impacts of fragmentation including invasive species, exacerbation of fire risk, fragmentation of habitat for species of conservation significance, disruption of ecological connectivity, and potential for ecosystem collapse. In addition, the proponent must detail the difference between 'fragmented' and 'contiguous' wet sclerophyll communities, and how the impacts from the project will differ between fragmented and contiguous communities.		No	Impacts on the wet sclerophyll forests (and corresponding OUV of the WTQWHA) are discussed in Section 8.10.2 of the PER, including discussion on fragmentation, and the difference between existing fragmented and contiguous wet sclerophyll communities. The Project has sought to minimise the impacts to wet sclerophyll vegetation to the extent practical, as described in the PER.

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501	.006	Hazard and risk	The proponent has not addressed the fact that rainforests are increasingly more susceptible to wildfire. Further information is required on prevention of wildfire into rainforest within the Project Area, and also the spread of wildfire into adjacent vegetation communities within the Area. The PER notes that: 'Through improvements to access throughout much of the Project area, creation and implementation of construction and operational bushfire management plans, and preparation of a bespoke fire regime for the Project area (including land-based offset sites), the Project is anticipated to improve the prospects of managing the risk of bushfires within the Project area that may detrimentally impact the WTQWHA'. However, the PER (p 560) does not appear to take into account that changes in climate conditions may result in extreme fires. In S 8.9.2.3, the PER states that 'low-moderate intensity fires are rapidly extinguished once they encounter rainforest'. Recent experience in Australia has shown that rainforest has proven to be highly vulnerable to fires under particular climatic conditions. Examples of this include Nyleta (within 60 km of the Chalumbin project site), Eungella National Park (near Mackay) and the Gondwana Rainforests of southern Queensland/northern NSW – in all of which large areas of rainforest were catastrophically burnt by wildfire. The project should not proceed unless the proponent can demonstrate that the project will not contribute to or exacerbate catastrophic fire events that have the potential to impact on sensitive vegetation communities and habitats within the project site and adjacent to the site in the Area. The proponent must also demonstrate that the proposed bushfire management plan not only minimises opportunities for fire events emanating from project activities but also protects sensitive vegetation and communities (including within the Area) from catastrophic bushfire without resorting to damaging mitigation measures such as clearing for firebreaks.		No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
501	.007	Visual impacts	The World Heritage listing for the Wet Tropics recognises that it possesses outstanding scenic features, natural beauty and magnificent sweeping landscapes as well as its other significant natural features). The PER acknowledges that the proposed Chalumbin project will present impacts on scenic amenity from both within the Area looking out and looking towards the Area. In the conclusion of the Landscape and Visual Impacts Assessment (p. 129), it is noted that: "It is anticipated that there would be no significant direct impacts on the landscape character of the WTQWHA due to the Project and there would be no direct impacts on the superlative scenic features comprising mountains, gorges and waterfalls, which are the key Outstanding Universal Values (OUV) of the WTQWHA, However, the view from Majors Mountain lookout and a small part of the Koolmoon Creek track, which are located within this internationally recognised and protected landscape, would be significantly impacted by the introduction of turbines into a natural landscape, including localised impacts on sweeping forest vistas. It is acknowledged however that these viewpoints represent a single localised viewpoint condition that is not typical of the surrounding WTQWHA and is understood to be experienced by a low number of receptors. Therefore, the visual impact on the WTQWHA is on a very limited area accessed by a relatively small number of hikers and does not affect the major tourist vantage points for which this part of the WTQWHA is renowned, such as Tully Gorge Lookout and also would not have a significant effect on localised vantage points within Tully Falls National Park close to the Project, such as Rhyolite Pinnacle". The Authority disagrees with this assessment and proposes that the project will have very clear and significant impacts on the landscape character of the Area. It is not possible that 87 wind turbines up to 250 metres in height within a short distance from the Area boundary could not have a significant visual impact on the scenic features in the Area. The PER dismisses impacts on scenic amenity on the WHA through a viewpoint of lack of visitation to viewing areas within the WHA. This is a negative approach and does not adequately reflect the scenic values of the area and its importance to the community.		No	The LVIA presented in Appendix M of the PER was prepared in accordance with internationally accepted methodologies and by Lat27 - the pre-eminent consultancy for such assessments of wind farms in Queensland. The assessment appropriately qualified the potential landscape impacts of the Project by highlighting the infrequent opportunities for the Project to be viewed by members of the public when within the WTQWHA.
501	.008	Cumulative impacts	Cumulative impacts The potential cumulative impacts on flora, fauna and the outstanding universal value from the combined renewable energy proposals including Chalumbin, Upper Burdekin, Mt Fox, High Road and the Kaban windfarm (currently under construction) have not been adequately considered. Insufficient effort has been made to source the relevant data necessary to undertake an analysis to inform an appropriate cumulative impact assessment. An example of the inadequacy of the cumulative impact assessment relates to the Magnificent Brood Frog, a species listed as Vulnerable under the EPBC Act, and which is poorly understood in terms of its habitat requirements and habitat range. The PER for the Upper Burdekin project states (p275-76): "The EPBC referral for the proposed action (EPBC 2021/9066) lists this species as being unlikely to occur on the subject site". The Authority conducted a site visit 14/15 October 2021 (this date was after EPBC 2021/9066 was submitted) to the Upper Burdekin site with the project proponent (Windlab). During this site visit the Authority discussed Brood Frog with the Windlab Project Manager. Given the similarities of the Upper Burdekin site (including potentially suitable habitat), and its proximity to the Chalumbin site, the Authority asked if Windlab had surveyed for the Magnificent Brood Frog. Windlab said they had not conducted surveys, and subsequently committed to do so. The Authority passed on this conversation to the Project manager of Ark Energy for follow up. To the Authority's knowledge (we have checked directly with Windlab and Ark Energy) there has been no follow up conversations on Brood Frog surveys and any subsequent insights that could be gained regarding Brood Frog habitat requirements and distribution of this poorly understood species. It is not clear to what degree Ark Energy have consulted directly with other projects in the broader project area regarding any of the matters assessed in the PER, to ensure that they are using the most complete and contemporary information to inform a cumulative impact assessment. This Chalumbin project should not proceed unless Ark Energy can demonstrate that they are using the most complete and up to date set of data and information across all current and proposed projects to inform consideration of cumulative impacts. This will require evidence that Ark Energy have undertaken reasonable efforts to initiate direct discussions and collaboration with other projects in the broader area to share contemporary information, including the Upper Burdekin and Mt Fox and Kaban proposals.		No	The Draft PER for the proposed Upper Burdekin Wind Farm has recently been released for public comment and this has been used to update the cumulative impacts section of the Chalumbin PER. It is worth noting that the proponent for the Upper Burdekin Wind Farm does not appear to have undertaken field surveys for the magnificent brood frog, and that their PER instead includes a desktop assessment of the species' likelihood of occurrence. This does not enable a quantitative assessment of potential cumulative impacts on the species of any value. Addition brood frog surveys have been undertaken at the Chalumbin Wind Farm site since December 2022 and remain ongoing, in order that project-specific impacts can be more accurately assessed.
501	.009	Wet sclerophyll forest impacts	The Authority further notes that a cumulative impact assessment on wet sclerophyll has not been undertaken in the current Chalumbin PER. The project should not proceed unless Ark Energy can undertake a proper cumulative impact assessment on Wet Sclerophyll (i.e. consulting with all other projects).		No	Section 5.5 of the PER now includes an assessment of cumulative impacts on wet sclerophyll forest from the various projects identified in the PER Guidelines as being required to be assessed. This determines there will be no cumulative impacts on this vegetation type.
501	.010	Offsets	Other issues It is not clear what is proposed for the 'indicative offset area' in the southern portion of the project site. The Authority supports better management and protection of native vegetation and habit adjacent to the Area. However, it is unclear how this southern area can act as an effective conservation offset where significant road and turbine infrastructure has been retained and effectively fragments the proposed offset area to a very high degree. This proposed offset area requires further detail on the proposed benefits (including consideration of the infrastructure in the area) including the mechanisms to be applied to ensure that that this is a real offset (e.g. what will be the enhanced management of the Area, what will be the changes in tenure).		No	There have been changes to the proposed offset management areas since the PER was released for public comment. The amended areas will be reassessed in the final PER. The southern offset area on Wooroora Station has been revised to no longer be intersected by project infrastructure.
503	.001	N/A to PER matters	Queensland Conservation Council (QCC) welcomes the opportunity to respond to the Chalumbin Wind Farm Draft Public Environment Report EPBC 2021/8983 (Draft PER). QCC is the peak environment body in Queensland, currently representing 51 member groups and has been supporting communities to protect our natural environment since 1969. We recognise the need to reduce our emissions as soon as possible to protect unique and irreplaceable Queensland ecosystems including the Wet Tropics World Heritage Area, where every incremental increase in temperature rises significantly reduces habitat range for endemic species. Renewable energy is one of the best and fastest ways we can reduce emissions. However, building the renewable energy we need cannot come directly at the expense of the species and habitats we are attempting to save and protect. We retain significant concerns about the environmental impacts of the Chalumbin Wind Farm. In particular, we are concerned that the project will lead to a negative impact on the magnificent brood frog population in the project area and the proposed offsets do not provide suitable habitat availability to support the long term viability of the species.		No	Noted. Project impacts on the magnificent brood frog are discussed in section 8.4.2 of the PER, along with measures to avoid, minimise and mitigate these impacts.
503	.002	MNES	Fundamentally we do not believe that Ark Energy has demonstrated that this project, and its associated impacts on 1,049.6 hectares of threatened species habitat in a highly biodiverse region, are necessary for the renewable energy transition in Queensland. The five MNES species that will be significantly impacted by this project (magnificent brood frog, masked owl, northern greater glider, koala and spectacled flying-fox) are each facing multiple threats to their survival and as such should not be subjected to the loss of any further critical habitat.		No	Your concern has been noted.
503	.003	Offsets	Further, we call on Ark Energy to address the following issues in the final Public Environment Report: - Create a proactive offset strategy that will deliver increases in contiguous habitat and that will respond to policy reform as and when required.	Investigate turbine design options to reduce impact to wildlife including countershading blades and other new technologies.	No	The proponent can only work within current legislative frameworks and has no way of forecasting policy reform. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The possibility of countershading blades was raised with key statutory stakeholders who did not support this option because of the overall landscape significance of the WTQWHA and the perception that countershading would have too great an impact on the site.
503	.004	Fauna mortality turbines	Increase the collision monitoring post construction from 4 years to 10 years and increase reporting requirements from 2 years to 10 years to ensure a robust analysis of turbine incidences. - Make Bird and Bat Mortality Monitoring Program reports publicly available. - Utilise the consultant's (Attexo) and subconsultants existing bird and bat data and carcass monitoring data to inform project design and ongoing fauna management strategies.		No	Monitoring for the Project will be in accordance with approval condition requirements. The Project team has taken on board this advice, initially received during a project briefing with the Spectacled Flying-fox Recovery Team, and has revised the Bird and Bat Management Plan to make a clear commitment to make monitoring reports publicly available, and to make a more specific commitment to adapting fauna management strategies to findings from the ongoing studies of birds and bats.
503	.005	Masked owl	In the case of unavoidable impacts to nesting trees of masked owl, increase the installation of nest boxes and/or translocated stags for masked owl from 1:1 to 1:2		Yes	The Project team has agreed to provide translocated stags and/or nest boxes at a ratio of 2:1 wherever the loss of masked owl nesting trees is unavoidable. Section 8.5.2 of the PER has been updated to reflect this.
503	.006	Project alternatives	Alternatives to Chalumbin Wind Farm We don't accept the arguments in Section 3 of the Draft PER that an alternative renewable development project built would have greater impacts. The assumption that an alternative renewable development would have to have 30% more turbines is not supported. This appears to be based on an assumption that the wind resources would be lower in another location. The performance of Queensland's existing wind farms is dependent on many factors including transmission constraints which have been prevalent in North Queensland. For example, Coopers Gap Wind Farm in southern Queensland has had a higher operational capacity factor in the last year than Mt Emerald Wind Farm, closer to Chalumbin. There are currently more than 7 GW of wind projects in Queensland being assessed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). We believe that effective Renewable Energy Zone Planning from the Queensland Government can prioritise the most suitable of these sites and ensure that they are managed to create a positive biodiversity impact.		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. Due to the absence of a feasible alternative, no specific alternative location to the west of the Project area was identified for the purposes of comparison in Section 3.2 of the PER. The suggested 30% increase in capital cost is associated with the conservative assessment that 30% more infrastructure would be required in an area to the west with less-ideal wind resource and a more difficult, lengthy and costly electrical connection. The strategic planning suggested by the submitter has merit; however, this is not presently occurring, and therefore is not relevant to the Project or its assessment under the EPBC Act.
503	.007	Offsets	Offsets In December 2022, the federal government released the Nature Positive Plan: better for the environment, better for business. This plan outlines the government's response to Professor Samuel's independent review of the EPBC Act which found that the EPBC Act is flawed and required significant reform. In particular, it acknowledged that "current offset arrangements are failing to prevent environmental decline."1 The government has committed to reforming the EPBC Act and will introduce legislation to give effect to this response in 2023. Construction at Chalumbin is due to start in mid 2023, so it is important to create outcomes that are able to proactively address the current extinction crisis. The three proposed offset areas of the Chalumbin Wind Farm are all within the project area. The Draft PER lists the dangers of habitat fragmentation, particularly on more sedentary species. However, the southern Wooroora offset area includes linear fragmentation from the wind farm. This will result in a worse environmental outcome than continued grazing use by decreasing connectivity between the Koomboloomba South Forest Reserve and the Yourka Reserve Nature Refuge.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. The proposed offset management areas have been revised since release of the PER for public comment and the final PER will include a reassessment of the new areas. The southern offset area on Wooroora Station no longer has project infrastructure within it.
503	.008	Magnificent brood frog	Magnificent Brood Frog Impacts The research currently underway on the habitat requirements and presence of the magnificent brood frog within the project area needs to be completed and considered in the final Public Environment Report to ensure that the estimation of habitat loss and offsets calculations are correct. Given that there is little known about this species, it is imperative that the latest science informs project outcomes. We are also concerned that the funding for the magnificent brood frog will not lead to actual improved outcomes for the frog if habitat loss and fragmentation occurs prior to research being conducted. The conservation advice2 for the magnificent brood frog published in 2017 states that "As the total population size is likely to be very small, all of the known habitat is considered to be critical for survival". Given that the project will remove 120.5ha of known habitat and the species was found during surveys, this amount of habitat loss will likely have a significant impact on the species and the offsets proposed will not provide suitable outcomes for the survival of the species. As stated in the Draft PER "Construction activities have the potential to degrade and destroy seepage areas, which are dependent on climate factors and difficult to map year-on-year. Seepage areas would remain outside of the Project footprint. The Project could potentially disrupt the breeding cycle of an important population."		No	A conservative approach has been taken in mapping potential habitat for the magnificent brood frog across the Project area and it is highly unlikely that all of the potential habitat is occupied by the species, which tends to undergo "boom and bust" population cycles from year to year (MBF Working Group, pers. comm.) The clearing estimate of 120.5ha is considered "worst case". Additional surveys in areas of potential habitat have been underway since late December 2022 and will be reported on The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed. One of the key advantages of siting offsets within the host properties is the known presence of magnificent brood frog and their habitat. These areas will be legally protected in perpetuity, thus meeting one of the key objectives of the National Recovery Plan (i.e. to protect habitat). Without these offset areas, none of the potential habitat across the Project area would be protected. The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy. A proportion of these funds is being made available to researchers now, prior to Project approval.
503	.009	Alignment with government policy	Conclusion QCC strongly advocates for the just and fair transition to net zero emissions and rapid decarbonsation that is required to keep global temperatures within 1.5 degrees of warming. Renewable energy plays a critical role in the transition to net zero emissions, however the development of renewable energy projects should not come at the expense of Queensland's unique flora and fauna. The impacts to MNES identified within the Draft PER will have lasting and significant impacts on threatened species. Offsets have been demonstrated to be ineffective in obtaining robust conservation outcomes. The proposed Chalumbin Wind Farm is scheduled to start construction in mid 2023, at the same time that legislative reform will be undertaken. Therefore, the final PER should address the latest recommendations as laid out in the Nature Positive Plan, or latest documentation released by DCCEEW and seek to proactively avoid and minimise impacts to MNES.		No	The Project is assessed against the legislation in force at the time of the proposal. Sections 1.5 and 3.0 of the PER identify the drivers for the Project siting and the factors influencing the proposed layout of the Project. Section 6.0 of the PER identifies the ways through which the Project has sought to avoid, minimise and mitigate potential impacts on MNES.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
505	.001	Biodiversity general	To whom it may concern, The Chalumbin wind farm should not be approved because: It will destroy huge areas of critically important ecosystems. These are fundamental to the survival of many species of animals, including critically endangered animals such as the yellow bellied glider. The wind turbines will kills many animals who have generationally adapted to living in, and flying through, this area. This will include many types of bats, insects and birdsand will further reduce their numbers. Some species of animals will be pushed to extinction. This is completely unacceptable, especially considering the project will only go for 25/30 years. Countless families, our included, have lived for generations in this area, enjoying the local natural attractions and animals. Their experiences will be ruined by this. In particular, this proposal will ruin the skyline, and destroy the visual amenity of all locals and visitors to the area. Finally, this proposal would destroy sacred sites which have formed a deeply significant part of our Traditional Owners connection to Country. It is appalling to consider a company with no connection to our community, culture or environment would seek to visit such destruction upon the cultural heritage and ecology.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting anticipated climate change effects.
507	.001	Emissions	I hereby submit comments in relation to the Draft Environmental Report as follows. 13.0 Economic and Social Matters Specifically, 13.2.1 GHG Emissions and Appendix L The Draft is defective because it fails to account for the embodied energy in - •the magnets and copper found in the Wind Turbine Generator – the CO2 required to mine, process and refine the copper and rare earths (e.g. Neodymium Dysprosium) required is larger than the steel and composite accounted for in Appendix L. •the copper to be found in the Battery Energy Storage System and the Overhead Power Transmission Lines – the CO2 required to mine, process and refine the copper required is larger than the steel and concrete accounted for in Appendix L. The draft is defective because it fails to account for the CO2 generated in the Decommission Phase and in particular the CO2 generated in the recycling processes for the materials recovered from the site and the transportation of those materials to reprocessing plants in Australia and abroad. The draft is defective because it does not address what is to become of the composite turbine blades, the lithium-ion batteries, the rare earth magnets and the copper used in the construction and operations phase when decommissioning takes place . Currently there are no known recycling processes for turbine blades – they go to land fill [SRSrocco Report – "The Renewable Green Energy Myth: 50,000 Tons of Non-Recyclable Wind Turbine Blades Dumped in Landfill" 2020]. No reference is provided as to how the lithium-ion batteries will be recycled (or will they also be dumped). The matter of recycling the magnets and copper is similarly not dealt with. The draft is defective because it does not address what will become of the radioactive waste generated in the mining, processing and refining of the rare earth magnets used in the Wind Turbines The above are serious and should be addressed in a final report.		No	Procurement of materials and equipment for the Project will include prioritisation of ethical sources. For example, the Vestas EnVentus WTG has been designed to reduce the reliance on rare earth materials, with the majority of the materials being 'light rare earth' (Neodymium) and a minimal amount of 'heavy rare earth' (Dysprosium). The Project will undertake a comprehensive supplier qualification process and extensive material implementation across turbine variants to support diversified sourcing for magnet material, enabling-to the securing of capacity and cost control. This comprehensive supplier qualification process answers to the sustainability focus of Project stakeholders (e.g. re-use of magnet materials).
509a	.001	Wet sclerophyll forest impacts	Presently Sclerophyll forests occur as a discontinuous strip up to 4 kilometres wide along the western margin of the Wet Tropics rainforest that occupy approximately 54,000ha. The Wet Sclerophyll forests, commonly dominated by Eucalyptus grandis Rose Gum and Eucalyptus resiniferous Red Mahogany, have evolved under a fire regime of regular Aboriginal burning which has favoured the growth and fire tolerant species and kept the rainforest at bay. Aboriginal management continues through land protection officers. The Wet Sclerophyll forests are particularly important as an ecotone habitat and an ecotonal community between the rainforests and savanna ecosystems. As well as home to a unique suite of species, the wet sclerophyll forests are often used by rainforest and woodland species at different times of the year particularly at this time of the year with the wet season building up. They are also home to some special species, the endangered northern or tropical bettong (Bettongia tropica) and the northern population of two other species of mammals restricted to this type of forest type- The endangered Yellow bellied Glider (Petaurus australis unnamed WT subspecies) and the Swamp Rat (Rattus lutreolus lacus).		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
509a	.002	Opposition to project	Heavy Industrialised Wind Farms in remnant Forests bordering Wet Tropics World Heritage and high conservation area boundaries, causing degradation by bulldozing remnant forests to make way for 65m haul roads through the forest to allow for wind turbine cartage and heavy machinery will ensure the destruction of species habitat and displacement of vulnerable endangered fauna, silting up of upland waterways which drain into major catchments that drain into The Great Barrier Reef and the installation of SODAR technology that omits a human ear piercing beep sound every 10 seconds ensures that no faunal species, birds or bats remain in their natural habitat is ethically and morally WRONG!		No	The Project footprint represents a small proportion of the Project area: approximately 3.4 % for construction and 0.3 % for operations. The Project area will not be converted to large-scale industrial land use; operational wind farms are able to coexist with agricultural and grazing land uses such as those that presently occur within the Project area. Appendix J of the PER contains a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks including risks to the GBR. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Potential impacts to water quality are considered as part of the Construction Environmental Management Plan and Erosion and Sediment Control Management Plan, developed as part of the development application under the State's Planning Act 2016. Water quality is to be assessed in accordance with the water quality guidelines and the prescribed water quality objectives for the Herbert River Basin as per the State's Environmental Protection (Water and Wetland Biodiversity) Policy 2019. The As per the management plan, the ESCs will be regularly monitored and modified as required to achieve water quality objectives. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). Section 13.2.1.1 of the PER calculates the GHG costs associated with the dominant construction materials for the Project (steel, concrete and composite materials). It should be noted that a GHG calculation for material composition within a WTG is not a linear relationship with the WTG nameplate generation capacity. The GHG costs associated with transportation of materials and components (including via sea from China) are outlined in Section 13.2.1.2 of the PER. The GHG costs associated with vegetation clearing (i.e. the loss of the carbon sequestration potential associated with the vegetation to be cleared) are outlined in Section 13.2.1.3 of the PER.
509a	.003	Northern bettong	Endangered listed Bettongia tropica- In early 2000 I was involved with my partner in the Wet Tropics World Heritage feral pig trapping program along the western edge of WTWH boundaries in the vicinity of Wooroora and Yourka Stations with the aim to collect pig gut samples to be collected from us by Bill Dorney (dec) from South Johnstone Research Centre. Under further investigations the pig gut samples were found to contain Ectomycorrhizal fungal sporocarps mainly what's called 'Truffle' fungi and among other things Bettongs. A scientific investigation was taken further with my partner leading a scientific team into this area where a breeding colony of Bettongia tropica were identified and cameras were set up to monitor this colony. Many people are of the opinion that this Bettong does not exist south of Ravenshoe when in fact it does, and can be often seen by locals who live along the southern end of Wooroora Rd. The Northern Bettong (Bettongia tropica) is a small, endangered gerbil like mammal native to forests of North Queensland. It lives in burrows at the base of trees, feeds at night on roots and fungi and is very vulnerable to feral pig and cat activities. This Northern Bettong is threatened by habitat loss from feral pigs & cats, It is restricted to mixed open Eucalyptus woodlands and Allocasuarina forests bordering rainforests in Far North Eastern Qld. Having sat in that forest for many nights and days under all weather conditions I can confirm that the waterways are also prolific with Platypus as well as many other fauna species.		No	Information on the northern bettong is included in Section 4.7.6 of the PER. It was previously known to inhabit the broader Ravenshoe area but has not been recorded there on any publicly available databases since 1988. A camera trap study in the greater Ravenshoe area in 2001 did not record the species. The Project's camera trap study (more than 9000 camera trap nights across an 11-month period) did not record the species. The northern bettong is easily confused with the rufous bettong, which is a common species not listed under the EPBC Act. Anecdotal reports of northern bettong from residents of Wooroora Road cannot be verified and therefore cannot be relied upon in the PER. Nonetheless, potential habitat for the species has been mapped and the potential impacts of the project assessed, with mitigation measures proposed in Section 8.6.6 of the PER. The platypus has also been recorded in the Project area but this is not discussed in the PER as it is not listed under the EPBC Act and it is not a Matter of National Environmental Significance. The platypus is listed as Special Least Concern under the Queensland Nature Conservation Act and it was assessed in the Project's Ecological Assessment Report that was submitted to the State Government and approved in 2022.
509a	.004	Wet sclerophyll forest impacts	Threatened species and communities-are threatened plant and animal species, those that which may be vulnerable to extinction in the wild due to low populations, highly restricted distributions and habitats or continual threatening processes of which Ark Energy states 'November 2022 Design Changes-Information Sheet' you state that you have reduced the Wet sclerophyll clearing from 170.1ha to 117.5ha down 52.6ha/31%. It is not acceptable for Ark Energy/Korean Zinc or any other proponent under Code 23 to consider that this is acceptable. It is not! Our WTWH region 'The Wet Tropics of Queensland was inscribed on the World Heritage List on the 9th December 1988. The primary Goal of World Heritage is to conserve, protect, rehabilitate, present and transmit to future generations the World Heritage Area'. Nature and wildlife do not draw a line down the middle that they do not cross into. DCCEEW 2022-2032 Action Plans objective is to prevent new extinctions. Number 1 on this list of Threatened Species Action Plan of 20 Priority Places is the Eastern Forest of Far North Queensland? Threatened species are a widely used indicator of the status of biodiversity. Criterion 9 of the World Heritage Convention recognises threatened species as part of biodiversity values. www.wettropics.gov.au/wet-sclerophyll Our WTWHA is a living Gondwana museum of ancient landscapes & geology, plant evolution, animal evolution, biodiversity found nowhere else on our planet, endemic and rare species & communities, aquatic ecosystems, mammals, birds, frogs, reptiles, freshwater fish, invertebrates, insects, butterflies, moths & spiders.		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
509a	.005	WTQWHA	Draft PER Section 4.10.2 National Heritage Values Here in Ravenshoe the Highest Mountain in Queensland we are encompassed by 12 National Parks of high significance including a number of high conservation protected areas within the WTWH region including Wooroora Run/Chalumbin and Glen Gordon in fact the whole region including the Upper Burdekin and Mt Fox.		No	This submission is noted.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
509a	.006	Indigenous Cultural Heritage / Engagement	Walking Tracks and Camp sites are viewed as Songlines to Aboriginal people. The term 'Songline' describes the features and direction of travel. When the British invaded, the colonists used Aboriginal Songlines because a path had already been cleared. Over time and continued use, these traditional routes evolved to become cart tracks, stock routes, massacre tracks, then gravelled paths to finally bitumen covered roads that we see today. The top ridges that you propose to blast and construct turbines on is a 'very major Songline' just like the Kennedy Highway is, as are the waterways as far as it goes and connects with the next tribal clan and so on, there are still alive today knowledge carriers of these stories with tons of information collected and stored in archives on the Jirrbal language speaking areas and of the Djirrbal Nation which can be only accessed by rightful custodians. Destroying this Songline on Woorooora/Chalumbin is considered to be ongoing genocidal ecocide! The custodians of this knowledge have not been allowed to or supported to participate in an ongoing extensive Cultural Heritage and full Environmental Impact assessment of their own. There are massive shortcomings in the SARA Report and within Wabubadda RNTPBC that need further attention and consideration. This region has twice been nominated for protection under National Parks, Woorooora was once earmarked by Bush Heritage Yourka Refuge to purchase because of its high biodiversity values.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
509b	.001	Project viability	In Point 1.8 Ark Energy explains that the Chalumbin Project is integral to the decarbonisation of Queensland's fossil fuel emissions. The Chalumbin Project is not critical at all for the decarbonisation of the state. These are the projects already in the pipeline for Queensland with a total of 27,473GW of available capacity. Take away Chalumbin's 600 MW leaves 26,873MW of capacity being rolled out across Queensland. This is a table of all renewables thus far in the pipeline for development. Some have already been developed such as Mount Emerald and some projects are excluded such as Proserpine Wind Farm and Eungulla Wind Farm which are still in planning stages. A list of 78 renewable energy projects developed/approved or under assessment is included in the full submission.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
509c	.001	Project alternatives	The proposed Chalumbin Wind Farm does not need to be where it is currently located within a state biodiverse corridor. See Diagram 1. At this early stage of rapid renewable energy development, in the absence of any planning whatsoever, renewable projects must be placed in degraded, modified or altered landscapes. Failing this, projects should be concentrated along the CopperString 2.0 line where remnant forests are lower in biodiversity. I have attached Diagram 2 to illustrate the vast opportunities available with strong wind resources and Photovoltaic availability along an existing transmission corridor to Georgetown. This provides power transmission opportunities into where the energy will be consumed in Townsville. Renewable projects must be located in lower biodiverse areas in the interim period until the new planning guidelines and state codes are developed as published recently by the Premier in the new ten-year power plan. Rushing ahead with the Chalumbin project is a folly of an idea when other opportunities in lower biodiverse areas are available. Ark Energy have chosen the Chalumbin site because this is a cheap option.		No	The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project.
511	.001	Alignment with government policy	Sustainability has a triple bottom line – environmental, social and economic, sometimes expressed as 'planet, people and profit'. The order of priority here is fundamental. Sustaining our social systems including economic organisation, is completely dependent on and encompassed by complex self-sustaining natural systems. There is no future in maximising profit at the expense of the natural environment. Make a living, not a killing. Environmental: The major, parallel and immediate threats to environmental integrity are: - rapid climate change and - continuing biodiversity loss due to other causes such as land clearing, habitat fragmentation, interference with waterways, invasive species, excessive extraction of resources and pollution. Climate change is a threat to human existence due to its effects on the natural environment.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
511	.002	MNES	The report 'Australia State of the Environment 2021', released in July 2021, describes the dire state of Australian ecosystems. In response to this report, the '2022 – 2032 Threatened Species Action Plan, Towards Zero Extinctions' discusses actions to prevent further extinctions in Australia. The plan identifies priority places: 'In line with the objectives of the EPBC Act, this approach broadens the focus from supporting individual species to also protecting and restoring wider ecosystems through landscape-scale conservation activities.' The Eastern Forests of Far North Queensland is a priority place. The Action Plan identifies 110 priority species, selected from over 1900 species listed under the EPBC Act as either Critically Endangered, Endangered or Vulnerable. Targeting priority species also aims to protect other species within their habitats. Priority species identified that are associated with Chalumbin include the Red Goshawk Erythrotriorchis radiatus, Spectacled Flying-fox Pteropus conspicillatus, and Koala (Qld, NSW, ACT) Phascolarctos cinereus.		No	None of these three species has actually been definitively recorded within the Project area. Nonetheless the PER acknowledges that the Project could result in a significant residual impact on these three species (plus the northern greater glider and the magnificent brood frog). A range of mitigation measures, rehabilitation (see Appendix K of the PER) and offsets (see Appendix O of the PER) has been committed to, in line with the mitigation hierarchy and the requirements of the EPBC Act.
511	.003	MNES	Ark Energy's Chalumbin proposal threatens endangered species and ecosystems through land clearing and fragmentation, interference with waterways, the introduction of pest species, the effect of wind turbines. They have misleadingly portrayed Chalumbin as damaged cattle country when the majority of the area is remnant vegetation. Surveys have been inadequate and cannot be trusted. Rehabilitation and offsets are not possible for the type and degree of damage that would be caused. Areas such as Chalumbin are vital higher elevation refugia for all species as temperatures rise. The Spectacled Flying fox, a keystone species for the Wet Tropics WHA, lost a large proportion of its population when 23 000 died in an unprecedented heat wave in Cairns in November 2018, likely driving it into the 'critically endangered' category. They have significant colonies in the Chalumbin area, as documented elsewhere, and are particularly susceptible to barotrauma from wind turbines. There are already two wind farms at Ravenshoe, one is small scale, on farmland and about twenty years old with turbines due to be replaced in the near future. The other, at Kaban, is a large scale industrial project currently under construction, causing considerable environmental damage in an area known to contain endangered species. The cumulative effect of these proposals has also not been considered and will be devastating.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. Despite no Spectacled Flying-foxes being recorded on site the species has still been considered in the design phase as such full range of mitigation measures for both the construction and operational phase of the project are outlined in Section 8.6.10 of the PER. This data has been informed by the current conservation advice issued by DCCEEW. There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator.
511	.004	Project alternatives	Alternatives to the proposal have not been adequately considered in the PER, including locations with better wind resources in Central Qld that are on degraded land, and the option of renewable energy being provided at a much smaller scale closer to where the power will be used, reducing losses in transmission. Environmentally, Chalumbin is an inappropriate development in the wrong location.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. It is contended that there are numerous proposed projects in the vicinity of the area described by the submitter; however, these areas are not characterised by extensive grassland communities as suggested.
511	.005	Social impacts	Social: The basis for the broader social licence for renewable energy generators is the assumption that they will be beneficial, reducing the need to burn fossil fuels and therefore protecting the Earth from a disastrous temperature rise. The emphasis on switching from fossil fuels to renewables has, in public discussion to date, overshadowed the simultaneous need to protect biodiversity. The general public and potentially at least some investors are likely to respond negatively to renewable energy developments in environmentally sensitive areas once information reaches a wider audience. People respond in horror to footage of the extensive destruction caused by the Kaban development.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community. The PER demonstrates that potential impacts to MNES are manageable and the Project advances ESD - which is an object of the EPBC Act. The Project is located in an area where the necessary pre-requisites for a commercial wind farm are present (grid connection, wind resource, land access and tenure). The Project will contribute to the decarbonisation of the local, regional, State, national and global economies - this is imperative to slowing and halting the impacts of climate change to biodiversity. This is also fundamental to intergenerational equity.
511	.006	Community consultation	The lack of engagement that Ark Energy has had with the local community has been well documented and is inconsistent with claims made by the company. The 'community consultation group' is run by someone whose paid job is to facilitate development, it cannot claim to represent the local community. The 'Australia State of the Environment 2021' report and the Action Plan above have both sought understandings of First Nations people in the care of country, also acknowledged in the EPBC Act. Consultation with the Jirrbal people has been incomplete, the proposal is causing grief to many. The inevitable displacement of local people from their homes caused by an influx of construction workers in a region where accommodation is already scarce is destructive of local communities.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. CWF is currently investigating the feasibility of an alternative accommodation option close to the Project area following feedback from Tablelands Regional Council, local residents and other stakeholders on the stressed accommodation market in the broader region and the potential to further reduce construction related impacts on nearby residents. Any accommodation facility would be temporary (during the construction period), subject to its own approvals and would be located in such a way that it does not have a significant impact on Matters of National Environmental Significance.
511	.007	Project viability	The University of Sydney's comments on 'Australia State of the Environment 2021' states that 'Environmental destruction also costs our economy billions of dollars, with climate change and biodiversity loss representing both national and global financial risks.' Circular Economy concepts are originally centred on industry and manufacturing and are becoming widely recognised in areas such as the health system as an essential transition to more sustainable ways of operating. 'The circular economy is based on three principles, driven by design: •Eliminate waste and pollution •Circulate products and materials (at their highest value) •Regenerate nature It is underpinned by a transition to renewable energy and materials. A circular economy decouples economic activity from the consumption of finite resources. It is a resilient system that is good for business, people and the environment. The circular economy is a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution.'(Ellen McArthur Foundation). Any company riding on the 'virtue' of renewable energy should be actively considering these principles. Ark Energy's approach appears to be a cosmetic exercise rather than a serious attempt to tackle what is an existential threat. It will create few jobs in the community and be of no economic benefit locally. On current evidence, the Chalumbin development is due to deliver 'displacement and death' rather than 'jobs and growth'		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The suggestion of a contribution towards research for the Magnificent Brood Frog is proposed in addition to direct land-based offsets for the species.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
513	.001	Opposition to project	The Chalumbin Wind Electricity Generating Works should not be approved for the following reasons:- I absolutely object to this disgusting Chalumbin Wind Electricity Generating Works plan & the false representation of this ugly, environmentally destructive, contaminating ruination of Australia's precious & pristine remnant wilderness, threatened & yet to be discovered species. This is in no way a 'Farm.' I object to our public funds being scandalously wasted on non-beneficial, useless power generation & the increased energy costs this incurs for consumers from the repulsive, anti-Australian Wind/Solar industry. The illogical, cult like worship of such an idiotic, inferior, unreliable, intermittent & insecure energy source is akin to idolatry - like the evil Tower of Babel - totally against our best interests! Chalumbin Wind EG Works is designed to weaken Australia's power & prosperity & is SO harmful to Ravenshoe, Atherton Tablelands, Qld & Australia - doing nothing but feeding the subsidy sucking, fake green gravy train & supporting Chinese manufacturing. There are a multitude of reasons why this is a brainless part of the imaginary power, fake-green, rip-off of Australia energy scheme/scam that will NEVER work. It's an unconscionably cruel joke & obviously VERY stupid that anyone would ever believe that 86 weather dependant Wind Turbines - shedding toxic Bisphenol A (lethal to young children,) from their blades & filthy, hapless, toxic fire/smoke hazardous BESS - with their short, toxic waste creating life spans & energy intensive, toxic polluting life-cycles would ever do a thing to benefit the environment, change the climate or reduce emissions - let alone provide essential, reliable, efficient power. They will NEVER be base-load power! 86 Wind Turbines are totally useless when there are wind droughts! This dodgy CWF 'shell' company - ultimately owned by Ark Energy/Korea Zinc cannot claim to decarbonise anything with this pile of intensive energy created junk! With global hostilities on our doorstep, it is glaringly obvious that Australia must be energy independent to protect our sovereign risk. With our plentiful supplies of coal, gas & uranium resources - the envy of the world - our priority must be the health & welfare of Australians, not reliance on & support of slave labour product & our most hostile adversary - the Chinese Communist Party.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
513	.002	Contamination	Local Councils have a duty not to host unethical slave labour reliant Wind/Solar/BESS product - including these Wind Turbines, BESS & any part thereof. No Australian Government - including the Qld Gov should ever be reliant on the cruel torture of slave labour - including 6 yr old children forced to mine cobalt in the Congo. There is NO clean cobalt! https://www.news.com.au/finance/business/mining/harvard-professor-explains-heartwrenching-source-of-electric-vehicle-iphone-batteries/news-story/db881f47c76db89581409c092a740c4c *https://www.ohchr.org/sites/default/files/documents/countries/2022-08-31/22-08-31-final-assesment.pdf Instead of lying & pretending that Wind Turbine monstrosities reduce harmful emissions & ignoring all the potent, man-made, most harmful greenhouse gas of all - SF6 - Sulphur Hexafluoride - 23,500 times more warming than CO2 - leaking from Wind Turbines & wrongly increasing exponentially thanks to all these poverty power Wind Turbine failures, the proven cleanest, safest source of power - Nuclear SMR's must be adopted instead - for a logical, secure, healthy & prosperous future. No additional, ugly, agriculturally disruptive,environmentally destructive, unhealthy EMR impacting transmission lines would then be needed at all with an essential transition to Nuclear energy. I totally object to these turbines shedding toxic Bisphenol A (lethal to young children) from their blades. It is reprehensible that these toxic contaminating monstrosities have previously ever been approved anywhere in Australia when they are such a risk to our health & safety. https://stopthesethings.com/2022/12/17/clean-energy-scourge-wind-turbine-blades-shedding-tonnes-of-toxic-microplastic/ To blight such a beautiful, iconic landscape, contaminate our land & vital water sources & irreversibly destroy more than 1000 ha of ecological habitat - is a State Significant national disgrace - the antithesis of 'Caring for Country,' & would unjustly rob future generations of their essential intergenerational equity - burdening them with an astronomical pile of toxic waste - for no beneficial reason whatsoever.		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Nuclear energy projects are not permitted under the EPBC Act (s140A).
515	.001	Opposition to project	To whom it may concern, Greed over future I won't make this submission long as many before me have gone to great effort in detailing the specifics as to why this development will be of great detriment to the environment in which we live. I simply want to have my say, short and sweet. I'm just a youngster of 18 years, and my future is already fraught with uncertainties so great, and with consequences so far reaching that my generation are, and should be very concerned, and extremely ready to act, in which we are. Money comes and goes, the economic impact of this development will be minor, in the grand scheme, but the real impact will be much greater, and longer lasting. And that is the impact upon our beautiful country, our beautiful land, our beautiful ecosystems. As any rationally thinking person can deduce, whether it be as childish as Lego, or as grown up as ecology, things take much more time, and effort to be built, than destroyed. I truly believe the destruction of forest that must occur to make this development possible will have impacts that are far reaching, long lasting, and beyond damaging. So, this is my voice, and I'm going to use it. Stop Chalumbin wind farm. It's simply not worth the cost.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
517	.001	Opposition to project	As per submission 21.		No	As per the response to Submission 21.
519	.001	Opposition to project	I wish to lodge a formal objection to any further expansion of the industrial wind farm complex that is taking place in Far North Queensland and specifically the proposed Chalumbin Wind Farm project. I firmly believe in the need for renewables and sustainability, however after seeing the existing wind farms at Walkamin and Kaban and the plans for the even larger proposed envisaged for Chalumbin, I believe further wind farms in this delicate environment will be counterproductive and will lead to a species decline in both flora and fauna. As a person who has spent the last thirty years trying to rehabilitate and restore 160 acres of wet tropic rainforest, I understand the effects of climate change and see them every day. I also understand the need for an alternative source of power but not at any cost, the project proposed at Chalumbin has too high a cost for the environment and our endangered species		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
521	.001	Opposition to project	I sincerely object to Chalumbin Wind Farm and all other wind farms and those monster panels taking up good farming land or housing. I object a million times.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
520	.001	Biodiversity general	I wish to lodge a formal objection to the progression of the CHALUMBIN WIND FARM PROJECT, proposed for construction in the Ravenshoe area of Far North Queensland, due to its effect on Flora and Fauna that inhabit the proposed area. I believe that a further Wind Farms in this area a total waste of resources, they have a limited life compared to the amount of forest and landscape that must be disrupted, not to mention the pressure placed upon the endangered species that inhabit the area The wind Turbines have a very short life, about 20 years, the forest would be there forever at a lot less cost. The FAN BLADES are made of a composite material that does not allow them to be recycled and has them destined for land fill, I do not believe knocking down large tracts of forest and destroying the habitat of endangered species for the dubious short-term gains that MAYBE provided by this project.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project. Modern turbine blades are approximately 80% recyclable.
523	.001	Opposition to project	As per Submission 21		No	Response as per Submission 21
522	.001	Opposition to project	Chalumbin windfarm is a state significant development which is poorly planned and located in an inappropriate selected site and is a good example of what should not be done in natural resource management. The proposal ignores the principles and objectives behind sustainable environmental planning. It ignores the objectives as outlined in the 1979 EPA act, which are highly principled and ethical. Can Epuron imagine standing up in the Land and Environment court and pretending you have been scientific in your approach? Can you imagine how you could possibly prove your case beyond reasonable doubt?	The Chalumbin wilderness leasehold lands be given National Park status and protected for future generations	No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
522	.002	WTQWHA	Chalumbin wind farm proposal resides along the common boundary of the Wet Tropics World Heritage Area,separated by a mere cow proof fence. The entire area is a site of UNESCO international conservation importance and significance. The proposed impact area is inadequately planned alongside one of the most biodiverse and intact areas of the planet.		No	These concerns are noted. The PER has determined that the Project is not likely to have a significant residual impact on the values of the WTQWHA.
522	.003	Evaluation of existing environment	The report compiled on behalf of Epuron omits and ignores extremely critical and important ecological information and details of onsite habitat and ecosystems. Cited scientific references are not found throughout the epuron report and there is no backup to any of their findings onsite, all of which should be disregarded. The insultant consultants watered down report treat the non scientific community as fools. The epuron report is a far fetched fairy tail. They want non scientists, to think theres only a few plant, animal and bird species, on rock shelves. On their side of the cattle proof fence. Yet on the other side of that old barb wire fence exists one of the most biodiverse communities on the face of the planet. Shame- full people blinded by greed, it is nothing short of discraceful behaviour.		No	The PER includes 20 pages of cited scientific literature, with many more references included in the various appendices. It is not clear what kind of "backup" of findings this submission is referring to, particularly when the PER has been assessed by DCCEEW as meeting the PER Guidelines. As this submission focuses on insults rather than substantiated points, a specific response cannot really be provided.
522	.004	Adequacy of the PER	I am not a layman, I am a scientifically qualified and experienced person . As outlined in this submission, you can judge epuron is motivated by no less than pure greed! Epuron ignores the socio economic environment tripple bottom line essential to natural resource management. The insultant consultants report ignores all the preset principals of ecological sustainable development and environmental planning as for example set out in the objectives of the 1979 EPA act and lectured to all science undergraduates in Australia. Epuron ignore the socio/ economic/ environmental triple bottom line which is an essential requirement of environmental planning. In no areas of the document is a precautionary principal mentioned or implemented. The impact of the proposal is scarcely mentioned throughout the documentation.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. As described in Table 14-1 of the PER, central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
579	.001	N/A to PER matters	Over the last two years, the Office of Bob Katter, Federal Member for Kennedy has engaged closely with constituents in person at public meetings, private meetings and via representations in Parliament. He has received hundreds of submissions relating to the Chalumbin Wind Farm to his parliamentary email. As a result of these meetings and representations, we offer the following submission.		No	Noted.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
522	.005	Indigenous Cultural Heritage / Engagement	Cultural heritage sites of significance to the local Girmal aborginal community have been totally ignored in this proposed development. This is a shamefull expo		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
579	.002	N/A to PER matters	CHALUMBIN is a vast, ancient and remote region of jungle and wildlife located on the South Western fringe of the Atherton Tablelands in Far North Queensland. Positioned between the Tully Gorge National Park and Koombooloomba National Park, it is approximately 15km to the south west of Ravenshoe, a town of nearly 2,000 people. According to local groups, its' remote location is what ensures the native wildlife and vegetation are protected.		No	Noted.
579	.003	Opposition to project	A passionate community representing over 43,000 people from Cardwell to Gordonvale, Mission Beach to Mareeba, have united in opposition of the project. Mr Katter has thrown his support behind the local community which overwhelmingly opposes the wind farm construction. Up until the 5th January 2023, Mr Katter has received 257 email submissions. 256 are against the wind farm, 1 is neutral. Importantly, it must be prefaced that Mr Katter is not against all wind farms. A more suitable location for wind farm energy production lies in the heartland of Queensland, in places like Hughenden where it is 1,000 metres above sea level, with no trees or abundant bird life. This location is free from cyclone damage and the wind is also far more reliable.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
579	.004	MNES	Fauna impacts High Risk Fauna detailed in the opposition group material include: Spectacled Flying-foxes. Koalas Sea Eagles Sarus Crane Magnificent Brood Frog It is a huge concern that while locals have seen the gliders and koalas in the habitat, the assessment indicates that there are no recorded sightings. During cyclone seasons, it is natural for bird flocks to fly west to escape the winds. This puts all native birdlife from the coastal areas at risk.		No	There are multiple prior records of greater glider within the Study area to the north, east and south of the Project area (ALA), as shown in Figure 4-31. of the PER. Northern greater gliders were observed on both properties during the nocturnal spotlighting surveys and this is fully documented in the PER. The same applies to the magnificent brood frog. Sea eagles and sarus cranes are not listed as threatened or migratory species under the EPBC Act and are therefore not required to be addressed in the PER. The weather forecast will be continually monitored at the site and alert potential extreme weather events, including cyclones (at the project site, or in proximity to). In the case of cyclonic weather events, turbine operation would cease due to risk of infrastructure failure. As turbines will not be operational during these periods, the risk of bird collision will be reduced.
579	.005	Vegetation clearing	Flora impacts Jeanette Kemp, vegetation ecologist, has written a great detail on the impacts on vegetation from proposed windfarms in FNQ. Her research finds that the windfarms will have a huge impact on fauna and vegetation.		No	The Project team has prepared a comprehensive Public Environment Report that is the culmination of over two years of survey and assessment work, tailored specifically to this project in this location. Your ecologist's research has been undertaken purely at a desktop level and without access to project-specific information such as proposed mitigation measures.
522	.006	Biodiversity general	The impact area shared common boundary, to wet tropics is ecologically rare, on both sides of the boundary. It resides in a microclimate combination of extremely high rainfall, elevated topography, and exists on extensive areas of rich basalt soil type. Rich soils support higher biodiversity, the fragmentation caused by this proposal is abhorrent, with impacts not measured nor mentioned. Wet schlerophyll along the contiguous boundary with wet tropics is a consistent part of keeping high biodiversity and should be preserved at all costs. The type of habitat is unusual in Australia. The basalt soil supports extremely valuable, rare and diverse habitat and ecosystems and supports a huge biomass per given area. Supporting one of the world highest diversity of plants animals and birdspecies. Most these areas in Australia have already been cleared for agricultural purposes. These important facts are conveniently ignored by Epuron as they seek only economic yield. Epuron diverge on the topic of soils, mentioning how they have monitored bore holes even though no groundwater reserves will be used and is thus irrelevant. There is constant reference to rock shelves and degrading comments it is einsleigh uplands vegetation which it is not. There is scant disregard to the impact in the wet schlerophyl forests which flanks the wet tropics boundary. This has been incorrectly labelled in the documentation as a mere woodland. The flanks of wet tropics world heritage area where the impact is to occur is a significant nationally important diverse botanical community of value to humanity and future generations. It is a remnant community of limited extent on the Australian mainland. Yet there is nill regard to fragmentation and the impact of the proposal. There are tens of millions of acres available alternative woodlands across northern Australia. The impact area contains one of the highest abundance and species diversity of avifauna on the planet, yet this is totally disregarded. There is no regard given to numbers and diversity of migratory birds which will fly through the blades to their death. They should be protected by the Ramsay International Convention. No mention is made of avifaunal mortality and the fact that higher density bird populations likely result in higher mortality rates in the blades. In fact only a few bird species are researched and of these they obviously have been chosen to favour the proponent developers advantage.		No	All of the issues raised in this submission have already been discussed at length in the PER.
522	.007	Construction impacts	The impact area is leasehold land, and as such are owned and controlled by the crown and do not exercise the rights of freehold title. These leasehold lands have been extensively logged of large and medium timbers throughout the late 1800s and 19th century. It now contains unwanted timber mammoth mother trees, hollow in nature, of intrinsic habitat value. Yet Epurons report mentions pushing them over slowly to help wildlife mortality. No regard is given to fragmentation of ecosystems created by the impact of this proposal. Caused by over 100kms of roadways that dissect the chalumbin wilderness on a permanent basis. The roads are 70 metres width the impact of which has been previously researched and published. It is scientifically established that 70 metres is an impenetrable barrier to many plant and animal species. Yet this is disregarded.		No	The proponent has obtained approval from Queensland State government for access to the leasehold land. All necessary access approvals and permits must be obtained prior to the approval of the development application under the Planning Act 2016. State approval was received in June 2022. Habitat fragmentation and reduced connectivity is listed as a potential construction impact of the project and discussed in section 5.2.2 of the PER. Potential fragmentation impacts associated with the road clearing will be temporary, and apply to construction only. Following construction, access roads will be rehabilitated.
522	.008	Survey effort	Disregarded are 3000 species of flora which interchange in and out of the national park imagined boundary. Limited flora research was undertaken and out of a possible 3000 species only a few were 'found' . How appropriate these few reside just to the west of the impact zone. It is highly suspicious why no floral transects were undertaken and GPS marked. This would provide a written record to be cross referenced. Transects are standard scientific methodology in environmental science. There is no mention that floral communities vary both in space and time and that seed stock exists within the soils remaining in a dormant capacity. There is no mention of the recent fire history onsite and the affect of fires on the Australian biota. There has been no quadrat sampling for fuel and determination of recent fire influences. Nor determination of these fires influence of species composition onsite. This has been omitted. No regard has been given of the influence of the highest floral biodiversity adjacent in the park next door and how much of an impact this development will have on that vegetation. Disregarded are the multiple species of fauna which also interchange in and out of the national parks boundary. Of course, only a few species were found and we rely on the honesty of the development -which is clearly dishonest.		No	Surveys have been conducted in a manner that is consistent with the relevant state and federal guidelines that are listed throughout Section 4 of the PER. Specifically, vegetation surveys were undertaken in accordance with the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland version 5.1 (Neldner et al 2020) which is an accepted approach. The experience of the two lead botanists is provided in Section 4.2.2.2 of the PER. Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
579	.006		Submission refers to issues raised in Submission 1		No	See response to Submission 1
579	.007		Submission refers to correspondence from Kimbri Law engaged by Rainforest Reserves Australia. See Submission 500		No	See response to Submission 500
522	.009	Wet sclerophyll forest impacts	Failure to mention remnant wet scherophyl forest along a rainfall gradient on the western side of the escarpment. Failure to mention connectivity principal to Wet Tropics World Heritage area. Limited time frames of sampling with little or no scientific methodology and no reference to published scientific journal articles. Failure to list all animal species which are likely to occur and which do occur across the common boundary to the national park. Avifaunal and all fauna list is far from comprehensive and not researched correctly.		No	Wet sclerophyll forest is described in Section 4.11.1 of the PER, with potential impacts on this vegetation community and the species it supports discussed in Section 8.10. The PER did not contain a list of all species recorded during field surveys as this was not a requirement of the PER, which is intended to assess those species and communities listed under the EPBC Act only. A full species list was provided in the Ecological Assessment Report that supported the DA application, which has been available through the SARA website for approximately 9 months. The PER lists over 20 pages of published scientific literature in the references list (Section 15).
522	.010	Survey effort	Remnant vegetation fails to mention wet schlerophyl forest and continually incorrectly identifies that forest as an open woodland . Because it has been logged it does not mean the vegetation type changed to open woodland which it is not. Good quality timber was removed resulting in a more open canopy and it is yet to grow back to maturity. Omitted, - impact of 70 metres width of clearing which dissects the wilderness area. No mention of creating an impenetrable barrier to flora and fauna and failure to mention the additional edge affect created. No published research cited in this regard which is available.		No	The Project is not located within the Chalumbin wilderness area and there will be no clearing of wilderness. Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). Wet sclerophyll forest is described and mapped in Section 4.11.1 of the PER. Fragmentation and edge effects (including research published from authors such as Dr William Lawrence, cited in the text) are discussed in the PER.
522	.011	Vegetation clearing	Failure to mention habitat trees with excessive hollows of intrinsic habitat value. Failure to mention the number of these to be removed by the clear felling operation. Failure to mention these mother trees were not suited to logging and were left behind as a consequence. Failure to mention multiple of species of migratory birds protected under Ramsay International Convention. List provided is almost non existent compared to all bird species present. Not mentioned area has one of the highest populations and species diversity of avifauna on the Australian mainland.		No	The importance of trees hollows is discussed in the PER in relation to specific species (e.g. greater glider, masked owl). The Project area does not overlap with any Ramsar Sites. Bird species that are listed as migratory under the EPBC Act are addressed in Section 4.9 and 8.8 of the PER. A full list of bird species recorded during the two years of surveys is provided in Appendix Q (n = 145)
522	.012	Mitigation and management measures	Mentions pushing down habitat trees slowly to reduce impact on species even though you are permanently removing their habitat. Is it possible to be more idiotic?		No	Pushing down habitat trees slowly to reduce impact or "soft felling" is a widely accepted practice to limit injury to fauna within the tree in question. Fauna species collected during clearing will be relocated to suitable adjoining habitat.
522	.013	Project alternatives		Mentions lack of alternative options. However there are tens of thousands of acres of available lands in open woodland and farm areas that are suited to windfarms. Many options exist close to the grid. The scale of this operation means it would be feasible to build a link to the grid over many kilometres. The triple bottom line of planning socio/environmental/economic is ignored and skewed to economics only.	No	The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. Some of these future developments may leverage any transmission line connection that ultimately is constructed to the west, such as CopperString 2.0. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project.
522	.014	Project alternatives	There is no such thing as no action as there are opportunities at cape flattery cooktown lakeland downs etc. These are very high wind speed sites. The mention of coal fired power stations has no merit as the environmental revolution created by Tesla has changed the political/social/environmental/economic politics of the world		No	The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP.
522	.015	Biodiversity general	'Fossil fuel alternatives would contribute to the ongoing acceleration of climate change impacts globally' This is true but this is not an excuse to implement poorly planned corrupt windfarms developed on unsuitable sites where there are many other opportunists close by . The planning must be done smarter and should not be positioned in sites of the nations highest biodiversity. The impact of this development directly impacts a broad range of flora and fauna species and communities. We are loosing the biodiversity under the blade of a bulldozer and not by climate change. The project impact is creating segmentation of an intact wilderness which contradicts what the worlds scientists are trying to achieve.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
579	.008	Adequacy of the PER	I have been involved in the DA and EIS system, reviewing over 200 proposals during a 40-year period and undertaking major land-use studies both before the concept of State Significant Development [and after] began with a project called "MANS" or the major airport needs of Sydney, in mid-1980's. This was a $27m study at the time and contained glaring and substantial errors, from simplistic editorials to significant mistakes surrounding water flows, sedimentation, access issues, population impacts and faunal impacts. Further, I have been a major contributor and responsible for 15 EIS proposals. In this case, the degree of mis-representation, is astounding. From the direct use of materials downloaded from "Dr. Google", without credit: To the non-use of data and flip-flopping of different naming conventions or the misnaming of significant flora groups. At the very least misleading, at worst fraudulent.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. No specific examples are provided by the submitter for the proponent to respond to.
522	.016	Wet sclerophyll forest impacts	Wet scherophyl high conservation value not mentioned, which resides on the Glen Gordon volcanic. Bore holes have suspiciously been drilled and assess groundwater reserves. This is a decoy, there is no groundwater extraction proposed in the development.		No	Wet sclerophyll forest is described in Section 4.11.1 of the PER, with potential impacts on this vegetation community and the species it supports discussed in Section 8.10. The Project has not drilled any boreholes.
579	.009	Project design	Scale on map None given on https://arkenergy.com.au/wind/chalumbin/ or on the flora maps in the appendix. Demonstrates proponents' willingness to deceive. It says: "...The number of turbines has changed by < 10%, which will cause little change to the impact...."		No	Scale bars are provided in the PER maps.
579	.010	Project design	2.Basis for proposal Epuron say: "...44 operational renewable projects in Queensland represent over 5 GW of clean energy capacity....." Chambulin proposal is: "....The Project will be an important part of the future energy generation portfolio within Queensland" These comments are counter intuitive, as the proposal only represents a 602MW nameplate, less than 8% of current operational. A careful look at the expected output [which is not justified in the document], of 1985GW, shows on nameplate: 24/7 per annum is 5085GW, so the proposal is to produce power, on the proponents data, just 39% of the time. In fact, more likely 50% of that, just 29.5% - so a return of just 1000GW/annum, given local low wind flows for the majority of the year.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
579	.011	Project viability	How much do these WRG cost? What's the cost of a wind turbine in 2022? $1,300,000 USD per megawatt. The typical wind turbine is 2-3 MW in power, so most turbines cost in the $2-4 million dollar range. Operation and maintenance runs an additional $42,000-$48,000 per year according to research on wind turbine operational cost. Economic?? Unlikely. A simple "back-of-the-matchbox estimate shows 11.6 years before 'break-even" with NO subsidy. If these were so "economic", breakeven would be much shorter. Simply not worth the environmental vandalism proposed.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
579	.012	Offsets	Offsets are just words. The destruction and dislocation of habitat have still occurred [Kaban example], which is the underlying issue. The comment in the summary is just not supportable, when compared to the map showing location of proposed turbines and the connecting services combined with the industrial devastation proposed. The activities at Kaban show "offsets" that will not achieve the "written word". Chambulin will give us more of the same. This includes 5,700 ha contiguous with the Wet Tropics, protecting the largest patch of intact wet sclerophyll forest adjacent to Tully Falls National Park and improving habitat connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
522	.017	Evaluation of existing environment	Pictures are misleading in an attempt to establish only granitic rock shelves exist throughout the wilderness on open woodland. This is definitely not the case on the eastern extent of the wilderness area.		No	All photos contained within the PER and its various appendices were taken on site. Many photos throughout Section 4 of the PER show examples of habitat types other than granite outcrops. The Project area does not encompass the Chalumbin Wilderness Area and is currently subject to existing disturbances in the form of roads (Glen Gordon Road, Blunder Park Road) and high voltage powerlines. Both host properties have been grazed for approximately 140 years.
579	.013	Cumulative impacts	Additive Effects: There is no proposal for "additive effects", given Kaban, Chalumbin and Fox proposals on flora and fauna, much less visual amenity.		No	Section 5.5 of the PER provides a cumulative impact assessment that considers the cumulative impacts of a number of proposed and committed wind farm projects in the broader region - as required by the PER Guidelines.
522	0.18	Biodiversity general	Not mentioned extremely high monsoonal rainfall along the eastern side of the development, no mention there is a rainfall gradient to the west. No mention of the water holding capacity of basaltic soils present in an extensive area of the impact zone. No mention these soils support massive biomass per given area and offer a dry season reserve for wildlife. No mention proximity and affect on world heritage area as the development windmills are along the park boundary. No mention of habitat trees to be exterminated.		No	Climate, hydrology, soils, geology and groundwater are all outlined in Section 4.1 of the PER. These factors have all been taken into consideration in the development and design stage of the project as demonstrated again in the Preliminary Construction Management Plan and Preliminary ESCP, the Sediment and Erosion Management Plan and the Flood Assessment report located in Appendix I, J & N respectively. The PER provides a full assessment of potential impacts on the world heritage area (Section 8.11); habitat trees are also discussed at length within the report.
579	.014	Rehabilitation	5.REHABILITATION The issue of "rehabilitation" is relied on to support the PER. In fact, NO DEVELOPMENT would require NO REHABILITATION. In any case, this is a long term 20+ year project or is it really only 20 years and no replacement?? OR Is it 30-years. The PER says 30 years, but the 'private meetings' say 20 years. There is no information on this important area, which is typical of the flawed document and proposal. The PER says: "....Rehabilitation would prioritise habitat for key species....." NOT supportable.		No	The project has a life of 30 years but may need to be repowered after 20 years. Refer to the executive summary in the PER.
579	.015	Community consultation	The proposal is to sell out the Ravenshoe community for "a few pieces of silver" and no permanent jobs. The exemplar here is Emerald Hill turbine development, where the maintenance crews come from "offsite". This is a typical situation, where I found in Tenterfield the maintainers came from West Australia. When it comes to community consultation, Epuron uses the same play book as the Kaban proponents: •Don't consult with the locals. •Call meetings and then abandon the meeting, call no further meetings; •Overload the meetings with company personnel. •Only put "spin" articles in the press. •Demonstrate to the community that there is a big car presence. [Visit of premier/ Deputy Premier, but refusal to engage with the community [Threats by security to individuals who were on public land] •Don't establish mailing lists/ mailings for the proposal; •Use a "community committee" with a captive chair, who is compromised due to their work output/direction and •Chair prepared to direct committee to an specific outcome for, so called – community benefits •For bribes to the community to be made $500k/ annum The proponent does not meet at 11.1.1, the IAP2 Framework requirements partially or at all.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. Approximately 15 to 30 full-time jobs will be generated during operation, typically 10 to 20 technicians along with a Project Manager, administration and other support roles. This will include environmental roles on an as-needed basis to assist in operational monitoring.
579	.016	Community consultation	At an Epuron presentation to the Chamber of Commerce, Ravenshoe – there was a question raised about end of project life, and the reply was "....we have an investment partner, and they're not public yet, but hopefully they will be very soon and they're a company that's very big on ESG. And they want to do the right thing. And they for example it's in consultation with them that we are able to offer the community $500,000 per year, because they are going to be paying for that." A comment was made by an attendee, that there should be an open community forum where everybody can attend public meetings, not these private meetings. Epuron's answer was – the community advisory group doesn't work like that. At the private meeting I attended, there was a deliberate attempt to split the community and divert questions.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments.
579	.017	Social impacts	Accommodation: Has become unaffordable or unavailable for both residents and travelers, with ONLY the Kaban devastation currently being active. This situation will only multiply and has been evident in areas eg. Parkes, where a new development puts unsustainable pressures on the local housing stock.		No	At this stage of the project design process, the proponent is considering the requirement and potential locations of a workforce accommodation facility in consultation with relevant stakeholders, including Tablelands Regional Council. Housing affordability is not a matter addressed by the EPBC Act, therefore does not require consideration in the PER. However, as stated in section 5.6.2.3, if an accommodation facility is required, CWF is committed to ensuring that the establishment of the facility will not have an impact on MNES.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
579	.018	Traffic and transport	Effect on current residents: There is scant concern for the local population, the impact of swing blades, noise, disruption to traffic [both daily and by large loads]. The destruction of the Evelyn Road by Kaban traffic is an example, with the locals left with a damaged road particularly between Toumalin and the Kennedy Highway. The Wooroora road is the central access point for south bound traffic. The proposal gives no methodology to prevent non-local [within 25km] from using it to access the proposed area to the south. That a PER says that is what will occur, is no guarantee at all and damage will occur to the area that is unfunded. The PER at P64 says: "...located..... away from higher density populations to the east". In other words, the population at Ravenshoe can put up with the development and won't complain: OR, there will be less complaints by going to that site. Traffic and the integration into daily life means that traffic changes are an important part and impact on a rural community, with little or no access to public transport, having to travel to other centres for services not available locally [within 20km] together with road condition. It impacts safety of travel and broader amenity. Not addressed. That a meeting was called in Innot Hot Springs at very short notice does not allow individuals to voice their concerns. The effect of impacts such as visual and noise are not addressed in full or at all. That other locals, who will be impacted on the inbound Kennedy Highway areas, need to have their concerns heard. There was NO CONTACT of this group of people. This is the modus operandi of Epuron/Ark/ Korea Zinc in their approach. Exclude and say no-one came, so all is OK.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
522	.019	Survey effort	'Rocky pavement' is mentioned repeatedly throughout the documentation as though it is the only vegetation community present. It is an illusion attempt to decoy the readers assessment but is totally incorrect. Surveys conducted introduce bias towards whom is paying whom, the consultant is answerable to Epuron. Thus surveys are not comprehensive, not backed by scientific data, not backed by published science journal articles, conducted on an adhok basis and not comprehensive.		No	This is because there are extensive areas of rocky pavement throughout the Project area and they are a highly specialised, unique habitat type. Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. There is a full list of the published scientific literature available in the reference section of the PER. Consultants were obviously paid to undertake the work but vehemently deny the suggestion that they were "bought".
579	.019	Traffic and transport	Wooroora Road: This road is the proposed access and will carry daily light to middle sized vehicles in massive numbers. For the period prior to commencement and the duration of the project. The road [Wooroora], on my travelling on it over a 3-year period, until I moved further west, never had less than 9 cars passed in the travel from Kookaburra Drive or Binbrook Road to Ravenshoe or on return. The road is designed as a secondary road with a single sealed lane. The local use is not accounted for in the report or the proposals effects on local users and residents. There is no indication of undertakings to repair and maintain with TRC. There is no document to go to the cases of people who will be wedged between two industrial developments – Kaban and Chalumbin and the effects and means to fully ameliorate any effects. That there is no method proposed to have a corrective action for damage repair due to traffic movement over the full life of the proposal. This also resolves to State funded roads. An alternative did not enter the PER, which is the document in front of the public and the Minister. The Innot proposal was much later. Primary route In Appendix R, the report says, bluntly: Primary Local Route Roads Wooroora Rd & Tully Falls Road • Multiple instances of vegetation clearing • Road to be realigned into road corridor • Localised pavement widening • Likely re-sheet of pavement required over unsealed sections of Wooroora Road This proposal would smash down the area and render it to be like any other "industrial" road. It is an 80km/hour zone, with a double white line for most of its length. This increases the viability for it's current use and clearing would remove the ambience of the area irrevocably.		No	As described in Section 1.4 of the PER, the Project has not committed to one access option over the other at this stage; this will largely depend on engineering studies currently underway associated with the structural integrity of the bridge crossing of the Herbert River. Traffic impacts associated with the Project will be managed through a Transport Management Plan and a Traffic Impact Assessment with the buy-in of relevant stakeholders including the Department of Transport and Main Roads and Tablelands Regional Council. Workers travelling to site will be required to abide by strict speed limits in an effort to avoid collisions with wildlife.
579	.020	Noise and vibration	Sound and health effects: No mention of this in the summary document, particularly low-level emissions or locality problems. The proposal does not meet the international sound requirements, particularly for "quiet enjoyment". Not demonstrated by the proponent.		No	A noise impact assessment is required in accordance with the Queensland Planning Act 2016 - State Code 23. The State Code prescribes noise limits for sensitive receptors, including dwellings, that must be met during operation of the wind farm. The project was approved by the State government in June 2022 subject to conditions of approval, including conditions that noise during construction must meet limits prescribed in the Environmental Protection (Noise) Policy 2019.
579	.021	Noise and vibration	Effect of sound There is a recent Court determination at Bald Hills – East Gippsland, which has turbines being directed to be "turned off" at night to reduce sound impacts. http://www.austlii.edu.au/cgi-bin/viewdoc/au/cases/vic/VSC/2022/145.html A current case is being made in Cairns Supreme Court against Emerald Creek, specifically as to sound effects and to the land/ property values. http://www.austlii.edu.au/cgi- bin/viewdoc/au/cases/qld/QSC/2022/54.html?context=1;query=wind%20farm;mask_path=au/ cases/qld/QSC Thorne (sub 155 – senate enquiry 2015): There is significant body of peer-reviewed research readily available in the public forum to substantiate the potential for serious to moderate adverse health effects to individuals due to wind farm activity noise while living in their residences and while working on their farms near large-scale wind farms or large turbines. Adverse health effects can arise from extreme psychological stress from environmental noise, particularly low frequency noise with symptoms of sleep disturbance, headache, tinnitus, ear pressure, dizziness, vertigo, nausea, visual blurring, tachycardia, irritability, problems with concentration and memory, and panic attack episodes associated with such sensations when awake or asleep.		No	A noise impact assessment is required in accordance with the Queensland Planning Act 2016 - State Code 23. The State Code prescribes noise limits for sensitive receptors, including dwellings, that must be met during operation of the wind farm. The project was approved by the State government in June 2022 subject to conditions of approval, including conditions that noise during construction must meet limits prescribed in the Environmental Protection (Noise) Policy 2019.
522	.020	Survey effort	Noted Prostanthera clotteniana, Triplarina nitchaga, Litoria dayi are only 3 chosen flora species of a possible 3000 species. Extremely coincidental that these have all been discovered just outside the impact zone. Would you be able to explain that in the Land and Environment Court to the defence barrister? There is no mention of variance in time and space , the affect of fire regime in the wilderness area, no leaf litter sampling. The species surveyed has been done on an ad-hok basis . It was not a professional transect approach to sampling and needs to be redone.	Surveys should be redone	No	The Project footprint has been specifically designed to avoid all known populations of the listed threatened plant species, it is not at all coincidental and yes, we would be able to explain this in the Land and Environment Court. Protected plants surveys followed the very specific requirements of the Flora Survey Guidelines – Protected Plants (DES, 2020). Pre-clearance surveys in areas of potential habitat will be undertaken prior to construction to confirm absence from the Project footprint. In the unlikely event that individuals are observed within the Project footprint, micrositing and redesign actions will be explored in preference to impacting the species.
522	.021	Survey effort	Primitive minute sample of a few species of birds that are actually present. It is an illusion that there are no other species present even though the species diversity will be in the hundreds of species. The hundreds osf species have been omitted.		No	Bird surveys undertaken to date amount to a total effort to date (as at January 2023) of 530 person-hours and are still ongoing. As stated in Appendix Q of the PER, 140 bird species have been recorded across the project area.
579	.022	Noise and vibration	I note that: "Until the recommended studies are completed, developers and planning authorities will be negligent if human health is damaged as a result of their proceeding with, or allowing to proceed, further construction and approvals of turbines within 10km of homes. It is our advice that proceeding otherwise will result in serious harm to human health. We remind those in positions of responsibility for the engineering, investment and planning decisions about project and turbine siting that their primary responsibility is to ensure that developments cause no harm to adjacent residents; and, if there is possibility of any such harm, then the project should be re-engineered or cancelled. To ignore existing evidence by continuing the current practice of siting turbines close to homes is to run the dangerous risk of breaching a fundamental duty of care, thus attracting grave liability."		No	A noise impact assessment is required in accordance with the Queensland Planning Act 2016 - State Code 23. The State Code prescribes noise limits for sensitive receptors, including dwellings, that must be met during operation of the wind farm. The project was approved by the State government in June 2022 subject to conditions of approval, including conditions that noise during construction must meet limits prescribed in the Environmental Protection (Noise) Policy 2019.
579	.023	Noise and vibration	Meeting Approvals: The wind farm must meet the noise conditions as stated and that the noise levels include all other sources of noise. That is, even if the wind farm is quieter than the specified noise levels it could still be non-compliant if ambient (non-turbine) noise levels "push" the overall noise levels above the criteria. (Thorne R. sub 154) However, affected residents have little opportunity to gain redress because: 1.There is no compliance mechanism. 2.There is no complaints mechanism. 3.There is no practical way for anyone to challenge noise exceedances, or adverse effects on wellbeing through sleep disturbance. Wind farms characteristically have low frequency and infrasound issues. The proposal does not lead to proper conditions being raised. The PER does not address infrasound and there is no way to ensure that only wind farm low frequency noise is being assessed. Minister, there must be a means where there is proper financial redress Where I am located, we are to the south of Kaban [< 2.5km] and if the proposal for Chambulin gets legs, <3km. So will be midway between the two turbine groups. Ability to resell Limited to NONE at regional prices		No	A noise impact assessment is required in accordance with the Queensland Planning Act 2016 - State Code 23. The State Code prescribes noise limits for sensitive receptors, including dwellings, that must be met during operation of the wind farm. The project was approved by the State government in June 2022 subject to conditions of approval, including conditions that noise during construction must meet limits prescribed in the Environmental Protection (Noise) Policy 2019.
522	.021	Biodiversity general	Full range of species are not assessed and or omitted. Large ear horseshoe bat is spoken about which likely range may not be in the study area, what about the other species likely to occur onsite, omitted information I suppose. Kaola, Northern bettong, northern greater glider. Direct impact and the precautionary principal should be implemented as they will be there, even though the consultant deems it not present in the wilderness area.		No	Section 4 of the PER describes the species that have been recorded or are considered likely to reside within the Project area. Northern greater gliders were recorded during field surveys and are discussed in Section 4.7.7. Northern bettong are widely accepted to be locally-extinct in this area, and were not recorded in the Project area. Koala were not recorded but have been assumed present.

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579	.024	Project proponent	Get out of Jail Free card: The main PER says: The information contained in this document produced by Attexo Group Pty Ltd is solely for the use of the Client identified on the cover sheet for the purpose for which it has been prepared and Attexo Group Pty Ltd undertakes no duty to or accepts any responsibility to any third party who may rely upon this document. Which is a complete "get out of jail card" for the developer and the documents for the proponent. It allows the proponent to essentially, do anything it wants once it gets approval. Further, there is NO punitive effect or "risk" attributed to the proposal There are NO constraints or losses OR major fines for not keeping to an approved proposal. However, the requirements for a PER and site assessment include: The PER must contain a description of the existing environment of the proposed action area and the surrounding areas that may be affected by the action. This is NOT the case, for the Chambulin proposal.		No	The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. The Project owner will be bound to comply with any EPBC Act approval conditions. The submitter identifies a standard consulting report disclaimer.
579	.025	Evaluation of existing environment	Soils Soils are dealt with in a 1/3-page, with the descriptions not being accurately carried into the document proper. There is no use of the local mapping carried out in the area, which gives the erosion risk and soil/sediment loss rates. Local published data has rates from 3tonnes/ha upto 300tonnes/ha. The Kaban site had works commencing before protective works were in place. I see no means in place, Minister, to prevent this with Chalumbin.		No	The soils are presented on 7 pages in the Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER where the best available soils mapping and local soil types are presented along an erosion risk assessment (Section 3.3 - Appendix J) with the topsoil and subsoil characteristics such as % clay, % silt and sodicity. The majority of the Project footprint is mapped by the soil survey titled Land resources of the Ravenshoe – Mt Garnet area north Queensland Vol 1 – Land resource inventory (Heiner and Grundy 1994) at a scale of 1:100,000. The soil loss rates have been calculated using the best available data at a landscape scale and included the use of rainfall erosivity (EI30) from historic daily rainfall data from the project area to model the impact of high intensity rainfall. The project is not the Kaban site and there has been a far more detailed assessment of erosion risk and the project has committed to not undertaking any ground disturbance works during January to March which Kaban did not.
522	.022	Indigenous Cultural Heritage / Engagement	Refers to assessment of canopy closure. There is no mention of hunting grounds and the cultural heritage sites of the Girbal Aboriginal community. When these peoples were forcefully removed from country post ww11 open country existed of numerous hunting grounds. There are many of the Girbal aboriginal community cultural heritage sites which will be directly impacted by this development. Yet they have not been included in the proposed development.		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
579	.026	Evaluation of existing environment	Flora No proper assessment of the protective margin of the rainforest [support flora] and misnaming conventions. Fauna No proper assessment of the effect of the proposal on migratory birds as related to the WR-DR- WS-F continuum and these species and other species eg. Cranes, which frequent these paths.		No	Vegetation communities have followed the relevant State and Federal naming conventions. In the absence of a specific example for this claim, it is not possible to provide a more specific response. Extensive season bird utilisation surveys have been undertaken throughout the Project area (and will continue to be undertaken) as reported in Appendix Q of the PER. This naturally includes migratory birds, irrespective of whether they are listed under the EPBC Act (noting that the entire purpose of the PER is to address the requirements of this Act). Sarus cranes (not listed as either threatened or migratory under the EPBC Act) have not been recorded within the Project area in 2 years of surveys, which is unsurprising as the Project area does not comprise their preferred habitat. This species has been observed in large flocks on the adjacent cotton fields, foraging in ideal conditions. The surveys have not recorded a single crane over-flying the Project area on their migration back to the Atherton Tablelands KBA which would suggest that the Project area does not overlap with their primary pathway.
500b	.001	Opposition to project	The EPBC Act Protects, matters of national environmental significance and the Proposed Chalumbin Windfarm will have a massive environmental and social impact on: World Heritage Wet Tropics; National Heritage Places, including Cultural Heritage sacred sites; nationally threatened species; the Great Barrier Reef; migratory species; the environment, where actions proposed are on, or will affect Commonwealth land and a severe social negative impact on the community. The Department of Environment have a "Duty of Care" to Protect Natural Heritage. No amount of planning will compensate the destruction of High Biodiverse remanent Wet & Dry Sclerophyll forests bordering World Heritage Wet Tropics, Herbert River Catchment area pollution and erosion flowing into the Great Barrier Reef. Threatened Endangered Flora & Fauna are at risk of Extinction. Chalumbin is the wrong site for a wind farm, wind farms only lasts 25 years, forest REGENERATE for 1000's of years. Cutting down trees is NOT 'GREEN' and the proposed Chalumbin wind farm will only add to climate change. Ravenshoe is a small country town and I want it to remain this way and for it not to become industrialised. I have witnessed the destruction with the Kaban wind farm and the ugliness of the massive turbines on the skyline which have already ruined the natural beauty of the area. I say NO to Chalumbin wind farm, I do not consent to be assaulted by Electrical and Magnetic Frequency Emissions from wind turbines.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
579	.027	Opposition to project	Management and words FIX ALL: The summary document is not sustainable, compared to the documents proposed industrial destruction of habitat and the biosphere. The PER says "…Avoiding and minimising impacts to local flora and fauna is a priority for this project. Increasing renewable energy capacity and biodiversity conservation are both critically important and compatible objectives, it just requires careful planning and management, and the right approach. Chalumbin Wind Farm is committed to working with ecology specialists and local knowledge holders to achieve a net positive outcome for biodiversity in the project area over the longer term…." This does NOT meet the requirements of the PER report and process. This is a blatant attempt to fool people who have no understanding of the process, much less the technical language used. In the PER at P2, Epuron/Ark/Korea Zinc say: "The PER should enable interested stakeholders and the Minister to understand the environmental consequences of the proposed development. Information provided in the PER should be objective, clear, and succinct and, where appropriate, be supported by maps, plans, diagrams, or other descriptive detail. The body of the PER is to be written in a clear and concise style that is easily understood by the general reader. Technical jargon should be avoided wherever possible. Cross-referencing should be used to avoid unnecessary duplication of text but must be specific. The PER does not follow this "objective", but is inconcise, misleading, does not justify the environmental consequences or a clear style used. It is pompous, bloated and difficult to follow for the reader, requiring a high level of technical skill. The summary document is NOT a summary, but a blatant coverup of a flawed investigative process set to come to a specific end and support of the proposal. PLEASE Minister, do not approve this.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines.
527	.028	Project design	14.Number of Turbines: The proposal has had a large number removed from the original proposal [200]. The original proposal would have been based on an economic assessment and numbers proposed reflect this original economic assessment. Economics: This is now 86 turbines. IS the proposal economic? Guided by the results of the ecology work and input from Traditional Owners, the community and local stakeholders, 114 wind turbines have been removed from an initial layout of 200, to address concerns and reduce impacts. Ecology -Fact Sheet. The project area involves two cattle grazing properties south of Ravenshoe. They include remnant vegetation and disturbed areas from access roads and transmission lines that traverse the site (pictures below). The project does not involve any rainforest, or the Wet Tropics of Queensland World Heritage Area, or Chalumbin Hill and the wilderness area known as Chalumbin. The statement above is unable to be supported, as there is no discussion of the gradation that occurs from Rainforest to Dry Rainforest/Vine Forest to Wet sclerophyll to Dry sclerophyll to Savannah [WR-DR-WS-F]. This is a continuum of flora and related fauna, which is a dynamic feature and is moving westward. See PER and Rainforest below.		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life. It is contended by the proponent that no rainforest habitat, WTQWHA or the area known as Chalumbin Hill will be directly impacted by the Project.
579	.028	Erosion and sedimentation	Alternate site The PER does not reasonably assess an alternate site, but is dismissive of it at P65 of the PER: Considering the driver of proximity to existing grid infrastructure, it is considered that the alternative location should be assessed within the Einasleigh Uplands Bioregion. IN fact: The proposed site has a high to extreme sediment load RISK and all the site drains to the Herbert River and GBR [Great Barrier Reef] There is NO discussion of this in the PER at all. In fact sediment loads are extreme and could reach over 200 tonnes sediment/ha/annum from disturbed areas. In fact, the generation of sediment from 1071 ha of disturbance is: At just 100 tonnes/ ha, given that the local mapping shows a range from This demonstrates that the company has a set objective and, no matter what, will not deviate from these specific outcomes.		No	Feasible alternatives are discussed in Section 3.0 of the PER. A Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER undertakes a detailed assessment of the soil erosion risk where the local climatic, soil and topography factors have been considered.

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579	.029	Project design	Changes to proposal: The table above infers that there will be (refer to tables in full submission): •A 90% effective reduction in the construction footprint due to "revegetation"; •The access tracks and the internal overhead transmission lines do not agree; •Clearing and construction footprint do not agree Misleading and is improperly used as a key explanator for the proposal.		No	The changes made to the Project have been assessed via GIS tools to ensure the proper calculations of operational and construction related footprints are determined.
579	.030	Adequacy of the PER	Fails to meet requirements of the EPBC Act In the referral under the EPBC Act, Epuron/Ark/Korea Zinc says: "The Project area comprises the Glen Gordon (11,500 ha) and Wooroora (20,300 ha) properties located approximately 15km south-west of the township of Ravenshoe in Queensland, within the Tablelands Regional Council Local Government Area. The two properties are managed for cattle grazing and have similar landform attributes consisting of steep and hilly terrain(700-1,000 m) with relatively flat grazing land leading up to ridgelines. The Project area is located along the boundary between the Wet Tropics bioregion (to the east) and the Einasleigh Uplands bioregion (to the west). The eastern and southern parts of the Project area are within the Kirrima- Hinchinbrook sub-bioregion(7.6) and the north-western part is within ???" [Not defined by proponent] "Under the Planning Regulation 2017, the clearing of native vegetation associated with the Project is not "exempt clearing work" or "accepted development" hence an OPW permit assessed under State Code 16 is required……" Further, any claims made (e.g. regarding the presence/absence of protected matters) need to be adequately justified and supported with evidence. "……..as set out in the EPBC Act and Regulations" Minister, these claims are not made out by the proponent.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. Section 4.1.3 of the PER states that "the north-western part is within the Herberton-Wairuna sub-bioregion (9.6)." A permit for the project has been issued under the Planning Act 2016 for operational work that is clearing of native vegetation.
579	.031	Alignment with government policy	Threatened Species Strategy The current proposal by Korea Zinc/ Ark/ Epuron has not taken into account the current Threatened Species Strategy [2022] In the strategy, it says in part: The Threatened Species Action Plan maps a pathway to recovery for our nation's threatened wildlife, spanning terrestrial, marine and freshwater environments. It presents a vision to drive practical on-ground efforts and identifies critical action for the recovery of threatened species and ecological communities guided by experts and the Australian Public. Also: "We all benefit from our natural environment and we all have a role to play in its conservation. Sustainable development is a shared opportunity and responsibility: it will fail if left to governments alone. To make our actions effective and sustainable, we partner and coordinate with community, scientists and other researchers, non-government organisations (big and small), state and territory governments, regional NRM organisations, local Landcare groups, local government and the business sector. Only by working together can we effectively prioritise and maximise resources to protect threatened species. A partnership approach between all of these groups gives us the best chance to achieve positive results for threatened species…." It is obvious that there is no strategy presented by Korea Zinc/ Ark/ Epuron, to meet the Australia wide strategy.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The proponent has worked with, and will continue to work with, community groups, NGOs, regulators, NRM bodies, local government and the corporate sector to achieve fit-for-purpose and industry-leading outcomes on this Project. It is the intention of the Project to utilise local knowledge in much of the land management and rehabilitation activities associated with the Project.
579	.032	MNES	Further, the proposal in the PER by Epuron/ Ark/ Korea Zinc does not properly deal with the following matters, as allowed for in the Threatened Species Strategy: Emergency intervention to avert extinctions At times, species may be pushed dangerously close to extinction or face significant impacts within a short timeframe. A combination of introduced threats and environmental factors can significantly increase the risk of extinction and we must be quick to respond. In these situations, the Australian Government may need to redirect resources and efforts to stabilise and recover the species. This Action Plan is thus intentionally flexible and responsive to such changes. In the Chalumbin case, there are flora and fauna impacts, as the area lies beside the Wet Tropics World Heritage area and the proposal is a significant threat to the region, which, despite the PER proposals, is unlikely to be sufficient to avert significant damage. I believe that the precautionary principle should be invoked, and the proposal refused. Further, the proposals further south in the Upper Burdekin as the lands are in a major bird migratory zone and have a lot of similar characteristics, should also be refused as there is a cumulative impact from Mt. Emerald to south of Mt. Fox. Minister, I call on you to use your ability to avert fauna and flora extinctions in the this and refuse the cumulative proposals as detailed.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
579	.033	Erosion and sedimentation	Soils and Geology A mere 1/3 page is used to "describe" the major site resource and in reverse, major limitation. A straight "Dr. Google" take and insert. The names used are not repeated as to limitations in sufficient detail for the reader to conclude there is a serious site limitation. Erosion Management Plan The report, in the appendices, goes on the link management to a site Erosion management plan and does not even bother to give method of application, except to pass off the management of soil movement etc. to a mythical "on-site manager and an unsupervised plan. The reality of the soils [and concurrently, the rock pavements] is the interaction of the local high rainfall, high erosivity rainfall rates and soil loss. These from existing mapping are from <5T/ha/annum to over 300t/ha/annum.		No	Refer to Soils - Submission response number 579.025. A Preliminary Erosion and Sediment Control Plan contained in Appendix I of the PER establishes the baseline requirements for soil Erosion and Sediment Control (ESC) to be applied throughout Project construction works. The construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site.
579	.034	Erosion and sedimentation	Uncontrolled soil and sediment Loss The following mapping shows the level of soil loss on the site. There is no mention of soil erosion losses from the site or any state-of-the-art methodology for control. From the soil erodibility map, a range of soils are intersected. These have from low to high erodibility. At the low end, these range locally from low soil loss < 10 tonnes/ha/annum to extreme loss rates of >300tonnes/ha/annum. This does not include non-agricultural lands, which, where steep slopes occur have erodibility expected of up to 300 tonnes/ha/annum. Using the proponents 1000 ha footprint [maybe up to 2000 ha], there is a range of: AND: 10,000 tonnes sediment/ha at the low end 300,000 tonnes sediment produced. Regardless, there is a serious impact likely to the GBR and localised destruction of habitat. This is a high rainfall, high intensity zone [rainfall from 1.2 m to over 2.0 metres].		No	An assessment of slopes and soil types are contained in the Preliminary Erosion and Sediment Control Plan (Section 4.4.2 Appendix I of the PER). The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs will be used during the construction phase of the project that assess the site specific risk and develop detailed ESC measures to minimise erosion and maximise sediment retention on site. Year round construction is standard practice, however the project has committed to shutting down for January - March which historically has the highest potential for large high intensity rainfall events. The potential for high intensity storms to occur during the dry season (or at any time of the year) are discussed in Section 2.2.2 of Appendix J. A 'worst-case' scenario has been discussed in this section and presented in Table 2-11 comparing the net sediment loss during the highest daily dry season rainfall event during the last 10 years compared to the net sediment loss over a 2 month construction period. It is important to note that the project will plan the construction activities based on risk and will be undertaking progressive rehabilitation during construction to limit the total disturbed area at any one time. Road maintenance has been included in the discussion, but erosion has not specifically been calculated for this activity due to unknown variables such as frequency of maintenance. Climate change has been discussed in Section 2.3 of Appendix J. The project area is currently grazing land and the assumptions at a landscape scale are appropriate. The way in which gravel and forest provide erosion protection are not exactly the same but both are effective at reducing erosion. The modelling has been through a peer / technical review process. Detailed assessment of the soil erosion risk and the local climatic, soil and topography factors have been considered in detail in Appendix J of the PER. The project will not undertake any ground disturbance works during January to March in response to this analysis and it has highlighted the importance of strong planning and detailed site-based Erosion and Sediment Control Plans to be used during the construction of the project.
588	.001	Opposition to project	Refer to submission 21		No	Refer to response to submission 21
579	.035	Erosion and sedimentation	Land capability and erosion potential (refer to diagrams/maps within full submission) A comment by A. Russo, a senior company man, was that fill batters will be 1:2 [45-degrees] – All this would do is increase site soil losses and sedimentation into the Herbert River via it's tributaries. The diagram below is an approximate overlay of the turbine proposal over the local land capability map. The land impacted conforms with the soil loss data.		No	Batters at a 1:2 slope have the potential to reduce erosion with less surface area exposed to rainfall impact and less area for concentrated runoff to form resulting in less erosion compared to flatter batters. Final batter slope specifications (following site and geotechnical assessments) and erosion and sediment control methods will be developed during the detailed design phase of the project. Where topsoiling and revegetation of batter slopes is the preferred option batters will be laid-back at a slope closer to 1:4 depending on the site and characteristics of the soil to ensure long term stability.
19b	.001	Opposition to project	As per submission 69a		No	See response to Submission 69a.

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19c	.001	Opposition to project	THE production and installation of wind turbines has an actually bigger carbon footprint than coal burning when one takes in the consideration of how many you to need produce equivalent power. The irreparable destruction of environment is mind blowing. How can a sane person justify this development other than personal gain of money and notoriety. The public peasants have been conned to believe this is clean energy. The "assault" of electrical radiation against humans is a crimminal act. The wiping out of 'Koala" habitat is also a crimminal act as they are now on " the endangered species list". The environmental damage is staring you in the face now with the "Kaban windfarm" now operational wiping out habit"eg.birds, koalas and frogs, the list goes on. The waterways are getting polluted from the start of the wet season with little or no sediment control. The lies of any environmental care are blatantly there for the world to see. How can our government promote and profit from this environmental damage and say that they represent the future of this country. So many proven alternate energy options are available that are not full of corruption to make a few people rich. The time to save what we have left of environment is NOW> not in 5/10 /20-year plans. Wake up Pilbershack "minister for environment [apparently]" and do what you proclaim. Save the destruction or are you another lying corrupt politician stuffing your pocket and business associates bank accounts with blood money. I am one of the peasants of the world trying to have a voice to stop you greedy self-centered people from destroying the planet for short term gain. Your governments have made submissions to very difficult for ordinary people to object as every article in the Public environment report must be individually addressed. More proof of your corruption to deceive the public and destroy what is left of our world to feather your nest and your corrupt overseas investors, selling out our country with no thought of future generations. If this government approves this development of " Chambulan winfarm" and others in untouched environments I hope the public will riot build gallows and hang you all because your lives are obvoiusly as worthless as the wildlife, clean water, trees, soil biodiversity and offshore reefs that you are happy to destroy. WAKE UP AND STOP THIS MADDNESS!!!!!!! Tim Henny. "Concerned citizen and peasant of the world.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
97c	.001	N/A to PER matters	This submission is to express concern at the damage to biodiversity and to some endangered species, represented by the proposed Chalumbin Wind Farm. My source for ecological and technical information is the document "Summary of draft public environment report - Chalumbin wind farm". The thoughts expressed here are my personal reactions S a 77 year- old outdoors-loving Queenslander to the proposed wind farm.		No	Noted.
97c	.002	MNES	My concern is based on the neutral values threatened by this proposal. Threatened ecological communities are Mabi forest and Broad leaf tea-tree forest. There are 18 listed threatened species. Some examples are North Queensland lace, magnificent brood frog, mountain mistfog, masked owl, red goshawk and ghost bat. All contribute to the unique and irreplaceable North Queensland Wet Tropics.		No	The likelihood of whether an EPBC-listed ecological community is present or has the potential to be present at a particular site is based on an assessment of how an area meets the listing description, key diagnostic characteristics and condition thresholds of the national ecological community (as described in Section 4.3.2.1) (TSSC 2012a). As expressed within the Project Area Habitat Assessment of the Mabi Forest TEC (see Section 4.3.1.4 of the PER), the community was listed in the PMST (see Appendix B of the PER) as likely to occur within the Project area. The Recovery Plan for Mabi Forest (Latch 2008) does not indicate any known patches of remnant Mabi Forest within the Project area, nor does the mapped pre-clearing extent of this community appear to extend as far south as the Project area. Vegetation surveys undertaken to ground-truth REs within the Project area did not confirm the presence of the Mabi Forest community (nor either of the constituent REs) and it is therefore considered that there is no Mabi Forest TEC within the Project area. Surveys to identify patches of broad leaf tea-tree woodland TEC within the Project area were undertaken in October 2020, as described in Section 4.2.2.2 or the PER. The broad leaf tea-tree woodland TEC was listed in the PMST (Appendix B) as likely to occur within the Project area. The TEC broadly corresponds with RE 7.3.8 and the vegetation mapping undertaken as a result of Project surveys identified two patches of this community, which had been mapped as non-remnant by DoR (Figure 4-12). These patches did not meet the diagnostic characteristics of the TEC as in both cases the canopy was dominated by Eucalyptus lockyeri, with Melaleuca viridiflora only present in the T2 layer. It is therefore considered that there is no broad leaf tea-tree woodland TEC within the Project area. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER, this has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts.
97c	.003	Biodiversity general	Apart from their intrinsic value in the ecology of the region, including the adjacent Wet Tropics World Heritage Area, the entire ecosystem forms part of a nature tourism economy which will be jeopardised by the imposition of this ugly and destructive project.		No	This submission has been noted. The Landscape and Visual Impact Assessment provided in Appendix M assesses the impact to the tourism values on the WTWHA and has identified the effects as not significant.
97c	.004	Emissions	The need for wind farms like this one, is to provide electricity with zero CO2 emissions, although that statement can be questioned if we include the entire life cycle of the wind farm. Nonetheless, a solution exists that fits the engineering need to provide baseload power with no CO2 emissions, and can be placed on the existing grid. This saves grid extension with associated environmental damage and high costs. This solution is modular nuclear power. Given out political environment, this logical solution may not be available.		No	The GHG emissions assessment presented in Section 13.2 of the PER was prepared by James Bailey and Associates, a recognised and experienced consultancy in GHG emissions assessments. The Project is one of many renewable energy projects (of many types) proposed in Australia and - rather than intending to provide electricity with zero emissions - is intended to contribute to decarbonisation of the local, regional, State, national and global economies. Nuclear energy projects are not permitted under the EPBC Act (s140A).
97c	.005	Project location	An option vastly preferable to Chalumbin Wind Farm, is to locate a wind farm somewhere in the extensive grassland areas north of Bowen and outside of Gladstone and Rockhampton population areas. These areas avoid impacting MNES. They would have little impact on tourism which relies on environmental values. And they would benefit from average wind speed on month to month basis up to double that of Ravenshoe		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. It is contended that there are numerous proposed projects in the vicinity of the area described by the submitter; however, these areas are not characterised by extensive grassland communities as suggested.
311	.001	Opposition to project	As per Submission 21.		No	As per response to Submission 21.
311	.002	Visual impacts	The red light around me backyard is very disturbing. More native animals are escaping to our backyard.		No	It is not clear what this submission is referring to with regard to red light within their backyard.
591	.001	N/A to PER matters	Dear Minister, I am writing to you in my capacity as both a practicing environmental scientist and a former Branch Head (2005-2012: Environmental Research Institute of the Supervising Scientist) in the Department of Environment to express my concern about the Chalumbin Wind Farm PER that is currently in its public comment phase. The proponent is currently placing full page advertisements in local (Atherton Tablelands Region North Queensland) newspapers with the sentence: "Comments in support of the project benefits outlined in the Draft PER can be submitted via….." (Mareeba Express14-12-22 Copy attached).		No	Noted. This was an effort to advertise the benefits of the Project, as described in Section 11.0 of the PER.
591	.002	N/A to PER matters	Irrespective of the merits of the case this statement appears to imply that only statements in supportof the project should be submitted to the proponent. This approach is contrary to not only the spiritbut the legal intent of the process, and has the potential to distort the execution of due process byovertly soliciting only positive comment. Indeed, one step further it could potentially be that theproponent will only include positive comment in its response to the Department. This would clearlynot be following due process if it was to occur.I am drawing this matter to your attention in the context of the response that will be made from theproponent to the Department after the end of the public response period.Respectfully yoursDr David Jones		No	The process established under the EPBC Act, requires the proponent to take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. These must be included in the finalised PER for submission to the Minister. All submissions to the PER that have been received by CWF within the comment period have been logged, summarised and addressed as part of finalising the PER.
593	.001	Biodiversity general	To Whom It May Concern at Ark Energy I have visited the Atherton Tablelands this in October this year and I'm intrigued by it's natural beauty and biodiversity. I have a great interest to conserve it that way for our grandchildren's sake (they are Australians, I am German).I refer to: https://arkenergy.com.au/news/2021/7/12/323-epbc-act-referral-documentation/.Your Chalumbin Wind Farm proposal poses several questions, one of them being: Are you not aware of the many vulnerable and endangered species and the communities living in the area of Chalumbin that is surrounded by National Parks, Forest Reserve and State Forest?!		No	Please refer to the entire PER.
593	.002	MNES	I am talking about- Critically endangered species (Northern Greater Glider),- Endangered species (Yellow-bellied glider, Red Goshawk, Koala),- Vulnerable species (Magnifcent Broodfrog, Red Goshawk, Northern Greater Glider),- Migratory species (Sarus Cranes – globally threatened),last but not least- Ignoring the vital interests of the endangered local Jirrabal community, the custodians of this land (seehttps://stopchalumbinwindfarm.com/traditional-custodians)		No	The northern greater glider is listed as Vulnerable (not critically endangered) and the sarus crane is not listed as migratory under the EPBC Act. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. Indeed, some studies (such as magnificent brood frog and bird utilisation surveys) are ongoing. The surveys were undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER, including with respect to their duration and timing. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact assessment as outlined in Section 5.0 of the PER. This has been used to inform a suite of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna. When these are unavoidable significant offsets and site rehabilitation (as outlined in Appendix K) are to be provided to mitigate these impacts. In terms of Indigenous engagement the registered Native Title claimants have been supportive of the project and are involved in the process as outlined in Section 11.6 of the PER.
593	.003	Contamination	As a scientist and lover of nature myself, I have taken a great interest in Professor Ian Plimer's work over the years. Ian Plimer is a prominent Australian Geologist and former professor of Mining Geology at the University of Adelaide, Emeritus Professor of Earth Sciences at the University of Melbourne. He is addressing clearly the dangers of blindly and mindlessly installing windmills in his recent video: https://rumble.com/v1o1pq2-professor-ian-plimer-renowned-australian-geologist-discusses-real-scienceb.html.He emphasizes very clearly when he says:"40% of the epoxy that is used in the laminated blades is made of a chemical called Bisphenol A. Bisphenol A is extraordinary toxic. It's banned in many countries in the world. We cannot recycle those turbine blades. We loose about 2.5g of Bisphenol A every year from a blade. We only need 1g of Bisphenol A and we have destroyed 10 million liters of water. Over the life of a turbine blade, we destroyed half a trillion liters of water by contaminating it with this high toxin. We cannot recycle these blades. No third world country any longer will take them. We cut them up, put them in soils and substance Bisphenol A leaks out into the soils and waterways."		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
593	.004	Opposition to project	My summary: I'm sure looking at the EPBC Act 1994 it will have no leg to stand on, because this project does not do justice to the epochal problems in this area regarding interaction between the environment conservation and energy supply that have to be solved. Your proposal must be rejected with all clarity because it would have devastating consequences if implemented - for the fora, fauna and for the survival of the people of the Atherton Tablelands.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
595	.001	Opposition to project	As per Submission 408	Response as per Submission 408.	No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
595	.002	Project viability	See full submission for Table 1 - Proposed Wind Project comparison with Current Liddell Operation the capacity of the wind works is not equivalent to a similar base-load power plant e.g. the 602MW capacity for the wind project equates to only about a 200MW capacity of a base-load power station. Is it not misleading to pretend that the nameplate capacity is equivalent to base-load alternatives? 2. it is even more evident that the intermittent output of the wind works (1,985GWh) is much less than an equivalent 24/7 base-load power plant (3,000GWh based on Liddell's output). AGL's proposed modern 250MW dual fuel CCGT would provide over 1,971GWh at a cost of $400 million and would connect to the existing Liddell transmission, thus avoiding the additional backup generation and storage, etc. required for this wind works project. Surely, this is a cheaper and less environmentally damaging proposition? 3. the wind works capacity factor (37.6%) is vastly inferior to even a 50 years old based load power station (54.4%) that is constrained by regulation when it can generate electricity; modern base-load power stations have capacity factors above 90%, much lower emissions and provide low cost electricity on demand. [capacity factor is the ratio of actual or estimated output to the potential 24/7 output over a year based on the stated maximum capacity of the power plant]. Is it not misleading to pretend that the project generation would be remotely equivalent to base-load alternatives?		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
606	.001	Opposition to project	1 - The TWN acknowledge the need for renewable energy, but projects need to be in the right place given the large footprint of renewable energy projects, whether wind or solar.		No	As discussed in the PER, the project would have a total nameplate wind farm generating capacity of 602MW and contribute to the Queensland Government's target of 70% renewable energy by 2032 and 80% by 2035. The Queensland Government identified the Northern Renewable Energy Zone which has been selected because of the suitability for renewable energy projects, including a high wind resource.
606	.002	Biodiversity general	6 - The project does not respect the necessary 5 km for the breeding of brolgas and sarus cranes. This lack of respect for essential breeding buffers reinforces a precedent in Western Victoria where transmission lines and turbine locations are within 5 km of nesting sites. Although the birds may be present and even nesting, the wind farm infrastructure prevents the young's successful breeding and maturation. Any turbines or infrastructure should not be located within 5km of breeding sites.		No	Brolgas and sarus cranes are not listed as either threatened or migratory under the EPBC Act. They are also not listed as threatened species under the Queensland NC Act. In two years of regular, seasonal bird surveys, neither species has been recorded within or flying over the Project area. The Sarus crane breeds primarily on remote pastoral land in northern Queensland but, along with brolgas, migrates 500km to spend the dry, non-breeding season on the Atherton Tablelands (Nevard et al 2019).
606	.003	Construction impacts	2 - Installation and maintenance of wind turbines require extensive road access. The biggest cause of loss of biodiversity is the fragmentation of habitat. Road networks are a major cause of the fragmentation of habitat. 3 - Roads are vectors for feral and weed species. 9 - Installation of the wind turbines and the ongoing maintenance will damage water flows over the landscape and waterways.		No	Access roads will be rehabilitated following construction of the project to minimise the potential impacts of fragmentation of habitat. This is further discussed in section 5.2.2 of the PER. Weed and pest control measures will be established and implemented across the site and carried through during the operation of the project. Appropriate vehicle washdown procedures will be implemented during maintenance. Potential impacts to water quality will be managed through erosion and sedimentation controls as per the preliminary Erosion and Sediment Control Plan (Appendix I) and Sediment and Erosion Management Plan (Appendix J).
606	.004	Erosion and sedimentation	5 - Erosion and sedimentation are significant issues for landscapes and coastal waters across Australia. The TWN does not consider that in this zone with rainfall of 4 metres or more, Ark Energy has sufficiently demonstrated an ability to eliminate the potential damage from the project.		No	Water quality and protection of aquatic values are acknowledged as key issues for the Project and are addressed comprehensively in the PER. The construction of the Project will use of the best practice erosion and sediment control guidelines (IECA 2008) to develop erosion and sediment control measures implemented as part of a CPESC certified ESCP. Baseline water quality and soil erosion monitoring is also presented in Section 4.5 of the Sediment and Erosion and Management Plan (Appendix J of the PER).
606	.005	Offsets	4 - Offsets have not delivered on the promise of a net gain for biodiversity. The TWN supports Ark Energy's use of a significant net gain principle to guarantee a positive and successful outcome. Still, the TWN is unconvinced that this net gain will be delivered, given past failures with offsets.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.
595	.003	Social impacts	the Chalumbin wind works operating staff of 15 -30 is much lower than a base-load power station, which also provides such jobs for at least twice as long (> 50 years and even well over 60 years). The conclusion is that the project will contribute substantially to a net loss of jobs in Australia. A study in Spain revealed 2.1 jobs were lost for each renewables job created.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
606	.006	N/A to PER matters	7 - It is inappropriate as a matter of process for these submissions to be submitted through the developer of the project. That is a failure of governance.		No	The process established under the EPBC Act, requires the proponent to take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. These must be included in the finalised PER for submission to the Minister. All submissions to the PER that have been received by CWF within the comment period have been logged, summarised and addressed as part of finalising the PER.
606	.007	Cumulative impacts	8 - The project needs to be considered in the context of other proposed wind farms in the area and the cumulative impact of the projects collectively		No	Section 5.5 of the PER presents a qualitative assessment of cumulative impacts of the Project in conjunction with other existing or propose wind farms in the northern QREZ. There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
542	.001	Opposition to project	Refer to submission 21		No	Refer to response to submission 21
595	.004	Project viability	to even get close to the same output as Liddell, a wind works would need to be nearly 3 times larger, so requiring nearly 14 times more land and $5.1billion in expenditure plus other costs specifically needed to be incurred for the wind works to be constructed and operate (e.g. new/upgraded roads, new transmission infrastructure, compensation payments, higher subsidies, access to a BESS). The LOCE is a flawed measure of cost. Total system cost changes are the only valid measure. No country or jurisdiction in the world has reduced their actual average electricity prices when renewables are 30% or more of their installed electricity generation capacity. There is a significant additional cost to provide electricity from somewhere else when the wind is zero, too light or too strong. Such extra costs are caused by the project, which on average only produces electricity 38% or less a year. To claim the project will reduce electricity prices is misleading. Should not the proponent be open about this significant short-coming?		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
595	.005	Opposition to project	Conclusion The non-equivalence of capacity values results in misleading the general public and others, as does the omission of capacity factors. The PER requires proponents to include a comparison with alternatives to their project but they do not do so. By omitting comparisons with rooftop solar, offshore wind turbines, HELE, CCGT and nuclear power plants they avoid a proper understanding of the options, particularly those that can produce lower cost electricity at least 90% of the time compared to the wind works estimated optimistic 38% a year. The claims that the project will result in clean, cheaper and reliable energy generation are unsubstantiated and are contrary to the real world facts evidenced by both domestic and overseas experiences. This proposed project will do little to address the already compromised energy needs of the NEM grid, let alone, Australia. In fact, it will make it worse as evidenced by overseas experiences in recent years and our own experiences in 2021 and 2022, with soaring electricity prices, blackouts, energy rationing and business closures predicted for years to come. The costs in net jobs, environmental damage, destruction of wildlife and habitats, visual pollution of natural landscapes, immediate significant increase in greenhouse gas emissions, increased cost to electricity consumers and tax payers, cumulative disruption to local communities and others along transport routes, health and fire risks, possible use of slave labour, energy and sovereign security risk, and unfunded end-of-life costs, are just a few more reasons this project should not proceed.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels). Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life. Nuclear energy projects are not permitted under the EPBC Act (s140A).
597	.001	Opposition to project	As per Submission 21		No	See response to Submission 21.
597	.002	Opposition to project	I don't consent to the wind farms being built due to the town would be deserted.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
599	.001	Opposition to project	As per submission 21	As per response to submission 21	No	Section 4 of the PER provides description of the environment within the Project area and surrounding landscape for matters protected under the EPBC Act. With a full impact assessment of the Proposed action outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact Assessment is outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts. A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
599	.002	Opposition to project	Just why? What about the trees, waterfalls, animals, views we paid for. There's plenty of available land you greedy people.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
601		Opposition to project	As per Submission 21.	As per response to Submission 21.	No	Section 4 of the PER provides description of the environment within the Project area and surrounding landscape for matters protected under the EPBC Act. With a full impact assessment of the Proposed action outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts. The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact Assessment is outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts. A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Due to the undulating, typically elevated, topography of the Site coupled with the 250 m turbines proposed, it is considered that the Project will be visible to a range of receptors. These receptors include residents, visitors and workers in nearby settlements and rural properties, motorists on local roads and highways as well as visitors to the WTQWHA and National Parks, State Forests, Conservation Parks and Forest Reserves. Mitigation of impacts has been considered. Through the development of the proposed Project, inherent mitigation of both landscape character and visual impacts has already been incorporated into the Project design, specifically through a reduction of the quantity of proposed turbines as well as selective siting, resulting in the current Project that this LVIA considers. It is acknowledged however, that even with fewer turbines and selective siting, that screening views of 250 m high turbines is not possible. The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the Environment Protection and Biodiversity Conservation Act 1999.
602	.001	Opposition to project	As per Submission 21.		No	As per response to Submission 21.
603	.001	Opposition to project	As per Submission 21.		No	As per response to Submission 21.
604	.001	Opposition to project	As per Submission 21.		No	As per response to Submission 21.
605	.001	Opposition to project	As per Submission 21.		No	As per response to Submission 21.
13b	.001	Project viability	The proposed Chalumbin wind farm is an ECOLOGICAL, BIODIVERSITY and CLIMATE DISASTER. The wind farm's likely purpose is for industrial expansion, not to replace ANY fossil fuel-based power generation. Even if that was the case, its benefits are clearly overstated and can only consistently supply around 100 000 homes (at the most), not the stated 320 000 homes (based on the rarely-achieved maximum output). It has very significant and underestimated fossil fuel and ecocide emissions, such, that even then, its effect on emissions reductions will be minimal, if any. Instead, it will likely cause a large amount of land use change emissions, as well as ongoing loss of carbon sequestration.		No	Section 13.2 of the PER investigates the Project's performance from a greenhouse gas (GHG) perspective. Table 13-20 of the PER demonstrates that the GHG costs (including production of materials, transportation of materials, loss of carbon sequestration due to vegetation clearing) are 20 times lower than the GHG savings (calculated on a 30-year operational Project life and reduction in emissions through reduced reliance on fossil fuels).
13b	.002	Biodiversity general	The wind farm will require the destruction of 2500 acres (over 1000 hectares) of old growth forests, which are habitat for thousands of species, many of which are rare and endangered. The destruction of forests will remove both nesting trees and food trees for many species of marsupials including koalas and greater- and yellow-bellied gliders. This will inevitably result in the cruel deaths of these animals, by either direct trauma or starvation and exposure, as surrounding habitat will already be supporting maximum numbers of these species.		No	These issues are addressed in the PER. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
13b	.003	Vegetation clearing	Construction of the wind farm will require 146kms of access and haulage roads, which will be up to 70m wide in places and may even be over 100m wide, including the wind turbine pads. This will fragment populations of many species, meaning that the overall integrity of the populations will be significantly reduced and more likely to become locally extinct, with this and further insults such as fire and disease. It's difficult to imagine that any glider, as well as many other species, will traverse such barren wastelands for food or to mate, as crossing open areas largely devoid of vegetation would make them increasingly susceptible to predation. The effect of roads on ecosystems has been extensively researched and there are no positive impacts, only negative.		No	The Project team has made a significant commitment to rehabilitate up to 70% of the area cleared for construction, and to supplement this rehabilitation with fauna crossing infrastructure (e.g. glider poles, rope bridges) to minimise the impacts of habitat fragmentation.
13b	.004	Hazard and risk	In addition, 146km of roads will also hasten the invasion of many exotic species and have other profoundly deleterious effects on the ecosystems and its species. There will be microclimate effects, leading to higher temperatures and desiccation of neighbouring forests, making the ecosystem much more fire prone and degraded.		No	Site management measures are outlined in Section 6.0 of the PER, it is worth noting that these measures are intended to be adaptive and will be reviewed and updated in response to changes within the project area. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case. Additionally, the PER includes "Preliminary Vegetation and Pest Management Plan" (Appendix E) and "Preliminary Weed and Pest Management Plan" (Appendix F), both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intention of these "Preliminary" documents are not intended for implementation purposes however are intended to act as the framework for the establishment of adaptable, mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities.
13b	.005	Vegetation clearing	"Rampant road building has shattered the Earth's land into 600,000 fragments, most of which are too tiny to support significant wildlife", a new study has revealed. "The impact of roads extends far beyond the roads themselves", the scientists said, "by enabling forest destruction, pollution, the splintering of animal populations and the introduction of deadly pests. New roads also pave the way to further exploitation by humans, such as poaching or mining, and new infrastructure."(1) New infrastructure, like wind turbines, which themselves have devastating ecological repercussions... "70% of remaining forest worldwide is within 1km of the forest's edge, subject to the degrading effects of fragmentation. A synthesis of fragmentation experiments spanning multiple biomes and scales, five continents, and 35 years, demonstrates that habitat fragmentation reduces biodiversity by 13 to 75% and impairs key ecosystem functions by decreasing biomass and altering nutrient cycles. Effects are greatest in the smallest and most isolated fragments, and they magnify with the passage of time. Fragmentation experiments— some of the largest and longest-running experiments in ecology—provide clear evidence of strong and typically degrading impacts of habitat fragmentation on biodiversity and ecological processes. The experiments here reveal ongoing losses of biodiversity and ecosystem functioning two decades or longer after fragmentation occurred." (2) Scientific study on the effect of roads on arboreal animals is limited, but the effects are obvious. It has been studied in the case of red pandas, an arboreal mammal: "This study presents evidence consistent with the barrier effect of roads on movement of red pandas." (3) Studies on koalas have shown the detrimental effects of roads in koala populations in both primary and secondary forests (4). The Chalumbin project area is known to contain koalas at low density, though probably had higher densities prior to the pelt industry and when chlamydia was brought in by livestock. This is from a technical paper on the ecological effects of roads from Victoria (5):"Roads may form barriers to the movement of animals. This barrier effect results in one of the more significant ecological impacts of roads: the fragmentation and isolation of wildlife populations. Roads may limit the access of animals to vital resources, therefore decreasing the area of available habitat, and may potentially limit the movement and dispersal of individuals, fragmenting populations and consequently reducing gene flow. The barrier effect of roads on animal movement depends primarily on road width and the intensity of its use.		No	As described in Section 7.0 of the PER and the Preliminary Rehabilitation Plan (Appendix K of the PER), rehabilitation of the areas disturbed by construction but not required for operational activities forms a critical element of the Project's efforts to minimise the extent and duration of impacts to MNES and the broader values of the Project area. The Project has made an industry-leading commitment to rehabilitate temporary construction disturbances and retain only the minimum footprint required for safe operations of approximately 107.3 ha (or 0.3 % of the Project area). A key focus of the rehabilitation program will be to rehabilitate habitat for those MNES assessed as having a significant residual impact including koala, masked owl, northern greater glider and spectacled flying-fox (at least 80%) and magnificent brood frog (at least 70%), with a goal to rehabilitate 70 % of all other areas. With respect to potential fragmentation of habitat for the Northern Greater Glider, Section 8.6.7.3 of the PER states that vegetation clearing will be undertaken in accordance with an approved Species Management Plan and any unavoidable impacts on hollow-bearing trees will mitigated through the retention and use of hollow-bearing stags, and the installation of nest boxes on a 2:1 basis. The majority of the cleared area (up to 80 %) will be progressively rehabilitated as soon as possible on completion of construction, incorporating glider poles where necessary to maintain connectivity until the revegetation has sufficiently established. The submission quotes a Victorian paper that investigates barrier impacts associated with roads and concludes that the road width and intensity of use determine the impact on fauna. In the case of this Project, the rehabilitation measures described above will lead to a considerable reduction in the operational width of the access tracks. Furthermore, the tracks will be very infrequently used during the operational phase and therefore this low level of use will not be expected to factor into barrier effects for species.

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13b	.006	Vegetation clearing	Wide roads with heavy traffic loads have the greatest impact on animal movement. Tracks in parks and reserves are likely to have less impact on animal movement." After completion of the construction of the wind turbines, one would expect there to be less traffic. However, consider that much of the haulage roads will be SEVENTY metres across. 70m is wide enough for a SIXTEEN LANE highway (assuming 3.5m per lane, a 4m median strip, and 4m for shoulders either side). The haulage roads required for wind turbines are ecologically devastating in fragmenting and degrading forests and separation of ecosystems. Another paper from Victoria stated: "Exotic vegetation was found to extend about 50 m from the road. Traffic noise and light penetration varied according to topography and vegetation cover, but averaged of 350 m and 380 m, respectively, from the road. Mammal surveys indicated there was an increase in species richness once traffic noise reached ambient levels (40 dB) and traffic light penetration ceased. Bird surveys resulted in the identification of four species (9%) that only occurred within 150 m of the road (edge species) and 21 species (58%) that only occurred at distances of 150 m or more from the Epsom-Barnadown Road (interior species). A core habitat area for bird species was identified at about 900 m from the road. It was found that the average width of forest in the Bendigo Regional Park impacted by the Epsom-Barnadown Road was 1800 m, which translates to an area of 1.8 km^2 per kilometre of road." (6) Translating the above to Chalumbin, that would equate to 261 square kilometres of forest which would be affected by haulage roads. Obviously there would be some overlap due to the fact the roads are not straight, but basically that would mean almost the entire project area would be affected by edge effects, causing loss of biodiversity, habitat degradation, micro climate effects and more invasive species. Despite this, Ark Energy claim outrageously that there would be a net positive effect due to "protection" of forest areas not impacted directly by the wind turbines and roads.		No	As described in Section 7.0 of the PER and the Preliminary Rehabilitation Plan (Appendix K of the PER), rehabilitation of the areas disturbed by construction but not required for operational activities forms a critical element of the Project's efforts to minimise the extent and duration of impacts to MNES and the broader values of the Project area. The Project has made an industry-leading commitment to rehabilitate temporary construction disturbances and retain only the minimum footprint required for safe operations of approximately 107.3 ha (or 0.3 % of the Project area). A key focus of the rehabilitation program will be to rehabilitate habitat for those MNES assessed as having a significant residual impact including koala, masked owl, northern greater glider and spectacled flying-fox (at least 80%) and magnificent brood frog (at least 70%), with a goal to rehabilitate 70 % of all other areas. With respect to potential fragmentation of habitat for the Northern Greater Glider, Section 8.6.7.3 of the PER states that vegetation clearing will be undertaken in accordance with an approved Species Management Plan and any unavoidable impacts on hollow-bearing trees will mitigated through the retention and use of hollow-bearing stags, and the installation of nest boxes on a 2:1 basis. The majority of the cleared area (up to 80 %) will be progressively rehabilitated as soon as possible on completion of construction, incorporating glider poles where necessary to maintain connectivity until the revegetation has sufficiently established. The submission quotes a Victorian paper that investigates barrier impacts associated with roads and concludes that the road width and intensity of use determine the impact on fauna. In the case of this Project, the rehabilitation measures described above will lead to a considerable reduction in the operational width of the access tracks. Furthermore, the tracks will be very infrequently used during the operational phase and therefore this low level of use will not be expected to factor into barrier effects for species.
13b	.007	MNES	There presumably will be multiple access points into the Chalumbin area by all the large haul trucks and other vehicles, for the construction and maintenance of the wind farm. Inevitably there will be deaths and trauma to considerable numbers of wildlife, as they try to cross the road. The road to the Chalumbin substation is largely within Tully Falls National Park, within the Wet Tropics World Heritage Area. Obviously many of the species affected will be threatened and endangered, such as Southern Cassowaries. What right do we have to inflict death and suffering on these sentient beings? We know that elsewhere, Lumholtz Tree Kangaroos, Redlegged Pademelons and numerous species of possums are killed by road traffic through rainforested areas. Not to mention many species of birds including Southern Cassowaries and Orange-footed scrubfowls.		No	Tully Falls Road (south of the intersection with Wooroora Road) will not be used by construction plant and equipment. Construction traffic will not access the project site through Tully Falls National Park, this is already made clear in the PER.
13b	.008	Biodiversity general	The impacts are inexcusable, especially for construction of industrial facilities within forests, which will themselves have undeniable very significant climate and biodiversity impacts. Access to the Chalumbin project elsewhere will be through both isolated stands and significant areas of wet and dry sclerophyll forests. Eastern Grey Kangaroos, Whiptail Wallabies, Agile Wallabies, Swamp Wallabies, and Wallaroos inhabit such areas. Undoubtedly individuals of these species will be killed by the large trucks and excess traffic necessitated by wind farm construction and maintenance.		No	These issues are addressed in the PER. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
13b	.009	Magnificent brood frog	A study from 1985 (6) found that sealed roads caused the deaths of around 4.5m amphibians Australia-wide. Roads traversing national parks and forested areas, especially adjacent to streams and wetlands, will have significant impacts, on amphibians and reptiles. More roads, more traffic, and undoubtedly more wildlife deaths. Certainly the critically endangered Magnificent Brood Frog will have a sizeable portion of its habitat destroyed by the Chalumbin Wind Farm, having already had the same happen as a result of the Kaban Wind Farm to the North. Its chances of extinction are undoubtedly much higher with the Chalumbin project.		No	The access roads within the Project area will not be sealed. Nonetheless, the PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures (including sensitively designed culvert crossings under access roads in areas of the species' habitat). This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
13b	.010	Fauna mortality turbines	It's well documented that wind turbines have catastrophic effects on bats. It's thought that the bats die as a result of extreme pressure changes adjacent to spinning turbine blades. These pressure changes cause blood vessels in the lungs to burst (7). It is known that wind turbines in the USA kill almost a million bats per year (8). This number is significant to many bat species, some of which are threatened and endangered. A research review published 9 years ago in 2016 showed that worldwide, the biggest cause of mortality of bats is wind turbines. (9) It's known that many bat species that inhabit the forests of Chalumbin are endangered. Mt Emerald wind farm to the north has killed many endangered Spectacled Flying Foxes. Most bats that were killed at Mt Emerald wind farm were Northern Freetail Bats, a species little is known about and it's not known how many exist in the wild and whether their populations are declining. Surely the precautionary principle applies. However what is known, is that they roost in tree hollows in old growth forests, so it is likely that they will also be impacted by forest clearing for roads and wind turbines in the protected area.		No	There has been very little research undertaken specifically on flying-foxes in relation to the risk of barotrauma. One paper (Lawson et al 2020) performed computational fluid dynamics simulations of a wind turbine and analytical calculations of blade-tip vortices to estimate the characteristics of the sudden pressure changes bats may experience when flying near a utility-scale wind turbine. The paper concluded that barotrauma is unlikely to be responsible for a significant number of turbine-related fatalities, instead impact trauma (i.e. direct collision) is the likely cause of the majority of wind turbine-related bat fatalities. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia.
13b	.011	Fauna mortality turbines	There has been so much concern in the USA about bat deaths, that the wind energy industry in brought in voluntary guidelines to halt turbines at low wind speeds, when bats are most active (10). This supposedly reduces bat mortality, however, because bats are long-lived and slow reproducers and rely on normally very high adult survival rates, it's unlikely, even if these measures were instituted, that wind turbines will not result in a CATASTROPHIC loss of bat populations year on year, especially in natural ecosystem areas where bat populations are high, like Chalumbin. "Bats play an essential role in pest control, pollinating plants and dispersing seeds. Recent studies estimate that bats eat enough pests to save more than $1 billion per year in crop damage and pesticide costs in the United States corn industry alone." The benefits to Australian agriculture would be similar. In addition, bats play an essential role in pollinating plants and dispersing seed in ecosystems themselves. In Central Europe, wind turbines kill on average 14.3 bats per turbine per year. In the USA, the figure is 12.25 bats. In Victoria, Symbolix found 7-10.8 bat deaths per turbine per year. Emma Bennett, with the help of dogs, found up to 20 bats killed per turbine per year (12). Generally, bats are more abundant in the tropics than temperate zones, due to higher numbers of insects and more abundant flowers and fruit and larger areas of relatively intact ecosystems. Therefore, we would reasonably expect the figures in tropical North Queensland to be higher. Even if curtailment by stopping wind turbine rotation at low wind speeds is undertaken, the reduction in mortality will be more than negated by the growth in number of wind farms planned for Queensland. The very worst action would be, to place them in the middle of a fully intact ecosystem: it will have catastrophic effects on bat populations. In Victoria, if a member of the public kills grey-headed flying foxes, they face fines of up to $37 310 or two years in prison. However wind farms kill them with impunity. (38) In Queensland, the Spectacled Flying Fox is considered endangered and has been deliberately killed by farmers. The farmers formerly used electric grids to deliberately kill them, but an injunction sought by Dr Carol Booth was upheld. The Chalumbin area is a key foraging ground for Spectacled Flying Foxes.		No	The Project team has taken on board this advice, initially received during a project briefing with the Spectacled Flying-fox Recovery Team, and has revised the Bird and Bat Management Plan to make a clear commitment to best practice curtailment where this is considered to be appropriate through the BBMP's adaptive management framework. The species has not been confirmed present within the Project area and therefore "potential" foraging habitat has been mapped on a precautionary level; there has been no evidence in 2 years of field assessments to demonstrate that the Project area is a "key foraging ground".
13b	.012	Fauna mortality turbines	Dozens of grey-headed flying fox carcasses have been found at wind farms in Victoria, and it's estimated that the real mortality is about 3 times the number of dead animals found. The Chalumbin wind farm will further precipitate declines of Spectacled Flying Fox numbers, undoubtedly which may ultimately culminate in extinction. The same flying foxes that inhabit the Wet Tropics World Heritage Area also forage in the Chalumbin area – they do not respect man made boundaries. Therefore this is another way that this wind farm will have negative impacts on the world heritage values of the Wet Tropics World Heritage area.		No	Noted.
13b	.013	Fauna mortality turbines	Many birds fall victim to wind turbines. Birds are prone to collisions and death with wind turbines, in particular large birds such as birds of prey and migrating waterbirds. Whilst it is well known that for example cats kill many birds every year, these are of course smaller species and often more common. Wind turbines often kill larger birds, such as raptors, waterbirds, and of course migrating birds. The coastal ranges are 'flyways', along which hundreds of migrating bird species migrate every year. The East Asian – Australasian Flyway is recognised as the most species-rich flyway globally, hosting approximately 477 species of land birds and 201 water birds (13). These include many species of cuckoos, such as channel-billed cuckoos and koels, as well as many native pigeons and doves which tend to follow coastal ranges as flyways. Add to that a multitude of other species such as sulphur-crested and red-tailed black cockatoos, rainbow lorikeets, scaly-breasted lorikeets, several species of swifts, and swallows and martins. Raptors are especially vulnerable to wind turbine collisions and deaths. Studies from around the world have shown that a large variety of raptors have been killed by turbines (14). However, the authors of this paper state "Attempts to measure and mitigate the effects of wind turbines on wildlife have been an integral part of wind-energy development." This doesn't seem to have been the case in Australia, where wind turbines have been placed with absolutely no consideration for raptors. And it's not just the wind turbines that kill raptors. In 2018 alone, 29 wedge-tailed eagles were killed after colliding with high voltage power lines associated with wind farms (15). In Tasmania, additionally, dozens of wedge-tailed eagles have been killed by wind farms, and the further roll-out of more wind farms will likely precipitate the extinction of wedge-tailed eagles in that state. And eagle wind farm deaths are likely to be even higher than reported. In Tasmania, the ludicrous concept of 'offsets" are used by wind energy operators to compensate for eagle deaths. "But you need about 12 extra eagle chicks to compensate for every adult eagle killed at a wind farm." There's no evidence the covenanting process has increased (chick) production at all." (18)		No	Noted

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13b	.014	Fauna mortality turbines	Wedge-tailed eagles are known to fly over the forests of Chalumbin and will likely be killed by wind turbines, as may have already happened with the existing power lines spanning eagle habitat from Mt Emerald in the north, via the Kaban wind farm to the Chalumbin area, as well as the wind farms of Mt Emerald and Kaban. Another raptor species, the endangered Red Goshawk is likely to occur in the Claumbin area. An unused nest has been found, and I have personally seen a Red Goshawk just outside the Chalumbin project area in the Ravenshoe Forest Reserve at 17.699101 S, 145.465642 E, alighting from the ground. Red Goshawks would certainly be disturbed by road building and construction of wind turbines. They fly mostly beneath forest canopies but have been observed regularly flying above the canopy where they would be vulnerable to collision with wind turbines. There is no doubt that construction of the Chalumbin wind farm would have adverse consequences to individuals of this species in this area, likely causing local extinction. Other raptor species which will be adversely affected are grey goshawks, brown goshawks, and possibly falcons.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area. Potential bird and bat strike is addressed in the PER through the Preliminary Bird and Bat Management Plan (Appendix G), which is designed to be adaptive based on operational monitoring and impact triggers - this is standard practice for wind farms in Australia. The other species named in this submission are not listed under the EPBC Act and have not been addressed in detail in the PER. However, they have been accounted for in the Bird and Bat Management Plan.
13b	.015	Biodiversity general	Flying insects are yet another victim of wind turbines. "Evidence is accumulating that insects are frequently killed by operating wind turbines, yet it is poorly understood if these fatalities cause population declines and changes in assemblage structures on various spatial scales. Current observations suggest that mostly hill-topping, swarming, and migrating insects interact with wind turbines. Recently, the annual loss of insect biomass at wind turbines was estimated for Germany to amount 1,200t for the plant growth period, which equates to about 1.2 trillion killed insects per year, assuming 1 mg insect body mass (18). Accordingly, a single turbine located in the temperate zone might kill about 40 million insects per year. Furthermore, Scheimpflug Lidar measurements at operating wind turbines confirm a high insect activity in the risk zone of turbines. " (19) We need to consider that Germany is very much a populated and urbanised country, located in the temperate zone. The fatalities for wind turbines in the wet coastal tropics would be expected to be very much higher, especially turbines located in biodiverse largely intact ecosystems. The insect fatalities in Germany were skewed towards migratory insects, so one would expect negative consequences for distant ecosystems, as well as the ecosystems in which the turbines are located. We know that insects are collectively keystone species in all terrestrial ecosystems, and are foundational and central to intricate food webs. We do know that loss of insects causes loss of populations to every species that depends on them, especially insectivorous birds, amphibians, small marsupials and non-marsupial rodents, and smaller reptiles. And loss of those species has negative effects to the populations which depend on those species for food, for example, raptors (such as red goshawks), snakes, owls, and quolls.		No	The PER Guidelines do not require an assessment of Project impacts on insects.
13b	.016	Water resources	The geology of the Atherton Tablelands and surrounding areas is complex and marked in some areas by mineral-rich volcanic intrusions. Historically, there was a mine operating at Blunder Creek, about 26km from Mt Garnet. Blunder Creek itself runs through the Chalumbin Project area. The Blunder Creek Mine yielded lead, bismuth, and silver. These minerals can be contaminants of ground water, especially when deposits are mined or significantly disturbed. If this happens, plants can be poisoned and die, and animals, including humans, can become poisoned from toxic levels of minerals accumulating in the body. This may lead to death. The human body lacks transport mechanisms to rid itself of all metals except iron, and to an extent, copper. All other metals will accumulate in the body. The same would apply to wildlife and the situation may be even worse. The Baal Gammon copper mine near Herberton led to warnings that creek water and dam water should not be consumed in 2012, due to high levels of copper, cadmium and arsenic, in local creek waters in 2019 (20). This was the result of that mine and previous workings in the area. The mine was closed and abandoned in 2019 (21). "These results show elevated contaminants in the seep water and downstream in Jamie Creek including metals such as aluminium, arsenic, cadmium, copper, lead, manganese, nickel, zinc and sulphate," a department spokesperson said. "Landowners were warned by authorities against using the water in the creek and nearby river for drinking, swimming or watering livestock." What about the effects on local wildlife, which have no choice but to drink the contaminated water?		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. Water supply source is not a matter addressed in the EPBC Act, therefore does not required consideration in the PER.
13b	.017	Water resources	It is quite possible, that the considerable earthworks and road building, as well as excavations for the foundations of wind turbines, will disturb deposits of minerals which will then leach into local streams and ground water. This is of course in addition to the obvious sedimentation of creek waters which will occur as a result. This will have negative effects on the Magnificent Brood Frog, which has existed in the restricted ranges of wet sclerophyll forest montane streams for millenia, and clearly will not tolerate such disturbance to its habitat. Add to that the negative impacts of wind turbines on the insect populations which it needs as a food source. The Lake Eacham rainbowfish, previously declared extinct, has been found in Blunder Creek, and its habitat will be destroyed by the inevitable sedimentation and increase in turbidity of water as a result of roadworks and site preparation for the wind farm. It will likely become extinct again in this area.		No	The PER has been updated to include consideration of the Lake Eacham Rainbow Fish (see Sections 4.10.1 and 8.9.1). The PER acknowledges that the Project could result in a significant residual impact on the magnificent brood frog despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed, which will ensure that areas of known brood frog habitat are protected in perpetuity (thus meeting the objectives of the National Recovery Plan). The proponent has also made a voluntary financial contribution towards magnificent brood frog research, above and beyond the direct offsets that are required under the EPBC Act Environmental Offsets Policy.
13b	.018	Contamination	It has been calculated that wind turbines shed around 60kg of microplastics per year. This has been deduced by studies of leading edge erosion. Leading edge erosion is a major cause of degradation of wind turbine blades, and often this requires replacement blades every 10 years. The discarded blades are rarely recycled, but dumped in landfill. The quoted study was based on wind turbines in Norway, where ice and salt would have more effect than Chalumbin. Regardless, there will be some shedding of microplastics into the project area as a result of this wind farm. Even if the level of shedding is only half that of Norway, that's still 2.5 tons of microplastics that are discarded into the Chalumbin ecosystem and creek waters every year. That's 51 tons over 20 years. "25 tonnes of annual emissions in the form of micro- and nanoplastics are thus sprinkled over outfields, pastures, soils, water sources and eventually fjords and sea areas. How much of this will be Bisphenol A is uncertain, but 1 kilo of bisphenol A is enough to pollute 10 billion litres of water. That's 10 000 000 000 litres. Since 2017, the WHO has advised that drinking water should have a maximum of 0.1 micrograms of BPA pr. litre. This is 0.000 000 1 grams per litre of water." "The pulp loss mainly consists of two-component epoxy. A turbine wing is largely made of fiberglass reinforced epoxy where epoxy makes up approx. 40% of the pulp and fiberglass make up 60%. In addition, some balsa wood, divinycell (a kind of hard foam) and some other materials are used to create the profile for the wing construction. Epoxy contains 33% bisphenol A. This amounts to approx. 13 - 15% of the total weight of a rotor blade. In other words, there is a lot of microplastic, and a large part of this is bisphenol A."		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
13b	.019	Contamination	"Exposure to BPA is a concern because of the possible health effects on the brain and prostate gland of fetuses, infants and children. It can also affect children's behaviour. Additional research suggests a possible link between BPA and increased blood pressure, type 2 diabetes and cardiovascular disease." 14% of 51 tons of microplastics shedded over 20 years at Chalumbin is Bisphenol A. That's 7 tons of Bisphenol A. 1 kg of Bisphenol A is enough to pollute 10 billion litres of drinking water. So significantly toxic levels of BPA are likely even if only a fraction of the BPA makes its way into watercourses. "...preliminary assessments of the effects of microplastics exposure in mammalian reproduction have emerged with the publication of peer-review articles that revealed the effects on spermatogenesis and sperm quality in exposed animal models and the indirect effects on the offspring occurring via gestational exposure. This manuscript summarizes the main ecotoxicological and health risk of microplastics in mammals, the main threat for sperm quality along the lifespan and the upcoming studies on the effects of microplastics (MPs) in male fertility in mammals." (30) Bisphenol A is one of many endocrine disrupter chemicals (EDC). Due to their terrestrial habitats and aquatic reproduction, many amphibians are both very vulnerable and highly suitable bioindicators. In humans, Bisphenol A exerts epigenetic effects in both male and female reproduction. In males, BPA affects spermatogenesis and sperm quality and possible trans-generational effects on the reproductive ability of the offspring. In females, BPA affects ovary, embryo development, and gamete quality for successful in vivo and in vitro fertilization (IVF). (31) "The plasticizer bisphenol A affects somatic and sexual development, but differently in pipid, hylid and bufonid anurans. Due to their terrestrial habitats and aquatic reproduction, many amphibians are both very vulnerable and highly suitable bioindicators. ...However, environmentally relevant concentrations, as low as 0.023 µg/L, were sufficient to provoke species-specific anatomically and histologically detectable impairments of gonads, and affected morphological traits of metamorphs. As the intensity of these effects differed between the three species, our data imply that BPA diversely affects amphibians with different evolutionary history, sex determination systems and larval ecologies. These results highlight the role of amphibians as a sensitive group that is responsive to environmental pollution." (40)		No	BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
13b	.020	Contamination	The Chalumbin wind farm will inevitably introduce high levels of microplastics into the ecosystem and watercourses, and this can be expected to have adverse consequences to the reproduction of all mammals in the area, as well as reptiles, amphibians, and birds. Many species have been shown to be susceptible to the introduction of endocrine disrupter chemicals which mimic the activity of endogenous steroid hormones, and thus interfere with endocrine functions, especially those related to reproduction. This is especially significant for the Magnificent Broodfrog.		No	The purported issue of the release of microplastics from the leading edge erosion of wind turbine blades has been an emerging topic within wind farm opposition circles for the last 2-3 years. The proponent is not aware of any peer-reviewed scientific articles that confirm this is an issue for the industry to mitigate.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
590	.001	Adequacy of the PER	Cover, Contents, Executive Summary and Acronyms The introduction in the Executive Summary of the Public Environment Report (PER) contains information that confuses the ownership/operation intentions of Ark Energy. The introduction states that; "The objective of the proposed action is to construct and operate a renewable energy facility of approximately 602 MW nameplate generation capacity to efficiently supply renewable electricity to the National Electricity Market (NEM)." However, from the engagement that the Cairns and Far North Environment Centre (CAFNEC), and other community members have had, our understanding is that Ark Energy will not operate the project. For transparency's sake we would expect the PER to be clear about whether or not Ark Energy aims to operate the wind farm after construction. The Executive Summary also states; "CWF is a special purpose vehicle created for the Project and is a subsidiary of Ark Energy Projects Pty Ltd (formerly Epuron Projects Pty Ltd). Such project companies are commonplace to hold the agreements and approvals throughout the life of the project should wider ownership change and ensure that commitments made at any stage of the project must be maintained by an eventual owner or investor in the project.". CWF refers to the entity Chalumbin Wind Farm Pty Ltd. As seen above, the PER states that project companies are commonplace to hold agreements and approvals throughout the life of the project, however it is not clear how this mechanism works. For this assessment process, Ark Energy is the proponent, however there is no detail provided about mechanisms that would ensure that CWF under any new ownership would be accountable for commitments Ark Energy has made. This is mostly concerning any 'leading practice' commitments that Ark Energy might make on top of its legislated requirements. To provide transparency and certainty to the community that this project affects, Ark Energy needs to provide more clarity about how the special purpose vehicle - The CWF Pty - will be accountable to commitments made by Ark Energy. The PER states that "The Queensland Government and AEMO has, through the QREZ initiative, sought to strategically identify the best places for future renewable energy projects in Queensland." Through engagement with the Queensland Energy Department, CAFNEC has learned that the maps provided by the Department, and referenced in the PER, are broad regions, rather than specific areas for development. The Queensland Energy Department is expected to develop more precise strategic development areas in each Queensland Renewable Energy Zone (QREZ). The Northern QREZ currently stretches from Mackay to Cairns. It is misleading to state that the CWF is in a strategic area for Renewable Energy, just because it falls within the current Northern QREZ. Additionally, as clearly stated in the PER; "Key factors to determine the most prospective places within the Northern QREZ for wind farm projects include certainty of wind resource, ready access to the grid and appropriate separation from dense settlements." This statement highlights the lack of current information or consideration of biodiversity in the identification of QREZs, which should in fact be a priority. The Queensland Government has indicated that biodiversity considerations are important and that the Queensland Energy and Jobs Plan commits to "Ensure the development of clean energy maximises opportunities for positive co-existence, preserves the local environment and promotes greater biodiversity.". Additionally, the Queensland Regional Partnerships Framework sets land use mapping as a key priority, stating that; "The key desired outcome is co-existence, not conflict, where Queensland's critical industries are all supported to grow and do not impede on environmental priorities. Land use mapping informs QREZ development planning, with QREZ planning to inform and complement Infrastructure Plans and Regional Plans (Action 1.4 in the Energy and Jobs Plan)." It is clear that, although some commitments have been made, biodiversity has not yet been considered in the identification process of the Queensland Renewable Energy Zones.. The proponent has not provided sufficient information regarding the location of this project and why it is a strategic area to develop.	The PER also states that "CWF has sought to ensure that the Project design was undertaken with the primary driver of avoiding and minimising potential impacts to the WTQWHA and other MNES, all while having the "bigger picture" of the LCOE, the Northern QREZ and the decarbonisation of the local, regional, national and global economies in mind." The proponent can not simply claim to have the bigger picture without properly demonstrating the strategic siting of the project, the consideration of both the climate crisis and the biodiversity crisis. Evidence of all of these considerations need to be provided by the proponent. Recommendations 1. To provide transparency and certainty to the community that this project affects, Ark Energy needs to provide more clarity about how the special purpose vehicle - The Chalumbin Wind Farm Pty - will be accountable to commitments made by Ark Energy. 2. The proponent must provide more detailed information regarding the siting of this project, and why this wind resource is more strategic to develop in comparison to other resources, including biodiversity considerations. 3. The proponent must provide specific information on the current status of threatened species, and about how this proposal will either exacerbate or aggravate their extinction pathways and consider the broader threats to those species in that assessment.	No	Commitments made within the PER become requirements for the ultimate owner of the Project (and SPV). The SPV is the proponent of the Project and will be responsible for compliance with any EPBC Act approval for the Project. There is no publicly available information that further identifies within the Northern QREZ more strategic areas for renewable energy development. The PER has been prepared in accordance with the PER Guidelines. Sections 1.5 and 3.0 of the PER set out the process by which the Project was developed, the strategic goals and policy considerations relevant to Project development Sections 1.5 and 3.0 of the PER describe some key drivers for a technically feasible wind farm development (land access, wind resource, grid connection and capacity). Biodiversity values (and other values, such as cultural heritage) form an important part of design iteration - as described within Section 6.0 of the PER. Section 8.0 of the PER provides the impact assessment in relation to each MNES relevant to the Project.
13b	.021	Noise and vibration	It is known that wind turbine noise has negative effects on habitat quality and wildlife. "However, as shown below, while the potentially adverse effects of Wind Turbine Noise (WTN) on humans are being studied and regulated by planning and building laws, the same scrutiny has not been applied to examining or reducing potentially adverse effects of WTN on wildlife. The impact of noise pollution on wildlife is still largely ignored in environmental impact assessments (EIAs) during planning processes, and there is insufficient mapping of wildlife species and their noise sensitivity, even in areas considered biodiversity hotspots." (22) "Noise pollution influences the acoustic environment even far from anthropogenic centers, in remote areas that include critical habitats for endangered species . Noise pollution negatively impacts wildlife by disrupting mechanisms that are crucial for their survival. In particular, noise can: 1) cause physiological damage such as chronic, high levels of stress hormones, or actual hearing loss ; 2) be directly perceived by animals as a threat, causing them to increase costly anti-predatory behaviors at the expense of foraging, or flee the affected area altogether, leading to functional habitat loss ; 3) distract foragers, reducing their efficiency of finding and handling food; 4) hinder animal communication by reducing the distance at which a signal can be detected , limiting the ability of the signal to reach its intended recipient, and decreasing the amount of information that can be extracted from a signal, such as the sound of an approaching predator or potential prey. These mechanisms are not mutually exclusive, and the role that each plays in determining the impact of noise pollution varies by species. Not all species react to noise in the same way, due to differing sensitivities to noise, context, and lifehistory . Overall, noise pollution alters animals' communities, reduces their overall survival and fitness, and contributes to the decline of global biodiversity."(22) "Traffic is the most widely studied source of anthropogenic noise. ....compared the spectral properties of WTN and traffic noise, and suggested that a combination of highway noise and WTN might create a greater, more complex disturbance, rather than one masking the other. Specifically, WTN alters the natural acoustic environment by inducing airborne loud broadband sound which is within the hearing range of many animals , including most bird species. A few other studies have also looked at the effects of WTN on other wildlife with mixed results." (22) A study of the effects of wind turbines on antipredator behaviour in California ground squirrels showed that WTN caused a higher level of alertness attributed to loss of auditory capacities. (23) It may be reasonably assumed that this caused physiological damage due to chronic high		No	Potential impacts from noise, light and vibration are discussed in Section 5 (generally) and throughout Section 8 (in relation to specific MNES). Mitigation measures have been proposed.
590	.002	Transmission capacity	The Proponent is proposing to create more than double MW of energy that the current availability in the Grid. In 2021 Powerlink conducted an augmentation consultation which resulted in an upgrade to the coastal transmission line between Townsville and Cairns and added up to 500 megawatts of new renewable energy capacity in Far North Queensland. The Kaban Wind Farm connection has used up 152MW of the 500 MW capacity, leaving approximately 350 MW of spare hosting capacity in Far North Queensland. The Queensland Energy and Jobs Plan (QEJP) proposes a transmission augmentation of up to 500kV from Southern Queensland towards Townsville and ultimately to the Hughenden area, completed by the mid-2030s. At this stage it's not clear if additional hosting capacity in FNQ will be created as a result of the QEJP. Although for the next 10 years or more, the remaining hosting capacity will likely remain at 350mw unless some large new loads connect in North Queensland. There is only currently 350MW available in transmission, but the Chalumbin Wind Farm Project proposes to add approximately 602 MW in total. Stage 1 of the project will generate 364MW (PER states 7MW per turbine, with 52 turbines in stage 1). Which means that there is just slightly more MW than availability in the line, and there is no certainty that stage 2 would ever progress. Stage 1 of the project is likely to have a much higher environmental impact than stage 2, as stage 1 is close to the Wet Tropics, and impacts large areas of Wet Schellrophyl and MNES. The proponent has argued that this project is an essential step in the progression of our transition to renewable energy. However, their proposal is far outside the scale of what's realistically achievable now, and the development has not balanced impacts to nature, grid availability or project design.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network.
590	.003	Project alternatives	In 2021 the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Panel on Biodiversity and Ecosystems Services (IPBES) hosted a co-sponsored workshop regarding biodiversity and climate change. The workshop and its report [1] was the first joint collaboration between the two intergovernmental bodies, and was hosted in recognition that "climate change and biodiversity loss are two of the most pressing issues of the anthropocene"[1] and that that dealing with these two processes in isolation "creates a risk of incompletely identifying, understanding and dealing with the connections between the two."[1]. Amongst other important findings, a key finding of the workshop was that "Technology-based measures that are effective for climate change mitigation can pose serious threats to biodiversity. They should be evaluated in terms of their overall benefits and risks.[1]" In its discussion of feasible alternatives, the proponent states that "section 1.5 of the PER demonstrates a series of factors that provide overwhelming justification for the pursuit of renewable energy developments in this region." While the proponent has provided a detailed summary of the current state of our climate crisis, they have not in any way provided information about the biodiversity crisis that our nation and the world are experiencing, and the potential exacerbation the development poses on this specific region. The proponent must include information regarding the high biodiversity, the economic setting and social setting of this region. The proponent has not provided enough detail to support their claims, especially considering the lack of reference to the Sustainable Development Goals (SDGs), or triple bottom line of sustainability. The proponent has demonstrated that there is a need for renewable energy replacement of fossil fuel generation to limit climate damaging emissions. Site selection criteria for the proponent included proximity to transmission lines and wind resources, but no clear consideration of biodiversity has been demonstrated during site selection. The proponent has provided no justification for their lack of consideration of alternative sites in the context of biodiversity conservation or loss. As Section 3.2 has identified, the areas surrounding the transmission line between Townsville and Cairns is almost completely surrounded by remnant vegetation, which can be considered a proxy for MNES values. The QUeensland State of the Environment Report (2017) describes regional ecosystems and maps the remnant forest across these ecosystems. The majority of the CWF project sits in the Wet Tropics Bioregion, with the north western quarter reaching into the Einasleigh Uplands. The proponent has stated that the financial cost of developing the project in the Einasleigh Uplands or Gulf Plains is too high to consider, but has not shared an analysis on the increased cost to biodiversity associated with development in the Wet Tropics Bioregion. When comparing the Einasleigh Uplands and the Wet Tropics bioregions for remnant vegetation impacts, it can be seen that 89% of the Wet Tropics Bioregion is either endangered or of concern, compared to 41.7% in the Einasleigh Uplands, or 51% in the Gulf Plains (Table 1). In fact, as Table 2 demonstrates, the proponent has selected the bioregion containing the highest percentage of endangered or of concern regional ecosystems of any bioregion in Queensland. Table 1. Proportion of regional ecosystems by biodiversity status Table 2: Comparison of endangered and of concern regional ecosystems across bioregions. The proponent has provided no mapping of potential wind resources in the Gulf Plains or Einasleigh Uplands, or any of the other bioregions of Queensland, and has additionally made claims that an alternative location scenario can be conservatively expected to have at least 30% greater impact on MNES, but has not provided any clear evidence of how this was calculated. The EPBC Act calls for feasible alternatives to consider; (a) the location where the action is to be taken; (b) the time frames within which the action is to be taken; (c) the activities that are to be carried out in taking the action. The proponent has not sufficiently demonstrated the consideration of alternative locations for this wind farm. To be prioritising the development of the bioregion with the most endangered and of concern regional ecosystems, without first demonstrating that this development can not be achieved elsewhere is unacceptable. The expectation should be that the proponent has considered other locations in Queensland, with wind resources available, and with less endangered/of concern regional ecosystems and proximity to,or future proximity to, transmission.	As concluded in the IPBES/IPCC co-sponsored workshop aforementioned;"Solving some of the strong and apparently unavoidable trade-offs between climate and biodiversity will entail a profound collective shift of individual and shared values concerning nature – such as moving away from the conception of economic progress based solely on GDP growth, to one that balances human development with multiple values of nature for a good quality of life, while not overshooting biophysical and social limits." In the citing of CWF, the proponent has weighed economic cost over environmental cost, which does not align with the triple bottom line for sustainability, the SDGs or the guidance of the IPBES/IPCC to create development that balances human development with multiple values of nature for a good quality of life, while not overshooting biophysical and social limits[1]. The Queensland State Planning Laws include a number of different pieces of legislature for assessing wind farms, including State Code 23. State code 23 in Queensland is outdated, and has not been reviewed since its creation in 2017, a time in which renewable energy development was at a different scale, and had a different development profile. The code means that wind farm development is Code Assessable. As a result, wind farm developments in Far North Queensland are not thoroughly assessed under the Nature Conservation Act, and there is no requirement for community consultation. This means that the impacts to several matters of concern under state legislation have not been properly examined, including impacts to; ● Biodiversity Planning Areas for ○ Wet Tropics - Regional Ecosystem ○ Core Area and Corridor Remnant Vegetation ● Cultural Heritage Boundaries - Present across the entire site ● Remnant Regional Ecosystems Vegetation Management Status ○ Least Concern - present across the whole footprint ○ Of Concern - present at 31 of the turbine sites ○ Endangered - Present across the Major Access Road ○ Corridor Buffers - Present at 64 of turbines sites ● Vegetation Management Category B Area—remnant vegetation shown on a regional ecosystem or remnant map as an endangered regional ecosystem, an of concern regional ecosystem or a least concern regional ecosystem - Across the entire site 1. The proponent must clearly indicate how the proposal aligns with Sustainable Development Goals, or the triple bottom line of sustainability, to demonstrate "overwhelming justification." 2. The proponent must describe in detail how it did, or did not, consider citing alternatives to this proposal in terms of biodiversity conservation or loss. 3. The proponent must provide a detailed cost/benefit analysis of development in closeby bioregions, such as the Einasleigh Uplands, including an analysis on the cost to biodiversity associated with development, comparing to development in the Wet Tropics bioregion 4. The proponent must provide clear calculations on the claim that "alternative location scenarios can be conservatively expected to have at least 30% greater impact on MNES." 5. Considering the commitments by State and Federal Governments to create consistent approaches to threatened species management in Queensland, the proponent should provide information about any impacts to threatened species listed under Queensland legislation.	No	The phrase "overwhelming justification" was used in Section 3.0 the PER to describe the factors contributing to the pursuit of renewable energy developments in the broader region. The Triple Bottom Line is aligned with the concept of ecologically sustainable development (ESD) which is an object of the EPBC Act. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market. Lengthy transmission lines to connect a project to the grid are detrimental to the commercial viability of a renewable energy project. Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. The proponent does not have data, nor should it be required to have the data, to undertake the detailed cost/benefit analysis proposed by the submitter.Due to the absence of a feasible alternative, no specific alternative location to the west of the Project area was identified for the purposes of comparison in Section 3.2 of the PER. The suggested 30% increase in capital cost is associated with the conservative assessment that 30% more infrastructure would be required in an area to the west with less-ideal wind resource and a more difficult, lengthy and costly electrical connection. The PER has been assessed by DCCEEW as adequately responding to the requirements outlined in the PER Guidelines and being fit for publication. The species protected under the Nature Conservation Act 1992 are not a consideration under the EPBC Act, unless they are also listed under the EPBC Act. The Project did assess potential impacts to State-listed species through the Development Application process under the Planning Act 2016.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
590	.004	Significant impact assessment	The proposed site for the CWF will result in significant clearing of threatened species habitat and remnant forest. When looking at threatened species habitat clearing, it is important to consider it on a cumulative basis. Articulating clearing solely based on land area does not reflect the multitude of species that are relying on areas of vegetation. The table below contains figures extracted from the impact assessment in the Chalumbin PER. When viewed cumulatively, the clearing of threatened species habitat amounts to 8043.21ha with 3734.11ha of this having a significant impact on a threatened species. The scale and impact of this Wind Farm is far beyond previous projects. The clearing associated with Kaban Wind Farm really demonstrated the impact that these developments can have on our natural areas and threatened species habitat. Chalumbin is almost ten times the size and impact of Kaban, and closer to the World Heritage Area and with increased threatened species impacts. 1. Coopers Gap (452 MW): 379 ha total, 729 ha cumulative threatened species 2. Mt Emerald (180 MW): 73 ha (total clearing) 3. Kaban (157 MW): 129 ha, 259 ha cumulative threatened species 4. Chalumbin (600 MW); 1,026 ha, 8043 ha cumulative threatened species In 2017, the Queensland Government published a report titled "Scientific review of the impacts of land clearing on threatened species in Queensland" [2]. The report investigated the drivers of biodiversity decline in Queensland. According to the report; "The key threats to biodiversity in Australia are: habitat loss and fragmentation of habitat; climate change; land-use change; invasive species and pathogens; grazing pressure; altered fire regimes; and changed hydrology (State of the Environment Committee 2011)."[2] As section 5.2 of the PER highlights, the CWF proposal will have several impacts including; habitat loss, habitat fragmentation, loss of connectivity, the introduction or increased prevalence of pests and weeds, increased risk of bushfire, reduced water quality and as mentioned in section 5.2.7, changes in the hydrology of the project area. The development activities associated with CWF feature 5 out of 8 key threats to biodiversity as recognised in the report published by the Queensland Government, and is a clear threat to the nation's biodiversity. The PER states that "an alternative location within the Northern QREZ in a more highly modified landscape (historically cleared for agricultural purposes) is not a feasible alternative, as there are no locations within the broader region that are sufficiently devoid of remnant vegetation." The proponent has not provided any evidence for this analysis, and it is unlikely that they have sufficiently investigated sites that would not require this amount of habitat loss. The mapping provided in the 3.0 Feasible Alternatives - Plate 3-1 shows that there is wind resource 7 - 11 m/s west of Mt Garnet where there are more disrupted landscapes with a lower density of threatened species. The proponent has also failed to understand or assess the impact to World Heritage Values associated with the loss of habitat for the Spectacled Flying Fox (SFF), Pteropus conspicillatus. In 2001, a report published by CSIRO found that; "P. conspicillatus is a significant component of World Heritage values in its own right and also contributes to two ecological processes that are important to the maintenance of other World Heritage values and the ongoing evolution of the Wet Tropics World Heritage Area"[3]. The PER has not in any way considered the impact to Outstanding Values of the Wet Tropics World Heritage Area associated with habitat and foraging loss of the SFF. Considering the threatened nature of the species, and the proposal to clear almost one thousand hectares of habitat, this is an unacceptable oversight. CAFNEC is a member of the Spectacled Flying Fox Recovery Team, and in the process of reviewing and renewing the Recovery plan. The proponent has not engaged with the Spectacled Flying Fox Recovery Team at all and it is unlikely that the proponent has an understanding of the current threats to the SFF or the population pressure that it currently faces. In 2018, a heat wave caused the death of 23 ,000 SFF, which had a serious impact on their population size. Evan Quartermain, Head of Programs at Humane Society International Australia stated that; "Even though the spectacled flying-fox Endangered listing was made after the shocking Cairns heat stress event, it was actually a delayed decision and didn't reflect the catastrophic losses the species experienced. We now have a clearer picture of the event's consequences and there's no question an uplisting to Critically Endangered is appropriate and necessary." [4]	We know that the vulnerability of the species is much higher than its current listing implies, and the failure to engage with the Spectacled Flying Fox Recovery Team indicates that the proponent does not understand the significance of this. The Public Environment Report also states that, "There is potential for the Project to have a significant residual impact on the spectacled flying-fox through turbine collision and/or barotrauma. If such an event leads to a significant residual impact (through exceeding an impact trigger limit), it may be necessary for the Project to offset this impact through payment into a research fund for the species." The SFF is on the brink of extinction. The loss of habitat, potential turbine collision and barotrauma have not been properly considered, avoided or mitigated. A failure to do so could mean not only the loss of this species, but serious impacts to the Outstanding Values of the Wet Tropics World Heritage Area. The management interventions for impacts to the Magnificent Brood Frog (MBF) are completely insufficient. The PER states that; "In addition to the direct (land-based) offsets, a significant indirect offset is proposed for the magnificent brood frog to advance the scientific knowledge for this species, in the form of contribution towards research of up to $250,000." While research is important for the recovery of threatened species, it should not come at costs to the population and it should be clear that research does not offset an impact. Considering the data insufficiency in the case of the MBF, it could potentially mean the funding finds that the impact to the species was irreversible, by which time it will be too late to intervene. As mentioned earlier, the proponent has not considered biodiversity in the citing of this project, which is abundantly clear when we are considering losing more than 8,000ha of threatened species habitat. The Executive Summary of the Scientific Review of the Impacts of Land Clearing on Threatened Species in Queensland states that "Internationally and nationally, habitat loss is the greatest threat to threatened species." The amount of habitat loss for the multiple threatened species associated with this development proposal is not acceptable. Recommendations 1. The proponent needs to properly describe the cumulative clearing in regards to Threatened Species, including a clear calculation and description of the amount of threatened species habitat lost to clearing. 2. The proponent needs to provide a detailed summary of alternatives that were considered to avoid development activities that are listed threats to biodiversity, as recognised in the report published by the Queensland Government [2]. 3. The proponent must provide a detailed assessment of the impact to World Heritage Values associated with the loss of habitat for the Spectacled Flying Fox, Pteropus conspicillatus. 4. The proponent must consult with the Spectacled Flying Fox Recovery Team to gain an up to date understanding of threats to the species and potential impacts of the Chalumbin Wind Farm. 5. The proponent needs to establish a detailed plan for how impacts to the Magnificent Brood Frog will be mitigated or offset. Funding for research alone is an insufficient offset and $250,000 is unlikely to provide sufficient funds to improve understanding of the MBF.	No	The maximum clearing footprint of the Project is 1,071 ha. This vegetation may represent habitat for more than one species, but it can only be cleared once. This submission's interpretation of clearing amounts is not realistic. An assessment of alternatives is provided in Section 3 of the PER. Potential impacts to the spectacled flying-fox are addressed in Section 8.6.10. The Project team has consulted with members of the SFF Recovery Team on several occasions. A Species Management Plan for the magnificent brood frog will be developed and will be reviewed and approved by DCCEEW prior to construction activities commencing. As stated in the PER, it is proposed that land-based offsets will acquit 100% of the offset requirements for this species; in addition, the proponent has made a significant commitment for a voluntary contribution to research into the magnificent brood frog. It should be noted that Project surveys have already contributed to improved understanding of this species' distribution (a fact which is acknowledged by the MBF Working Group).
590	.005	Cumulative impacts	The cumulative impact assessment has not in any meaningful way considered the impacts of other wind farms that are in operation, in the process of being constructed or proposed for construction. The proponent has provided a table that lists potential impacts, but there is no detailed assesment of how these collective impacts will be impacting threatened species, particularly those with data gaps. The work that has been done to assess cumulative impacts appears to be solely sourced from publicly available information, and not through any engagement with other developers. To truly understand the cumulative impacts, there must be direct engagement with other developers whose projects will create cumulative impacts. That is particularly the case for the Upper Burdekin Wind Farm, which is proposed in a similarly biodiverse region. Given that the CWF is clearing large sections of Wet Sclerophyll forest, an important ecotonal environment for the Wet Tropics, it is of priority that the proponent assesses the cumulative impact on Wet Sclerophyll forest.	1. The proponent must directly engage with other developers whose projects will create cumulative impacts in relation to the Chalumbin Wind Farm and work to properly assess cumulative impacts. 2. Of priority, cumulative impacts to Wet Sclerophyll forests must be assessed.	No	The cumulative impact assessment in Section 5.5 of the PER has been updated to consider wet sclerophyll forests as well as actual MNES. It is worth noting that the Upper Burdekin Wind Farm project area does not include any wet sclerophyll forests, according to their draft PER which was recently released.
13b	.022	Noise and vibration	It is known that wind turbine noise has negative effects on habitat quality and wildlife. "However, as shown below, while the potentially adverse effects of Wind Turbine Noise (WTN) on humans are being studied and regulated by planning and building laws, the same scrutiny has not been applied to examining or reducing potentially adverse effects of WTN on wildlife. The impact of noise pollution on wildlife is still largely ignored in environmental impact assessments (EIAs) during planning processes, and there is insufficient mapping of wildlife species and their noise sensitivity, even in areas considered biodiversity hotspots." (22)		No	This submission is noted. The PER has been assessed by DCCEEW as meeting the PER Guidelines. Similarly, the project received development approval from the State last year.
13c	.023	Noise and vibration	"Noise pollution influences the acoustic environment even far from anthropogenic centers, in remote areas that include critical habitats for endangered species . Noise pollution negatively impacts wildlife by disrupting mechanisms that are crucial for their survival. In particular, noise can: 1) cause physiological damage such as chronic, high levels of stress hormones, or actual hearing loss ; 2) be directly perceived by animals as a threat, causing them to increase costly anti-predatory behaviors at the expense of foraging, or flee the affected area altogether, leading to functional habitat loss ; 3) distract foragers, reducing their efficiency of finding and handling food; 4) hinder animal communication by reducing the distance at which a signal can be detected , limiting the ability of the signal to reach its intended recipient, and decreasing the amount of information that can be extracted from a signal, such as the sound of an approaching predator or potential prey. These mechanisms are not mutually exclusive, and the role that each plays in determining the impact of noise pollution varies by species. Not all species react to noise in the same way, due to differing sensitivities to noise, context, and lifehistory. Overall, noise pollution alters animals' communities, reduces their overall survival and fitness, and contributes to the decline of global biodiversity."(22) "Traffic is the most widely studied source of anthropogenic noise. ...compared the spectral properties of WTN and traffic noise, and suggested that a combination of highway noise and WTN might create a greater, more complex disturbance, rather than one masking the other. Specifically, WTN alters the natural acoustic environment by inducing airborne loud broadband sound which is within the hearing range of many animals , including most bird species. A few other studies have also looked at the effects of WTN on other wildlife with mixed results." (22) A study of the effects of wind turbines on antipredator behaviour in California ground squirrels showed that WTN caused a higher level of alertness attributed to loss of auditory capacities. (23) It may be reasonably assumed that this caused physiological damage due to chronic high levels of stress hormones as well. It would reasonably be assumed that species such as possums, gliders, and koalas, wallabies, kangaroos, bandicoots, quolls, dunnarts, which inhabit the Chalumbin area, would also mount the same sort of response to WTN, causing reduction of life expectancy and increased predation, if, of course, they do not flee the site altogether. It should also be noted that the Chalumbin wind farm site will provide a combination of traffic noise and wind turbine noise, which will create a greater disturbance.		No	This submission is noted. It is acknowledged that insufficient scientific research has been undertaken globally on the potential impacts of WTN noise on wildlife. The paper referenced in your submission (22) concludes that "WTN effects on wildlife could be mitigated by gathering additional scientific data on WTN impacts, mapping species presence and auditory sensitivity to provide information for planners and advisors, and mandating the use of better science-informed practices and technologies for WTN reduction, including long-term monitoring, zoning and micro-siting". CWF has been very open to sharing scientific data collected from project surveys to date and would likely respond favourably to future requests that could inform improved science-based practices. In the meantime, the PER has been assessed by DCCEEW as meeting the PER Guidelines.
590	.006	Alignment with government policy	There are concerning discrepancies between the information contained in the SARA approval and what is contained in the PER. There are a number of threatened species that are listed as impacted under the SARA documentation, that are either entirely missing from the PER, or have differences in the information provided. The concerning discrepancies between this documentation is highlighted below, and demonstrates that the proponent has not provided all information available to them in the PER. The proponent must provide all documentation and knowledge regarding the potential impacts of the CWF in the PER. Information in the SARA Approval Documents: No red goshawks were observed during the diurnal bird surveys in January 2021. A nest considered possibly belonging to red goshawk was observed in the Glen Gordon property, in riparian vegetation to the north of the main property access road (see Plate 6-9 and Figure 6-3). The nest was unoccupied (as would be expected in late January) but appeared to have been recently built (no older than the 2019-20 breeding season). Photographs of the nest were sent to a number of recognised red goshawk experts; one (a QPWS ranger) confirmed the nest as likely belonging to the red goshawk while two others considered it was 'possibly' belonging to the red goshawk. The white-throated needletail is widespread in eastern and south-eastern Australia. It is recorded in all coastal regions of Queensland, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains (SPRAT 2021) One white-throated needletail was observed during the March 2021 field surveys. The specimen was found deceased within the existing transmission line corridor (Plate 6-10) as shown on Figure 6-3. Information in the PER: "The red goshawk has not been observed within the Project area. There is potential for the Project to have a significant residual impact on the red goshawk, in the event that turbine collision occurs. If a collision event leads to a significant residual impact (through exceeding an impact trigger limit), it may be necessary for the Project to offset this impact through payment into a research fund for the species." "No habitat mapping has been undertaken for white-throated needletail as this species could occur in any airspace over the Project area". The PER states that there is nil habitat in the project area.	Recommendations 1. The proponent must provide all documentation and knowledge regarding the potential impacts of the Chalumbin Wind Farm in the PER. 2. A thorough investigation must be made into the discrepancies between the SARA approval documentation and the PER to understand why the differences exist and provide clear information about how they have been resolved	No	The material presented in the development application under the Planning Act 2016 and State Code 23 is necessarily different to the information presented in the PER (the former responds to Matters of State Environmental Significance while the latter responds to MNES). Any differences in assessment of certain species between the documents is a result of the increased knowledge at the time of the PER preparation (compared with the Ecological Assessment Report prepared for the development application), the evolution in habitat mapping rules (one was to satisfy State regulators, the other to satisfy DCCEEW), and changes to the Project design. The White-throated Needletail is almost exclusively aerial and therefore no roosting habitat exists within the Project area. It is not uncommon for assessments under the Planning Act 2016 and the EPBC Act to differ in certain respects.
13	.023	Noise and vibration	Koalas are present in the Chalumbin area in low density, and rely on vocal signals to find mates. Typically the males emit a sonorous bellowing call during the breeding season, and the female chooses and finds a mate based on that (24). "Koala bellows consist of inhale and exhale components; at the height of bellowing activity, the average duration of each was 1.6 and 0.46 s, respectively. The frequency range of inhalation at the height of bellowing activity was approximately 80–750 Hz. Frequency range for exhalation at the height of bellowing was approximately 90–400 Hz." (24) Wind turbines generate low frequency noise in the range of 20-200Hz, so there is indeed considerable overlap with the frequencies used by koalas. In addition, because low frequency sounds travel farther than high frequency ones, the lower frequencies generated by wind turbines are especially damaging to koala populations. WTN will therefore impair the abilities of koalas to breed, and likely contribute to local outright extinction. The low frequency noise (20-200Hz) of wind farms has been found to have adverse health effects on humans. (25). "LFN exposure has been found to cause a variety of health conditions. Exposure to LFN from wind turbines results in headaches, difficulty concentrating, irritability, fatigue, dizziness, tinnitus, aural pain sleep disturbances, and annoyance. Clinically, exposure to LFN from wind turbines may cause increased risk of epilepsy, cardiovascular effects, and coronary artery disease. (25) A review paper indicated that road traffic noise may overactivate the hypothalamic-pituitaryadrenocortical axis (HPA) and sympathetic-adrenal-medullar axis (SAM), increase the blood pressure and reduce HRV, and finally affect the cardiovascular system. (26) If such chronic noise is known to have detrimental effects on the health of humans, it would be reasonable to consider that its effects on wildlife, especially mammals, would be somewhat similar.		No	Koalas have not been confirmed present within the Project area. Section 8.6.3 assesses the potential impacts of the project on koala in the absence of a confirmed population. In relation to noise impacts on people, a noise impact assessment is required in accordance with the Queensland Planning Act 2016 - State Code 23. The State Code prescribes noise limits for sensitive receptors, including dwellings, that must be met during operation of the wind farm. The project was approved by the State government in June 2022 subject to conditions of approval, including conditions that noise during construction must meet limits prescribed in the Environmental Protection (Noise) Policy 2019.
13b	.023	Noise and vibration	Infrasound is sound of frequencies below normal hearing range for humans, that is, below, 20Hz. It is an emerging topic of study. "With digital bioacoustics, scientists can eavesdrop on the natural world – and they're learning some astonishing things" (27) "As scientists eavesdrop on nature, they are learning some astonishing things. Many species that we once thought to be mute actually make noise – lots of it, in some cases. For example, research by Camila Ferrara at Brazil's Wildlife Conservation Society has demonstrated that Amazonian sea turtles make more than 200 distinct sounds. Ferrara's research showed that turtle hatchlings even make sounds while still in their eggs, before they hatch, to coordinate the moment of their birth. Ferrara's acoustic research also revealed that mother turtles wait nearby in the river, calling to their babies to guide them to safety, away from predators: the first scientific evidence of parental care in turtles, which were previously thought to simply abandon their eggs." (27) "Scientists are also learning that vocally active species – like bats – make sounds which contain much more complex information than previously thought. Bat echolocation, for example, was discovered nearly a century ago. But only recently have researchers begun deciphering the sounds that bats make for other purposes. By recording many hours of bat vocalizations and decoding them using AI algorithms, scientists have revealed that bats remember favors and hold grudges; socially distance and go quiet when ill; and use vocal labels that reveal individual and kin identity. Male bats learn territorial songs in specific dialects from their fathers and, much like birds, sing these songs to defend territory and attract mates, which scientists characterize as culture. " (27)		No	Infrasound / low frequency sound is not listed as a key threatening process for the any of the MNES species that are considered likely to be impacted by the project. It was not a requirement of the PER Guidelines to consider infrasound.

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13b	.024	Noise and vibration	"Research by Mirjam Knörnschild in Costa Rica with sac-winged bats has demonstrated that mother bats babble to their babies in "motherese", in a manner similar to humans; baby bats learn to vocalize this way. Until recently, scientists had no idea that bats were capable of vocal learning, or conveyed such complex information in their vocalizations. " (27) "As we grapple with these future-oriented questions, we should not forget about the pressing challenge of noise pollution, the reduction of which can have immediate, positive and significant impacts for non-humans and humans alike. Hushing the human cacophony is a major challenge of our time. Digital listening reveals that we have much more to learn about non-humans, and provides new ways to protect and conserve the environment. Perhaps one day we will invent a zoological version of Google Translate. But first we need to learn how to listen." (27) Infrasound, being of low frequency, has the capacity to travel farther than any other frequency. A study from Finland showed that infrasound can travel 40-60km from wind farms, and did so on more than 50% of days. (28) Infrasound causes harmful health effects as far as 15-20 km from wind turbines – the risk distance grows if the efficiency, amount or height of the wind turbines increases or in a long-term exposure. (29)		No	Infrasound / low frequency sound is not listed as a key threatening process for the any of the MNES species that are considered likely to be impacted by the project. It was not a requirement of the PER Guidelines to consider infrasound.
13b	.025	Noise and vibration	So if the adverse infrasound effects of wind farms on humans, who do not use infrasound for communication, can be ascertained up to 20km away, why would we not expect even greater adverse effects on wildlife, which do commonly use infrasound for communication, and are often located much closer than 15-20km away? As the article stated, animals which were previously thought of as mute are now found to be vocalising in the infrasound frequency range. The northern greater glider, which is common in the wet sclerophyll forests of the Chalumbin area, is an animal which is thought to be mute. It may be that further research using infrasound frequencies finds that this animal, which is threatened, is not mute, and vocalises in the infrasound range. If so, wind turbine infrasound will have an additional detrimental effect, as well as habitat loss and destruction of trees with nesting hollows. The yellow-bellied glider, which has also been recorded extensively in the Chalumbin project area vocalises extensively in audible frequencies, and it may well be that they vocalise also in the infrasound range.		No	Infrasound / low frequency sound is not listed as a key threatening process for the any of the MNES species that are considered likely to be impacted by the project. It was not a requirement of the PER Guidelines to consider infrasound.
13b	.026	WTQWHA	"The WTQWHA is located to the east of the Wooroora property, and also cuts across a portion of the north-eastern extent of Wooroora Station (immediately adjacent to the Project area). It was considered critical by the Project team to ensure that the Project footprint did not extend into the WTQWHA. The Project footprint has been designed to achieve a separation distance of at least 600 m from the WTQWHA at its closest point (in the east of Wooroora). This not only avoids direct impacts to the WTQWHA, but also decreases the likelihood of any indirect impacts to the WTQWHA being associated with the Project. For comparison, the buffer to the WTQWHA from the Windy Hill Wind Farm is approximately 500 m." The direct wind farm project area does not extend into the WTQWHA; however roughly SIXTEEN wind turbines are located with 2km of the WTQWHA. As discussed above, they will have direct impacts on the WTQWHA via noise pollution including infrasound noise pollution (which can extend up to 40-60km away), and it is likely that many insects, bats, and birds that inhabit the WTQWHA will be killed by wind turbine blades. In addition, tourists who visit the WTQWHA expecting a natural and wilderness experience in this area will be grossly disappointed to find rampant industrialisation occurring on the doorstep of the WTQWHA. They will not give good reviews and will not recommend their experience to others. The wind turbines will likely be visible from Koombaloomba Dam and certain points along Tully Falls Road; certainly increased traffic and the carcasses of dead cassowaries and other wildlife will also be visible by tourists. In addition, access to the southern and eastern parts of the wind farm will likely be via Tully Falls Road, which passes through 30km of the WTQWHA. Additional traffic connected with the wind farm will no doubt cause more noise pollution and more wildlife fatalities. If the Tully Falls Road is used for haulage of wind farm components, it will require extensive widening, with destruction of more roadside trees and habitat within the WTQWHA. Additionally, the length of turbine blades will mean that many corners along that road will need extensive roadworks to lessen the degree of curvature, again with further destruction of trees and earthworks, with resultant water and erosion issues.		No	No construction vehicles will access the Project area via Tully Falls Road south of the intersection with Wooroora Road. Tully Falls Road will not be widened or upgraded in any way by the Project. A Landscape and Visual Impact Assessment (Appendix M of the PER) has determined that turbines will not be visible from Koombooloomba Dam due to the topography and vegetation in between.
13b	.027	Wet sclerophyll forest impacts	"The Project area supports large areas of remnant vegetation dominated by open eucalypt woodland with small pockets of scattered rainforest communities close to the eastern boundary comprising a total of approximately 7.4 ha. The Project has been designed to avoid any clearing of rainforest vegetation therefore threatened species specifically associated with these communities are not expected to be directly impacted." Not actually true. Rainforest exists along some of the deeper creeks and gullies within predominantly wet sclerophyll forest and will be directly impacted by haulage roads in many of the most eastern locations, as the roads will need cross these gullies in multiple locations. If not directly impacted, the rainforest is in close proximity to the haulage roads and wind turbine sites.		No	No rainforest vegetation will be cleared by the Project, either for turbines or for associated access roads through gullies. Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area).
13b	.028	Indigenous Cultural Heritage / Engagement	Mention is made of the need to provide distance between wind turbine locations and Arthur's Seat and Kara Outstation. However for many indigenous people, the entire landscape is a sacred site, and so it should be. Environmental law is rapidly evolving and many progressive countries are now recognising that rivers and ecosystems should have the same rights bestowed upon humans. "It's only natural: the push to give rivers, mountains and forests legal rights. It seems logical to grant protection to nature by treating it as a living entity. And the law might be catching up." (32) Certainly the ecosystems of Chalumbin are worthy of being recognised as a legal entity for a variety of biodiversity, climate, and ecosystem integrity reasons.		No	The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Section 6.1.3 outlines that a key requirement of the CHMA between the project proponent and Jirrbal People #4 Traditional Owners was the commissioning and completion of a Preliminary Scoping Study by the Jirrbal's chosen advisors which included desktop literature reviews, engagement with senior knowledge holders, a site overview inspection and a workshop with members of the Jirrbal community. The Preliminary Scoping Study produced a list of areas of known high potential for cultural heritage (red zones), areas of low potential for cultural heritage (green zones) and areas of unknown heritage potential (orange zones). These investigations identified that the Arthur's Seat topographical feature was of high cultural significance for the Jirrbal People #4. No infrastructure is proposed within 2,000 m of Arthur's Seat, as per early recommendations from the Jirrbal People #4.
13b	.029	Red goshawk	"The Project footprint has been designed to achieve a separation distance of more than 1,000 m between this nest and any proposed wind turbine." This is totally insufficient. It does not prevent a pair of red goshawks building a nest closer than 1000m, and it does not prevent their death by collision with wind turbines at any location in the Project Area, which they are obviously at risk from, when they choose to fly above the canopy, which they more often do in the afternoon, and when conducting courtship display flights. It certainly does not prevent any potential noise and infrasound impacts, nor does it protect them against the endocrine disruptor chemicals associated with microplastics from the wind turbines themselves.		No	The National Recovery Plan for the red goshawk identifies buffer zones of 300-400m from a red goshawk nest; the Project has voluntarily increased this buffer to 1km. As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
13b	.030	WTQWHA	" Lack of a comprehensive visual impact assessment associated with the values of the WTQWHA" Degradation of the visual impacts of the WTQWHA is unavoidable and reduction of number of wind turbines to 86 is only a token change. " Impacts to wet sclerophyll forest vegetation – WTMA preference is to avoid wet sclerophyll forest vegetation entirely, or – Demonstrate how ecological function is maintained despite impacts; " The WTMA clearly identified the wet sclerophyll forests to be of biodiversity and ecosystem importance. Ark Energy made changes to supposedly reduce the area of wet sclerophyll forest affected by 31%. However Ark Energy has maintained that they need to totally destroy 117 ha of wet sclerophyll forest (most likely an underestimate): "The area is also important to allow the connection of the southernmost Project infrastructure to the rest of the Project. For these reasons, the wet sclerophyll forest vegetation has not been completely avoided by the Project design. However, the Project has taken the WTMA feedback on board and has sought to ensure that the design can maintain the important ecological function of this area despite the construction and operation of the Project." As stated above, the edge effects of road clearing and habitat destruction generally can extend for hundreds of metres on either side of the road. The haulage road will be the width of a 16 lane highway in places, and yet Ark Energy claim that "strategic placement of fauna movement infrastructure" will be enough to remedy this.		No	A comprehensive LVIA has been undertaken for the Project and is presented in Appendix M of the PER. Impacts on wet sclerophyll forest (including impacts associated with edge effects) are discussed in Section 8.10.2.3 of the PER.
13b	.031	WTQWHA	There is NO demonstration of how ecological function is maintained despite impacts, given the multifaceted impacts of haulage road building and wind turbine construction and operation. Fauna movement is just ONE aspect of ecological function, and the infrastructure in no way remedies the edge effects, destruction of freshwater habitat, destruction of feed trees and nesting hollows, noise pollution, and wind turbine collisions of birds, bats, and insects over wet sclerophyll forests, as well as pollution by microplastics and endocrine disruptor chemicals. Fauna movement infrastructure can only conceivably placed AFTER construction of the wind turbines is completed, as rope ladders between trees on either side of haulage roads would obviously interfere with the passage of heavy trucks carrying blades and other components. I would assume that the WTMA would have rightly been critical of the response of Ark Energy to their requests.		No	As described in 8.6.7.4 of the PER, vegetation clearing will be undertaken in accordance with an approved Species Management Plan and any unavoidable impacts on hollow-bearing trees will mitigated through the retention and use of hollow-bearing stags, and the installation of nest boxes on a 2:1 basis. The majority of the cleared area (up to 80 %) will be progressively rehabilitated as soon as possible on completion of construction, incorporating glider poles where necessary to maintain connectivity until the revegetation has sufficiently established. This will be further detailed in the MNES Management Plan.
13b	.032	MNES	The initial proposal of 200 wind turbines was likely a tactical ploy to allay opposition to a reduced number of turbines, and I would assume that this was likely Ark Energy's objective all along. The destruction of wet sclerophyll forests, the destruction of a significant area of Magnificent Brood Frog habitat, the fragmentation of ecosystems and reduction of ecosystem integrity, the noise pollution, the infrasound pollution, the microplastics and EDC contamination, the collisions of birds, bats, and insects in area adjacent to the WTQWHA, is still unacceptable with 86 wind turbines.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
13b	.033	Vegetation clearing	"Vegetation clearing will be limited to those areas required for earthworks and construction of the Project. Those areas which are not required for the ongoing operation of the Project will be rehabilitated to pre-disturbance vegetation state as soon as practicable following construction." Obviously, but exactly what clearing is required will be totally at the discretion of Ark Energy; if they decide to conduct more clearing than what is stipulated in the PER, there will be no oversight of this from any government department and nothing will be holding them to their original plans. Because the wet sclerophyll forests are old growth forests, with significant trees with nesting hollows, they CANNOT be rehabilitated to the pre-disturbance vegetation stage and they will take many decades, indeed maybe even centuries to recover, if they ever do. Generally only old trees contain tree hollows, which are the only suitable nesting sites for many species of possum and glider., as well as many species of birds, like parrots, and bats.		No	It is recognised that hollows take decades - sometimes centuries - to develop within vegetation. For this reason, as described in 8.6.7.4 of the PER, vegetation clearing will be undertaken in accordance with an approved Species Management Plan and any unavoidable impacts on hollow-bearing trees will mitigated through the retention and use of hollow-bearing stags, and the installation of nest boxes on a 2:1 basis. The majority of the cleared area (up to 80 %) will be progressively rehabilitated as soon as possible on completion of construction, incorporating glider poles where necessary to maintain connectivity until the revegetation has sufficiently established.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
13b	.034	Mitigation and management measures	"Sequential clearing will occur to minimise impacts on native fauna, particularly arboreal fauna which may be using tree hollows."	Presumably this is to allow fauna using the tree hollows to escape, and it will not stop destruction of trees with hollows. So even if the animals escape, where to? Often tree hollows in surrounding areas will already be occupied and the surrounding ecosystem will already be at carrying capacity for that species, Inevitably a large proportion of animals that are displaced for any reason will perish, due to lack of shelter, stress, lack of food, and easier predation.	No	The PER does not claim that sequential clearing will prevent the loss of trees with hollows. As clearly stated in the PER, large hollow-bearing stags will be identified and retained during the vegetation clearing stage, and re-attached to adjacent undisturbed vegetation at the same height and aspect to their original position. Along with the use of artificial nest boxes during the rehabilitation stage, this will ensure a net gain in available large hollows.
13b	.035		" Turbine locations will be microsited within the Project corridor, where conditions and wind resource allow, to take advantage of areas of lower ecological significance." • "Removal of protected plants will be avoided as much as practicable by locating infrastructure away from populations and individuals during micrositing activities." • "Access roads will be aligned along existing tracks wherever practicable to minimise vegetation removal and loss of hollow-bearing trees, as well as to avoid additional disturbance through GBR wetland protection areas. • "Develop a Species Management Program (SMP) to identify specific measures to be implemented that will mitigate impacts to threatened fauna species and breeding places during construction as well as the operation of the Project. "	These are token gestures, and undertakings with no legal binding or government oversight and enforcement. Wind farms are entirely profit-driven, and any costs are minimised. Any undertaking which may be costly and/or will interfere with the timeline of the project may well be abandoned, and who is to know?	No	These commitments are expected to form approval conditions for which compliance reporting will be required.
13b	.036		"• Pre-clearance surveys will be undertaken by a suitably qualified ecologist to: – identify GPS locations of any protected plants within the proposed disturbance areas noting details for each individual, including a health assessment; – identify and mark all hollow-bearing trees; – identify and mark any other active breeding places such as nests, burrows etc.; – identify suitable release sites; and Extensive deforestation, Kaban wind farm. We would expect similar damage at Chalumbin. – identify presence of weed species."	Again, these are likely token gestures with no government or independent oversight.	No	These commitments are expected to form approval conditions for which compliance reporting will be required.
13b	.037	Vegetation clearing	"A suitably qualified fauna spotter-catcher will be present during all clearing activities, working under an approved SMP. The fauna spotter-catcher will be responsible to check an area immediately prior to any clearing for; presence of any native fauna including searches of all potential habitats such as terrestrial microhabitats and hollows, etc. Any captured species (excluding koalas) will be relocated to an agreed release site. The fauna spotter-catcher will then advise the ground staff as to measures that need to be taken to avoid impacts on breeding places and fauna species. Specific threatened species pre-clearance activities within the Project footprint will include: – canopy searches in suitable foraging tree species for koala; and – inspections of suitably sized hollows for the presence of greater glider."	Unless the fauna spotter-catcher is able to climb all trees with nest hollows, this is pointless. Possums and gliders will not emerge from their nesting hollows unless they are disturbed. If they are, they will often travel quickly and be impossible to catch. If the hollows are not manually inspected, the only way they will emerge is when the tree is felled, and it is very possible they will be injured when this happens. Any significantly injured animal will most likely be euthanased by vets. If not injured, they may not be caught and will travel to surrounding areas where there may be a paucity of nesting hollows, and there is a good chance they will not survive the experience. Even if they are caught and relocated, their chance of survival is limited, as the area they are relocated to may well already contain only used nesting hollows, and the habitat may already be at carrying capacity for that species.	No	The measures described for the spotter-catcher activities are standard practice in Queensland under SMPs and Rehabilitation Permits.
13b	.038	Vegetation clearing	"Sequential clearing will occur. Key steps as part of sequential clearing are summarised below: – the first phase will consist of removing understorey vegetation and smaller juvenile trees only. Juvenile trees are under 4 m in height or trunk circumference of less than 31.5 cm at 1.3 m above the ground. No hollowbearing trees will be cleared in Phase 1; – after 48hrs the second phase can commence which is to clear the remaining larger trees, including those with hollows. Trees with small hollows will be cleared using the "slow drop" technique. The tree will be brought down slowly by the machine and mulch put underneath to soften the fall. They will then be inspected by the fauna spotter-catcher to ensure no wildlife remain in the hollow. Where practicable, fauna will be caught, and released into suitable recipient sites once clearing has stopped. – if any native fauna are injured they will be taken to a local vet/wildlife carer for treatment. "	This means that the vegetation clearing would involve quite a long and laborious process, especially when well over 1000 hectares are to be cleared. I personally have difficulty believing that this process will be undertaken over the entire area to be cleared, unless Ark Energy are prepared to devote several months, or even 1-2 years, to the vegetation clearing process before other work is to commence. Given Ark Energy will want to commence road construction and earthworks as soon as possible, I am very doubtful this sequential clearing process will occur. Ark Energy will have a construction schedule, with limitation of time devoted to clearing of vegetation. Certainly, again, there is no government oversight on this, or as far as I know, any environmental regulation which will hold Ark Energy to this.	No	Sequential clearing is a standard practice in Queensland for large projects, and will be factored into construction scheduling.
13b	.039	Vegetation clearing	" All fencing on site, including security fencing, will incorporate design measures to allow for the movement of fauna. Fencing design must consider allowing fauna to move through or over it and will not use barbed wire."	Security fencing normally involves high chain link fences, sometimes with barbed wire on top. The only way that fauna may move through it is if large and frequent holes are cut in the chainlink, then it no longer can be regarded as 'security fencing'? Is this really what Ark Energy will do? This statement is short on detail.	No	The Project will not be security fenced throughout the Project area. Rather, the security fencing will likely be installed at interfaces with public access points and around valuable and significant facilities (e.g. substations). The MNES Management Plan will include further detail on this requirement.
13b	.040	Vegetation clearing	"Installation of glider rope crossings and glider poles in areas of confirmed glider habitat with a clearance width of 50 m or greater to maintain habitat connectivity"	As stated above, this can conceivably be undertaken only AFTER construction of the wind turbines is completed, many months or even 1-2 years after clearing has commenced. And this statement is short on detail as to how frequent the crossings are along the roads. This is again, likely to be a token gesture.	No	As described in 8.6.7.4 of the PER, vegetation clearing will be undertaken in accordance with an approved Species Management Plan and any unavoidable impacts on hollow-bearing trees will mitigated through the retention and use of hollow-bearing stags, and the installation of nest boxes on a 2:1 basis. The majority of the cleared area (up to 80 %) will be progressively rehabilitated as soon as possible on completion of construction, incorporating glider poles where necessary to maintain connectivity until the revegetation has sufficiently established. This will be further detailed in the MNES Management Plan.
13b	.041	Vegetation clearing	"Nest box installation to be undertaken where active dens are identified within the Project footprint to compensate for loss of denning resources."	Again this statement is short on detail as to how many nest boxes are to be placed. Will one be placed for every disturbed arboreal marsupial? Or just a few token nest boxes placed? Many bats and birds also inhabit tree hollows – what provision will be made for the loss of their nesting hollows? None is mentioned in the PER.	No	As described in 8.6.7.4 of the PER, vegetation clearing will be undertaken in accordance with an approved Species Management Plan and any unavoidable impacts on hollow-bearing trees will mitigated through the retention and use of hollow-bearing stags, and the installation of nest boxes on a 2:1 basis. The majority of the cleared area (up to 80 %) will be progressively rehabilitated as soon as possible on completion of construction, incorporating glider poles where necessary to maintain connectivity until the revegetation has sufficiently established.
13b	.042	Vegetation clearing	"Minimise clearing widths and where feasible install measures to assist fauna safely move across these areas to adjacent habitats. This may be reducing vehicle speeds to minimise chance of vehicle strike, establish rope crossings at key fauna corridors (such as watercourse crossings)."	Regardless of how much clearing widths are minimised, very wide widths (70m) are often needed for transport of wind turbine components, and the wind turbine pads themselves. "This may be" - again, hollow words; there is no legal obligation for Ark Energy to do any of this if the project is permitted, and there is certainly no interest from the State Government to provide any oversight or enforcement of any of these undertakings. Remember, the Qld State Government has already authorised this wind farm as far as I am aware, and they have even passed "State Code 23" to allow wind farms to be built anywhere except near schools and churches, and no environmental consideration can be enough to stop them. The Qld Government has absolutely no interest in enforcing any environmental safeguards with regards to wind farms.	No	Management Plans - such as a MNES Management Plan - will be required to be prepared and approved prior to works commencing. There will be compliance obligations for the Project, as well as auditing and reporting requirements. Management Plans - such as a MNES Management Plan - will be required to be prepared and approved prior to works commencing. There will be compliance obligations for the Project, as well as auditing and reporting requirements.
13b	.043	Biodiversity general	"All vehicles associated with construction activities will travel at slow speeds (e.g. 40 km/h) to minimise the chance of any fauna strikes occurring, with the majority of vehicle movements being during the daylight hours. Speed limit signage will be placed at the entrance to the site and other key access tracks. "	This may be the case, but construction vehicles and workers will be travelling to and from Ravenshoe, and even further afield, frequently early in the morning and late afternoon, when road wildlife crossings in the Chalumbin area and the WTQWHA areas are more frequent. Construction workers generally travel at high speeds and have very little empathy for wildlife if any. During the nearby construction of the Kaban wind farm, at least 5 extra Lumholtz tree kangaroos have been killed on the road, and this has been attributed largely to Kaban wind farm construction and worker vehicles travelling between Kaban and Atherton early in the morning and late afternoon. There will inevitably be increased wildlife road mortality and injury as a result of this wind farm development.	No	Potential risks associated with fauna interacting with Project vehicular traffic will depend on the location and presence of a construction accommodation facility. The contractors working on the Project will be required to comply with the CEMP and any Traffic Management Plans that deal with potential impacts on the surrounding transportation network. Travelling over the speed limit is illegal and will be taken seriously by the Project owner.
13b	.044		" All fauna encountered (e.g. vehicle strike or during clearing activities) will be recorded in a central register by the Project Environment Manager. Any injured fauna will be reported as required in the Species Management Program that will be in place for the Project."	As far as I am aware, again, there is no government or independent oversight of fauna encounters and outcomes. There is no legal obligation for Ark Energy to release any of this information to the general public.	No	The proponent will be required to report fauna injuries in accordance with the requirements of the Species Management Program it works under through the provisions of the Nature Conservation Act 1992.
590	.007	MNES	Lack of Consideration of Iconic Species and Species Listed Under The Nature Conservation Act Apart from the inconsistencies between information provided between the SARA Assessment and PER, there is also the concern that there are a number of species that are listed under the Queensland Nature Conservation Act that are not listed in the EPBC Act. While the assessment under the EPBC Act does not require the assessor to consider listed species at a state level, we encourage both the assessment team and Minister to consider the importance of these species. This includes considering the iconic importance of several of these species and the state and federal government's commitment to developing consistent approaches to threatened species listing. Directly from DCCEE website: The 2013 Senate Standing Committee on Environment and Communications report "Effectiveness of threatened species and ecological communities' protection in Australia" recommended that the Australian, state and territory governments prioritise work to reduce duplication and inconsistency between their lists of threatened species. It also recommended that the governments work to establish uniform and integrated processes for the future listing of threatened species. The 2009 Report of the Independent Review of the EPBC Act included similar recommendations. One of the most important species to consider is the Lumholtz Tree-Kangaroo (Dendrolagus lumholtzi). The Lumholtz Tree-Kangaroo is an iconic species, and has a seriously restricted habitat and high site fidelity. Kanowski, John & Winter, J. & Simmons, T. & Tucker, Nigel found that; "The conservation of tree-kangaroos in remnant forests on the Tablelands is important because: (1) remnant forests support a significant proportion of the total population (remnants comprise about 20% of the remaining prime habitat for D. lumholtzi on the Tablelands); (2) remnant forests provide connectivity between populations on the Herberton Range and populations to the north and east of the Tablelands; and (3) tree-kangaroos are becoming increasingly important to residents of the Tablelands, e.g., as an icon of the local tourist industry." According to information provided in the SARA documentation, "the species shows strong site fidelity, with individuals remaining within their home range even when this is threatened by clearing or disturbance; as such, it has been known to occupy forest fragments of less than 20 ha. Populations in such fragments may have limited long-term viability (Woinarski & Burbridge 2016b)." The SARA Documentation also states that "One adult and one juvenile were recorded on camera within a small patch of rainforest vegetation within the Project area (see Plate 6-7). This vegetation is not intersected by any Project infrastructure." In the mapping provided below, sourced directly from the SARA report, it is clear that there is a mapped Lumholtz Tree-Kangaroo Habitat on the proposed site. According to Figure 8.8 below, potential habitat will be intersected by the development (around met mast in inset) as well as the road across Blunder Creek (sites marked with post-its). The statement by the proponent that development will not intersect with habitat is incorrect, even if the habitat is marginal. The Lumholtz Tree-Kangaroo is a part of the fauna of Outstanding Universal Value associated with the Wet Tropics WHA and this fact must be considered in the assessment of this project.	There are also a number of other important species found on site that are listed under the Queensland Nature Conservation Act, that the Department and minister should consider in assessing this project. Particularly regarding cumulative impacts. ● Litoria serrata, Tapping Green Eyed Frog - listed as Vulnerable. This species was observed at two locations within the Project area during spotlighting surveys ● A Rufous Fantail was recorded by camera trap in April 2021 (Plate 6-11) within a small rainforest patch on a rocky drainage line (Figure 6-3), dominated by Brush Box (Lophostemon confertus). ● Platypus (Ornithorhynchus anatinus)were observed in Blunder Creek on the Glen Gordon property during the wet season surveys. We urge the Department to include these species and the information in their assessment for two key reasons. 1. The government commitments to consistent approaches to threatened species management 2. The absence of any public consultation on SARA assessments, meaning that the community and experts can not raise concerns with assessment or mitigation measures for these species. 1. Assessment of impacts to threatened species under the Queensland nature laws, recognising the state and federal government's commitment to developing consistent approaches to threatened species listing and management. 2. The Lumholtz Tree-Kangaroo is a part of the fauna of Outstanding Universal Value associated with the Wet Tropics World Heritage Area and that must be considered in the assessment of this project.	No	The purpose of the PER is to provide an assessment of matters protected under the EPBC Act (i.e. matters of national environmental significance). DCCEEW does not have any jurisdiction over species that are listed under State legislation unless they are also listed under the EPBC Act. The PER already provides a baseline description of habitat and observations for the Lumholtz tree-kangaroo, the rufous fantail and the tapping green-eyed frog. The PER also provides a detailed assessment of potential impacts on these species and has concluded that significant residual impacts are not anticipated.
13b	.045	Biodiversity general	"Appropriate procedures for managing injured wildlife will be developed and included in the CEMP."	I am surprised these procedures have not already been developed. Injured wildlife often suffer severe stress reactions including capture myopathy, and many will die with unsympathetic and rough handling by workers. If significantly injured, most vets will decide to euthanase wildlife, but vets are located an hour away at least if there is an injured animal. Is there any provision for administering sedatives like diazepam, and pain relief, to injured animals on site? Or must they suffer, often in agony for an hour or two, until a vet can see them in Ravenshoe or Atherton, if a vet is available, and if Ark Energy consider they can afford a worker and his/her car to be offsite for a few hours whilst the injured animal is treated? I am very doubtful that Ark Energy management will treat injured animals with any care and compassion, when money and timelines are at stake.	No	Such procedures are standard and accepted practice for Species Management Programs, CEMPs and Rehabilitation Permits.
13b	.046	Biodiversity general	- "During trenching activities, open trenches will be monitored daily. If species are trapped in the trench they will be released by a fauna spotter-catcher. The amount of open trench will be minimised and trenches will preferably be backfilled prior to nightfall. " • "Escape ramps or planks and/or shelter (e.g. sawdust filled bags) for trapped fauna will be installed in open trenches. "	Again, there will be no independent or government oversight of this to ensure compliance.	No	The Project owner and contractors will be required to undertake works in accordance with approved Management Plans.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
13b	.047	Construction impacts	"Dust generating activities will be minimised during dry, windy conditions."	This is a wind farm site, where we are expecting frequent windy conditions, right? Far North Queensland has a dry season when it is mostly dry for several months every year. The construction schedule will demand that dust generating activities need to be undertaken during dry windy conditions. Again, there will be no independent or government oversight of this to ensure compliance. Hollow words.	No	Impacts to air quality, including dust, will be managed as part of the Construction Environmental Management Plan required under the Queensland State Planning Act 2016. A Construction Management Plan can be found as part of the application material for the development application. The State approved the project in June 2022.
13b	.048	Noise and vibration	"Standard construction work hours for noise-generating activities will generally be between 6.30am and 6.30pm, reducing the risk of disturbance to nocturnal and crepuscular fauna."	Especially in winter months, crepuscular fauna is actually commonly active after 6:30am and before 6:30pm, and will likely be impacted by "noise-generating activities". A large proportion of wildlife, including most birds, are actually diurnal, and will be extensively impacted. Macropods are also frequently active during diurnal hours if not too warm and sunny, as well as being active during crepuscular and nocturnal hours. Even if animals are nocturnal, they are OBVIOUSLY trying to sleep during daylight hours and will be terribly disturbed! Ark Energy management has never obviously worked a night shift.	No	Yes, most birds are diurnal and therefore the statement "Standard construction work hours for noise-generating activities will generally be between 6.30am and 6.30pm, reducing the risk of disturbance to nocturnal and crepuscular fauna" does not apply to them (nor is it claimed to).
13b	.049	Construction impacts	" Standard construction work hours (generally 6.30am to 6.30pm) predominantly coincide with daylight hours, minimising the need for lighting to facilitate night works. There may be some night work associated with the Project, subject to construction schedule and climatic conditions. "	Ark Energy now admit to disturbance to noctural animals as well as diurnal animals which are trying to sleep at night. There is no way to greenwash the fact that wildlife in surrounding forests will be extensively disturbed. These are "edge effects" as outlined in the first part of this document.	No	Potential impacts from construction noise and lighting have been addressed in the PER where applicable to the species. Construction activity will be managed through a Construction Environmental Management Plan required under the Queensland State Planning Act 2016. A Construction Management Plan can be found as part of the application material for the development application. The State approved the project in June 2022.
13b	.050	Erosion and sedimentation	" CWF commits to avoiding all ground-disturbing construction activities during the highest rainfall months of January, February and March – thereby minimising the risk of larger erosion events impacting exposed soils."	Heavy rainfall events can and do occur in the Wet Tropics and adjacent areas outside the months of January, February and March, meaning that larger erosion events are still very possible, especially in December and April, months when tropical cyclones can form in the Coral Sea and impact the Chalumbin area.	No	As stated in the PER.
13b	.051	Erosion and sedimentation	"Creek crossing locations will seek to take advantage of existing gaps in the riparian corridors as far as practicable. Work in creek crossings will be carried out in periods of no flow where practicable. "	Again this undertaking is not monitored or enforced and it is likely that creek crossing work will be undertaken to fit in with the construction schedule, rather than waiting for unpredictable time periods for flows to subside.	No	As stated in the PER.
13b	.052	Hazard and risk	"For "hot-work" activities, a risk assessment will be completed considering forecast weather, fire hazard ratings and site conditions."	The PER is deficient in outlining what these "hot work" activities actually are and the risks posed in starting fires. Do they not want the public to know?	No	Hot-work activities are defined in accordance accepted definitions from Work Safe Qld, being any process involving grinding, welding, brazing, oxy cutting, heat treatment or any other similar process that generates heat or continuous streams of sparks.
590	.008	Mitigation and management measures	Wet Sclerophyll Forest Despite some avoidance measures adopted by the proponent, there is still considerable clearing of Wet Sclerophyll Forest being proposed. "It should be noted that the wet sclerophyll forest vegetation within the Project area could not be entirely avoided by the CWF. The large central patch of wet sclerophyll forest vegetation within Woororoa is located in a critically important part of the site from a Project design perspective". From the information provided in the PER, it is estimated that the development would still result in the clearing of 117.4ha of Wet Sclerophyll Forest. Wet sclerophyll forests are particularly important as an ecotonal community between the rainforests and savanna ecosystems. As well as being home to a unique suite of species, the wet sclerophyll forests are often used by rainforest and woodland species at different times of the year. They are also home to some special species, the endangered Northern or Tropical Bettong (Bettongia tropica), and the northern population of two other species of mammals restricted to this forest type - the Yellow-Bellied Glider (Petaurus australia reginae) and the Swamp Rat (Rattus lutreolus lacus). - Wet Tropics ManagementAuthority Website. The proponent has not properly described the potential impacts of losing this important ecotonal community for the species which are often found there. The proponent must clearly articulate the impacts of losing this Wet Sclerophyll Forest, particularly considering the fact that this ecotone is reducing over time across the bioregion. Buffer Zones The report resulting from the International Expert Meeting on World Heritage and Buffer Zone Davos, Switzerland 11 –14 March 2008 states that "A clear explanation of how the buffer zone protects the property should also be provided" [6]. The proponent has provided almost no detail regarding how buffer zones were calculated or how they will be effective, and more information needs to be provided.	1. The proponent must properly describe potential impacts of losing Wet Sclerophyll Forest in relation to its role as an important ecotonal community for the species which are endemic to it. 2. The proponent must provide detail regarding how buffer zones were calculated or how they will be effective.	No	The PER indicates that northern bettong has not been recorded within the Project area despite an extensive (11-month) camera trap campaign. The species is commonly thought to be locally extinct from the area, therefore clearing any amount of wet sclerophyll forests within the Project area is not likely to impact the species. The northern sub-species of yellow-bellied glider is dependent on the presence of two particular eucalypt species for denning and foraging, not just wet sclerophyll forests in general. Potential habitat for yellow-bellied glider has been mapped within the Project area based on the ground-truthed presence of these two eucalypt species and it was found that there is very little YBG habitat within the Project area. Therefore there are expected to be minimal impacts on this species from clearing of wet sclerophyll forests. The swamp rat is not a listed threatened species and was not required to be assessed in the PER. The WTW Periodic Report to the World Heritage Committee (WTMA 2011) identified that there was no buffer zone around the property at the time of its inscription and that a buffer zone was not considered necessary, with the boundaries of the property being adequate to maintain the property's Outstanding Universal Value. Section 8.10.2.3 of the PER provides justification for the adherence to a 600 m buffer between Project infrastructure and the WTQWHA - this includes reference to literature to demonstrate the sufficiency of this buffer.
13b	.053	Hazard and risk	" Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management."	There is no information given as to who will undertake these 'cool mosaic burns' and the methodology used. "Controlled grazing" is what already happens at Woororoa Station. And what will be weed management other than spraying into the ecosystems large amounts of noxious herbicides such as glyphosate and "Tordon". Will weeds be actually physically pulled up and removed? Somehow I don't think so. It's safe to assume nasty chemicals will be sprayed into surrounding ecosystems. Elsewhere it is known from research that disturbance of wet sclerophyll forests due to disturbance such as logging causes microclimate changes which actually INCREASE the risk of more severe devastating fires (33). The presence of roads also increase human-caused ignitions of wildfires, through accidental ignitions and deliberate arson. And it has been shown that roadside cattle grazing actually increases fire risk through weed invasion and degradation; both factors are applicable to Chalumbin. (34) The Chalumbin Wind Farm project actually will increase bushfire risk and severity. Do surrounding landholders and WTMA know this? And the wind turbines themselves can be a source of fire. "On 17 January 2017, wind farm operator Infigen sparked a blaze that ripped across the southern Tablelands of NSW and destroyed 3,400 hectares (8,400 acres), hundreds of sheep and cattle, sheds and at least one home."	No	Site management measures are outlined in Section 6.0 of the PER, it is worth noting that these measures are intended to be adaptive and will be reviewed and updated in response to changes within the project area. Hot work is any process involving grinding, welding, brazing, oxy cutting, heat treatment or any other similar process that generates heat or continuous streams of sparks. Section 6.2.10 of the PER sets out the following measures will be implemented to mitigate and manage impacts from bushfire risks as much as practicable during the construction phase: • As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. • For "hot-work" activities, a risk assessment will be completed considering forecast weather, fire hazard ratings and site conditions. • Vehicles may not idle or be parked in areas of long grass. • Access tracks and fence lines will be used as firebreaks within the Project area and regularly maintained during construction and operation of the Project. • Smoking will not be permitted on site. • Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case. Additionally, the PER includes "Preliminary Vegetation and Pest Management Plan" (Appendix E) and "Preliminary Weed and Pest Management Plan" (Appendix F), both outline impact avoidance, management and mitigation measures for the prevention and control of noxious weed species within the project area. It is the intention of these "Preliminary" documents are not intended for implementation purposes however are intended to act as the framework for the establishment of adaptable, mitigation, management and monitoring methodologies to assist the Principal Contractor and/or the Environmental Officer in their responsibilities.
13b	.054	Hazard and risk	"Wind turbines are just another ignition source that adds to the anxiety experienced in rural Australia on "bad days", like 17 January 2017. In Australia, wind turbines have so far been responsible for at least four serious bushfires: •Ten Mile Lagoon in Western Australia in the mid-1990s; •Lake Bonney, Millicent (SA) in January 2006; •Cathedral Rocks Wind Farm, Port Lincoln (SA) in February 2009; and •Starfish Hill (SA) in November 2010 "	There is no doubt that the Chalumbin Wind Farm will INCREASE fire risk and severity.	No	Section 6.2.10 of the PER has addressed matters relating to bushfire risk. As part of the construction planning a certified Bushfire Management Plan will be prepared prior to construction and implemented during on-site activities. During the bushfire season, the fire danger status will be monitored daily through the Rural Fire Service website. Fuel loads will be monitored and managed through activities such as controlled grazing, cool mosaic burns and weed management. The Project will be constructed and operated in accordance with a Bushfire Management Plan (required under the State development permit), with firebreaks / asset protection zones established to ensure appropriate radiant heat flux. The linear nature of the Project will likely improve the access throughout the Project area to manage bushfire more effectively than is currently the case.
13b	.055	Mitigation and management measures	It's obvious that most mitigation measures are just unenforceable hollow words, but I find it somewhat surprising that no mitigation measures are proposed to reduce bat and bird collisions. It seems Ark Energy just don't care. These mitigation measures like delayed "cut-in" wind speeds to reduce bat mortality can incur more costs. And there are wind turbine designs which do not involve rotating blades, and therefore will minimise insect, bat, and bird collisions (37). Why isn't Ark Energy proposing these in such a sensitive area? These won't however obviate the need for clearing, damaging roads and earthworks and thus even if Ark Energy were to propose using this, the project should still be vetoed by the Federal Government under the EPBC Act. No mitigation measures have been proposed for the issues of microplastics and EDCs, wind turbine noise and infranoise, probably because there are no valid mitigation measures for these problems with the proposed wind turbines. The proposed mitigation measures comprise either doing what would normally happen but spun to make it seem like a mitigation (eg "working between 6:30am to 6:30pm to minimise disturbance to crepuscular and nocturnal wildlife"), or measures which are totally voluntary and unenforceable with no government and independent oversight. As with every other aspect of the wind energy industry, it seems to be totally self-regulated and governments aren't interested in conducting any oversight and monitoring.		No	Mitigation and management measures to reduce bat and bird collisions are discussed in Appendix G (Bird and Bat Management Plan). BPA is a building block chemical found in epoxy resins used in producing the blades, with BPA not being present in the surface coatings/Leading Edge Protection. They are in hardened/cured stage (inert) for a finished blade in service life, as such are not to be exposed to the environment and would not be able to leach off the blade and into the environment. Wind turbine manufacturers are progressing technology to continually improve recyclability of wind turbine components; this includes processes that will eliminate the need for landfill disposal of epoxy-based blades when they are decommissioned.
13b	.056	Opposition to project	The proposed Chalumbin wind farm has numerous very significant negative ecological, biodiversity, and climate effects. Each one of which should be enough to disallow it from proceeding, if indeed the government considers the climate and biodiversity to be important considerations. The question should really be not whether this wind farm should go ahead – clearly it should not – but whether the Chalumbin area should be a national park, situated as it is between the Wet Tropics World Heritage Area to the East and the Yourka Nature Reserve to the West. Clearly as habitat for many endangered and threatened species, such as the Northern Greater Glider, the Koala (locally extinct now in many areas), the Yellow-Bellied Glider, the Red Goshawk, the Masked Owl, the Lake Eacham Rainbowfish, this area is worthy of a high level of protection, not industrialisation. In addition, wet sclerophyll forest is one of the highest carbon uptake ecosystems and this is not the kind of habitat we should be destroying and degrading for any reason. It's utterly ridiculous that it is proposed that a significant part of this ecosystem will be destroyed 'to save the climate'. The owner of Woororoa Station has previously offered his property for sale to the Queensland Government for the purposes of making it a national park, so clearly he is aware of its biodiversity and ecosystem significance. I hereby call on the Queensland and Federal Governments to veto the Chalumbin Wind Farm proposal and instead to buy the land for the purposes of declaring it a national park.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
590	.009	Offsets	The Proponent has not properly calculated or understood the offsetting required for the impact that the development will have. The PER states that; "The indicative offset areas will be subject to further detailed field assessment and analysis using the EPBC offset calculator as the Project progresses. " At this stage of the assessment, the proponent should have a full and proper understanding of the impact to MNES and offsets they are proposing to account for that impact. Without a detailed field assessment and analysis with the use of the EPBC offset calculator, the proponent has not provided sufficient information for assessors or the community to fully understand the impacts that this proposal will have, and this should not wait until the project is underway. (Figure Concerns Regarding Offset Area 2 on Woororoa Station p 24) The proponent has described Offset Area 2 in the PER, stating that it will "will target the protection of landscape connectivity between the Koombooloomba South Forest Reserve and WTQWHA to the east, and Yourka Nature Refuge to the west". Despite this statement, the proponent is proposing to develop and clear an estimated 25-30 km (approximate measurement using scales provided on proponents map) of road and 16 turbines straight through the middle of the designated offset area. To describe this as protecting landscape connectivity is appalling, and demonstrates a lack of understanding of the impacts of such development on connectivity. The result of this 'offset' is higher fragmentation and disruption to the landscape connectivity. The PER states this project will have; "unavoidable significant residual impact on certain matters of national environmental significance". With the current rate of biodiversity loss globally and in Australia, and with the predicted climate impacts that are already locked in with current warming, can we really be permitting a project that has such large impacts on multiple species? Concerns Regarding Offsets on Leasehold Lands The proponent is simply leasing the lands from individual landholders of both properties. Although there are provisions for offsets to be protected perpetuity through legislation, this can only be achieved with agreement of the landholder. The PER states that landholders have "expressed a willingness to enter into	1. The proponent should a provide detailed field assessment and analysis with the use of the EPBC offset calculator 2. The proponent must reassess the validity of Offset Area 2 and provide clear evidence of how the offset actually provides landscape connectivity, given that it is likely to decrease landscape connectivity, not provide it. 3. The proponent should secure clear commitments from landholders to enter into offset agreements that protect the land in perpetuity. 4. The proponent must provide detailed information regarding the assumption that habitat improvements can be made within 20 years.	No	The information requested in this submission forms part of the next stage in the offset process, development of a detailed Offset Area Management Plan for each proposed offset site. Field assessments for this work have been underway since November 2022 and are ongoing. The analysis using the Environmental Offsets Guide (i.e. the calculator) will be included in the OAMP which will be submitted to DCCEEW for review and approval in due course. This approach is common practice and has been agreed in advance with DCCEEW. The landowners will be required to enter into legal agreements that protect the offset areas in perpetuity, an encumbrance on the property that is transferable to subsequent owners in the event of a sale. Currently the precise boundaries of the offset management areas are being negotiated with the landowners and the final PER will include a reassessment of the amended areas.
590	.010	WTQWHA	The four natural World Heritage criteria for which the Area is listed are: 1. Natural phenomena or beauty 2. Major stages of Earth's history 3. Significant ecological and biological processes 4. Significant natural habitat for biodiversity The visual amenity assessment is inadequate. There are situations where wind farms could be considered an asset to visual amenity to the landscape, but not in a natural wonder like the Wet Tropics WHA; an area celebrated for its prehistoric nature and landscape which people expect to be uninterrupted by human development. The Rhyolite Pinnacle trail network was specifically designed for its wilderness viewpoints and looks over some of the largest and most natural landscapes in the Wet Tropics. The project visual assessment contains statements such as " it was identified that the view from the lookout at Majors Mountain, which is located within the WTQWHA, would experience an impact of moderate to major significance due to the Project. However, it is noted that the area from which views can be experienced is relatively small and this trail does not appear to be heavily trafficked. Similarly, the Bally Knob lookouts would experience extensive panoramic views over the Site with impacts of up to moderate to major significance. Again, the trail to Bally Knob is overgrown, which indicates a low level of usage". (p2 visual assessment report). This is diminishing the value by putting it in a visitation sense, and not from a scenic amenity perspective. 2. Major stages of Earth's history; 3. Significant ecological and biological processes; Development in areas that border the Wet Tropics have the potential to interrupt the significant ecological and biological processes that it is listed for. It isn't clear where the PER has sought to investigate and address the impacts of edge effects, and incursion on these elements of the WHA. The PER states that; "All Project disturbance is located within the two cattle grazing properties with a minimum distance of 600 m between any proposed infrastructure and the WTQWHA". However, the proponent has not provided clear information about how this distance was chosen, or how it is sufficient to protect World Heritage Values. 4. Significant natural habitat for biodiversity The CWF site is directly adjacent to the Wet Tropics WHA. The biodiversity associated with the WHA does not simply end at a physical border defined by legislation. The PER has highlighted that the habitat across the site is significantly important to a multitude of threatened species and that the development of the site will have significant impacts. The proximity and landscape of the development site to the World Heritage Area indicates that we should not be locating energy development in these locations.	1. The proponent must provide more detail about how the visual amenity concerns raised regarding views from Rhyolite Pinnacle could be mitigated. 2. The proponent must provide an assessment of visual impacts from Koombooloomba Dam. 3. The proponent must provide an assessment of how impacts associated with development in areas that border the Wet Tropics World Heritage Area have the potential to interrupt the significant ecological and biological processes that it is listed for. The proponent must provide an assessment of how impacts associated with development in areas that border the Wet Tropics World Heritage Area have the potential to impact threatened species landscapes and the significant natural habitat for biodiversity that it's listed for.	No	The LVIA (Appendix M of the PER) states that it is anticipated that there would be no significant direct impact on the landscape character of WTQWHA from the Project and there would be no direct impacts on the superlative scenic features comprising mountains, gorges and waterfalls, which are the key Outstanding Universal Values (OUV) of the WTQWHA. It goes on to state that the Rhyolite Pinnacle is not significantly affected by the Project. Viewpoint 15A within the LVIA presents the assessment of visual impacts from Koombooloomba Dam. The effect of the turbines on VP15 is considered to range from No impact to Moderate impact and therefore Not Significant. Sections 8.10 and 8.11 of the PER provide an assessment of how the Project may impact the WTQWHA with respect to ecological and biological processes, MNES and other factors contributing to the WTQWHA OUVs.
590	.011	WTQWHA	We know that the WTQWHA is very vulnerable to fire and that this will be exacerbated with the increasing impacts of climate change. In 2018, not long before the Black Summer Bushfires, the Wet Tropical Rainforests were on fire [5]. This fire started outside the WHA in a disturbed landscape, entered the rainforest and resulted in a loss of 250ha after burning for 10 days. The proponent has failed to provide a fire management plan that indicates how fire risk to the WHA will be managed, and how fires will be responded to if they do occur. Additionally, as a result of the failure to properly prepare a fire management plan, the proponent is losing an opportunity to provide meaningful jobs to Indigenous Rangers, who have expertise in fire management and planning, developed from thousands of years of managing the landscape.	The proponent must provide a detailed fire management plan, including threats to natural resources, the WHA, and the use of traditional burning regimes.	No	A Bushfire Management Plan will be developed for the Project in accordance with the Project's development permit. It is expected that bushfire management within the Project area will improve once the Project has been developed, due to improved access for firefighting and the availability of appropriate firefighting equipment on site. Condition 18 of the Project's development permit under the Planning Act 2016 requires the preparation of an Operational Bushfire Management Plan in consultation with the Queensland Fire and Emergency Services. Condition 20 of the Project's development permit requires the preparation of a Construction Bushfire Management Plan for inclusion in the Project's Construction Environmental Management Plan.
590	.012	Adequacy of the PER	Other Approvals and Conditions Section '10.15 Development Permit Conditions – Required Plan' is very misleading regarding what the state requires under State Code 23. Seven of the management Plans listed as 'likely' to be developed under state code 23 are not a part of documentation provided on the State Approvals and Assessments (SARA) 'decisions made' portal for the CWF. The proponent is making misleading statements, which adds to concerns raised early given the discrepancies between the SARA Threatened Species Assessment and what has been provided to the federal assessment process. Of real concern, due to the lack of decommission planning in the PER, there are only two mentions of decommissioning in State Code 23, one of which merely introduces the concept. The other is a statement;"Wind farms will need to be decommissioned at the end of their operational life, and to a reasonable extent, the site should be returned to its former state". State laws will not require a decommissioning plan of the proponent, and the lack of any detailed plan in this PER is a real concern for the land holder, local community and for the ecosystems that will be affected by this development. Already assessed and approved under state legislation. No public consultation during the SARA process. Not in SARA Documentation/Approval Bushfire Management Plan (only a 7 sentence, 6 dot point summary bushfire risk mitigation) Safety and Emergency Management Plan; Construction Environmental Management Plan, Decommissioning Plan Complaint Investigation and Response Plan; Cleared Vegetation Plan; Contained in SARA Documentation Vegetation and Fauna Management Plan; Bird and Bat Management Plan; Traffic Impact Assessment (State-controlled Roads); and Traffic Impact Assessment (Local Government Roads). Erosion and Sediment Control Plan; Noise Impact Assessment; Noise Monitoring Plan; Noise Monitoring Report; Operational Strategy; Pre-and Post-Construction Assessments of TV and Radio Reception Strength; Rehabilitation Management Plan, Wind Monitoring Tower/Meteorology Masts Marking Plan; *1 While a construction management plan is required, there is no requirement for a 'construction environmental management plan'. The construction management plan is not required to assess impacts to the environment, a key issue is the definition of a 'sensitive land use' under the code, which excludes anything to do with the natural environment. State code 23 does not effectively assess or require mitigation of impacts to the environment.	1. The proponentPER should include plans that have been referenced in the PER that are not provided in the SARA approvals including; a. Bushfire Management Plan (this is currently only a 7 sentence, 6 dot point summary bushfire risk mitigation) b. Safety and Emergency Management Plan; c. Construction Environmental Management Plan *1 d. Decommissioning Plan e. Complaint Investigation and Response Plan; f. Cleared Vegetation Plan;	No	The plans referenced by the submitter are all required by the Queensland Government under the Project's Development Permit granted in 2022. These require preparation and submission to the regulator and other nominated stakeholders prior to construction, or prior to operations/decommissioning (whichever is relevant to the specific plan). Condition 18 of the Project's development permit under the Planning Act 2016 requires the preparation of an Operational Bushfire Management Plan in consultation with the Queensland Fire and Emergency Services. Condition 20 of the Project's development permit requires the preparation of a Construction Bushfire Management Plan for inclusion in the Project's Construction Environmental Management Plan. Condition 19 of the Project's development permit requires the preparation of a Safety and Emergency Management Plan. Condition 28 of the Project's development permit requires the preparation of a Decommissioning Management Plan. Condition 30 of the Project's development permit requires the preparation of a Complaint Investigation and Response Plan. Condition 39 of the Project's development permit requires the preparation of a Cleared Vegetation Plan.
590	.013	Community consultation	Consultation regarding the CWF has not been proactive. Due to State Assessment Processes not requiring community consultation, CAFNEC did not find out about the CWF until the proponent was well into the State Assessment and Referral Agency's process. Even at this stage, CAFNEC was made aware of the project through concerned communities, not because the proponent had contacted our organisation. CAFNEC is not only the conservation council for the region, but is also the organisation that led the campaign for the Wet Tropics to be listed as a World Heritage Area. CAFNEC should have been identified as a key stakeholder from the beginning, and notified of the CWF accordingly. Although the proponent was willing and generous with their time with CAFNEC when requested, they were not proactive in their communication, were evasive with simple questions about the details of the project and not open to feedback. In the PER the proponent refers to a particularly negative moment in the process of their community engagement, where it quotes; At this initial session a number of community members expressed their frustration that a presentation was not provided and it became evident that there were some community concerns about ecological impacts and Indigenous engagement that were necessary to address. The animated reactions of a small group of people put the safety of other attendees at risk and their behaviour also prevented all attendees from having the opportunity to speak, hear or be heard". The initial community engagement session was poorly organised and seemed to assume disinterest from the community. The room was not set up to facilitate the number of people who were interested in attending, seating was not provided and there were no printed materials or presentations provided to the community. It is for this reason that the community had negative reactions to the initial community engagement session. Additionally, the proponent has not adequately considered the capacity of those potentially affected to participate in the community and stakeholder engagement. This is particularly in regards to the accessibility of the drop in centre, with a lack of public transport and the dispersed nature of the area having a significant impact. It is clear that the proponent has not considered the cultural needs for regional and first nations people in engaging with the project by making it culturally safe and inviting. Additionally, the quote below does not reflect the strong recommendation from CAFNEC in all our engagement with Epuron/Ark Energy, from the very first meeting, that we have serious concerns about the citing of the project. In all our engagement with the proponent, CAFNEC re-iterated that we could not see sufficient evidence that it was necessary, or an informed decision to develop the project in such a sensitive location. We asked the proponent to properly research and assess the feasible alternative, and seriously consider the viability of the project from a biodiversity perspective. We have not seen any evidence throughout any of the engagement that this recommendation has been taken seriously. Consultation and feedback from key local stakeholders including WTMA, Terrain NRM and CAFNEC, on the importance of the wet sclerophyll forest to the OUVs of the WTQWHA has led to the subsequent removal of eight wind turbine generators, 27 km of access roads and four kilometres of internal high voltage transmission line. A significant, strategic offset is also proposed involving more than 7,400 ha across three areas, primarily located immediately adjacent to the WTQWHA, including the largest patch of intact wet sclerophyll forest adjacent to the Tully Falls National Park, and the creation of formal connectivity between Koombooloomba National Park and Yourka Reserve Nature Refuge. Due to the poor performance in consultation with the community, the developer has not gained the trust of many community members. As a result, there is a real concern in the community that their feedback on the PER will not be publicly published or included in the final PER. To alleviate these concerns it is recommended that the proponent keep a publicly available record of all submissions made on the PER.	1. The proponent should provide a clear description of the feedback provided by CAFNEC regarding concerns with a lack of consideration of biodiversity in the citing of this project. 2. The proponent should keep a publicly available record of all submissions made on the PER.	No	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the Draft PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. Appendix B of the Response to Submissions Report (i.e. this table) is the record of formal CAFNEC feedback to the Draft PER. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The process established under the EPBC Act (section 98) requires the proponent to invite comment on draft PER. In order to finalise the draft PER the proponent must take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. These must be included in the finalised PER for submission to the Minister. All submissions to the PER that have been received by CWF within the comment period have been logged, summarised and addressed as part of finalising the PER. The proponent identified CAFNEC as a key stakeholder and initiated engagement with CAFNEC on multiple occasions. Feedback from consultation with CAFNEC influenced the removal of a number of wind turbines for the final proposed design. The proponent acknowledges CAFNEC's view that the location is unsuitable for a wind farm. Based on the assessment work and the proposal, the proponent does not share this view. The Response to Submissions Report (Appendix U to the Final PER) includes all issues raised within the submissions received to the Draft PER. This satisfies the proponent's obligations under the EPBC Act and under prevailing privacy legislation.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
590	.014	Indigenous Cultural Heritage / Engagement	While the Proponent has engaged with the North Queensland Land Council (NQLC), and the Wabubadda Aboriginal Corporation Registered Native Title Body Corporation (WAC), there remains a large amount of division in the Traditional Owner Community of the Jirrbal people. Increasingly there is an expectation that developers engage more meaningfully with Traditional Owners that are affected by the impacts of development. While the proponent has indicated that consultation has happened with NQLC and WAC, there is a large section of the Traditional Owner Community who feel alienated, unheard and unrecognised. Below are a number of videos that hold these voices: ● https://youtu.be/AHAN90Od1QM ● https://youtu.be/IT-KZOJ9Osk ● https://youtu.be/ojUpXCHR-CQ ● https://youtu.be/To_ZLnO4uTk The proponent has not made efforts to engage or hear from the broader Jirrbal community, who may not have been reached through engagement with NQLC or WAC. As a result the Proponent and the development proposal has caused division in the community, angst and pushback from the community. We can no longer continue to approve these developments while they are causing division and fractures in Indigenous communities.	1. The proponent needs to do broader and deeper consultation with Jirrbal people to understand why so many in the community oppose the wind farm, despite the engagement they have had with North Queensland Land Council and Wabubadda Aboriginal Corporation Registered Native Title Body Corporation.	No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
590	.015	Social impacts	The PER Guidelines require that the economic and social impacts of the action be analysed, however the PER has failed to describe these impacts. While the proponent has provided information regarding the economics of the development, the analysis is poor, and relies on correlation rather than any focused analysis. In regards to the social impact of the action, the proponent has either failed to describe, or failed to provide sufficient information for the following impacts: ● The capacity and accessibility of public infrastructure, facilities and services, including education, health and emergency services and the increased pressure of an increased population and activity ● A detailed analysis of the existing housing and accommodation market, including availability, capacity and affordability ● A profile of the local and regional labour market, including an assessment of the likely availability of personnel with skills relevant to the project ● Details of other resource and infrastructure projects in the area, both planned and currently operating, based on publicly accessible information. ● Changes to community values and/or the way the community functions ● Impacts on how people live, work, play and interact with one another on a day-to-day basis ● Impacts on culture, history, and ability to access cultural resources ● Impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources ● Impacts on communities' quality of life including liveability and aesthetics, as well as the condition of their environment ● Impacts on communities' physical and mental health and well-being, as well as their social, cultural and economic well-being ● Changes to livelihoods, for example, whether peoples' jobs, properties or businesses are affected, or whether they experience advantage/disadvantage. The proponent needs to properly assess these impacts, to ensure they have been properly considered and that the project does not create unacceptable social impacts to the small and regional community of Ravenshoe and surrounds. The PER has shown that there will be a serious increase of population in the Ravenshoe area associated with the development, with hundreds of workers needed for the development stages. There are several concerns that the proponent has failed to address in regards to workforce and workforce needs. The PER describes the geography of the Ravenshoe area and has highlighted that the majority of the existing workforce is not skilled or trained for the jobs that will be available for the development of the wind farm. The PER includes the following statement, "CWF advises that 50% of the construction workforce are expected to be from the local area", but has provided no detailed information about how this calculation was made. The proponent has not included any indication for training or opportunities for the local community to join the workforce. The PER also states that there will be "Consideration of a construction camp in response to concerns from residents in Ravenshoe about potential displacement of the community from affordable housing stock as a consequence of the construction workforce." Given the project is expected to bring in hundreds of workers, and likely their families too, it would be expected that housing would be required, particularly considering the current housing crisis. The PER states that this housing would be temporary, however the proponent should be leaving lasting positive impacts and it would be more ideal to develop permanent housing stock.	1. The proponent must provide a complete social impact assessment including an assessment of; a. The capacity and accessibility of public infrastructure, facilities and services, including education, health and emergency services and the increased pressure of an increased population and activity b. A detailed analysis of the existing housing and accommodation market, including availability, capacity and affordability c. A profile of the local and regional labour market, including an assessment of the likely availability of personnel with skills relevant to the project d. Details of other resource and infrastructure projects in the area, both planned and currently operating, based on publicly accessible information. e. Changes to community values and/or the way the community functions f. Impacts on how people live, work, play and interact with one another on a day-to-day basis g. Impacts on culture, history, and ability to access cultural resources h. Impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources i. Impacts on communities' quality of life including liveability and aesthetics, as well as the condition of their environment j. Impacts on communities' physical and mental health and well-being, as well as their social, cultural and economic well-being k. Changes to livelihoods, for example, whether peoples' jobs, properties or businesses are affected, or whether they experience advantage/disadvantage. 2. The proponent should describe opportunities for upskilling locals to join the workforce associated with the development of the plan. 3. The proponent must provide a more detailed assessment of the impacts to housing and accommodation pressures that the development will create.	No	The PER has been prepared in accordance with the PER Guidelines. Section 13 considers economic and social matters associated with the project and Section 11 consultation.
590	.016	Rehabilitation	During 2021 the Glasgow leaders declaration of forests and land use saw Australia commit to working collectively to halt and reverse forest loss and land degradation by 2030 while delivering sustainable development and promoting an inclusive rural transformation. The declaration committed Australia to a number of different focused actions including to conserve forests and other terrestrial ecosystems and accelerate their restoration. According to Queensland's Statewide Landcover and Trees Study, we lost 680,000ha of forest in the 2018-2019 period. The Queensland Government is yet to release reports on more recent years, but it is clear that we have an unacceptable amount of clearing in Queensland. This is a major barrier to the national commitment to end deforestation by 2030. If this proposal is approved, it will set a precedent that it is acceptable to clear thousands of hectares of habitat for renewable energy. With a rapidly expanding energy market, this precedent will see clearing of this nature continue and prevent us meeting our commitment to end deforestation by 2030, which is only 8 years away. Throughout the PER the proponent has used the language 'leading practice', but we could not agree that this is the case. The proponent has also stated that the project is 'net positive' for biodiversity, but there is no evidence to support this. The proposal would see a cumulative loss of 8,043.21ha of threatened species habitat. The project's offset areas are smaller than the area of forest expected to be cleared, and as mentioned earlier, Offset Area 2 will actually further fragment the landscape. The PER also celebrates the fact that 70% of temporary construction areas will be rehabilitated. However, the PER has the below statement; "Some clearing of rehabilitated road verges may be required during decommissioning to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated on completion of decommissioning. This, however, is not expected to impact the proponent's target of at least 70% of the temporary construction footprint being rehabilitated". No detailed analysis or assessment has been made for decommissioning or the impact of decommissioning on rehabilitated areas, or the impacts that will have for suitability for threatened species. The Rehabilitation plan does not in any way describe how it will provide appropriate habitat for the threatened species who have lost habitat through clearing. There is no detailed information provided regarding the timelines for the rehabilitated areas returning to usable habitat for threatened species.	41. The proponent must provide a description of how the proposal hinders/helps the nation meet its goal to end deforestation by 2030. 42. The proponent must prepare a detailed decommissioning plan that includes financial coasts, environmental impacts and social impacts. 43. The proponent must clearly articulate how decommissioning would affect the rehabilitated areas of the site. 44. The proponent must provide a clear articulation of its understanding of 'net positive' and how that has been achieved.	No	Any clearing of remnant vegetation associated with the Project would be completed prior to 2030 and would be supported by environmental offsets under State and Commonwealth legislation (resulting in a net positive outcome for biodiversity). The goal to end deforestation by 2030 (as outlined in the Glasgow Leaders' Declaration on Forests and Land Use) is intended to address climate change; the Project will support the decarbonisation of the economy. Section 13.2 of the PER describes how the Project will result in a net reduction in greenhouse gas emissions (GHGs are the main driver of climate change). A Decommissioning Management Plan is required to be prepared for the Project prior to decommissioning (in accordance with condition 28 of the Development Permit issued under the Planning Act 2016). Potential decommissioning impacts are presented in section 5.4 of the PER and impacts relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning. Refer also to response 473.021. The aim of the offset management areas is to improve habitat quality for the relevant species and/or increase populations of the species by removing current threats (such as weeds and feral animals). A minimum ratio of 5:1 is currently proposed for the full clearance area, despite the fact that up to 70% of the clearing will be rehabilitated. This, along with a voluntary financial contribution towards research and improved bushfire management across the entire areas, will result in a net positive.
607	.001	Opposition to project	As per Submission 500		No	Please see response to Submission 500
275b	.001	Opposition to project	As per Submission 500		No	Please see response/s to Submission 500
567		Opposition to project	As per Submission 21		No	Please see response to Submission 21.
534		Opposition to project	As per Submission 21		No	As per response to Submission 21.
400b	.001	Opposition to project	As per Submission 21, with the addition of: No one should have the right for this genocide of Australian mammals and species in their wild environments. We need to leave these alone and untouched by the greedy man.		No	As per response to Submission 21.
506		Opposition to project	As per Submission 500		No	Please see response to Submission 500.
568		Opposition to project	As per Submission 21, with the addition of: I believe that the wind farms are not environmentally friendly because the amount of land that is being cleared is affecting the trees and animals species in areas. This is also affecting peoples livelihoods.		No	As per response to Submission 21.
569		Opposition to project	As per Submission 21.		No	As per the response to Submission 21.
570		Opposition to project	As per Submission 21.		No	As per the response to Submission 21.
571		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
572		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
546		Opposition to project	As per Submission 21, with the addition of: Ravenshoe has been my home all my life. Native wildlife need trees to survive, if the Chalumbin Wind Farm is allowed to be built, it will be catastrophic for the animals that live here.		No	Please see response to Submission 21.
573		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
574		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
25b		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
609		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
576		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
577		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
578		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
584		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
580		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
581		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
582		Opposition to project	As per Submission 21, with the addition of: I'm a wildlife painter and sculptor and feel a deep connection to possums, gliders and parrots and the heritage trees that they need to survive.		No	Please see response to Submission 21.
583		Opposition to project	As per Subsmission 21.		No	Please see response to Submission 21.
585		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
586		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
564		Opposition to project	As per Submission 21, with the addition of: The fact that we as a country not only pollute the waterways, the blades will just end up buried which begs the question if this whole structure will just be buried.		No	Please see response to Submission 21.
600		Opposition to project	As per Submission 21, with the addition of: Barbaric to all concerned. Disgraceful.		No	Please see response to Submission 21.
587		Opposition to project	As per Submission 21.		No	Please see response to Submission 21.
592	.001	Opposition to project	My name is Ken and I have asked for the opportunity to speak to you to express my objection to the Chalumbin Wind Farm and the reasons why. I have owned a property at the southern end of Gordon Earl Drive, Millstream since early 2012. The proposed site will have a direct impact upon myself and my neighbours due to the very close proximity to our properties.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
592	.002	Community consultation	Since 2012, not one representative from the Wind Farm company or any other State Government bodies or Local Council has ever approached me to address how it may impact me. No official documentation notifying me of the proposed project. Nothing. They may have forgotten how to send a letter or knock on my front door. I understand my neighbours are in the same position.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The proponent has made every effort to ensure community members are aware of the proposal and to provide them with convenient access to information and opportunities to provide feedback, including regular mailouts, online and printed feedback forms, a local shop front, local information sessions and inserts in local papers.
592	.003	N/A to PER matters	I would like to explain a little about myself to assist in understanding why I am objecting to the proposed project. I grew up in the Snowy Mountains. My father took cattle into the high country then one day he saw and realised the damage that was being caused to the environment. He made the decision to sell all of his stock and moved to Queensland. He landed at Malanda. This was in the early 70's and I traveled with him across the Tablelands and was taken by the natural beauty and wildlife. That part of my life when I was young has had a life long impact upon me regarding the environment and still exists today. When I bought my property in Millstream it was bare. Land cleared by the previous owners. I set about the task to plant trees. Lots of trees and of many varieties, especially those types that are more suited to this location. Over the years this action has attracted a lot of different birds, native bees and the larger bees for honey. Around 2014, bird watchers approached me and told me that they have sighted on my property 3 different species of rare birds not seen in this area for decades. I asked why. They told me it's because I planted the correct native plants that were cleared away before. That in itself shows that the destruction of the forests, the clearing of the natural habitat has far greater consequences for our wildlife and the overall impact on our environment. When the Kaban Wind Farm construction began the wildlife in my area has increased dramatically by about 10 fold. I suspect Wind Farm construction has forced them out of Kaban. I can see as a direct line of sight the Kaban Wind Farm at about 30kms and it is an eyesore on what was once worth viewing. My work life was interstate and it involved power generation. I worked in a coal fired power station for 12 years. I maintained and operated a power station with a team of highly experienced and qualified operators and engineers and have the qualifications to isolate and reinstate mechanical and electrical components within the station as well as isolate the power station from the grid.		No	Noted. Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
592	.004	N/A to PER matters	I have worked at ANSTO. For those who don't know ANSTO it's The Australian Nuclear Science Technology Organisation. As you can see I don't have a third eye and I can assure you I don't glow in the dark ! Those two fields of employment gave me the opportunity to work with the most senior electrical engineers and scientists in Australia. I would not be surprised if they were scratching their heads and wondering why would anyone consider implementing Wind Farms as our future energy source. I don't want to drown you with technical information. This my first opportunity to speak and you may well have had previous meetings and been swamped with lots of information. I do want to explain from my perspective, from my work experience why there are technical reasons in addition to environmental reasons to object. There needs to be more factual technical information regarding Wind Farms. From what I can understand most of the technical information comes from Socialist influenced sources in Europe and as well as Socialist influenced businesses that promote highly the wonders of Wind Turbines when the true facts of this technology are the opposite. The politicians, businesses and sadly Australians who are not fully aware of the Wind Turbine technology have been suckered into an epic scam. A scam of such a scale that people like Chris Bowen the Climate Clown are deluded. He has absolutely no idea about this or any other technologies regarding power generation. He must read that magazine NO IDEA.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021. Nuclear energy projects are not permitted under the EPBC Act (s140A).
592	.005	Project alternatives	When he and the rest of Labor, the Greens, Teals and other Left leaning Independents all parrot the same rhetoric that renewables is the cheapest and best source of energy then they too must also be reading the same magazine. They too have NO IDEA. As you may already be aware, we need base load power to sustain continuity of supply according to demand. Coal fired, Gas and Nuclear do that with a high degree of efficiency, affordability and reliability. Wind cannot and will never be able to no matter how many Wind Turbines you have. Should a coal fired 500mw unit trip then the system has a reserve capacity depending on the demand. Normally all of the other units would automatically raise output to cover for that loss to prevent blackouts. Should the system be fully loaded and a unit is lost then blackouts occur. Wind Farms do not have that abilty to compensate. More blackouts. This is part of the reason why there are so many wind turbines required. In addition the efficiency of each turbine is probably at best 30-50% on a good day. What happens during a cyclone? They shut down to prevent damage. Blackouts.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER. Nuclear energy projects are not permitted under the EPBC Act (s140A).
592	.006	Project alternatives	Technically they are the most inefficient, highest cost and environmentally damaging form of energy production. Why would anyone invest in this? The Australian taxpayers are funding a business and their model to run the Worlds' biggest energy scam. I am PRO NUCLEAR. A Nuclear SMR (Small Modular Reactor) could be built for around $2B. They can be placed where old coal fired power stations have been torn down All the services like the transmission lines, switchyards and water are in place and no need to spend $20B on the start of building a whole new grid which could end up being in the hundreds of billions of dollars.		No	Nuclear energy projects are not permitted under the EPBC Act (s140A).
592	.007	N/A to PER matters	Nuclear SMR's are not large scale plants like the early models and have safety features built in so are better to implement. Instead of wasting $20B on the start of just a grid, Australia could have 10 new SMR's in around 5 years plugged into the existing grid and supply stable, reliable and affordable power. Chris Bowen the Climate Clown says Nuclear is the most expensive form of energy. He couldn't be further from the truth. He must be referring to large scale nuclear not SMR's. We don't want or need large scale Nuclear. I don't want to be political about these Wind Farms but from what I can assess, is that foreign owned Socialist business is being funded by taxpayers to build, own and operate their business. They don't contribute to the investment. How can I get started with that type of business model? Being foreign owned they don't live here and would not give a care about how it affects us, our health and wellbeing, our lifestyle, our cost of living and the ruination of our environment. Those politicians and all areas of governments should be collectively hanging their heads in shame to grant permission to establish such a backward, technically inefficent, extremely expensive and environmentally destructive form of energy supply. Do they all have their money in shares with the companies		No	Nuclear energy projects are not permitted under the EPBC Act (s140A). Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
592	.008	Community consultation	Those who approved these projects and the business don't live here. They live a long way from here. They don't get to see them so to them it's okay. It's not okay. They should have them in their backyard if they think it's okay. Why should myself and the rest of the community have them foist upon us in such a questionable manner? I remind you that there has never been any consultation, notification or legal notices given at anytime and I know that applies to many of my neighbours. The manner in which this has been implemented is highly questionable and to me has the stench of corruption.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments.
592	.009	Social impacts	Recently several people bought the blocks next door to me and have just found out about the Chalumbin Wind Farm and are livid. The real estate agent failed to mention the Wind Farm prior to purchase. Now one of them is trying to sell. What form of recompense will occur should this cause a financial loss ? What happens to our property values? I cannot see anyone wanting to move here knowing there are giant Wind Turbines right next door.		No	In relation to a project like a wind farm, there are a number of factors that could have an impact on land values and therefore require appropriate consideration. These generally include: - Changes in income earning potential of property - Aesthetic appearance - impact on scenic views - Changes in fencing and on-site access roads - Changes in natural vegetation and ecology - General trends in property prices in the area independent of wind farming. The value of properties also go up and down for a wide range of external reasons. Supply and demand, local industry performance, proximity to amenities and infrastructure, housing affordability and the desirability of the location can all have an impact. The fact that a property is in the vicinity of a wind farm or that a wind farm is visible from a property does not mean that a property value is going to be impacted. There have been two studies commissioned by the NSW Government that have studied many property transactions before, during and after the construction of wind farms. Analysis of the prices obtained in these sales and comparison with the broader market in the region demonstrated no link between wind farms and a decrease in property value. This is no different to any other land use planning decision.

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Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
592	.010	N/A to PER matters	I had an industrial accident which caused physical and complex mental health problems leading to permanent disability. My property has been slowly developing as a retreat and a place to recover because of the environment. The Flora and Fauna. Where no industries are. A quiet rural residential area where what is around me is to be appreciated. Not have 95 towers, 250m high ugly, noisy, harmful and environment killing Wind Turbines next door to me. Already my health has deteriorated. After 10 years of trying to regain my health, without notice the construction of Wind Farms are starting to surround me. It's emotionally destructive and detrimental to my health.		No	Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
592	.011	N/A to PER matters	It is criminal the way this has been implemented and is destroying our community, our lifestyle and our environment. What gives anyone the right to undertake such an action without fully consulting with the community first ? Those who have approved and acted on provision of these Wind Farms are clearly not Australians. If they are then they are disloyal and show no regard whatsoever for their fellow Australians. It's all about the money. This is about the Socialist agenda internationally. How to weaken a country with the implementation of an inferior technology. The energy system we have had was affordable, reliable, constant and improving on effiencies as well as environmental improvement methods. It was the basis for our security, social improvement, wealth creation and lifestyles. Now with the introduction of the renewables lunacy like Wind Farms, our whole country will be weakened enormously and the financial burden will be overwhelming to the point of collapse. We can transition to emissions free energy but it's not with Wind Farms. We can maintain current power stations and increase gas supplies. This will help to introduce the Nuclear SMR's into the energy mix. At some point coal and gas will be phased out leaving just SMR's. That means action now. Nuclear SMR's have around a 60 year life span and over it's life the waste may fill a shipping container. The waste can be safely stored and never used for ill gotten purposes. The life of a wind turbine is around 20-25 years. Then refurbished. So over 60 years the Wind Turbine has to be replaced close to 3 times. At great expense and toxic waste capacity.		No	Nuclear energy projects are not permitted under the EPBC Act (s140A). Matters raised in this submission are not relevant to the scope Public Environment Report (PER) and are outside the scope of the DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) in December 2021.
592	.012	Contamination	What preparations have been made to recycle these turbines and if they can't be, then where are they going to be buried so they don't damage the water supply with their toxic materials ?		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
592	.013	Opposition to project	China continues to build more coal fired power stations to make more renewables. They don't use renewables to create renewables because renewables cannot sustain the high energy demands. More pollution is being created making renewables than renewables could possibly ever save us from with climate change. The hypocrisy of the green revolution is astonishing. Those who chose to believe it's for the good of the planet are deluding themselves. I suspect they also believe in the Perpetual Motion Machine. We are being scammed into implementing a renewables system that should never have started without properly and respectfully consulting the communities first. The destruction of our community has already begun and there are many confused and mentally distraught. It's having a negative impact before any construction and will have a far greater negative impact if constructed.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
592	.014	Opposition to project	I have raised my objection to these Wind Farms based on my local experiences, my work experience and qualifications. I cannot see why this form of energy source has been implemented when all of the correct technical information shows that it's the worst thing to have. I am not totally against renewables as I have a solar system for emergencies and land use. Even with solar there will be environmental issues but not to the same degree as Wind Turbines. I am speaking up because it's the right thing to do to protect the community. We all need to speak up and loud so that those in Government can hear what is happening and why it's wrong to have this form of Wind Turbine energy. I hope that what I have stated has helped those who may not be aware of the dangers and are able to be better informed to act accordingly. There is an alternative. There is a better way to beat climate change. It's Nuclear SMR's. OBJECT TO & REJECT ALL WIND FARMS. KEEP CHALUMBIN WILD.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved. Nuclear energy projects are not permitted under the EPBC Act (s140A).
524	.001	Opposition to project	Rapidly scaling up renewable power generation capacity is a global priority. However, we note that biodiversity loss and climate change mutually reinforce each other. Neither will be successfully resolved unless they are dealt with together.1 Climate change cannot be effectively addressed through severe deforestation and degradation of carbon-rich and biodiverse ecosystems.		No	The PER has been prepared in accordance with the PER Guidelines issued by the Department of Climate Change, Energy, the Environment and Water. The assessment process under the EPBC Act provides an approval pathway requiring proponents to demonstrate the potential impacts on Matters of National Environmental Significance of a project and how these potential impacts would be avoided, minimised, mitigated and managed. The Department will consider the information presented to determine if the project should be approved.
524	.002	Evaluation of existing environment	We note that there is significant public interest in ensuring rigorous, transparent and accountable assessment of environmental risks in relation to major projects that propose to destroy and fragment landscape-scale areas of wilderness due to the magnitude of impacts to First Nations, local communities and matters of national environmental significance (MNES).		No	This is exactly the reason that the PER has been released for public comment.
524	.003	Indigenous Cultural Heritage / Engagement	When assessing the social impacts of the Proposed Action,2 we consider that the Minister for the Environment and Water (Minister) must have careful regard to the findings in A Way Forward: Final report into the destruction of Indigenous heritage sites at Juukan Gorge (Jukkan Gorge Report)3 to ensure the immeasurable culture and spiritual loss that occurred from the destruction of cultural sites at Juukan Gorge does not happen in any other projects.		No	It is acknowledged that the impact of the destruction of Juukan Gorge is immeasurable to Indigenous People, the processes in place through the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
524	.004	Koala	We do not support any attempt to undermine or bypass a recovery plan that is in force under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act).4 We consider that the National Recovery Plan for the Koala Phascolarctos cinereus (combined populations of Queensland, New South Wales and the Australian Capital Territory) (National Koala Recovery Plan)5 applies to the Proposed Action.		No	The PER references the National Koala Recovery Plan in a number of places and does not attempt to bypass it.
524	.005	MNES	We submit that the Minister should not approve the Proposed Action for the following reasons: a. The Proposed Action's likely impacts on MNES outweigh its benefits. b. The Proposed Action is inconsistent with the National Koala Recovery Plan. c. If the National Koala Recovery Plan does not apply, the Proposed Action is likely to result in unacceptable impacts to the Koala under the Significant Impact Guidelines 1.1 Matters of National Environmental Significance (Significant Impact Guidelines 1.1)6 and the EPBC Act Referral Guidelines for the Vulnerable Koala (Koala Referral Guidelines).7 d. The Proposed Action is likely to amount to unacceptable impacts to MNES from habitat destruction, fragmentation and edge effects. e. The Proposed Action is likely to result in unacceptable impacts on MNES from erosion and sedimentation. f. The Proponent did not carry out appropriate consultation with the Jirrbal people. g. The threat of serious and irreversible environmental harm and the degree of scientific uncertainty invokes the application of the precautionary principle. h. Precautionary measures cannot reduce the threat of serious or irreversible environmental harm to acceptable levels.		No	The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
524	.006	Transmission capacity	The Proposed Action is projected to provide 602 MW of generation capacity. This is approximately 2.5% of Queensland's future 24,000 MW renewable energy generation capacity. This figure does not take into account transmission loss from building renewable assets in remote locations, which are far from the main load and population centres which are along the coastline.		No	The Project, when operating, will be an important part of Queensland's energy mix.
524	.007	Transmission capacity	Australia's average transmission losses average about 5%, renewable energy generated from regional and remote assets can experience losses of up to 20 or 25%.10 In some remote areas, transmission losses can reach 35%. If the transmission loss from the Proposed Action is estimated to be 20%, it will only supply 2% of Queensland's future requisite generation capacity. The actual figure is likely to be lower, given that some overbuild will be required.		No	The Project, when operating, will be an important part of Queensland's energy mix.
524	.008	MNES	We submit that the Minister needs to consider the suitability of potential sites on a case-by-case basis and this consideration should ensure that impacts on MNES, First Nations and local communities are necessary, reasonable and proportionate to a project's rationale. If the impacts are disproportionate, we recommend that the Minister encourage renewable assets to be built in other sites with less destructive impacts on MNES.		No	Noted. Sections 1.5 and 3.0 of the PER identify the drivers for the Project in its current location and form, including a demonstration that there are no feasible alternatives to the development of the Project.
524	.009	Koala	In the current matter, the Minister is required (i) under s 136(1)(a) to consider the National Koala Recovery Plan (because the plan is relevant to a matter protected by s 18, namely the koala as a listed threatened species) and (ii) under s 139(1)(b) to not act inconsistently with the National Koala Recovery Plan. 14. We note that there appears to be a question as to whether the Minister may be required to disregard the National Koala Recovery Plan under s.158A(4), for the purposes of the approval decision to be made under s.133, because her predecessor's decision to make the plan was triggered under s 269AA(1) by the change in the koala's listing status from vulnerable to endangered, which change took place after her predecessor had decided under s 75 that the proposed action is a controlled action. 15. Our argument in reply is that, whilst s 158A(4) may require the Minister to disregard the koala's change in listing status, it does not affect her separate obligations with respect to the National Koala Recovery Plan under s136(1)(a) and s139(1)(b).		No	This appears to be directed at the Regulator rather than the proponent.
594	.001	MNES	We are writing to express our concern regarding the proposed development of Chalumbin Wind Farm, southwest of Ravenshoe in north Queensland. We are concerned about the location of the proposed development, which is set to take place on the border of the Wet Tropics World Heritage Area. Two hundred species of fauna are known to inhabit the projectarea, including the Vulnerable northern greater glider (Petauroides minor), the Endangered red goshawk (Erythrotriorchis radiatus) and the Endangered magnificent brood frog (Pseudophryne covacevichae). The company's Environmental Protection and Biodiversity Conservation Act referral application stated that the project is assessed as 'having a potentially significant residual impact on all three species'.		No	The Public Environment Report supersedes the EPBC Referral on the basis of the significant additional assessment work that has been undertaken since the referral was made. The project design and location has been refined to avoid the values within and surrounding the site. In addition, the project would be subject to mitigation and management measures to ensure that all project related activities are appropriately contained within the site. The proponent proposes to rehabilitate and restore the construction footprint resulting in 70% of the overall footprint to be restored. The revegetation will support the native flora and fauna throughout the project area. The proponent will continue to work with the relevant stakeholders and the communities to ensure that feedback and concerns are appropriately responded to and can be considered in the management of the project.
594	.002	MSES	Furthermore, the project is predicted to clear 165ha (407.72 acres) of habitat critical to the survival of these Vulnerable and Endangered species and 1024.86ha (2532.48 acres) of potential habitat for the species.		No	As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in a rare "sweet spot" characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
594	.003	Project location	Please consider opposing the development of this sensitive locality. Is there a more suitable location where remnant and pristine forest/habitat would not need to be cleared?		No	Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
594	.004	N/A to PER matters	Australian Wildlife Society, founded in 1909, is a national not-for-profit wildlife conservation organisation. We are dedicated to conserving Australian wildlife through national environmental education, public awareness, advocacy, hands-on wildlife conservation work, and community involvement. The Society encourages your strong support for this action and an acknowledgement of the receipt of this letter, please.		No	Noted.
596	.001	Opposition to project	Note this submission is a statutory declaration: I am absolutely against destruction and development of an industrial site (wind farm) is an irreplaceable wilderness. There are many reasons why these forms are not a good idea. 1. Habitat destruction 2. Endangered animal loss 3. Intrackable waste when life of machine expires 4. Taxpayer funded but foreign owners manage to avoid fair tax. I do not consent for this project to go ahead, and as a part owner, due to my taxpayer dollars being used, I object to the lack of consultation, and actually listening to objections.		No	The PER provides information in response to the PER Guidelines that has been deemed by DCCEEW to be adequate for the purposes of responding to the information requirements of the PER Guidelines. The PER addresses the potential impacts on MNES from the proposed project, demonstrates avoidance and provides appropriate mitigation measures to impacts. The design of the project footprint has been refined to avoid and minimise the impacts to MNES. These residual impacts are then addressed through a compensatory offset proposal that seeks to achieve a net benefit to the MNES that are likely to be impacted by the Project. Collectively, these measures are designed to achieve a net positive biodiversity outcome. The Project will also have a carbon positive impact (a 20:1 ratio across the 30-year operational life). An Offset Management Strategy can be found at Appendix O if the PER.
598		Opposition to project	As per Submission 21		No	Please see response to Submission 21.
524	.010	Alignment with government policy	13. In the current matter, the Minister is required (i) under s 136(1)(a) to consider the National Koala Recovery Plan (because the plan is relevant to a matter protected by s 18, namely the koala as a listed threatened species) and (ii) under s 139(1)(b) to not act inconsistently with the National Koala Recovery Plan. 14. We note that there appears to be a question as to whether the Minister may be required to disregard the National Koala Recovery Plan under s.158A(4), for the purposes of the approval decision to be made under s.133, because her predecessor's decision to make the plan was triggered under s 269AA(1) by the change in the koala's listing status from vulnerable to endangered, which change took place after her predecessor had decided under s 75 that the proposed action is a controlled action. 15. Our argument in reply is that, whilst s 158A(4) may require the Minister to disregard the koala's change in listing status, it does not affect her separate obligations with respect to the National Koala Recovery Plan under s136(1)(a) and s139(1)(b). 16. When a species becomes listed, the Minister's obligation under s.269AA(1) extends no further than considering whether to have a recovery plan for that species. The Minister may decide not to have a recovery plan. The Minister may also make or revoke a recovery plan for a listed threatened species at any other time. Accordingly, as a matter of statutory interpretation, a decision to make a recovery plan falls outside the scope of what must be disregarded under s.158A(4), regardless of what event (if any) led to that decision, and the contents of the plan as made must be given their full effect as required by s.136(1)(a) and s.139(1)(b). 17. The 'modern approach' to statutory construction places greater importance on the context of the text. This means that context is considered in the first instance (not only where there is ambiguity in the meaning of the words used), and consideration is given to the statute as a whole, the existing state of the law, and the purpose of the statute.11 This approach may favour an interpretation different to the plain meaning of the words.12 18. An interpretation of Act that would best achieve the purpose or object of the Act is to be preferred to each other interpretation.13 We consider that a broad interpretation of s 158A which seeks to exclude recovery plans from the Minister's consideration would not promote the objects of the Act, which include "to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources".14 Section 3A sets out principles of ecologically sustainable development (ESD Principles), which state that "the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making". 19. The Minister's ability to consider a recovery plan that is in force in relation to a threatened species is critical for the conservation of biological diversity and ecological integrity. This is because recovery plans "must provide for the research and management actions necessary to stop the decline of, and support the recovery of, the listed threatened species or listedthreatened ecological community concerned so that its chances of long-term survival in nature are maximised."15 20. Recovery plans also contain important information to support sound and evidence-based decision-making in relation to threatened species. Such information may include: a. Identification of key threats to the species or community; b. Identify the habitats that are critical to the survival of the species or community concerned and the actions needed to protect those habitats; and c. Identify any populations of the species or community concerned that are under particular pressure of survival and the actions needed to protect those populations 21. It is submitted that, an intention must not be imputed to the legislature to remove an important limitation on a Minister's power to approve controlled actions, absent clear and unambiguous language. Further, s 158A is capable of operating independently from s 139(1)(b). Its practical effect would be to trigger assessment criteria under the Significant Impact Guidelines 1.1 that apply to a species' previous listing status when a listing event has occurred after the Minister has made a decision under s 75 whether or not an action is a "controlled action".	22. For the above reasons, we submit that Minister must consider the National Koala Recovery Plan under s 136(1)(a) and must not make a decision that is inconsistent with the National Koala Recovery Plan under s 139(1)(b).	No	The National Recovery Plan for Koala is referenced extensively within the relevant sections of the PER and the Minister will take this plan into consideration when making her decision.
524	.011	Alignment with government policy	For the above reasons, we submit that Minister must consider the National Koala Recovery Plan under s 136(1)(a) and must not make a decision that is inconsistent with the National Koala Recovery Plan under s 139(1)(b).		No	The National Recovery Plan for Koala is referenced extensively within the relevant sections of the PER and the Minister will take this plan into consideration when making her decision.
524	.012	Vegetation clearing	We consider that the estimates of clearing are optimistic, particularly those areas of land that remain cleared during the operational phase of the project. With regard to the turbine hardstand areas, access will need to be provided for replacement and lay down of equipment and the defining piece of infrastructure is the blade. This area will more likely remain cleared than be rehabilitated. Consequently, the claims made regarding temporary disturbance areas to be rehabilitated are somewhat disingenuous (Table 2-1 PER).		No	The blade laydown area will not need to be retained during operations. In the rare event that a blade may need to be replaced, some localised removal of rehabilitation vegetation may be required. However, this is likely to be negligible in the overall scheme of the rehabilitation program (which is stated in Appendix K of the PER as 70% of the overall temporary construction disturbance). The potential for blade replacement (which overall is low across the operational life of the Project) is not expected to warrant larger areas of land left without rehabilitation.
524	.013	Rehabilitation	The statement that the unsealed access tracks will revert back to a 5.5 m track is a fallacy as it assumes that the blades once in service do not require replacement or refurbishment. In reality, if a blade requires replacement, access will need to be maintained at the full width. If it is not, then re-clearing will occur, which defeats the purpose of rehabilitation. We note that the standard of rehabilitation, however good, will not compensate for the original vegetation condition.		No	Blade replacement will involve a swept path analysis on a case by case basis with some clearing on the rehabilitated sides of the tracks. Refer to Section 5.4 of the PER.
524	.014	Vegetation clearing	For the above reasons, operational disturbance (including access tracks and pads) is more likely to be in the order of 500 to 600ha as opposed to the 107.2 stated in the PER. In response to the assertion that this is a small proportion of the overall Project Area21 and can be micro-sited to respond to site-specific constraints is a general statement without specific consideration of the environmental values that will be impacted.		No	The Project team stands by its estimate of potential rehabilitation, as described in Section 7.0 of the PER and the Preliminary Rehabilitation Plan in Appendix K of the PER.
524	.015	Erosion and sedimentation	The Proposed Action is expected to construct and operate 122 km of unsealed access tracks, including watercourse crossings.22 These tracks will be built in an area that has significant riparian areas, including Blunder Creek, which flows into the Herbert River (see Figure 1 below). The Herbert River flows in a south-eastern direction and is a contributor of dissolved inorganic nitrogen and fine sediments being released into the Great Barrier Reef.23 The Project Area also has a number of 1st, 2nd and 3rd order streams which are riparian habitat for a number of threatened species. Such areas are also important refuges for wildlife during dry periods.24		No	Noted.
524	.016	Erosion and sedimentation	We note that unsealed roads lose approximately 25mm off the surface each year.26 On the basis of 25mm of loss across the 120km of unsealed roads, this means the project could contribute approximately 30,000 m3 of sediment to drainage features. Assuming a bulk density of approximately 1.4 tonnes/m3,27 this amounts to approximately 42,000 tonnes of sediment. This amount of material loss is likely to be higher than this estimate during high rainfall months (January, February and March) and in areas with steep terrain. Over a 20-year design life, this means approximately 800,000 tonnes of material will be lost as dust or sediment, with much of this material deposited into surface water. The effects of this require careful consideration and does not take into account the earthworks disturbance for cutting and filling to support the construction of the project and its associated infrastructure.		No	Not sure what the 25mm lost from unsealed roads is based on. We think this is not accurate and would mean that unsealed roads would be half a meter lower in just 20 years. Detailed assessment of the soil loss risk / estimates have been undertaken in the Sediment and Erosion and Management Plan for the project contained in Appendix J of the PER. Batter slopes are identified as a high risk activity and will be managed accordingly in the site based ESCPs that will be used during the construction phase of the project.
524	.017	Koala	In response, our key concerns are as follows: a. The value of koala habitat is primarily determined by the presence of koala food trees and other resources needed by koalas to survive, rather than by detection of the species.30 This is because koalas are a cryptic species, are difficult to detect, and occur in low densities for much of their range. It is for this reason that both the Koala Referral Guidelines and the National Koala Recovery Plan set out holistic factors for assessing the value of koala habitat such as vegetation composition, habitat connectivity and key existing threats.31 b. The presence of a "koala stronghold" is not relevant for determining whether the Proposed Action is consistent with the National Koala Recovery Plan for the purposes of s 139(1)(b). c. While it is imperative to maintain certain koala populations for cultural, social and economic reasons for species recovery,32 the National Koala Recovery Plan emphasises that "no population is more important than another – for a threatened species, all populations are of value in contributing to the total population size and recovery".33 d. Destruction of koala habitat for land use change is the "main cause for habitat loss" for koalas. For this reason, the National Koala Recovery Plan states that the following actions impacting koala habitat should be avoided: i. clearing of habitat used by koalas for feeding and resting; ii. reducing connectivity between patches of habitat used by koalas for feeding, resting, commuting and dispersing either by clearing of vegetation or by the erection of barriers to passage; iii. clearing of habitat used as refuge by koalas during extreme events; and iv. activities that will expose koalas to additional threats such as dogs, cars and in places where koalas must use the ground to move between resting and feeding trees.34 e. The National Koala Recovery Plan protects all koala habitat that meets the above criteria, not only "habitat critical to the survival of the species".35 A narrow interpretation limiting protection to "habitat critical to the survival of the species" and areas inhabited by "important populations" would be contrary to the plain meaning of its words and the intended effect of the recovery plan. Such an interpretation would have the practical effect of enabling further widespread habitat loss and degradation.36		No	Potential habitat for koala within the Project area has been determined in relation to Locally Important Koala Trees and Ancillary Habitat Trees, in with departmental documentation (not detection of the species). The National Recovery Plan uses the term "stronghold" in relation to koala (p7, p53, p55). The National Recovery Plan refers to "important populations" in relation to defining areas of habitat critical to the survival of the species (p80) and in relation to Strategy 1 (p19). The PER has not suggested that the National Recovery Plan only relates to habitat critical to the survival of the species.
524	.018	Koala	The National Koala Recovery Plan states: "Within the geographic range of the Koala (Figure 1), Koala habitat is defined by the availability and nutritional quality of food trees, presence of suitable resting trees and microclimates, age structure of vegetation, history, and impediments to dispersal. These differ regionally because they are strongly influenced by local climatic and landform attributes. Applying the above criteria, we note that the Project Area contains extensive areas of locally important koala food trees (see Figures 4-7 below). All these areas constitute koala habitat. (refer to document)		No	Potential habitat for koala within the Project area has been determined in relation to Locally Important Koala Trees and Ancillary Habitat Trees, in with departmental documentation (not detection of the species). Refer Figure 4.27 in the PER
524	.019	Koala	In our view, the Project Area, including the clearance envelope, contains significant areas of high-value koala habitat as defined in the recent review prepared by the Australian National University for the former Department of Agriculture, Water and the Environment (DAWE) A review of koala habitat assessment criteria and methods (Koala Review).		No	This view is reflected in the PER. The ANU study was used to develop koala habitat mapping and is referenced in the PER.
579	.036	WTQWHA	Submission includes definitions of Wet Tropics from Wikipedia and an Expert Panel (undisclosed). Submission states: Simply, the PER by all judgement, FAILS to delineate the rainforest system by mapping AND Uses terminology to describe the system that is not commonly used. There is NO mention of "dry rainforest" as dominates literature that describes the Australian Rainforest, Nor The Rainforest-Dry Rainforest-Wet Sclerophyll [R-DR-WS] continuum. It uses the term mesophyll six times and does not link the term to the common usage of "dry rainforest". Further, there is no separate map showing this flora form except by viewing fauna distribution maps one-by-one. There is a definition showing the importance of this continuum for the ultimate survival of the wet rainforest. http://rainforest-australia.com/vegetation_history_of_the_athert..html		No	The vegetation mapping was undertaken by two very experienced botanists, one of whom is local to the Tablelands and both of whom are routinely engaged by the State and Australian Governments to undertake this type of work. We have every faith in the work they have produced on the Project. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
576	.037	Offsets	The proposal grossly interferes with wildlife corridors, on the admission of the proponent. To rely on "offsets" to give effect to the proposal interferes with what is a dynamic system and continuum of both flora and fauna. See appendix 2.		No	The proponent can only work within current legislative frameworks. The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines.

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579	.037	Koala	The surveys that were used to conduct to locate and map koalas in the Draft PER are not adequate. Koalas have been found nearby at Yourka Reserve, Kaban, Ravenshoe and Tumoulin. The latest technology such as thermal imagery drones were not used. It is likely that if the thermal drones were used, provided that professional methodology was used, then it is likely the koala findings may have produced different results. The koala is listed as endangered, which makes it imperative that the latest thermal imagery drones should be used to identify koala populations and mapping. It is my opinion that the precautionary principle was also not used. The PER does not address that the fact that most of the koala populations on the western edge of the Wet Tropics are in low abundance does not mean that they are not viable populations or that they are unimportant. On the contrary, in the current scenarios of increasing temperatures, more frequent extreme heat events and increasing bushfire frequency, they are extremely important populations. Based on the modelling released by IPCC, suggests that with + 2 deg C rise in temperature the higher altitude (900 metres and above) eucalyptus forests will be the only habitats in which koalas will survive in the far north. This, plus the fact that the hottest time of the year in this area coincides with the wettest time of the year, means that forest fire frequencies are much lower than they are further south. It is arguable that these forests are a climate refugia for koalas and of extreme importance for their long- term conservation.		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, in a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
524	.020	Koala	Presence and density of koala food trees – Extensive areas of "locally important koala trees" (LIKTs) were recorded and mapped in the Project Area (see Figure 2 below).39 An LIKT has is defined as a "a tree from a species that is regularly browsed by koalas in a particular Koala Management Bioregion (KMB) such that it could be considered a substantial part of a koala's diet. These are tree species that are identified as associated with medium or high use by koalas in published literature or direct feedback from local koala researchers and/or carers in a region.40 The LIKTs identified in the Project Area include: i. Eucalyptus crebra; ii. Eucalyptus exserta; iii. Eucalyputs grandis; iv. Eucalyptus melanophloia v. Eucalyptus resinfera; and vi. Eucalyptus tereticornis.41 We confirm that significant areas within the Project Area, including the clearance envelope, are capable of supporting low, medium and high-density koala populations (see Figure 2 below).		No	This is repeating information that has been provided in the PER, there does not appear to be a specific query or issue to respond to here.
579	.038	Koala	Impacts on koala populations: The PER does not detail the cumulative impacts of clearing for 60m to 100m wide haulage roads would interfere with the koala's breeding patterns. The endangered koala populations could be displaced by noise from planned wind farm developments across Far North Queensland. The Northern Koala was a lower weight than the Southern Koala and they travel further to find the trees that suit their diet. This has not been addressed in the PER.		No	Infrasound / low frequency sound is not listed as a key threatening process for the koala in the National Recovery Plan 2022. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan.
579	.039	Koala	Cumulative impacts to koalas that stem from the low frequency sound waves generated by the turbines which researchers believe could drown out the mating bellows made by males which have a mean of approximately 60 Hertz". Koala populations from Atherton to west of Ingham survive in "very low abundance", and according to wildlife biologist Roger Martin their communication calls are "the glue that holds populations together".		No	Infrasound / low frequency sound is not listed as a key threatening process for the koala in the National Recovery Plan 2022. The PER identifies that noise may have an impact on species occurring within the area and, as a result, construction and operations will be undertaken in accordance with the Environmental Protection Act 1994, the Environmental Protection (Noise) Policy 2019 and methods outlined in the Noise Measurement Manual (DES 2013), following the avoid, minimise and manage hierarchy.
579	.040	Koala	The cumulative impact to koalas would be severe, particularly knowing that their breeding patterns would be adversely affected. The PER does not address that Koalas would be impacted by the sounds of dynamite blasting, drilling, including the haulage trucks going backwards and forwards during development. Also Chalumbin falls adjacent to the Wet Tropics World Heritage Area. The western edge of the WTWHA is identified as a koala and wildlife corridor. Coupled with the usual koala threats, altered fire regimes and invasive declarable weeds also poses an enormous threat. This is underestimated in the PER. Cumulative impacts will be loss of forest on mountain tops will lessen rainfall and lead to more droughts and flooding. This will have an enormous impact on the koala habitat and their future security should this proposal go ahead. The vegetation clearing for the haulage roads, and the drying affects of the gigantic wind towers, would potentially cause bushfires. The koala has enough threats to deal with. The cumulative affects of the haulage roads, and vehicle strikes which doesn't go far enough in the PER. A higher level of assessment for this project, is required for these reasons: In considering the likely impacts Koala habitat, we consider that there should be careful regard to the adequacy of the information submitted. Koalas were found to have potential habitat within the Project Area, however no Koalas were found onsite by surveyors.		No	The PER identifies that there is koala habitat within the Project area. Potential impacts to the koala (including due to noise and vibration, and the access roads) have been assessed in Section 8.6.3 of the PER, mitigation measures have been outlined for both the construction and operational phase and the species has been included in the Preliminary Offset Strategy. Clearing of potential koala habitat will occur sequentially in accordance with a Species Management Plan. Areas cleared for construction that are not required for the ongoing operation of the Project will be progressively rehabilitated in accordance with the Preliminary Rehabilitation Plan. The PER includes a Preliminary Weed and Pest Management Plan (Appendix F) and commits to the development of a Bushfire Management Plan prior to construction activities commencing. The PER has been assessed by DCCEEW as meeting the PER Guidelines.
579	.041	Survey effort	Koala survey methods have been insufficient. Opportunistic searches are a low-cost method of Koala surveying. This is not a fail proof methodology. Recent research indicates that human observers can miss up to 46% of trees with scatsi. Therefore, there is a reasonable chance that the results of the opportunistic searches have failed to detect Koalas inhabit the site. https://www.dcceew.gov.au/sites/default/files/documents/review-koala-habitat-assessment- criteria-and-methods-2021.pdf		No	Field surveys have been undertaken in a manner consistent with the various State and Federal guidelines that are listed throughout Section 4 of the PER. Specifically in relation to koala, a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting does underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
524	.021	Koala	(Refer to figures Figure 4:Figure 5:Figure 6:Figure 7) Proposed Action is likely to cause severe degradation and fragmentation of koala habitat as follows: a. Clearing – The Proposed Action is expected to clear 843.8 ha of koala habitat.53 A significant proportion of this clearance area is comprised of high-value koala habitat. We are concerned that the basis for this estimate is unclear. No information has been provided regarding the likely widths of the 122 km of access roads required by the Proposed Action.54 The only estimates provided by the PER are: "Project area clearing widths will vary based on earthworks required at key locations. For a track width of 5.5 m, the temporary road construction may extend from less than 25 m to over 100 m depending on the complexity of the terrain and ability to safely construct the required earthworks."55 If the estimate of 843.8 ha is based on the assumption of a uniform road width of 5.5 m, the actual clearance area may be substantially higher because: i. The roads are all likely to have a 10m clearing on either side for fire safety and falling tree clearance.56 For this reason, most of the roads will likely be a minimum of 25.5 m wide (10m +10m + 5.5m). If the roads are planned on being firebrakes, it is likely that most of the roads are likely be 30 m wide, comprising of 15 m to either side of the centre-line.57 ii. The roads will include "a large swept path for long components being transported on steep bends".58 However, no estimate has been provided in the PER for the clearance for such bends and how many bends will be required. Assuming the blades are approximately 50 m long and trucks need to do right-angle turns, the blades will veer 35 m off track (see Figure 8 and 9 below). For this reason," For this reason, we estimate that, at the very least, 10% of the roads will have 50 m clearing on inner bends. iii. The gradient of most of the roads will need to be as flat as possible to accommodate semi-trailers without four-wheel drives. This means a high amount of cut and fill. However, no estimate was given of the cut and fill required for the 122 km of access roads and the impact of this on vegetation. b. Fragmentation – The Proposed Action is likely to result in serious fragmentation of koala habitat to either side of the access road for the following reasons: i. Given that the road length of the project is 122 km and most of the road will run through koala habitat, (.9 x 122,000m x 30m) + (.1 x 122,000m x 50m) = 3,294,000m2 + 610,000m2 = 390.4 hectares. ii. The road is likely to split continuous koala habitat into 20 discrete fragments with restricted peripheral connectivity. All direct connectivity will be lost, in particular with the tracks that are 30-50m wide clearing areas and construction access widths of 25- to over 100m. c. Edge effects – The destruction and fragmentation of koala habitat by the Proposed Action is likely to expose severe edge effects. Edge effects occur when organisms in a fragment are exposed to the conditions of a different surrounding ecosystem. They are the result of two adjacent ecosystems when they are separated by an abrupt transition. Edge effects can cause: i. Abiotic effects, which involve changes environmental conditions; ii. Direct biological effects, which may include changes in abundance and distribution of species caused directly by physical conditions near the edge; and iii. Indirect biological effects, which involve changes to species interactions such as predation, competition, biotic pollination and seed dispersal. These effects can extend to all parts of a forest. We note that likely edge effects from the Proposed Action have not assessed by the Proponent. Such effects are likely to be severe due to the splitting of continuous koala habitat into 20 fragments and the 122 km road, which will bisect koala habitat.		No	The width of the access roads has been determined along with a balance of earthworks estimate. Once the construction contractor has been engaged there may be minor changes to this, but the clearing area presented in the PER is the maximum clearing envelope, including the swept path around bends. This clearing envelope will be stipulated in the Project approval (as has been done at the State level). Edge effects have been addressed throughout Section 8 for each MNES considered. The 5.5m width relates to the formed road during the operations phase - i.e. the permanent width of the cleared area. The slopes and batters of the roads will be rehabilitated using locally important koala trees which will facilitate movement of the species across the landscape in the medium to long-term.
579	.042	Magnificent brood frog	Submission includes details on the current listing of the 21.Magnificent Brood Frog https://dx.doi.org/10.2305/IUCN.UK.2004.RLTS.T41048A10394015.en Submission makes comment: Minister, this local occurrence, on it's own, must be sufficient to STOP the PER process and deny the application.		No	The objection is noted, however there does not appear to be a specific issue to respond to here.
524	.022	Alignment with government policy	It is submitted that the Proposed Action is not consistent with the National Koala Recovery Plan for the purposes of s 139(1)(b) of the EPBC Act because it: a. Clear more than 843.8 ha of habitat used by koalas for feeding and resting; b. Destroy connectivity a continuous high-value patch of habitat used by koalas for feeding, resting, commuting and dispersing by clearing of vegetation; c. Clear habitat used by as refuge by koalas during extreme events in riparian areas; and d. Expose koalas to additional threats from vehicles where koalas must use the ground to move between resting and feeding trees.60		No	The koala has not been recorded within the Project area. The assessment of a potential significant residual impact has been done on a precautionary basis. The National Recovery Plan for Koala is referenced extensively within the relevant sections of the PER and the Minister will take this plan into consideration when making her decision.
579	.043	Wet sclerophyll forest impacts	The PER does not assess the impact on the Rainforest-Dry rainforest-Wet Sclerophyll [R-DR-WS] continuum at all The importance of this continuum in the region cannot be understated, as it is the support mechanism for both flora and fauna in the region plus the migratory birds. The following gives a summary of the rainforest importance and the relationship and current impact on these systems. The Submission includes extracts from a number of journal articles and websites regarding Wet sclerophyll forests before stating; The PER does not distinguish between the boundary of the rainforest, the Dry rainforest and the wet sclerophyll of the area. There is no assessment of the fragmentation of this continuum [R-DR-WS], nor of the cumulative impact of all the proposals in the region. I believe that this is a deliberate attempt and strategy to divert the approval process away from the true and distinctly negative impact of the proposal. When Epuron/Ark/Korea Zinc is asked for an explanation of the cumulative [Emerald Hill, Kaban, Chalumbin, Mt. Fox] impact, it says "The other proposals have nothing to do with us" Minister, the PER must reflect this continuum and it must be preserved in it's current form, by refusing the proposal.		No	Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). Indeed, one of these botanists, Dr Paul Williams, is the author of one of the papers included in Appendix 2 of your submission. One of your other references (DSITIA 2014) indicates that dry rainforest is sometimes referred to as "vine thicket" and you will find that the PER (Section 4.1.4 Vegetation) acknowledges the presence of small areas of vine thicket within the Project area. The DSITIA document also includes a map (Figure 9) which supports the claim in the PER that the rainforest within the Project area is primarily wet, not dry. Impacts on wet rainforest are not anticipated as the Project has been designed to avoid any clearing of this vegetation. Impacts on wet sclerophyll forest are fully assessed in Section 8.10 of the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
524	.023	Koala	We note that the Project Area one of the few remaining places in northeastern Australia that has been identified by the DAWE as likely to remain habitable for koalas under a global high emissions scenario based on modelling by Briscoe et al., 201662 (Figure 10). We consider that the Project Area constitutes "habitat critical to the survival of the species" because it serves a refuge for the species in times of stress and is critical for the long-term survival of the koala in Far North Queensland (FNQ) under a global high emissions scenario.63		No	Briscoe et al 2016 presents habitat suitability modelling for koala based on a number of different models, which present differing results for the 2070 scenario. Image 4c shows the habitat suitability for all models in 2070 which naturally shows a much larger area of suitable area along the eastern coast of Australia than image 4d which presents the "minimum habitat suitability across all models". The corresponding text in the article confirms that the location of refugia in image 4d (i.e. high elevation sites) was driven by assumptions of low foliage water content and represents the most pessimistic circumstances. The Chalumbin site is high altitude but it is not the highest altitude area in the Tablelands, which occurs to the east of the Project area within the WTQWHA. It is also worth noting that one of the primary purposes of constructing and operating a wind farm is to decarbonise Australia's energy market, reduce carbon emissions and contribute to averting the type of climate change effects modelled in studies such as Briscoe et al 2016.
524	.024	Koala	Submitter references Significant impact guidelines and koala referral guidelines in addition to regulatory requirements relevant to the koala. (P24)		No	There does not appear to be an issue or question to respond to here.
524	.025	Koala	The Proponent's main arguments are that (1) the Project Area is not of high importance for the Koala because no koalas have been sighted and (2) only 3% potential habitat for the species mapped within the Project Area will be cleared. In response, we say that the Proponent has incorrectly applied the relevant assessment Criteria. The Koala Referral Guidelines provide that value of koala habitat is determined by a holistic consideration of various factors, only one of which is koala occurrence. These factors are set out in the Koala Habitat Assessment Tool. Impact areas that score five or more are considered habitat critical to the survival of the koala. We consider that the impact area of the Proposed Action scores eight using the Koala Habitat Assessment Tool and therefore constitutes habitat critical to the survival of the koala (see Table 1 below). Table 1: Koala Habitat Assessment Tool (P25)		No	The EPBC Act referral guidelines for the vulnerable koala (DoE 2014) were relevant when the koala was listed as vulnerable under the EPBC Act. Now that the koala has been uplisted to Endangered, these guidelines have been replaced by the Approved Conservation Advice (DAWE 2022) and the National Recovery Plan (DAWE 2022), see https://www.dcceew.gov.au/environment/biodiversity/threatened/publications/epbc-act-referral-guidelines-vulnerable-koala. In any case, the referral guidelines were intended to be used by proponents and decision makers at the time of referring the Project under the EPBC Act - which the Chalumbin Wind Farm project did in 2021. The Minister must have regard to the National Recovery Plan when making a decision on whether or not to approve the Project.
579	.044	Indigenous Cultural Heritage / Engagement	Submission references Indigenous influence within the Wet Tropics and provides summary of article Connections, Transactions and Rock Art within and beyond the Wet Tropics of North Queensland.		No	Noted. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act.
579	.045	Visual impacts	Submission references the Tablelands Regional Council planning scheme and the specific outcomes related to scenic amenity. The Submission provides the following comment: This is dismissed in a handful of words in the PER [It is noted by the PER, that there are no iconic landscape features on or around the Site] Whereas the broad intent of the policy is clear with the Little Millstream and Millstream Falls being significant items to be preserved, as is the surrounding landscape. This is included in the preservation area as : The Savannah Way. The Savannah Way [Kennedy Highway] is promoted as an iconic route across the Tablelands and Gulf region. The Kaban turbine industrial construction and this proposal dominate the landscape units and of particular significance is the views from the Savannah Way, which is not discussed or put in perspective. This was also the case for Kaban.		No	A LVIA for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) is presented in Appendix M. Work undertaken by Lat 27 is underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. Section 10 of the LVIA sets out the cumulative assessment for the CWF and establishes the projects in the surrounding are which have been considered as part of the assessment. Existing projects form part of the baseline so are not assessed in the LVIA, these include: - Windy Hill Wind Farm (comprising 20, 44 m high turbines built in 2000) is approx. 17 km from the site - Mount Emerald Wind Farm (comprising 53 148.5 m high turbines, built in 2018) is located approx. 62 km from the site, given the considerable distance from the Chalumbin Site , noting it will take around one hour to drive between the two sites, the potential for cumulative impact is marginal. Two proposed wind farms have been identified and included as part of the cumulative assessment being the Kaban Green Power hub (18, 225m high turbines, currently under construction) is located approx. 9km north of the site. High Road Wind Farm is location approximately 13km north of Ravenshoe and 23km north of the site (18, 150m high turbines), currently being assessed thought Queensland State processes.
524	.026	Koala	The Proponent asserts that impacts from the Proposed Action to the Koala are acceptable because it will only adversely 3% of koala habitat in the Project Area. This type of quantitative argument concludes that habitat that is to be modified or destroyed is insignificant in relation to its wider distribution.		No	It is not the role of the proponent to determine whether or not impacts to the koala are acceptable, that role falls to the Minister. The PER acknowledges that the Project could result in a significant residual impact on the koala despite the implementation of a number of mitigation measures. This is why direct offsets have been proposed.
579	.046	Project alternatives	Submission includes an extract from the PER about the alternative configurations of the project. The Submission makes comment that: These were both also found to be unfeasible. Well, the answer is simple. NO APPROVAL Minister		No	It is assumed that the submitter is referring to sections 3.3.3 and 3.3.4 of the PER. These sections identified potential scenarios that avoid Magnificent Brood Frog habitat and Wet Sclerophyll Forest respectively. Both scenarios were found to be uneconomical and not feasible. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area.
524	.027	Indigenous Cultural Heritage / Engagement	63. Schedule 4 of the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) (EPBC Regulations) state that a draft PER must contain the following information: "2 Description 2.01 A description of the action, including:... (h) any consultation about the action, including: (i) any consultation that has already taken place; (ii) proposed consultation about relevant impacts of the action; (iii) if there has been consultation about the proposed action--any documented response to, or result of, the consultation; (i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views." 64. In Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193, the Full Federal Court considered the (1) purpose of public consultation and (2) key obligations and principles of proponents with regard to public consultation. While this case related to the specific application of Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (Cth) (OPGGS Regulations), these regulations are be construed in a manner that is consistent with the EPBC Act. 65. The Full Federal Court recognised that consultation was a "real world activity" with the following purposes in relation to titleholders that prose to engage in offshore petroleum activities: a. to ensure that the titleholder has ascertained, understood and addressed all the environmental impacts and risks that may arise from its proposed activity; b. to give the titleholder an opportunity to receive information it might not otherwise have received from others affected; c. to enable the titleholder to better understand how others with an objective state in the environment in which it proposes to pursue the activity perceive those environmental impacts and risks; and d. to enable the titleholder to refine or change the measures it proposes to address those impacts and risks by taking into account the information acquired through consultation. 66. The statutory obligation to consult stakeholders "must be understood in a practical and reasonable way so that it is capable of performance".71 In Santos NA Barossa Pty Ltd v Tipakalippa, the Full Federal Court considered illustrative case authorities regarding similar obligations under the Native Title Act 1993 (Cth) (NTA). Kenny and Mortimer JJ set out the following key principles: a. The key question is "whether a reasonable opportunity to participate in the decision-process has been afforded by the notice for a relevant meeting. The usual question is whether the notice was sufficiently clear to enable persons to whom is has been addressed to judge for themselves whether or not to attend a meeting and to vote for or against a proposal" (McGlade v South West Aboriginal Land & Sea Aboriginal Corporation (No 2) [2019] VCAF 238; 374 ALR 329 at [36]). b. When considering whether a failure to give members of a claim group or native title group ready access to participation in an authorization meeting, "a registered body should be in a position to demonstrate that it has explored all feasible options to enable a reasonable opportunity for participation in the authorization process in the manner contemplated under the NTA." (McGlade v South West Aboriginal Land & Sea Aboriginal Corporation (No 2) [2019] VCAF 238; 374 ALR 329 at [187]) c. Conduct that is superficial or token will not be enough for a proponent to demonstrate that consultation was appropriate and adapted to the nature of interests of relevant persons. Where interests are held communally, in accordance with tradition, the method of consultation will reasonably need to reflect the characteristics of the interests affected by the titleholder's proposed activity. 67. The Proponent states that it has fulfilled its obligations to consult the Jirrbal people under the Native Title Act 1993 (Cth) and the Aboriginal Cultural Heritage Act 2003 (Qld) because it engaged with the Jirrbal people for the purposes of a Cultural Heritage Management Agreement (CHMA) and an Indigenous Land Use Agreement (ILUA).73 It describes its engagement with the Jirrbal people as follows: a. Two rounds of engagement were conducted between November 2020 and February 2021. This engagement was conducted on site and through private interviews with individuals. b. The Board of Directors of the Wabubadda Aboriginal Corporation (WAC) nominated 20 senior Jirrbal people to be consulted by Technical Advisors. The consultation took place individually and in private groups between November 2020 and January – February 2020. c. A community workshop was held on 3 February 2021 with the aim or providing the Jirrbal people with information on the Project and Scoping Study. 40 People attended this workshop, which was held in Ravenshoe. d. A second round of engagement was proposed to be completed between May – June 2022. However, it is unclear whether this was conducted.	68. We are concerned that the consultation was not appropriate and adapted to the nature interests of the Jirrbal people for the following reasons: a. The community advisory group identified by the Proponent was not impartial and did not represent the interests of the Jirrbal People. Dr Geraldine McGuire, the Chair, was paid by Epuron for her role and failed declare a conflict of interests as her company Sustainable Solutions Global provides tailored services to renewable energy companies to fast track project approvals. b. On 16 September 2021, the Proponent held a community information session. However, the Jirrbal Elders and community members felt they were treated with disdain and their concerns were not welcome. c. No further open community meetings were held with the Jirrbal People after the initial community information session. Instead, the proponent organised drop-in sessions where community members could make individual appointments at an office hired by the proponent in Ravenshoe. No further meetings were held by the proponent and wider Jirrbal community in any public space. d. The ILUA negotiations did not constitute meaningful consultation with the Jirrbal people because a reasonable opportunity was not provided to the Jirrbal Elders and community members to attend a meeting. Further, impacts to Aboriginal culture and heritage and to the environment were not meaningfully discussed. This is discussed further below. 69. On 7 May 2022, Jirrbal community members attended an ILUA meeting facilitated by North Queensland Land Council about changing the land from pastoral to industrial land use. According to Patricia Mitchell, a Jirrbal Elder, and Georgina Wieden, a Jirrbal community member: a. The power to vote was dependent on a physical presence at the meeting or via Zoom. No transport was provided for the meeting. b. A reasonable opportunity was not provided to the Jirbal elders and community members because: i. Many Jirrbal community members in Ravenshoe and Tully did not receive notice of the meeting and were not consulted about the Proposed Action.76 ii. Voting was restricted to Jirrbal community members in attendance at the meeting. iii. Attendance by Zoom was not an appropriate medium for enabling Jirrbal Elders and community members to attend and participate in the meeting. iv. No transportation was provided to Jirrbal community members to enable them to attend the meeting. c. The meeting focused on financial compensation, rather than impacts to cultural heritage and to Country. d. The primary message conveyed was that if the Jirrbal people did not agree to the ILUA, they would lose out as another tribe would benefit. e. There was insufficient time for the Jirrbal people to consider the six resolutions that were voted on. In particular: i. The resolutions as they were not provided to attendees beforehand. ii. There was insufficient time during the meeting for Jirrbal community members to consider the resolutions. They were read out, there was a break in proceedings and the resolutions were voted upon. f. Because of inadequate opportunity to consider the resolutions, many Jirrbal community members did not understand the substantive content and implications of the resolutions that they were voting for. 70. It is submitted that the drop-in meetings provided by the Proponent do not constitute appropriate and adapted to the needs of the Jirrbal people because they: a. lacked transparency and accountability and eroded trust in the engagement process; b. removed the Jirrbal people's ability to collectively advocate for their needs; and c. decreased the Jirrbal people's ability to advise and support each other.	No	The circumstances of the CWF Project are distinguishable from those in the Santos NA Barossa Pty Ltd v Tipakalippa [2022] FCAFC 193 decision. That case involved no consultation having occurred with the relevant Indigenous stakeholder applicant. In contrast, Epuron/Ark has complied with legally established processes and requirements for consultation and agreement-making with the Jirrbal People under the Native Title Act 1993 (Cth) and the Aboriginal Cultural Heritage Act 2003 (Qld). Members of the Full Federal Court in the Santos decision recognised that an 'authorisation' process under the Native Title Act 1993 (Cth) (such as the authorisation process for the ILUA for the Project) is a workable way of consulting with communal interest holders. The ILUA was subject to a rigorous consultation and authorisation process managed by the Jirrbal People's legal representatives, the North Queensland Land Council. The ILUA was accepted for registration by the Native Title Registrar without any objections being made regarding the consultation and authorisation process. Members of the Jirrbal #4 claim group were given an appropriate opportunity to participate in the decision-making process regarding entry into the ILUA, consistent with the McGlade No 2 decision and other relevant case law. There are a number of material factual inaccuracies or omissions in this submission regarding the ILUA authorisation and broader engagement processes. For example, claim group members were offered travel assistance to the ILUA authorisation meeting in the notice of the meeting, contrary to the submission, and Dr Geraldine McGuire, the chair of the community advisory group was selected by the North Queensland Land Council without Epuron/Ark's input. Dr McGuire's costs were supported by Epuron/Ark to support Jirrbal's consideration of the Project, consistent with common practice in native title negotiations for the proponent to provide financial support to the native title party.
524	.028	Indigenous Cultural Heritage / Engagement	The Proponent states that it has fulfilled its obligations to consult the Jirrbal people under the Native Title Act 1993 (Cth) and the Aboriginal Cultural Heritage Act 2003 (Qld) because it engaged with the Jirrbal people for the purposes of a Cultural Heritage Management Agreement (CHMA) and an Indigenous Land Use Agreement (ILUA).73 It describes its engagement with the Jirrbal people as follows: Two rounds of engagement were conducted between November 2020 and February 2021. This engagement was conducted on site and through private interviews with individuals. b. The Board of Directors of the Wabubadda Aboriginal Corporation (WAC) nominated 20 senior Jirrbal people to be consulted by Technical Advisors. The consultation took place individually and in private groups between November 2020 and January – February 2020. c. A community workshop was held on 3 February 2021 with the aim or providing the Jirrbal people with information on the Project and Scoping Study. 40 People attended this workshop, which was held in Ravenshoe. d. A second round of engagement was proposed to be completed between May – June 2022. However, it is unclear whether this was conducted		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Woorooora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Woorooora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
524	.029	Community consultation	We are concerned that the consultation was not appropriate and adapted to the nature interests of the Jirrbal people for the following reasons: a. The community advisory group identified by the Proponent was not impartial and did not represent the interests of the Jirrbal People. Dr Geraldine McGuire, the Chair, was paid by Epuron for her role and failed declare a conflict of interests as her company Sustainable Solutions Global provides tailored services to renewable energy companies to fast track project approvals. b. On 16 September 2021, the Proponent held a community information session. However, the Jirrbal Elders and community members felt they were treated with disdain and their concerns were not welcome.75 c. No further open community meetings were held with the Jirrbal People after the initial community information session. Instead, the proponent organised drop-in sessions where community members could make individual appointments at an office hired by the proponent in Ravenshoe. No further meetings were held by the proponent and wider Jirrbal community in any public space. d. The ILUA negotiations did not constitute meaningful consultation with the Jirrbal people because a reasonable opportunity was not provided to the Jirrbal Elders and community members to attend a meeting. Further, impacts to Aboriginal culture and heritage and to the environment were not meaningfully discussed. This is discussed further below.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. The Community Advisory Group is voluntary and not required for consultation. The group includes two stakeholder representative members for the Traditional Owners. It is standard for a suitably qualified chair of a project community group to be compensated for their time. Membership is open to any interested member of the community and membership is voluntary and unpaid. Engagement with Traditional Owners has been ongoing. Many community information sessions have been held at the information centre, and all have been open to the public. All members of the community, including Jirrbal, have been welcome to attend local community information sessions and the local information centre which is open on a weekly basis. Protocols associated with ILUA meetings were prescribed and managed by NQLC

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524	.030	Community consultation	On 7 May 2022, Jirrbal community members attended an ILUA meeting facilitated by North Queensland Land Council about changing the land from pastoral to industrial land use. According to Patricia Mitchell, a Jirrbal Elder, and Georgina Wieden, a Jirrbal community member: a. The power to vote was dependent on a physical presence at the meeting or via Zoom. No transport was provided for the meeting. b. A reasonable opportunity was not provided to the Jirbal elders and community members because: i. Many Jirrbal community members in Ravenshoe and Tully did not receive notice of the meeting and were not consulted about the Proposed Action.76 ii. Voting was restricted to Jirrbal community members in attendance at the meeting. iii. Attendance by Zoom was not an appropriate medium for enabling Jirrbal Elders and community members to attend and participate in the meeting. iv. No transportation was provided to Jirrbal community members to enable them to attend the meeting. c. The meeting focused on financial compensation, rather than impacts to cultural heritage and to Country. d. The primary message conveyed was that if the Jirrbal people did not agree to the ILUA, they would lose out as another tribe would benefit. e. There was insufficient time for the Jirrbal people to consider the six resolutions that were voted on. In particular: i. The resolutions as they were not provided to attendees beforehand. ii. There was insufficient time during the meeting for Jirrbal community members to consider the resolutions. They were read out, there was a break in proceedings and the resolutions were voted upon. f. Because of inadequate opportunity to consider the resolutions, many Jirrbal community members did not understand the substantive content and implications of the resolutions that they were voting for.77		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The Project has sought to work closely with the Jirrbal #4 People (as Traditional Owners) through Project design activities and also in accordance with the Aboriginal Cultural Heritage Act 2003 (ACH Act) to ensure aspects of cultural heritage are managed appropriately. A Cultural Heritage Management Agreement (CHMA) was signed in October 2020 under the ACH Act. Protocols associated with ILUA meetings were prescribed and managed by NQLC.
524	.031	Community consultation	70. It is submitted that the drop-in meetings provided by the Proponent do not constitute appropriate and adapted to the needs of the Jirrbal people because they: a. lacked transparency and accountability and eroded trust in the engagement process; b. removed the Jirrbal people's ability to collectively advocate for their needs; and c. decreased the Jirrbal people's ability to advise and support each other. 71. Requests for meaningful and transparent consultation by community members also were declined by the Proponent (see Annexure 2).		No	Protocols associated with ILUA meetings were prescribed and managed by NQLC. The proponent has prioritised Traditional Owner (Jirrbal People #4) involvement and engagement throughout the Project development process. As described within the PER, the Project commenced discussions about cultural heritage identification and management in September 2020 and agreed to negotiate a Cultural Heritage Management Agreement (CHMA) for the Project. Both the Project and Jirrbal representatives agreed the importance of documenting a comprehensive CHMA before the Project progressed any ground disturbing site activities. The CHMA was negotiated with legal advice and support being provided to Jirrbal representatives via the North Queensland Land Council (NQLC), and the Agreement was executed by the parties in late October 2020. The CHMA will continue to be the principal arrangement for identification and management of cultural heritage. An Indigenous Land Use Agreement (ILUA) for Woorooora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation Registered Native Title Body Corporate (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the proponent. The proponent has followed prevailing law in Australia in relation to the agreement making under the Native Title Act 1993. An Indigenous Land Use Agreement (ILUA) for Woorooora Station was endorsed by the Jirrbal #4 Applicants and Wabubadda Aboriginal Corporation (WAC) on 7 May 2022 and subsequently signed by the Applicants, WAC and the Project proponent. This is the recognised process in Australia for dealing with Native Title. The suggestion that there has been no meaningful public consultation in the Chalumbin Wind Farm project is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project.
524	.032	Alignment with government policy	The Minister is required to apply the precautionary principle when making decisions pursuant to section 391 of the EPBC Act when there is a lack of full scientific certainty regarding the potential for serious or irreversible environmental damage. In particular, s 391(2) of the EPBC Act states: "(2) The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage." We consider that the Proposed Action fulfills both conditions precedent to the application of the Precautionary Principle. First, it gives rise to a threat of serious or irreversible damage because of the following factors: a. The magnitude of the Proposed Action, which is: i. Likely to clear at least 843.8 ha of koala habitat; ii. Cause extensive further secondary impacts to koalas and other threatened species in relation to habitat fragmentation and edge effects from the construction and operation of 120 km of unsealed roads; and iii. Cause the loss of approximately 800,000 tonnes of material will be lost as dust or sediment over a 20-year period which is likely to impact riparian areas in proximity to the Proposed Action and downstream areas flowing into the Herbert River. b. The value of the receiving environment, which is an area of high recovery value to the Koala because it: i. is a large, intact landscape for the Koala that has almost continuous native habitat for the Koala, is mostly free of vehicles and has high connectivity values; ii. has large areas of trees that provide food and other resources for the Koala; and iii. has extensive riparian areas that provide important refuges for the Koala during climatic extremes. c. The temporal scale of impacts, which include: i. the permanent destruction of approximately 1,045 hectares of remnant and regrowth vegetation; ii. long-term impacts due to the estimated 30-year lifespan of the Proposed Action, which has the potential to be renewed for a further 30-year operating life;78 d. Public concern by the Jirrbal people, local community groups including Stop Chalumbin wind Farm, Rainforest Reserves and the broader community concerned with biodiversity loss and climate change impacts from severe deforestation.		No	In relation to the precautionary principle, the PER provides sufficient certainty with respect to the potential impacts of the action on the existing values of the environment. Each of the items listed by the submitter are directly addressed within the PER. It should be noted that the Preliminary Rehabilitation Plan (Appendix K of the PER) describes how at least 70% of the land to be disturbed for the Project will be rehabilitated following construction activities.
524	.033	Alignment with government policy	The type and level of precautionary measures that are appropriate depends on the degree of seriousness of and irreversibility of the threat and the degree of uncertainty. The more significant the seriousness and the more uncertain the threat, the greater the level of precaution required. (Telstra v Hornsby [161]). In this case, we consider that precautionary measures cannot reduce the threat of serious or irreversible environmental impacts to the Koala to acceptable levels. As such, the appropriate course of action is to prohibit the carrying out of the Proposed Action (Sustain Our Sounds v The New Zealand King Salmon Company [2014] NZSC 40; [2014] 1 NZLR 673, 704 [111].)		No	The koala has not been recorded within the Project area. The assessment of a potential significant residual impact has been done on a precautionary basis. The National Recovery Plan for Koala is referenced extensively within the relevant sections of the PER and the Minister will take this plan into consideration when making her decision.
579	.046	Project location	Submission refers to the Tablelands Regional Council planning scheme, in particular the renewable energy sector. This completely avoids the issue: "….new development is located to avoid conflict with surrounding uses." as provided in the TRC Planning Scheme, which Korea Zinc MUST abide by in it's application/PER. The case is NOT made out.		No	The Tablelands Regional Council Planning Scheme was a consideration during assessment of the Project under the Planning Act 2016 and State Code 23. The Planning Report - available online - addresses this.
579	.047	Social impacts	Submission refers a community plan from 2011. The Submission comments that: There are a series of Wind Turbine proposals that extend throughout the region, which are opposed by the local residents. The level of community acceptance for Wind Turbines is less than 15%. To overcome opposition, the proponents Kaban/Epuron/Ark/Korea Zinc/Twiggy Forrest/Apple Inc negatively "engage" with the community, by offering bribes, donations, prizes etc. This is specifically shown by the proposed $500,000 "contribution" to the Ravenshoe community is around 80 cents per day/person. Minister, this is PEANUTS against the Environmental cost to the community. There is no community survey or polling from the applicant to demonstrate acceptance. By any measure, acceptance is essential. This is not happening with Chambulin – No social licence The publicly available measurable outcomes are not clear, but research into community outcomes indicate a Government [QLD] undertaking that would be $70 per year: The Government is promising CleanCo will help cut the average power bill by $70 a year. This demonstrates the concept that the community is about to "sell out" for no benefit. There is no absolute guarantee from the proponent to pay the locals the $70/annum. And remember that $90 is less than a months' worth of coffee at the local barista.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
579	.048	Social impacts	Submission includes extract from the PER (page 632). Comment on this section: Does not meet any definable endpoint and there is no impact for the proponent if the "aim" is not met, nor attempted to be met. Minister, another "bold aim" with no discernable and guaranteed outcome.		No	The proponent will use best endeavours to maximise local stakeholder involvement, local workforce and TRC engagement to realise beneficial outcomes for the community during construction and operation.
579	.049	Hazard and risk	The Submission refers to PER section stating: Project activities have the potential to result in accidental releases of hazardous materials, such as fuels and oils from vehicles and machinery. These hazardous materials can lead to localised soil contamination and contamination of water resources, which in turn can cause injury, reduced vigour or mortality to flora and fauna. The severity of the impact is dependent on the location and magnitude of the release. The Submission comments on this section stating: No mining lease interrogation, no geological provenance investigation, no historical mining investigation. What else has been investigated in a low-level way?		No	The PER, in section 5.2.8, goes on to say that "This is generally expected to be associated with low volumes and localised on the soil that can be collected and remediated as per standard construction projects". This section of the PER was required to look only at potential impacts. Strategies to manage these impacts are further discussed in Section 6.2.8.
579	.050	Erosion and sedimentation	Submission refers to extract from the PER stating: "the steepness of the terrain requiring a level of cut and fill to optimise the road layout and minimise slopes to 15 % maximum" Submission provides comment on this section: There is no attempt in the PER to discuss the current environment by dismissing the matter in a few words. Sedimentation rates are not considered at all, nor the off-site impacts and on-going risks to the environment including the GBR. The impact of post-construction damage in the next wet season is not considered at all. Minister, another FAIL.		No	Section 2.2 of the PER contains a description of the key project components and states that road slopes will not exceed 15% and that for a track width of 5.5m the temporary road construction may extend from less than 25 m to over 100 m depending on the complexity of the terrain and ability to safely construct the required earthworks. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. The Great Barrier Reef and World Heritage areas have been a key consideration in the assessment of the project and are discussed in various sections through the PER. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site specific construction Erosion and Sediment Control Plans (ESCPs) will be prepared and implemented for the construction of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site.

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579	.051	Mitigation and management measures	Submission refers to sentence in the PER: Areas stripped of topsoil not required for operation will be rehabilitated as soon as practicable. Submission provides comment on this, stating: That is simply not a good solution and a proper management plan should allow for immediate revegetation, proper stockpiles, ring collection banks, use of soil retention matting, hydro- mulching or a myriad of suitable techniques for a high rainfall, high impact environment. We are in a 1200mm to 3000mm environment, with daily rainfalls of over 100mm common. Does not meet any normal design parameters. Minister, the PER is flawed and must be rejected.		No	Climate data does not support your assertion that this is a 1200mm-3000mm environment. Rehabilitation will be undertaken as soon as practicable - i.e. as soon as areas are no longer being worked in or disturbed. Revegetation cannot be undertaken whilst earthworks are ongoing.
579	.052	Water resources	Submission refers page 58 of the PER regarding potable water. The Submission provides the following commentary: There has been no discussion of the impact locally. It should be noted that removals from the Millstream above Ravenshoe by Kaban, have impacted downstream users in Evelyn Creek and The Millstream. There was no local input or discussion, except for a 'stage managed' community "group and "individual briefings". These do not meet the spirit of community consultation.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource.
579	.053	Social impacts	Submission refers to the lack of employment opportunities from the project to the local community within 20km.		No	The operational jobs associated with the Project are significant in the context of the size of the Ravenshoe community and surrounds. The construction jobs offered by the Project presents an opportunity for upskilling of labour and opportunities to travel to other locations within the State for wind farm construction jobs following the completion of construction of this Project. The $500,000 per annum Community Benefit Program is a significant ongoing commitment that will benefit the broader community.
579	.054	Alignment with government policy	Submission refers to the QREZ - The QREZ in it's current form ONLY pays lip service to environment. This is particularly the case with Kaban, Chambulin and Fox Crater where there is a substantial additive effect. This is not addressed in the QREZ. This occurs anyway and the process should not be interfered with by any further interference. This currently flows to the larger centre but should be structured in such a way that it flows to smaller communities.		No	It is possible that strategic planning within the QREZs will occur; however, at this point there is no publicly available information to demonstrate this strategic planning or the mechanisms through which it will be enforced. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. Section 5.5 of the PER provides an assessment of the potential cumulative impacts of the various renewable energy projects operational, under construction, and proposed in the broader region.
579	.055	N/A to PER matters	Submission includes Appendix 1 outlining the results of the Community Vision for 2021 (based on 2011) consultation as to why people come to/stay in Ravenshoe or the Tablelands.		No	Noted.
579	.056	Wet sclerophyll forest impacts	Submission includes Appendix 2 which details the articles and websites which define Wet Rainforest-Dry Rainforest-Wet Sclerophyll-Forest continuum.		No	Two very well qualified and experienced botanists undertook the vegetation mapping for the Project and we have every faith in their work (which incidentally included consultation with the Queensland Herbarium in relation to the forest communities within the Project area). Indeed, one of these botanists, Dr Paul Williams, is the author of one of the papers included in Appendix 2 of your submission. One of your other references (DSITIA) indicates that dry rainforest is sometimes referred to as "vine thicket" and you will find that the PER (Section 4.1.4 Vegetation) acknowledges the presence of small areas of vine thicket within the Project area.
579	.057	Fauna mortality turbines	Submission attaches article "Vulnerability of avian populations to renewable energy production" (2022).		No	Noted.
579	.058	N/A to PER matters	Submission includes attached a number of media releases from Bob Katter MP regarding the project.		No	Noted.
486	.023	Contamination	Environment Report where Ark Energy have carried out an impact assessment regarding these significant issues or consulted with these Stations and Landowners? Also as these are both Cattle Stations and also considering Woodleigh as a tourist attraction and business including Weddings, Birthdays, Special Events, American & Japanese Students and also Australia Tourists not sure how things will go if the Blunder Creek gets polluted from Arsenic runoff, concrete batching plant run off, wash-down of concrete trucks & equipment, sediment run off and erosion from the construction works. This could end up with poisioning on high levels to people and livestock. Also considering all equatic life and endangered and threatened species that rely on these water resources.		No	Section 4.1.8 of the PER describes that the potential for leching of arsenic and other metalloids rom the Project into the receiving environment is low. Appendix J of the PER is a Sediment and Erosion and Management Plan that assesses the soil erosion and sedimentation risks. The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. The potential for high intensity storms to occur during the dry season are discussed in Section 2.2.2 of Appendix J.
63d	.001	Community consultation	When we bought our house in Millstream in January 2022 we were not informed of the proposed wind farm development. If we had been informed, we would have reconsidered purchasing the property. The real estate listing said the property was surrounded by national parks, there was no mention of privately owned land. We will be able to see the proposed development from our property. We purchased the property to be in a rural area surrounded by natural beauty and nature. We did not want to move to a property that was 3km away from heavy industrial land use. The lack of community consultation was evident in the lack of information readily available to us when we purchased the property.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The project had already been referred under the EPBC Act in January 2022 and a large public meeting had been held in Ravenshoe Town Hall. Information was also readily available on the proponent's website. Real estate listings are outside the proponent's sphere of influence. A renewable energy project such as a wind farm is not a heavy industrial land use; it is able to coexist with the prevailing agricultural land uses.
63d	.002	Community consultation	In June 2022 my neighbour (who has lived here for 12 years) was unaware of the proposed development. I feel that the developer has not made enough effort to hold public meetings and engage with the local community.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. This includes public meetings held in Ravenshoe in September 2021, Feburary 2022 and November 2022, and the establishment of a local information hub (open weekly as a minimum) in February 2022.
63d	.003	Community consultation	I am concerned about the use of misleading photos displayed by the developer in their literature, depicting cattle in pasture. In reality, only 5% of the proposed development is on cattle country and 95% is in remnant vegetation. The developer has at no time showed images of the remnant vegetation that will be affected by this proposal.		No	All photos contained within the PER and its various appendices were taken on site. Many photos throughout Section 4 of the PER show examples of remnant vegetation. The Project area does not encompass the Chalumbin Wilderness Area and is currently subject to existing disturbances in the form of roads (Glen Gordon Road, Blunder Park Road) and high voltage powerlines. Both host properties have been grazed for approximately 140 years and the cattle graze within the remnant vegetation.
63d	.004	Community consultation	From reading about the community meeting on 16th September 2021, it seems that the account of this meeting by the developer varies considerably from accounts of local community members. It seems the developer has used inaccurate accounts of this meeting as a reason why there have been no further community meetings. As a local resident, I think it is crucial to have meetings to discuss the proposal.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. Subsequent to the community meeting in September 2021, a series of public information sessions have been held in Ravenshoe in February 2022 and November 2022. An additional information session was held in Innot Hot Springs in November 2022.
63d	.005	Consultation	We (part of the local community) do not know the developers and the developers have not contacted us or made an effective effort to contact local residents. We live 3km from the proposed development and there are many local residents who will be able to see and hear the proposed development from our homes. We have not been provided with adequate information on the proposed development or how it may impact our everyday lives. There has been no house to house connection, either in person or by mail. There has been no connection at all with local Millstream residents who are the closest, geographically, to the proposed development and who, for various reasons, may be unable to travel to the developer's Ravenshoe office. I think the developer needs to individually contact householders who live close to the proposed development site, especially those who would be able to see and hear the development from their homes.		No	Information cannot be sent directly to recipients without their personal contact details, and the only way for a proponent to get an individual's personal contact details is for these to be provided. To try and reach as many people in the area as possible, Australia Post's unaddressed mailout delivery service was used to distribute newsletters. The Millstream area was included in this. However items may not have been left where there is a 'no unsolicited mail' notice. Newsletters are also sent directly to recipients who have provided their email or mail contact details – and in all project communications (including local newspaper advertisements) people are encouraged to register for newsletters as this is the best way they can be guaranteed of receiving them.
63d	.006	Consultation	I am concerned about potential damage to the wonderful local ecosystem. I am highly unsatisfied with the lack of community consultation on any ecological impacts to the area.		No	The project's lead ecologist has actively participated in almost all public information sessions, project briefings and hosted site visits that have been undertaken as described in Section 11 of the PER, as well as contributing content to project newsletters and other printed information materials.
63d	.007	Offsetting	Offsetting can have issues as raised in a recent webinar (referring to CAFNEC). The proposed offset will increase fragmentation.		No	There have been changes to the proposed offset management areas since the Draft PER was released for public comment. The amended areas have been assessed in the Final PER. The southern offset area on Wooroora Station has been revised to no longer be intersected by project infrastructure.
63d	.008	Rehabilitation	The replanting of 674.7ha of land will require many resources and take several years to complete. The destruction of remnant vegetation in a high biodiverse area simply cannot be offset by replanting trees and seedlings.		No	The proposed rehabilitation program is separate and additional to the proposed offset program. The commitment to rehabilitate the majority of the construction footprint is an industry-first, voluntary commitment. The proponent is aware that this will require significant resources and will take years to complete.
63d	.009	Indigenous cultural heritage	I believe the PER Guidelines in relation to Indigenous consultation have been breached. Many Jirrbal community members, including Elders with direct links to the land, have been excluded from all consultation processes. The Jirrbal people have strong concerns about burial sites, massacre sites and sacred sites, and these concerns have not been addressed by the developer. [submission reiterates the events of the September 2021 community meeting but has acknowledged elsewhere that the submitter did not attend]		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
63j	.001	Alignment with government policy	Having only 47 business days to submit submissions has been challenging, considering the size of the PER and the fact it is in 32 separate documents online. I feel I have not had the time to put in the depth and quality of submission that I would have liked.		No	The public exhibition period is defined in the EPBC Regulations and confirmed by DCCEEW, it is outside the proponent's control. Due to rectification of a procedural error, the public exhibition period for the project was longer than it would normally have been.
63j	.002	Water resources	The development area is located on the North East edge of the Herbert River catchment, this is the largest catchment in the Wet Tropics bioregion. Blunder Creek is the largest waterway to traverse the development site. This is a highly biodiverse aquatic area and I have concerns the proposed development will negatively affect this waterway, through pollution and physical damage to the rare and endemic aquatic flora and fauna in this area.		No	Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site specific construction Erosion and Sediment Control Plans (ESCPs) will be prepared and implemented for the construction of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site.
63j	.003	Water resources	The riparian vegetation and the waterway itself provide unique habitat for a range of native species. I have concerns that if water is extracted from Blunder Creek to be used by the development, there may not be a sufficient amount of water left in the creek for native flora and fauna.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource.
63j	.004	Water resources	Where will water for the concrete batching plants come from? I have concerns that this is not addressed in the PER. I believe if this water is extracted from Blunder Creek, it would severely impact the ecology of the area.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource.
63j	.005	Lake Eacham rainbowfish	A report on all MNES species that live in this and other waterways within the development area is missing from the PER. [submission includes an extract from ALA for the Lake Eacham Rainbowfish which does not show the Project area as it is zoomed on the known locations of this species] Note these maps may not show the recent discoveries in Blunder Creek. Removal of water from these creeks will have a negative impact on endangered flora and fauna which has not been addressed in the PER.		No	The Project team has been made aware, through the submissions process, of one endangered fish that potentially inhabits Blunder Creek that was omitted from the PER. The Final PER includes an assessment of the Lake Eacham rainbowfish. The majority of infrastructure associated with the Project will avoid direct and indirect impacts to Blunder Creek as per Section 4.1.5 of the PER. The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site.
63j	.006	Water resources	[quoting the PER] Water will be used for dust suppression and bulk earthworks as necessary. In addition the workforce will require potable water for drinking and amenities. Construction water supply can be sourced from a range of options including the construction of bores or dams subject to consultation with regulatory authorities and landowners. Potable water will likely be provided by rainwater tanks or through transactions with local government and associated water reticulation network. I have concerns that not enough research or planning has gone into the PER document in relation to water usage for construction.		No	The water supply for the construction of the project is yet to be determined but may be sourced from a number of different sources. Relevant approvals and permits will be sought for the take of water in accordance with Queensland's Water Act 2000 or trucked to site. Appropriate water sources would be selected for each component of the project to ensure efficiency of resource. It is standard practice for water sources to be further understood with the engagement of a construction contractor.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
63j	.007	Magnificent brood frog	Damage to waterways and water sources in this area due to the proposed industrial development will negatively impact this very rare amphibian. Amphibians are very sensitive to water quality and are harmed by any changes to waterways in their area of habitation. Their moist skins are especially sensitive to pollution. Any degredation to waterways within the proposed development site, any chemicals entering the water supply in the Chalumbin area during the construction period, would negatively affect the magnificent brood frog. Chemicals from concrete, petrochemicals from vehicles, and chemicals from general construction will negatively affect water quality and pH, and have a negative effect on aquatic life in the Chalumbin area, including the magnificent brood frog.		No	A detailed assessment of potential impacts on the magnificent brood frog is provided in Section 8.4.2 of the PER. The PER concludes that despite the implementation of a range of mitigation measures, the Project may result in a significant residual impact on this species. For this reason, and in accordance with the EPBC Act, environmental offsets for the magnificent brood frog have been proposed.
63j	.008	Australian lace-lid	The Australian lace-lid is endemic to the Wet Tropics bioregion. The previously mentioned ways in which pollution and physical alteration of waterways from the proposed development would affect the MBF would also affect the Australian lace-lid. [submission includes map extractions of this species distribution and records from ALA; all records appear to be from within rainforest habitats outside the Project area - as detailed in the PER] I believe the limited survey effort for this species could have missed it because it is very hard to spot and there is habitat within the development area.		No	The submission includes an excerpt from the Atlas of Living Australia with records of the Australian lace-lid within the Project area. Importantly, the most recent of these records dates from 1977 (as reported in Section 4.5.1.4 of the PER and illustrated in Figure 4-17). Potential habitat for the species (rainforest and wet sclerophyll forest alongside perennial streams) is limited (4ha within an area of approximately 31,000ha) and has been mapped in Figure 4-17 of the PER. None of this potential habitat is intersected by the Project footprint. As described in detail in Section 8.4.1, significant residual impacts on this species are not anticipated.
63j	.009	Water resources	Any contamination from the proposed development that ends up in the water table in the Chalumbin area will end up in the GBR. There have been recent concerns regarding the nearby Kaban Wind Farm discharging pollution into the nearby Evelyn Creek [submission includes photos of Evelyn Creek] This watercourse has been exposed to the enormity of sediment run-off from the earthworks, concrete batching plants, quarry materials, haulage trucks and blasting of mountain-tops during the industrialisation of what were critical habitats at Kaban.		No	The project will undertake erosion and sediment control in line with the IECA 2008 BPESC Standard. Appendix J of the PER is a Sediment and Erosion Management Plan that assesses the soil erosion and sedimentation risks. Site based ESCPs and progressive rehabilitation will be used during the construction phase of the project. Site based ESCPs assess the site specific risk and develop detailed ESC to minimise erosion and maximise sediment retention on site. The project has committed to not undertaking any ground disturbance works during January to March which will significantly reduce the risk of erosion and sediment runoff.
63j	.010	Water resources	The Herbert River is a contributor of dissolved inorganic nitrogen and fine sediments being released into the GBR. It is managed under the Reef 2050 Water Quality Improvement Plan. Any pollution from the proposed industrial wind farm development in the Chalumbin area could end up in the GBR. The Australian Marine Conservation Society has a campaign listing 10 critical actions to save the GBR. One of the key actions is to end tree clearing and protect native vegetation in Reef catchments. The proposed Chalumbin industrial development would be in contravention of UNESCO and IUCN Reef Report, contributing to pollution and run-off into the GBR. [submission quotes extensively from the March 2022 IUCN Monitoring Mission Report on the GBR which I am not going to reproduce here!]		No	Potential indirect impacts to the GBR is a key consideration for the project and has been addressed extensively in the PER, including in Section 4 (Description of the Environment), Section 5 (Impact Assessment) and Section 6 (Avoidance, Mitigation and Management). Erosion, pollution and sediment run-off are all assessed in the PER specific management plans developed including the Sediment and Erosion Management Plan (Appendix J), the Preliminary Erosion and Sediment Control Plan (Appendix I) and the Preliminary Rehabilitation Plan (Appendix K).
63k	.001	Indigenous cultural heritage	As a non-Aboriginal community member, I think it is inappropriate to industrially develop areas of cultural and spiritual significance. I think any money offered as compensation for the proposed development cannot replace sacred sites that are damaged or desecrated as the result of the development.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
63k	.002	Indigenous cultural heritage	I believe it is morally inappropriate to develop an area where massacres of First Nation people took place, especially if local First Nations people express a need for this area to be left undisturbed. [submission includes a photo of Carol Carney with a banner protesting against the project]		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
63k	.003	Indigenous cultural heritage	I believe many Jirrbal community members, including Elders with direct links to the land, have been excluded from the consultation process. I believe their strong concerns about burial sites, massacre sites and sacred sites have not been adequately addressed in the PER report or in their direct communication with the Jirrbal community.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
63k	.004	Indigenous cultural heritage	At the community meeting on 16th September 2021, Jirrbal elders had concerns about the threats the proposed development posed to sacred sites; their concerns were not addressed at this meeeting and there was no subsequent follow-up to address their concerns. If there are different points of view within the Jirrbal community, then mediation, meetings and effective communication needs to be prioritised for that community.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
63k	.005	Indigenous cultural heritage	I feel that issues have been clouded and divisions caused in local communities due to the promise of financial offerings to some members of the community.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
63k	.006	Indigenous cultural heritage	Much of First Nations history is passed down orally rather than recorded on paper. Therefore, I think that the oral history of any massacres in the area needs to be heard orally from the Jirrbal people and any other local Traditional Owners.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
464b	.001	Alternative power generation	The Chalumbin project will contribute minimally to the decarbonisation of the state. You are being dishonest about the contribution this wind farm will make to decarbonisation. [submission includes a table copied from Steven Nowakowski that lists energy capacity of renewable projects for Queensland] The Chalumbin project is neither critical nor necessary for a net zero outcome for Queensland.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
464b	.002	Cumulative impacts	The real cumulative impacts of this project have not been documented by the proponent. I have made a separate submission about the koala. The red goshawk may be impacted as the flight path will be in and around the turbines, which will likely result in impact and possible extinction. The proponent states that the project will not result in residual impact on this species (Table 5-3) but has provided no evidence of this. The clearing of 1,031 ha of habitat will result in dramatic and catastrophic cumulative impact. Jeanette Kemp wrote a paper on the cumulative impact of land clearing on endangered wildlife, see link.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
464b	.003	Avoidance	The statement that the project has been reduced in size by half is a barefaced and deliberate lie. The project was first published as having 95 turbines, it has never been promoted as being developed with 200 turbines.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations. A considerable amount of work is undertaken to define and avoid (to the extent practicable)ecological, heritage and engineering constraints before any project is referred under the EPBC Act and the proposed Chalumbin Wind Farm is no exception.
464b	.004	Offsets	The proposed offsets are inadequate and do not compensate or balance the projected loss. To be beneficial, offsets must be like for like. The only offsets that should be considered are revegetation of land in equal measures to that of the habitat impacted. I have been advised that the proponent offerred $250,000 to the Magnificent Brood Frog Action Group, this can only be seen as a bribe and does not constitute an offset. Please consult the Queensland legislation regarding offsets.		No	The Preliminary Offset Strategy (Appendix O to the PER) has been prepared to meet the EPBC Act Environmental Offsets Policy and the PER has been assessed by DCCEEW as meeting the PER Guidelines. There have been changes to the proposed offset management areas since the PER was released for public comment. The amended areas have been reassessed in the final PER. The $250,000 towards research into the magnificent brood frog is a voluntary commitment made by the proponent over and above the requirement for direct offsets which are also being proposed. Nonetheless, the EPBC Act Environmental Offsets Policy does allow for a proportion of indirect offsets in the form of research and there are many examples of other projects where research has successfully formed part of the offsets program. Queensland legislation is irrelevant to offsets under the EPBC Act Environmental Offsets Policy.
464b	.005	Power generation	[virtually identical to 464b 0.001 above but attached to the email as a separate submission] The Chalumbin project will contribute minimally to the decarbonisation of the state. You are being dishonest about the contribution this wind farm will make to decarbonisation. [submission includes a table copied from Steven Nowakowski that lists energy capacity of renewable projects for Queensland] The Chalumbin project is neither critical nor necessary for a net zero outcome for Queensland.		No	Wind farms such as the Chalumbin Wind Farm are a part of the current and future energy mix throughout the National Electricity Market. A robust and mature energy market benefits from a mixture of generation sources (of differing technology) such that there is complementarity and redundancy amongst the generators. The AEMO - through the Integrated Systems Plan - is working towards ensuring this occurs, as described in Section 1.5 of the PER.
464c	.001	Koala	The koala map is inaccurate as koala have been mapped on Yourka Reserve, Kaban, Ravenshoe and Tumoulin. Submission attaches the "real" map of koala habitat produced by the AKF		No	The AKF figure was produced at a desktop level (presumably using DoR RE mapping, which is inaccurate in places) and includes the following categories: primary, secondary (class A, B, C), other vegetation and unknown habitat quality. Only a few riparian areas within the Project area have been reportedly mapped as primary habitat. The habitat map included in the PER which shows the majority of the Project area as supporting koala food trees (broadly correlating to their category of Primary Habitat)
464c	.002	Koala	I own the Air BnB where the two ecologists you employed stayed and I personally documented the time they spent doing their work. They stayed for 5 days in total and spent about 20 hours observing the environment. If you employed other ecologists, I would like to be notified as to the amount of time they spent documenting wildlife.		No	The two ecologists stayed at this property whilst undertaking nocturnal surveys for the magnificent brood frog. Incidentally, this was only one of many surveys undertaken for the magnificent brood frog. The full range of survey techniques, effort and surveyors involved in the more than two years of field assessment for the project are detailed in Section 4.2.2 of the PER.
464c	.003	Koala	Koalas are very difficult to find if you do not have the appropriate thermal imaging devices, I believe that they just set up cameras in the project area to map the wildlife. This is insufficient to map koalas.		No	Thermal drones are a relatively new method for koalas and are suited for detecting the species at low densities whilst spotlighting along a walked or driven transect is a well-used method to obtain estimates of nocturnal arboreal mammal, including koala, incidence and abundance in wooded habitats. Like all survey techniques, there are limitations in this case, that affect detection rate.Terrain, temperature, wind speed, canopy cover and height of the koala in a tree can affect the detectability of koalas by thermal drones and pilot experience, drone speed and height, and the use of manual versus automated processing of imagery can influence the rate of false detections (that is, thermal signatures from other sources that are incorrectly identified as koalas) and duplicate detections (that is, the same koala detected twice due to overlapping images from adjacent transect lines. Where an unknown detection by drones is apparent, this would need to be verified in the field, which can be difficult logistically due to landscape structure and Project size. In a 2021 report by the ANU (A review of koala habitat assessment criteria and methods), it is acknowledged that there is no single technique or widely accepted method to survey koalas. Spotlighting may underestimate koala occupancy and density relative to estimates obtained by thermal detection drones - but drones have the potential to disturb koalas and other non-target species. As noted in Section 4.2.2.3 of the PER, the survey teams also undertook searches for scratches and scats; none were recorded. Camera trapping is acknowledged in the ANU report as a suitable secondary survey method for koalas (and the survey team has successfully recorded koalas by camera trap in other locations); in over 9,000 camera trap nights, no koalas were recorded at Chalumbin. Importantly, the assessment presented in the PER assumes that the koala is at least occasionally present within the Project area, and acknowledges that habitat for the species exists within the Project area. Therefore, any conjecture about the survey methodology for the species is moot. Potential impacts to the koala have been fully assessed in the PER, mitigation measures have been outlined and the species has been included in the Preliminary Offset Strategy as a precautionary measure. The PER has been assessed by DCCEEW as meeting the PER Guidelines, including in relation to the adequacy of the field assessment.
464c	.004	Revegetation	I am advised that it costs on average $50,000 per hectare to revegetate with an additional three year maintenance program for seedlings to survive. I question Ark Energies (sic) capacity and commitment to revegetate at this cost with this level of commitment. Ark Energy estimates 963ha will be replanted. This would equate to over $48 million excluding the three years of maintenance. Can the proponent document how this will happen and the cost that they have allocated for this to occur. In order to demonstrate their commitment to revegetation I suggest that the proponent grant Rainforest Reserves $48 million as a surety that they will revegetate the area suitably.		No	The options used for the revegetation and stabilisation of cut and fill batters will depend on a wide range of factors including the operational requirements, the size and slope of the batters, nature of materials. An estimate of $50,000 per ha for the cost of revegetation would be a very intensive approach. The Project will take a combined approach using strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A lower cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. The State approval for the project includes a condition to implement the Rehabilitation Plan (Appendix K of the PER) therefore there is no question of the proponent not fulfilling this commitment.
464c	.005	Southern cassowary	I live on a property adjoining Chalumbin Forest, this is cassowary habitat and I regularly have cassowaries visiting my property. This bird inhabits the area where the proponent intends to build the Chalumbin windfarm. The sclerophyll forests in the project area are at times a refuge to cassowaries, they offer food and shelter in times of food scarcity or after a cyclone. The proponent should read the Cassowary Recovery Plan to learn more about the implications for casswaries should the project be approved.		No	The stated property is on Tully Falls Road, within a landscape of predominantly rainforest. It is not surprising that cassowaries are found on this property. The Project's survey teams have regularly observed cassowaries alongside Tully Falls Road whilst travelling to and from the Project area. Despite undertaking a wide range of surveys across the Project area over a period in excess of two years, cassowaries have not been observed within the Project area as part of these surveys. As documented and mapped within the PER, there is very little rainforest within the Project area. None of the statutory documentation relating to the cassowary lists wet sclerophyll forests as a broad category as being important habitat for the species. The Recovery Plan (Latch 2007) has been referred to in preparation of the PER, including in relation to mapping of potential cassowary habitat.
464c	.006	Wet sclerophyll forests	Wet sclerophyll forests should be cleared for any purpose (sic) whether it is for coal or wind or solar. The forest type is very documented as being habitat for a wide range of species. If the project was to proceed the photography and video that will be captured showcasing wet forests being bulldozed will be beamed around the world by activists. This is not a good look for CIP. The conservation sector will not budge one bit on this issue. Therefore, the footprint needs to be reconfigured to avoid these areas.		No	The Project has necessarily adopted an approach of avoid and minimising impacts from clearing to the extent practicable and where avoidance is not practicable, the Project has committed to a range of mitigation measures including an industry-first rehabilitation programme. A comprehensive impact assessment for the Project in relation to the wet sclerophyll forest is provided in Section 8.8.3 with due consideration to the contributions that the wet sclerophyll forest makes to Outstanding Universal Value criteria ix and x for the WTQWHA. This also discusses the application of these criteria within the WTQWHA and beyond the WTQWHA boundary, and ultimately the application of these criteria to the Project under the EPBC Act.
28f	.001	Community Consultation	This submission is very personal to me, but I would like this to be publicly shared, as the Planning process, whereby submissions go to the Developer, that only allows 30 days is unjust, inequitable, and even unconscionable. Of serious concern is that there is a pattern here (see attached) that if it wasn't so serious, it would be laughable!		No	The public exhibition period is defined in the EPBC Regulations and confirmed by DCCEEW, it is outside the proponent's control. Due to rectification of a procedural error, the public exhibition period for the project was actually longer than it would normally have been. Similarly, it is not the proponent's decision for submissions to be received directly.
28f	.003	Opposition to project	The Wet Tropics and Far North Queensland in general is not suitable for the location of windfarms because of our region's substantial bushland and wildlife values, significant biodiversity and iconic cultural significance. Executive Summary - Introduction states that the original concept of 200 wind turbines, was then reduced to 95 wind turbines for the referral in July 2021, under the 1999 (EPBC Act) considerate of constraints and opportunities on the site such as the ecology and cultural heritage values. The concept of 200 wind turbines application was never actually lodged. If the ecology and cultural heritage values were ever considered, the Chalumbin Site would never have been chosen for an industrial development change of land use.		No	The initial wind turbine layout for the Project contemplated 200 wind turbines across the Project area, based purely on economic wind resource. The current 86 wind turbine arrangement for the Project reflects the continual iteration of the design as more information is gathered and assessed from a suite of variables and considerations. A considerable amount of work is undertaken to define and avoid (to the extent practicable)ecological, heritage and engineering constraints before any project is referred under the EPBC Act and the proposed Chalumbin Wind Farm is no exception.
28f	.004	MNES	THE GREAT BARRIER REEF – is at risk should the proposal go ahead. (Page 15) The project was referred to the Dept of Climate Change, the Environment & Water (DCCEEW) in July 2021 (EPBC 2021/8983) due to the potential significant impacts to World Heritage property, National Heritage place, Listed threatened species and communities; and Listed migratory species. The Great Barrier Reef did not even get a mention. Chalumbin is in the catchment area of The Great Barrier Reef and should this proposal go ahead, will pose an enormous threat, on so many levels that would require an independant report.		No	Potential indirect impacts to the GBR is a key consideration for the project and has been addressed extensively in the PER, including in Section 4 (Description of the Environment), Section 5 (Impact Assessment) and Section 6 (Avoidance, Mitigation and Management). Erosion, pollution and sediment run-off are all assessed in the PER specific management plans developed including the Sediment and Erosion Management Plan (Appendix J), the Preliminary Erosion and Sediment Control Plan (Appendix I) and the Preliminary Rehabilitation Plan (Appendix K).
28f	.006	Indigenous Cultural Heritage	Traditional owners speak up against the proposed Chalumbin wind farm, transcripts from Rainforest Rserves events raised issues including: - the wind farm will be built on sacred site including massacre sites and burial sites; - indigenous people / Traditional owners / Jirrbal people weren't consulted on the wind farm; - impacts to the Great Barrier Reef; - sacred sites aren't mapped.		No	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth Native Title Act 1993. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the Aboriginal Cultural Heritage Act 2003 (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
28f	.007	Community Consultation	ADVERTISEMENTS BY PROPONENT FOR COMMUNITY SESSIONS: It is deceptive to our Government and the community, that the developer advertises 'community information sessions' that is an a one on one basis. And yet they refused our invitations to come to attend our Public Information Sessions for questions and answers. The response "that's not the way we do things". there should be an open community forum where everybody can attend public meetings, not these private meetings.		No	Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. All community information sessions have been in groups, not on a one-on-one basis, and all interested parties were welcome.
28f	.008	Vegetation clearing	THE PROPOSED 86 WIND TOWERS WILL BE DEVASTATING TO BIO-DIVERSITY The proposed 86 wind towers, will require 122 kilometres of minimum 60m wide haulage roads. would have a devastating impact on the entire eco-systems of Chalumbin. If approved, the wind turbines will be installed along the high-elevation ridgelines of Wooroora. The proponent has made statements that the properties involved are cleared pastureland. This is incorrect. While cattle grazing does occur on the properties, remnant vegetation comprises 95% of the development site.		No	The PER does not claim that the host properties are cleared pastureland. Section 4 (Description of the Environment) clearly describes that the Project area comprises predominantly remnant vegetation, provides details of these vegetation communities and includes photos of this vegetation.
28f	.009	Opposition to project	The statement that the Northern QREZ is considered to have some of the best untapped wind resource in the country. The Proponent's statements again display a disconnection from the most beautiful ancient natural assets that is endemic to Australia.		No	The statement that the Northern QREZ is considered to have some of the best untapped wind resource in the country is accurate.
28f	.010	Decommissioning impacts	LAND USE - End of life – decommissioning. The new proposed change of land use does not replicate anything like the above land use (grazing for pastoral or 'stock grazing' purposes). This is why there is no social, cultural nor environmental license that would ever grant an approval to desecrate the Chalumbin landscape.		No	At the end of the project's operational life, project infrastructure would be decommissioned and the properties would continue grazing stock as they currently do.

Response to submissions received on Chalumbin Wind Farm Draft Public Environment Report (EPBC 2021/8983)

Ref. No.	Issue No.	Issue Topic	Submitter Issue	Submitter Recommendation	Change to PER?	Response to Submitter
28f	.011	Decommissioning impacts	End of life - waste and pollution. Concerns about costs to remove wind turbines at end of life and who is responsible for this, as renewable developments are usually on-sold to a global investment equity fund for the sole purpose of making a profit, during the project's lifetime.		No	Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects' and one of the Charter commitments is to: During the life of the project, we will recycle waste materials where feasible and commit to responsible decommissioning or refurbishment/repowering of the site at the end of the project's life. As outlined in Section 10.12 of the PER, waste generated during construction and operation must be managed in accordance with the Waste Reduction and Recycling Act 2011 (Waste Act) and the Waste Reduction and Recycling Regulation 2011. The purpose of the Waste Act is to reduce the amount of waste generated through the implementation of the waste management hierarchy (avoid, reduce, reuse, recycle, recover, treat, dispose). When turbines and blades need to be replaced or disposed of the options available will be evaluated against the waste management hierarchy and in accordance with the Waste Act and Regulation. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
28f	.012	Decommissioning impacts	END OF LIFE – 30 YEARS – Industry standard is 20 years My comment – the industry standard is about 20 years operating life. The corporations onsell, or can go bankrupt. It would be unethical to expect for Councils, Farmers, or community to clean up the mess, which if Chalumbin proposal goes ahead, would be huge. The Concrete will be left insitu, leaving just an industrial wasteland. In the public interest, the current land use, which brings economic values to the region, Chalumbin, Ravenshoe, should stay intact. The proposed Chalumbin wind Farm, Stage 1 and/or Stage 2, should not replace other economic businesses such as tourism, regenerative farming, small business, nor cultural and future opportunities for the Tablelands Communities		No	Ark Energy is a signatory to the Clean Energy Council's (CEC) 'Best Practice Charter for Renewable Energy Projects' and one of the Charter commitments is to: During the life of the project, we will recycle waste materials where feasible and commit to responsible decommissioning or refurbishment/repowering of the site at the end of the project's life. As outlined in Section 10.12 of the PER, waste generated during construction and operation must be managed in accordance with the Waste Reduction and Recycling Act 2011 (Waste Act) and the Waste Reduction and Recycling Regulation 2011. The purpose of the Waste Act is to reduce the amount of waste generated through the implementation of the waste management hierarchy (avoid, reduce, reuse, recycle, recover, treat, dispose). When turbines and blades need to be replaced or disposed of the options available will be evaluated against the waste management hierarchy and in accordance with the Waste Act and Regulation. Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades. The project is not expected to replace other economic businesses within the Tablelands region.
28f	.013	Project design	The PER references Stage 1 and Stage 2 – is another sneaky tactic to push the proposal through at any cost: Stage 1 - southern part of site, closest to Wet Tropics World Heritage Area, will be most effected. Reason for staging it is to connect it to the existing grid, can connect earlier and get some income and start earning money. Can delay Stage 2 if necessary to ensure that the coastal transmission upgrade will be in place when they need it. There is not enough room on the grid to connect the complete proposed project. Stage 2 is dependent on completion of upgrade of coastal transmission line. Stage 2 not dependent upon anything. Can always on-sell Stage 2 onto someone else.		No	At present, the proponent has been advised by Powerlink Queensland that there is sufficient capacity within the existing transmission network that runs through the Project area to connect the full nameplate generation capacity of both Stage 1 and Stage 2 of the Chalumbin Wind Farm.
28f	.014	Cumulative impacts	With reference to I wish to highlight that the cumulative impacts on this project is inadequate. The cumulative impacts that this project with have on flora, fauna biodiversity is underestimated. Species extinction will result if this project is allowed to go ahead. We are risking entire species by clearing habitat for this project.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines. The Draft PER for the proposed Upper Burdekin Wind Farm has recently been released for public comment and this has been used to update the cumulative impacts section of the Chalumbin Wind Farm Final PER.
28f	.016	Red goshawk	The cumulative impact on endangered species is unknown, one which includes the red goshawk. The confirmed red goshawk nest has miraculously disappeared. Has the nest been removed. In Table 5.5.2 the proponent states that the project will not result in residual impact. The clearing 1,031 ha of habitat is not only highly destructive for an endangered species, but the likely collision of the red goshawk will have a dramatic cumulative impact.		No	As noted in Section 4.6.3 of the PER, the presence of red goshawk within the project area has not been confirmed despite regular seasonal surveys since January 2021 and two years of targeted nesting surveys for the species (October 2021 and most recently, December 2022). The nest that was identified as potentially belonging to a red goshawk in January 2021 is still intact and has now been surveyed twice during the red goshawk nesting season; it has been vacant with no signs of recent use on either occasion. It is incredibly difficult to confirm a nest based on a photograph alone; photographs were initially sent to 4 experts and only one thought the nest belonged to a red goshawk. A precautionary approach was taken at the time of preparing the EPBC Referral, until further work could be undertaken at the appropriate time. These additional surveys have now been undertaken and no evidence of red goshawk has been found. The photographs of the nest have been sent to more experts, including representatives from Birdlife Northern Queensland who believed the nest was more likely to belong to a grey goshawk. This species has been recorded on site on more than one occasion during the bird surveys. On balance, taking into account the professional opinion of multiple experts and the team's own survey results, it is now considered unlikely that the nest was ever occupied by a red goshawk. In the absence of a year-round resident nesting pair, the Project area could provide foraging habitat for juvenile red goshawk that are known to disperse widely. The loss of 1,031ha of foraging habitat that may or may not be visited by dispersing juveniles is not considered significant within the context of the amount of foraging habitat available throughout the species' area of occupancy. The red goshawk is a lower risk for collision than many other raptor species because it forages within or just below the canopy - well below the height of the turbine blades. Red goshawk do soar during their mating displays - but as explained above, there is no evidence that there is a nesting pair within the Project area.
28f	.017	Magnificent brood frog	The proposed transmission line that connects the proposed High Road Wind Farm to the 275kV transmission line through The Bluff State Forest will be another impact to the Magnificent Brood frog's survival.		No	A transmission connection for the High Road Wind Farm is not currently determined and therefore cannot be included in the cumulative impact assessment presented in Section 5.5 of the PER.
28f	.018	Vegetation clearing	It is of concern that the proponent announced on the day the PER was released that the Chalumbin Wind Farm will be broken into two Stages. This was never revealed or published before the release of the PER. I note that Stage One will use existing transmission availability. Stage Two will be difficult for commencement until there are upgrades to the line. This may likely require a new parallel transmission line next to the present one. Another vast amount of vegetation clearing would be required and therefore should be included in the cumulative impact of the entire project.		No	At present, the proponent has been advised by Powerlink Queensland that there is sufficient capacity within the existing transmission network that runs through the Project area to connect the full nameplate generation capacity of both Stage 1 and Stage 2 of the Chalumbin Wind Farm. Section 5.6.1 of the PER describes the future upgrade of the National Electricity Grid in this region, which will likely take place with or without the Chalumbin Wind Farm being constructed.
28f	.019	Project design	the latest ten-year energy plan announced by the state government does not include transmission upgrades north of Ross. The proponent uses the AEMO REZ expansion guide for planning which is contradictory to state planning forecasting.		No	Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network without the need for transmission upgrades.
28f	.020	Project viability	Statement by proponent PER Market Operator (AEMO) that will be developed in a coordinated way to deliver a diverse mix of cleaner, cheaper and reliable energy generation. (There is a lot of evidence to show that the energy will not be cleaner, cheaper nor reliable energy generation). There is no real independent appraisal of electrical output of proposed wind farms before approving them. (Continues to compare with Mt Emerald that not enough energy is generated to meet proposed number of homes, that Kaban will also be the same).		No	Various inputs are required into the business case, prior to the financial investment decision to proceed with the project and commit over AUD $1b in construction capex. A bankable wind energy assessment has been conducted for the first stage of the wind farm which confirms the net capacity factor of the wind farm as 42.3%. This is the net capacity factor, i.e. includes losses as a result of degradation of the turbines over their operational life. This is further supported by a full-service term production guarantee from the turbine supplier, guaranteeing the production of the wind turbines over the operational life.
477c	0.001	Cumulative impacts	It is my belief that you have grossly underestimated the cumulative impacts that this project will have on flora and fauna biodiversity. The proponent has provided a table that lists potential impacts of other wind farms in operation, in construction or proposed for construction but there is no detailed assessment of how these collective impacts will impact threatened species. The work that has been done appears to be solely sourced from publicly available information and not through engagement with other developers. It is of priority that the proponent assesses the cumulative impacts on wet sclerophyll forests.		No	There is insufficient publicly available information on the potential impacts from other windfarm projects for any individual proponent to be able to quantitatively assess cumulative impacts. This assessment would need to be coordinated by the Regulator. The PER has been assessed by DCCEEW as meeting the PER Guidelines. The Draft PER for the proposed Upper Burdekin Wind Farm has recently been released for public comment and this has been used to update the cumulative impacts section of the Chalumbin Wind Farm Final PER. The other proposed wind farm projects are not anticipated to impact on wet sclerophyll forests and there are therefore no cumulative impacts on this vegetation community to assess.
477c	0.002	Environmental bond	As part of your application an environmental bond of $95.4 million should be paid to the government in trust, to cover the removal or replacement of turbines should your company go into receivershop or liquidation.		No	The Project owner will be responsible for fulfilling all approval condition requirements, including any rehabilitation obligations if these apply post-decommissioning. At this stage, no financial bonds are required for this.
477c	0.003	Environmental bond	Additional bond money is also required for site rehabilitation. It costs on average $50,000 per hectare to revegetate a site. Ark Energy estimates 963ha will be replanted, which would equate to $48.1 million. This would be considered one of the biggest and most costly revegetation projects to be undertaken and it is doubtful any nursery in northern Australia would be able to scale up for it.		No	The options used for the revegetation and stabilisation of cut and fill batters will depend on a wide range of factors including the operational requirements, the size and slope of the batters, nature of materials. An estimate of $50,000 per ha for the cost of revegetation would be a very intensive approach. The Project will take a combined approach using strategies that are appropriate to the revegetation being undertaken and the stage of revegetation and rehabilitation. A lower cost revegetation option is the regeneration from soil seed stores, locally collected seed and recruitment from adjacent vegetation communities. Where revegetation for particular species or communities requires a more intensive approach the project may use seedlings grown at local nurseries or translocation if required. The State approval for the project includes a condition to implement the Rehabilitation Plan (Appendix K of the PER) therefore there is no question of the proponent not fulfilling this commitment.
477c	0.004	Environmental bond	It costs around $550,000 per turbine to dismantle and remove off site at the end of the turbine's life. For 86 turbines this will cost $47.3 million for windmill replacement.		No	Wind turbines are predominantly recyclable. At the end of their operational life, the wind turbines will be dismantled on site (using the existing established hardstand) and separated into transportable sections for off-site recycling and re-use of key materials. It is anticipated that there will be new opportunities for recycling of all wind turbine components and materials by the end of the operational life of the Project (i.e. at least 30 years). The Project owner is required to prepare a Decommissioning Plan under the Development Permit; this will further explore the recycling opportunities for all wind turbine materials. Emerging technology that focuses on chemical processes is being developed within the wind industry and can be applied to all existing and future wind turbine blades. This addresses the blade to landfill question and it is anticipated that by the time the Project reaches decommissioning (i.e. after approximately 30 years of operation) there will be advanced and well-tested recycling techniques for wind turbine blades.
477c	0.005	Cumulative impacts	It is of concern that the proponent accounced on the day the PER was released that the project will be broken into two stages. Stage One will use existing transmission availability. Stage Two will be difficult for commencement until there are upgrades to the line, which will likely require a new parallel transmission line next to the present one., This will require a vast amount of vegetation clearing and therefore should be included in the cumulative impacts of the PER.		No	At present, the proponent has been advised by Powerlink Queensland that there is sufficient capacity within the existing transmission network that runs through the Project area to connect the full nameplate generation capacity of both Stage 1 and Stage 2 of the Chalumbin Wind Farm. Section 5.6.1 of the PER describes the future upgrade of the National Electricity Grid in this region, which will likely take place with or without the Chalumbin Wind Farm being constructed.
477c	0.006	Cumulative impacts	The proponent has not included the cumulative impact of the proposed transmission line connecting the proposed High Road Wind Farm to the 275kV transmission line through the Bluff State Forest.		No	A transmission connection for the High Road Wind Farm is not currently determined and therefore cannot be included in the cumulative impact assessment presented in Section 5.5 of the PER.

Appendix B

Response to Template Submissions

Friends of Chalumbin – Template

Submission 21	Response
With reference to EPBC 2021/8983 Chalumbin Wind Farm as a community member of Ravenshoe and surrounds	Noted.
I object and do not consent to the proposed Chalumbin wind farm going ahead. I object and do not consent to the whole Draft Public Environment Report EPBC 2021/8983 and I say NO to Chalumbin Wind Farm.	Noted.
The EPBC Act Protects, matters of national environmental significance and the Proposed Chalumbin Windfarm will have a massive environmental and social impact on: World Heritage Wet Tropics; National Heritage Places, including Cultural Heritage sacred sites; nationally threatened species; the Great Barrier Reef; migratory species; the environment, where actions proposed are on, or will affect Commonwealth land and a severe social negative impact on the community. The Department of Environment have a "Duty of Care" to Protect Natural Heritage.	Section 4 of the PER provides description of the environment within the Project area and surrounding landscape for matters protected under the EPBC Act. With a full impact assessment of the Proposed action outlined in Section 5.0 of the PER, this has been used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts.
No amount of planning will compensate the destruction of High Biodiverse remanent Wet & Dry Sclerophyll forests bordering World Heritage Wet Tropics, Herbert River Catchment area pollution and erosion flowing into the Great Barrier Reef. Threatened Endangered Flora & Fauna are at risk of Extinction. Chalumbin is the wrong site for a wind farm, wind farms only lasts 25 years, forest REGENERATE for 1000's of years. Cutting down trees is NOT 'GREEN' and the proposed Chalumbin wind farm will only add to climate change.	The Project has been informed by a full suite of desktop studies and a field assessment program (as outlined in Section 4.2.2 of the PER) that have been undertaken over the course of two years. The location of the project has been selected and refined to avoid areas of quality habitat and refuge for listed species with a full impact Assessment is outlined in Section 5.0 of the PER, this has be used to inform a suit of mitigation and management strategies aimed at limiting any negative impact to local flora and fauna, when these are unavoidable significant offsets and site rehabilitation as outlined in Appendix K practices are to be provided to mitigate these impacts.

Submission 21	Response
Ravenshoe is a small country town and I want it to remain this way and for it not to become industrialised. I have witnessed the destruction with the Kaban wind farm and the ugliness of the massive turbines on the skyline which have already ruined the natural beauty of the area.	A landscape and visual impact assessment (LVIA) for the Project was prepared by LatStudios Pty Ltd (trading as Lat27) and is presented in Appendix M of the PER. The assessment was undertaken by LVIA experts Lat 27 underpinned by robust landscape assessment and analysis techniques that inform assessment of projects such as CWF. The LVIA states that while there will be a significant change to Site character due to the introduction of wind turbines into a rural and natural landscape and significant impacts on some views towards the Project, which is typical for any wind farm development, the impacts are typically contained. In addition it is noted that people are likely to respond in different ways to the change. Landscape appreciation is relative and individuals of the local community may place higher or lower values on the landscape depending on their personal preferences; some viewers may view the change as positive (creating a point of interest) or neutral, whereas others will consider the change to be a negative impact on rural landscape values. Research (discussed in the LVIA) typically suggests that many viewers find windfarms acceptable even in high quality landscape, and other factors such as previous exposure to wind farms (such as the nearby Windy Hill scheme) or appreciation of wind farms as a means of taking action against climate change can also increase acceptability.
I say NO to Chalumbin wind farm, I do not consent to be assaulted by Electrical and Magnetic Frequency Emissions from wind turbines.	The Clean Energy Council - in its Best Practice Guidelines for the Australian Wind Industry - states that the electromagnetic radiation resulting from generation and export of electricity from a wind farm does not pose a threat to human health. Typically electrical cabling between wind turbines will be buried in the ground and grid connection cabling is at similar voltages to those routinely used by utilities in existing distribution networks. As part of the engineering specification, proponents will require that installation contractors adhere to prescribed electrical cabling standards. EMI is not a matter regulated by the EPBC Act and is accordingly, not relevant to the scope of the PER. The DCCEEW published "Guidelines for the Content of a draft Public Environment Report" for the Chalumbin Wind Farm (ref: 2021/8983) and this document sets out the information required to be provided in the PER about the action and its relevant impacts under the *Environment Protection and Biodiversity Conservation Act 1999*. The Project will be constructed and operated in accordance with relevant Australian and regulatory standards.

Cairns and Far North Environment Centre – Template

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590.001 Cover, Contents, Executive Summary and Acronyms	1. To provide transparency and certainty to the community that this project affects, Ark Energy needs to provide more clarity about how the special purpose vehicle - The Chalumbin Wind Farm Pty - will be accountable to commitments made by Ark Energy. 2. The proponent must provide more detailed information regarding the siting of this project, and why this wind resource is more strategic to develop in comparison to other resources, including biodiversity considerations. 3. The proponent must provide specific information on the current status of threatened species, and about how this proposal will either exacerbate or aggravate their extinction pathways and consider the broader threats to those species in that assessment.	1. Commitments made within the PER become requirements for Chalumbin Wind Farm Pty Ltd. Any change in shareholding of Chalumbin Wind Farm Pty Ltd (e.g. under a Joint Development Agreement) is bound by the commitments and compliance with any conditions of EPBC Act approval for the Project. 2. There is no publicly available information that further identifies within the Northern QREZ more strategic areas for renewable energy development. Section 3 of the PER assesses alternatives and demonstrates there are no alternative locations that would reduce the area of clearing of potential habitat for protected species (refer Plate 3-1 of the PER which illustrates the location of the wind resource, high voltage transmission lines and habitat for protected species). The PER has been prepared in accordance with the PER Guidelines. Sections 1.5 and 3.0 of the PER set out the process by which the Project was developed, the strategic goals and the policy considerations relevant to Project development. Sections 1.5 and 3.0 of the Draft PER describe some key drivers for a technically feasible wind farm development (land access, wind resource, grid connection and capacity). Biodiversity values (and other values, such as cultural heritage) form an important part of design iteration as described within Section 6.0 of the Draft PER. 3. Section 8.0 of the Draft PER provides the impact assessment in relation to each MNES relevant to the Project.
590.002 Transmission Capacity		Correspondence received by the proponent from Powerlink Queensland states that the proposed generation capacity of 602MW (nameplate rating) is within the thermal hosting capacity of Powerlink's FNQ transmission network. There is no requirement for additional augmentation of the existing network, in the form of transmission lines

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		through the national park, to facilitate the project.
590.003 Project Alternatives	1. The proponent must clearly indicate how the proposal aligns with Sustainable Development Goals, or the triple bottom line of sustainability, to demonstrate "overwhelming justification." 2. The proponent must describe in detail how it did, or did not, consider citing alternatives to this proposal in terms of biodiversity conservation or loss. 3. The proponent must provide a detailed cost/benefit analysis of development in close by bioregions, such as the Einasleigh Uplands, including an analysis on the cost to biodiversity associated with development, comparing to development in the Wet Tropics bioregion. 4. The proponent must provide clear calculations on the claim that "alternative location scenarios can be conservatively expected to have at least 30% greater impact on MNES." 5. Considering the commitments by State and Federal Governments to create consistent approaches to threatened species management in Queensland, the proponent should provide information about any impacts to threatened species listed under Queensland legislation.	The phrase "overwhelming justification" was used in Section 3.0 the PER to describe the factors contributing to the pursuit of renewable energy developments in the broader region. The Triple Bottom Line is aligned with the concept of ecologically sustainable development (ESD) which is an object of the EPBC Act. As described in Table 14-1 of the PER, the Project advances ESD as follows: Central to the design of the Project has been the avoidance and minimisation of impacts on areas of highest ecological, social and cultural value within the Project area. The Project is an important part of Australia's efforts to combat climate change and is located in an area characterised by excellent wind resource, ready access to the national electricity grid, and a remote location away from dense settlements. To this end, the Project, if designed in a manner that avoids and minimises impacts to MNES, will (a) contribute to the protection of the environment, (b) promote ESD and (c) promote the conservation of biodiversity by making a significant contribution towards decarbonising the local, regional, national and international economy. In doing so, it will contribute meaningfully to the reduction of climate change; the most critical threatening process to the WTQWHA and the MNES within and around the Project area. The submitter's proposed locations for future renewable energy developments are noted. For the reasons described in Sections 1.5 and 3.0 of the PER, the Chalumbin Wind Farm site represents an effective balance between the various requirements and necessities of a commercially viable wind farm project. There will likely be other wind farm locations developed in the future within the Northern QREZ, as foreshadowed by the AEMO ISP. The proponent must look at the existing provision of transmission infrastructure and its current capacity in order to determine an appropriate location for a wind farm in the current market.

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		Lengthy transmission lines to connect a project to the grid are cost and time prohibitive. Renewable energy project developers typically seek the three key factors described in Section 3.0 of the PER (land access, wind resource and grid connection capacity) in an early stage of project feasibility before further investigating the potential for a site to host a wind farm or another renewable energy facility. The Project area contains these three key factors and therefore was investigated further for potential to host a wind farm development. Early-stage due diligence was undertaken by the proponent to characterise the likely environmental values of the site, and this work was then supplemented by the field-based surveys described in Section 4.2 of the PER. The Project was designed to avoid and minimise potential impacts through the measures described in Section 6.0 of the PER. Relevant alternatives to the proposed action are described in Section 3.0 of the PER. Section 13 of the PER provides a social and economic assessment and Section 11 consultation for the project in accordance with the PER Guidelines. Due to the absence of a feasible alternative, no *specific* alternative location to the west of the Project area was identified for the purposes of comparison in Section 3.2 of the PER. The suggested 30% increase in capital cost is associated with the conservative assessment that 30% more infrastructure would be required in an area to the west with less-ideal wind resource and a more difficult, lengthy and costly electrical connection. There would also be a time cost given the investment in the wind resource and feasibility studies for the current project and risk of access to land. The species protected under the *Nature Conservation Act 1992* are not a consideration under the EPBC Act, unless they are also listed under the EPBC Act. The Project did assess potential impacts to State-listed species through the Development Application process under the *Planning Act 2016* and approval granted in June 2022.

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590.004 Significant Impact Assessment	Recommendations 1. The proponent needs to properly describe the cumulative clearing in regards to Threatened Species, including a clear calculation and description of the amount of threatened species habitat lost to clearing. 2. The proponent needs to provide a detailed summary of alternatives that were considered to avoid development activities that are listed threats to biodiversity, as recognised in the report published by the Queensland Government [2]. 3. The proponent must provide a detailed assessment of the impact to World Heritage Values associated with the loss of habitat for the Spectacled Flying Fox, *Pteropus conspicillatus*. 4. The proponent must consult with the Spectacled Flying Fox Recovery Team to gain an up to date understanding of threats to the species and potential impacts of the Chalumbin Wind Farm. 5. The proponent needs to establish a detailed plan for how impacts to the Magnificent Brood Frog will be mitigated or offset. Funding for research alone is an insufficient offset and $250,000 is unlikely to provide sufficient funds to improve understanding of the MBF.	The maximum clearing footprint of the Project is 1,071 ha. This vegetation may represent habitat for more than one species, but it can only be cleared once. This submission's interpretation of clearing amounts is not realistic. An assessment of alternatives is provided in Section 3 of the PER. Potential impacts to the spectacled flying-fox are addressed in Section 8.6.10. The Project team has consulted with members of the SFF Recovery Team on several occasions. A Species Management Plan for the magnificent brood frog will be developed and will be reviewed and approved by DCCEEW prior to construction activities commencing. As stated in the PER, it is proposed that land-based offsets will acquit 100% of the offset requirements for this species; in addition, the proponent has made a significant commitment for a voluntary contribution to research into the magnificent brood frog. It should be noted that Project surveys have already contributed to improved understanding of this species' distribution (a fact which is acknowledged by the MBF Working Group).
590.005 Cumulative Impact	1. The proponent must directly engage with other developers whose projects will create cumulative impacts in relation to the Chalumbin Wind Farm and work to properly assess cumulative impacts. 2. Of priority, cumulative impacts to Wet Sclerophyll forests must be assessed.	The cumulative impact assessment in Section 5.5 of the PER has been updated to consider wet sclerophyll forests as well as actual MNES. It is worth noting that the Upper Burdekin Wind Farm project area does not include any wet sclerophyll forests, according to their draft PER which was recently released.
590.006 Alignment with government policy	Recommendations 1. The proponent must provide all documentation and knowledge regarding the potential impacts of the Chalumbin Wind Farm in the PER. 2. A thorough investigation must be made into the discrepancies between the SARA approval documentation and the PER to understand why the differences exist and provide clear information about how they have been resolved	The material presented in the development application under the *Planning Act 2016* and State Code 23 is necessarily different to the information presented in the PER (the former responds to Matters of State Environmental Significance while the latter responds to MNES). Any differences in assessment of certain species between the documents is a result of the increased knowledge at the time of the Draft PER preparation (compared with the Ecological Assessment Report prepared for the

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		development application), the evolution in habitat mapping rules (one was to satisfy State regulators, the other to satisfy DCCEEW), and changes to the Project design. The White-throated Needletail is almost exclusively aerial and therefore no roosting habitat exists within the Project area. It is not uncommon for assessments under the *Planning Act 2016* and the EPBC Act to differ in certain respects.
590.007 Matters of National Environmental Significance	1. Assessment of impacts to threatened species under the Queensland nature laws, recognising the state and federal government's commitment to developing consistent approaches to threatened species listing and management. 2. The Lumholtz Tree-Kangaroo is a part of the fauna of Outstanding Universal Value associated with the Wet Tropics World Heritage Area and that must be considered in the assessment of this project.	The purpose of the PER is to provide an assessment of matters protected under the EPBC Act (i.e. matters of national environmental significance). DCCEEW does not have any jurisdiction over species that are listed under State legislation unless they are also listed under the EPBC Act. The PER already provides a baseline description of habitat and observations for the Lumholtz tree-kangaroo, the rufous fantail and the tapping green-eyed frog. The PER also provides a detailed assessment of potential impacts on these species and has concluded that significant residual impacts are not anticipated.
590.008 Mitigation Measures and Wet Sclerophyll Forest	1. The proponent must properly describe potential impacts of losing Wet Sclerophyll Forest in relation to its role as an important ecotonal community for the species which are endemic to it. 2. The proponent must provide detail regarding how buffer zones were calculated or how they will be effective.	The PER indicates that northern bettong has not been recorded within the Project area despite an extensive (11-month) camera trap campaign. The species is commonly thought to be locally extinct from the area, therefore clearing any amount of wet sclerophyll forests within the Project area is not likely to impact the species. The northern sub-species of yellow-bellied glider is dependent on the presence of two particular eucalypt species for denning and foraging, not just wet sclerophyll forests in general. Potential habitat for yellow-bellied glider has been mapped within the Project area based on the ground-truthed presence of these two eucalypt species and it was found that there is very little YBG habitat within the Project area. Therefore there are expected to be minimal impacts on this species from clearing of wet sclerophyll forests. The swamp rat is not a listed threatened species and was not required to be assessed in the PER.

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		The WTW Periodic Report to the World Heritage Committee (WTMA 2011) identified that there was no buffer zone around the property at the time of its inscription and that a buffer zone was not considered necessary, with the boundaries of the property being adequate to maintain the property's Outstanding Universal Value. Section 8.10.2.3 of the PER provides justification for the adherence to a 600 m buffer between Project infrastructure and the WTQWHA - this includes reference to literature to demonstrate the sufficiency of this buffer.
590.009 Offsets	1. The proponent should a provide detailed field assessment and analysis with the use of the EPBC offset calculator. 2. The proponent must reassess the validity of Offset Area 2 and provide clear evidence of how the offset actually provides landscape connectivity, given that it is likely to decrease landscape connectivity, not provide it. 3. The proponent should secure clear commitments from landholders to enter into offset agreements that protect the land in perpetuity. 4. The proponent must provide detailed information regarding the assumption that habitat improvements can be made within 20 years.	The information requested in this submission is developed after EPBC Approval is granted, under condition of approval and forms part of the next stage in the offset process, development of a detailed Offset Area Management Plan for each proposed offset site. Field assessments for this work have been underway since November 2022 and are ongoing. The analysis using the Environmental Offsets Guide (i.e. the calculator) will be included in the OAMP which will be submitted to DCCEEW for review and approval in due course. This approach is common practice and has been agreed in advance with DCCEEW. The landowners will be required to enter into legal agreements that protect the offset areas in perpetuity, an encumbrance on the property that is transferable to subsequent owners in the event of a sale. Currently the precise boundaries of the offset management areas are being negotiated with the landowners and the final PER will include a reassessment of the amended areas.
590.010 Wet Tropics Queensland World Heritage Area	1. The proponent must provide more detail about how the visual amenity concerns raised regarding views from Rhyolite Pinnacle could be mitigated. 2. The proponent must provide an assessment of visual impacts from Koombooloomba Dam. 3. The proponent must provide an assessment of how impacts associated with development in areas that border the Wet Tropics World Heritage Area have the potential to interrupt	The LVIA (Appendix M of the PER) states that it is anticipated that there would be no significant direct impact on the landscape character of WTQWHA from the Project and there would be no direct impacts on the superlative scenic features comprising mountains, gorges and waterfalls, which are the key Outstanding Universal Values (OUV) of the WTQWHA. It goes on to state that the Rhyolite Pinnacle is not significantly affected by the Project.

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	the significant ecological and biological processes that it is listed for. The proponent must provide an assessment of how impacts associated with development in areas that border the Wet Tropics World Heritage Area have the potential to impact threatened species landscapes and the significant natural habitat for biodiversity that it's listed for.	Viewpoint 15A within the LVIA presents the assessment of visual impacts from Koombooloomba Dam. The effect of the turbines on VP15 is considered to range from No impact to Moderate impact and therefore Not Significant. Sections 8.10 and 8.11 of the PER provide an assessment of how the Project may impact the WTQWHA with respect to ecological and biological processes, MNES and other factors contributing to the WTQWHA OUVs.
590.011 Wet Tropics Queensland World Heritage Area	The proponent must provide a detailed fire management plan, including threats to natural resources, the WHA, and the use of traditional burning regimes.	A Bushfire Management Plan will be developed for the Project in accordance with the Project's development permit. It is expected that bushfire management within the Project area will improve once the Project has been developed, due to improved access for firefighting and the availability of appropriate firefighting equipment on site. Condition 18 of the Project's development permit under the *Planning Act 2016* requires the preparation of an Operational Bushfire Management Plan in consultation with the Queensland Fire and Emergency Services. Condition 20 of the Project's development permit requires the preparation of a Construction Bushfire Management Plan for inclusion in the Project's Construction Environmental Management Plan.
590.012 Adequacy of the PER	1. The proponent PER should include plans that have been referenced in the PER that are not provided in the SARA approvals including; a. Bushfire Management Plan (this is currently only a 7 sentence, 6 dot point summary bushfire risk mitigation) b. Safety and Emergency Management Plan; c. Construction Environmental Management Plan *1 d. Decommissioning Plan e. Complaint Investigation and Response Plan; f. Cleared Vegetation Plan;	The plans referenced by the submitter are all required by the Queensland Government under the Project's Development Permit granted in 2022. These require preparation and submission to the regulator and other nominated stakeholders prior to construction, or prior to operations/decommissioning (whichever is relevant to the specific plan). Condition 18 of the Project's development permit under the *Planning Act 2016* requires the preparation of an Operational Bushfire Management Plan in consultation with the Queensland Fire and Emergency Services. Condition 20 of the Project's development permit requires the preparation of a Construction Bushfire Management Plan for inclusion in the Project's Construction Environmental Management Plan.

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		Condition 19 of the Project's development permit requires the preparation of a Safety and Emergency Management Plan. Condition 28 of the Project's development permit requires the preparation of a Decommissioning Management Plan. Condition 30 of the Project's development permit requires the preparation of a Complaint Investigation and Response Plan. Condition 39 of the Project's development permit requires the preparation of a Cleared Vegetation Plan.
590.013	1. The proponent should provide a clear description of the feedback provided by CAFNEC regarding concerns with a lack of consideration of biodiversity in the citing of this project. 2. The proponent should keep a publicly available record of all submissions made on the PER.	The suggestion that the public does not get a say in the Chalumbin Wind Farm is not accurate. Section 11 of the PER describes the comprehensive community and stakeholder consultation that has taken place for the Project. The publication of the Draft PER is further demonstration of public involvement in the process, as is the preparation and delivery of this submission to the Project. Appendix B of the Response to Submissions Report (i.e. this table) is the record of formal CAFNEC feedback to the Draft PER. CWF's approach to engagement is guided by the International Association for Public Participation (IAP2), widely accepted as the leader in engagement practice, and various guidelines published by the Clean Energy Council (CEC) and government departments. The process established under the EPBC Act (section 98) requires the proponent to invite comment on draft PER. In order to finalise the draft PER the proponent must take account of any comments received within the period for comment and contain a summary of any such comments and how those have been addressed. These must be included in the finalised PER for submission to the Minister. All submissions to the PER that have been received by CWF within the comment period have been logged, summarised and addressed as part of finalising the PER. The proponent identified CAFNEC as a key stakeholder and initiated engagement with CAFNEC on multiple occasions. Feedback from consultation with CAFNEC influenced the

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		removal of a number of wind turbines for the final proposed design. The proponent acknowledges CAFNEC's view that the location is unsuitable for a wind farm. Based on the assessment work and the proposal, the proponent does not share this view. The Response to Submissions Report (Appendix U to the Final PER) includes all issues raised within the submissions received to the Draft PER. This satisfies the proponent's obligations under the EPBC Act and under prevailing privacy legislation.
590.014 Indigenous Cultural Heritage	1. The proponent needs to do broader and deeper consultation with Jirrbal people to understand why so many in the community oppose the wind farm, despite the engagement they have had with North Queensland Land Council and Wabubadda Aboriginal Corporation Registered Native Title Body Corporation.	Section 4.11.2 of the PER addresses the National Heritage Values of the site, with section 4.11.2.2 setting out the Indigenous Values. The Jirrbal #4 people are the registered Native title claimants for the Project area as recognised by the Federal Court and the National Native Title Tribunal pursuant to the Commonwealth *Native Title Act 1993*. The Jirrbal #4 registered native title claimant is the 'Aboriginal party' for the Project area for the purposes of the *Aboriginal Cultural Heritage Act 2003* (Qld). A Cultural Heritage Management Agreement (CHMA) with the Jirrbal #4 has been in place since October 2020. The CHMA sets out agreed processes for ongoing engagement between CWF and the Jirrbal People in relation to the Project and cultural heritage management. In addition to the above, an Indigenous Land Use Agreement (ILUA) was endorsed by the Jirrbal #4 people on 7 May 2022, and registered on 4 November 2022, for the Wooroora property portion of the Project where native title has survived (i.e. has not been extinguished). CWF has engaged with the traditional owners who have the cultural knowledge and custodianship of areas in and adjacent to the Project area. The Aboriginal Group immediately adjacent to the east of the Project area is the Wabubadda Aboriginal Corporation RNTBC who represent the Determined Native Title holders of the area. To the west, north and south of the Project area the Jirrbal #4 Claim

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		areas extends well beyond the Project boundary. The Indigenous stakeholder and traditional owner who can speak for country and culture is the Jirrbal People through the Applicants and the Board of Wabubadda Aboriginal Corporation RNTBC. The knowledge and views of the Jirrbal People have been taken into account in relation to the Project. The land comprising the Project area is managed by graziers for agricultural purposes. Access to Jirrbal people has been restricted for many years. Through the negotiation of the Project ILUA, the proponent has negotiated with the owner/leaseholder of Wooroora Station to provide some access to Jirrbal people. The views of any non-Jirrbal people or indigenous groups are considered through the broader PER submission process.
590.015 Social Impacts	1. The proponent must provide a complete social impact assessment including an assessment of; a. The capacity and accessibility of public infrastructure, facilities and services, including education, health and emergency services and the increased pressure of an increased population and activity b. A detailed analysis of the existing housing and accommodation market, including availability, capacity and affordability c. A profile of the local and regional labour market, including an assessment of the likely availability of personnel with skills relevant to the project d. Details of other resource and infrastructure projects in the area, both planned and currently operating, based on publicly accessible information. e. Changes to community values and/or the way the community functions f. Impacts on how people live, work, play and interact with one another on a day-to-day basis g. Impacts on culture, history, and ability to access cultural resources	The PER has been prepared in accordance with the PER Guidelines. Section 13 considers economic and social matters associated with the project and Section 11 consultation.

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	h. Impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources i. Impacts on communities' quality of life including liveability and aesthetics, as well as the condition of their environment j. Impacts on communities' physical and mental health and well-being, as well as their social, cultural and economic well-being k. Changes to livelihoods, for example, whether peoples' jobs, properties or businesses are affected, or whether they experience advantage/disadvantage. 2. The proponent should describe opportunities for upskilling locals to join the workforce associated with the development of the plan. 3. The proponent must provide a more detailed assessment of the impacts to housing and accommodation pressures that the development will create.	
590.016 Rehabilitation	41. The proponent must provide a description of how the proposal hinders/helps the nation meet its goal to end deforestation by 2030. 42. The proponent must prepare a detailed decommissioning plan that includes financial coasts, environmental impacts and social impacts. 43. The proponent must clearly articulate how decommissioning would affect the rehabilitated areas of the site. 44. The proponent must provide a clear articulation of its understanding of 'net positive' and how that has been achieved.	Any clearing of remnant vegetation associated with the Project would be completed prior to 2030 and would be supported by environmental offsets under State and Commonwealth legislation (resulting in a net positive outcome for biodiversity). The goal to end deforestation by 2030 (as outlined in the Glasgow Leaders' Declaration on Forests and Land Use) is intended to address climate change; the Project will support the decarbonisation and mitigate the effects of climate change. Section 13.2 of the PER describes how the Project will result in a net reduction in greenhouse gas emissions (GHGs are the main driver of climate change). A Decommissioning Management Plan is required to be prepared for the Project prior to decommissioning (in accordance with condition 28 of the Development Permit issued under the *Planning Act 2016*). Potential decommissioning impacts are presented in section 5.4 of the PER and impacts relate primarily to vehicle movements around the Project area, potential for spread of weeds and risk of bushfire as described in the sections above. Some clearing of rehabilitated road

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		verges may be required to facilitate the movement of large equipment, to be determined by a swept-path analysis at the time. Any clearing of rehabilitated areas would be rehabilitated again on completion of decommissioning. The aim of the offset management areas is to improve habitat quality for the relevant species and/or increase populations of the species by removing current threats (such as weeds and feral animals). A minimum ratio of 5:1 is currently proposed for the full clearance area, despite the fact that up to 70% of the clearing will be rehabilitated. This, along with a voluntary financial contribution towards research and improved bushfire management across the entire areas, will result in a net positive.