Project Summary



St Patricks Plains Wind Farm



Harnessing the winds in the Central Highlands

"Development of a project of this scale and significance generates healthy debate. Whether you are in support of the project or have concerns, I encourage you to take the opportunity the exhibition period presents to have your voice heard." - DONNA BOLTON

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It takes years of hard work, commitment and perseverance to bring a wind farm proposal to the point where it is ready to be placed on public exhibition, we are now at that point with the St Patricks Plains Wind Farm.

I would like to thank all those – and there are many – who have contributed to this process and helped to define and refine the project. Firstly I would like

to acknowledge and pay my respects to all palawa people and particularly descendants of the people of the Big River Nation, the traditional owners of the land on which the project site is located.

In particular, thank you to the landowners, residents, visitors and other community members in the local area and the wider region, whose input, contributions and enthusiasm, despite the consultation limitations imposed by COVID-19, have played an important role in guiding the iterations of the proposal.

I also extend sincere appreciation to the planning specialists and independent consultants who have contributed their knowledge and technical expertise to guide the design and ensure the credibility and rigour of the Environmental Impact Statement (EIS) and its assessment reports.

In May 2022 the original Proponent of the wind farm, Epuron, was acquired by Ark Energy Corporation Pty Ltd. The Proponent of this wind farm is now St Patricks Plains Wind Farm Pty Ltd, a wholly owned subsidiary of Ark Energy Projects Pty Ltd. The development team has remained consistent throughout.

This booklet provides a concise overview of the proposal and key information in the EIS. It is not part of the project's formal assessment documentation. It is designed to assist members of the public who may not have time to read the full EIS and its appendices. We trust you will find it useful and informative.

Development of a project of this scale and significance generates healthy debate. Whether you are in support of the project, wish to work on it or have concerns, I encourage you to take the opportunity the exhibition period presents to read about the project and to have your voice heard by making a representation.

Finally, thank you for the widespread support shown for this project within the local and regional communities. A growing database of individuals and businesses interested in being involved during construction and operation is testament to this. Many community members and wider stakeholders have expressed their support for the project for its role in helping to address the critical issues of delivering new clean energy generation and taking action to address climate change and its increasingly concerning effects.

Yours Sincerely

Donna Bolton

Som Rotro

General Manager Development – Tasmania Ark Energy Corporation

Why is more renewable energy needed?

Over two decades ago Australia saw the need for an orderly transition of our electricity sector away from coalfired power generation. The Commonwealth government introduced the Renewable Energy Target which gave private companies confidence to invest in the workforce, skills, plant and equipment needed to develop and install renewable energy projects. Wind and solar are now the cheapest forms of new generation in Australia and globally.

The transition from carbon-emitting coal generation plants to cleaner emission-free renewable generation, while underway, has not progressed fast enough and needs to be accelerated to reach Tasmania's and Australia's renewable energy targets.

Australia risks running short of power and to remedy this we need to:

- ensure we have enough renewable energy in the National Electricity Market (NEM) for our significant growth in demand;
- retire the aging fleet of coal-fired generation plants before they break down and cause problems on the national grid;
- strengthen our existing transmission system to enable the distribution of the new renewable power generated.

The above actions are needed in a timely manner to reduce carbon emissions to slow the impacts of climate change. Increasing extreme weather events around the world are the main threat to communities, vulnerable species and habitats. On 17 July 2023 temperatures hit new records of 52°C in China and 53°C in California.

> Hon Guy Barnett MP Minister for Energy and Renewables

" Tasmania is the renewable energy powerhouse of Australia. By seizing Tasmania's immense potential, renewable energy can grow our economy, attract investment, create jobs and support Australia's transition to renewable supply."

- Minister's foreword, Tasmanian Renewable Energy Action Plan.

The Australian Energy Market Operator's (AEMO) 2022 Integrated System Plan forecasts that by 2050 electricity demand will double in its 'Step Change' scenario. In that scenario, Australia will require a nine-fold increase in renewable energy capacity (e.g. wind and solar farms) beyond that currently in operation.

In Tasmania, close to 2.5 gigawatts of new utility-scale wind will be required by 2032. The good news is that with its powerful Roaring 40s winds and good rainfall for existing hydro and potentially new pumped storage, Tasmania has a competitive advantage in the growing Australian renewable energy economy and is uniquely placed to take advantage of this opportunity.

While Tasmania already has the capacity to generate 100% of its electricity needs from current renewable sources, demand doesn't always align with supply, which is vital to homes and businesses. More generation on the island will increase the security and resilience of the electricity supply.

Capitalising on its natural resources, the Tasmanian Government set world-leading targets of 150% renewable energy generation by 2030 and 200% by 2040. We are working hard to help Tasmania achieve those goals.

Why here?

This site has all the attributes of a good wind farm –strong and consistent winds, freehold land and good grid connection – which drives down the cost of power.

St Patricks Plains Wind Farm does not need Marinus Link to proceed, it will service load growth on-island.

Step Change scenario

The below illustration has been adapted from the AEMO 2022 Intergrated System Plan (ISP) infographic:



Grid-scale wind and solar

to increase 9-fold





Electricity usage from the grid

to nearly double









Coal generation to be withdrawn



Where to view the project documents:

The St Patricks Plains Wind Farm Environmental Impact Statement, its appendices and planning documents are publicly exhibited and open for submissions until 25 September 2023.

The documents can be downloaded from the project website at <u>stpatricksplainswindfarm.com.au.</u> Printed copies are available to view at the following locations:

- St Patricks Plains Wind Farm Information Centre, 16a Patrick Street, Bothwell TAS 7030 - open 10am-4pm Fridays and on Saturdays during the exhibition period.
- Central Highlands Council, 19 Alexander Street, Bothwell TAS 7030 - Monday – Friday, during business hours.

The closing date for submissions is 25 September 2023

The exhibition period gives the public the opportunity to make a submission on any aspect of the project including support, concerns, or comments.

A submission must include the submitter's name, address, and the date of the submission as well as the name of the development application -St Patricks Plains Wind Farm.

Any person may make a representation in relation to the development application. Submissions should be directed either via post or email to the following:

Post: c/o General Manager Central Highlands Council 19 Alexander Street Bothwell, TAS 7030 Email: submissions@centralhighlands.tas.gov.au

Web: www.centralhighlands.tas.gov.au



St Patricks Plains Wind Farm Environmental Impact Statement, its appendices and planning documents

Scan the QR code or view online: stpatricksplainswindfarm.com.au

Project Overview

St Patricks Plains Wind Farm is a wind energy proposal in Tasmania's Central Highlands. The site spans six large, privately owned, agricultural and timber production properties totalling 10,000 hectares (ha). The project's operational disturbance footprint is a small fraction of the total site, at 194 ha. The site is approximately 10 km southeast of Miena and 25 km north of Bothwell. The location of the site was identified in 2012, and in 2018, after several years of wind monitoring, the location and boundaries of the site were defined, recognising the key attributes of a good wind farm site and few nearby residents.

Project location



LEGEND

The initial layout at the start of the planning process had 67 wind turbine locations. Over time, informed by community consultation, findings from assessment studies and advice from independent technical specialists, the design has been modified and refined.

The final proposed wind farm involves up to 47 wind turbines each with a hub height of 150 m, a blade length of 80 m and a maximum tip height of 231 m. There will also be ancillary civil and electrical infrastructure including approximately 52.5 km of new or upgraded internal access tracks, turbine curtailment technology, a substation, underground cabling, switchyard and battery stations, an operations facility and two meteorological masts.

The maximum disturbance footprint during construction would be 482 ha. After rehabilitation the indicative operational footprint would be up to 194 ha with 91 ha of that not cleared but solely subject to vegetation management.

At a cost of \$540 million the project would result in around 14% or \$80.5 million spent within Tasmania.

Subject to approval, construction could commence in the first half of 2025. It is estimated that construction would take approximately 24 months and generate up to 200 full-time jobs, with the workforce and materials for civil works sourced from within Tasmania where possible.

Large wind turbine and electrical infrastructure components would be imported via TasPorts' Port of Bell Bay in northern Tasmania and transported to the site along existing roads using specialised vehicles. The route to site would replicate that taken by the nearby Cattle Hill Wind Farm using the Midlands Highway and the Highland Lakes Road from Melton Mowbray up through Bothwell to site.

It is estimated that the wind farm would create up to 20 full-time jobs during its operational life of 25+ years with the option of continuing beyond that time frame with refurbishment.

The wind farm would have a maximum generation capacity of 300 megawatts and the power would be exported to the Tasmanian grid via the existing TasNetworks Liapootah-Palmerston 220 kV transmission line which crosses the site. The project would significantly increase Tasmania's production of renewable energy, contribute to the state's renewable energy targets and help to lower electricity prices.

The project has committed to a fund to support local community initiatives of \$3,000 per year per installed wind turbine (indexed to CPI) for the life of the wind farm. Based on a layout of 47 wind turbines this would amount to \$141,000 annually and more than \$3.5 million over a 25-year period.



Up to 47 wind turbines

Consultation

Pictured above: Open Day - Steppes Hall, August 2019

Ark Energy understands the importance of effective and comprehensive engagement with local community members and other stakeholders.

FXIT

With a planning process requiring a minimum of two years of on-site studies, Ark Energy has sought to engage the community early, keep all stakeholders updated, and address concerns in a timely and professional manner where it is possible to do so.

The project team's approach to consultation is informed by the International Association for Public Participation's (IAP2) Core Values and Public Participation Spectrum, widely accepted as the benchmark for good community consultation, as well as various industry guidelines.

A variety of methods have been used for consultation including:

- Dedicated project website with publicly shared project information and an online feedback form.
- · Dedicated project phone line and email address.
- Ongoing engagement through phone calls and emails.
- Face-to-face meetings and home visits.
- Zoom meetings and workshops during Covid restrictions
- Issue of 17 project updates/newsletters. 3 further newsletters have been issued since finalising the EIS.
- Insertion of 14 notices or updates in the local community newspaper, the Highland Digest. 5 further insertions have been issued since finalising the EIS.
- Engagement began in 2017 with key landowners and relevant agencies and to date there have been
 9 community information events, attended by a total of 480 people, held in Steppes, Bothwell and Miena.
- Since January 2023, the St Patricks Plains Wind Farm Information Centre in Bothwell has been open weekly and by appointment.

The project has received significant support from the closest communities as well as some opposition.

In 2022 a petition in support of the wind farm collected a total 286 signatures from residents and community members from the localities of Bothwell, Miena, Arthurs Lake and Flintstone.

Key reasons for project support include support for renewable energy both generally and in this location and local benefits such as the potential for employment and the community benefit fund.

Objections or concerns raised include the potential visual impact, risk to eagles, concerns about noise and bushfire, disruption during construction and lack of support for Tasmania's wider renewable energy policy agenda.

The project began with 67 turbine locations and the final layout submitted has up to 47 turbine locations. Many of the changes have been primarily driven by eagle avoidance. Community concerns have also affected layout changes. While there have been minor movements since 2021, information shared with the community provided feedback on the inputs to layout changes – this can be found on the project website <u>https://arkenergy.com.au/documents/803/</u> <u>StPatricksPlainsWindFarm_CommunityInfoDays_Feb2021.</u> <u>pdf</u> or by scanning the QR code above.

All turbines are now at least 3 km from the closest settlements of Wilburville, Flintstone, Shannon and Penstock Lagoon. A neighbour participation payment agreement program is being rolled out for all residents within 3 km of a turbine.

Ark Energy's on-ground engagement team very much appreciates the opportunity to meet and talk with neighbours to the project and thanks them for their time and hospitality.



To date there have been 20 project updates/newsletters distributed via postal mail, email or available at local project events and outlets.



Bushfest in Bothwell, November 2019



Miena Community Hall, February 2020

Impact Assessment

The overall goal of the environmental assessment process is to avoid and minimise impacts to the natural environment, local residents and community members.

As a Wind Energy Facility the Project has a high threshold of environmental assessment - a class 2C assessment under Tasmania's *Environmental Management and Pollution Control Act 1994* (EMPC Act). It is also a controlled action, like most of the wind projects in Australia, under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) which protects matters of national environmental significance.

The project must demonstrate how it has avoided, minimised and will manage significant impacts and also comply with a broad range of other environmental and planning legislation, regulations, guidelines, standards and policies.

The environmental impact assessment will be undertaken by the Environment Protection Authority Tasmania (EPA) and will include assessment of EPBC Act matters under a bilateral assessment agreement between the Tasmanian and Australian governments. Any environmental conditions required by the EPA would then be passed on to the consent authority which is the Central Highlands Council which will determine the development application.

Following the state approval process, the project would need a separate approval under the EPBC Act from the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).

An Environmental Impact Statement (EIS) has been prepared by Tasmanian firm ERA Planning and Environment which summarises the technical reports prepared to address the key matters identified in the Project Specific Guidelines (PSGs).

The EIS for the St Patricks Plains Wind Farm includes:

- Details of the proposal, project alternatives, consultation and the existing environment;
- A thorough summary of the potential impacts and proposed mitigation, management and monitoring for: avifauna, terrestrial fauna, flora and vegetation communities, noise, air quality, water including groundwater, waste management, dangerous goods and hazardous materials, natural values, greenhouse gases, cumulative impacts, traffic, visual and fire risk;
- The project's EPBC Act assessment and proposed offsets;
- Proposed decommissioning, rehabilitation and management measures; and
- Appendices of specialist reports for general design principles, avifauna, terrestrial flora and fauna, noise assessment, socio-economic impacts, traffic, visual impacts, shadow flicker and hydrogeology.

The overall goal of the environmental assessment process is to avoid and minimise impacts to the natural environment, and surrounding residents.

Prior to construction the project would be subject to detailed design including finalisation of component selection and, following geotechnical studies including ground testing, the final detailed positioning of all infrastructure.

If the project is approved the EPA will ensure compliance with any environmental conditions during pre-construction, construction, commissioning, operation and decommissioning.



St Patricks Plains Wind Farm's EPBC Act referral and decision are available online on the EPBC Act Public Portal:

epbcpublicportal.awe.gov.au/allreferrals (search for 'St Patricks Plains Wind Farm' or use EPBC number 2019/8497)



The EIS with all its Appendices is available on the Environment Protection Authority's Tasmania website:

https://epa.tas.gov.au/ business-industry/assessment/ proposals-assessed-by-the-epa/ st-patricks-plains-wind-farm-ptyltd-st-patricks-plains-wind-farmcentral-highlands-tasmania

Ecology

The freehold land surrounding the project footprint is used primarily for grazing and timber production and has a variety of natural values, species and habitats.

The EPA issued Project Specific Guidelines (PSGs) guiding the key species to be given particular consideration in the assessment of impacts. These include the Tasmanian wedge-tailed eagle, the Tasmanian devil, the spotted-tailed quoll, the eastern quoll, the ptunarra brown butterfly, the Miena jewel beetle and the Liawenee greenhood (orchid).

Avoiding and minimising impacts to fauna and flora species found on site, or which might use the project area, has been a priority during project planning.

Over two years of ecological assessment work has been completed by ecologists and survey teams, and, as results from the studies and surveys have become available, the project's design has been refined and modified to avoid and minimise impacts.



Pictured top: Miena jewel beetle bottom: Ptunarra brown butterfly



Terrestrial fauna

Targeted surveys confirmed five key species listed under the *Threatened Species Protection Act 1995* (TSP Act) or EPBC Act within the site: Tasmanian devil, spotted-tailed quoll, eastern quoll, Miena jewel beetle and ptunarra brown butterfly.

Evidence of devils was found at various locations including in three wombat burrows, which the project design has avoided. The assessment found that devils and quolls may be widespread but are likely to be low in abundance and concluded that, as wide-ranging carnivores largely driven by prey occurrence, most of the site is potentially suitable foraging and denning habitat for these species. The permanent footprint of the project represents ~1% of current available habitat within the site and availability of foraging and denning opportunities is considered to be negligible.

The assessment concludes that the project is not likely to have significant residual impacts on the Tasmanian devil, listed as endangered under the EPBC Act. However, Ark Energy has elected to voluntarily offer offsets. This is proposed to be a contribution of \$250,000 to the 'Save the Tasmanian Devil' program led by the Tasmanian Government, to support ongoing protection and management of the species whose key threatening process is the facial tumour.

The site contains approximately 56 ha of potential habitat for the Miena jewel beetle with known annual variations to the density of beetles and host plant. Further survey will be undertaken to inform management options. The site also contains approximately 3,787 ha of habitat for the ptunarra brown butterfly. Effort has been made to minimise the impacts on this species including potential impacts from predatory wasps and the project is not likely to have a significant impact.

Further detail is available in the EIS:

- Sections 6.1, 6.2, 6.3 and 7 of the main report
- Appendix C Terrestrial Flora and Fauna Assessment by North Barker Ecosystem Services.

For information provided on page 13, see:

 Appendix B - Threatened Avian Fauna -Site Utilisation by North Barker Ecosystem Services, including collision risk modelling by Symbolix.



Ecology

Flora and vegetation communities

The site is dominated by native grasslands, eucalypt forest and woodland and cultivated land with patches of wetland. Native vegetation communities can be broadly grouped into aquatic habitats, dry eucalypt and woodland habitats, native non-forest mosaic, and non-eucalypt forest.

Surveys identified a large number of native and non-native vegetation communities: 23 threatened flora species listed under the TSP Act and / or the EPBC Act and eight species of weeds listed under the Tasmanian *Weed Management Act 1999*.

Impacts on areas identified as important flora and fauna habitat have been minimised through careful wind turbine layout and siting. Using environmental constraints mapping to inform the design phase, the majority of both listed vegetation communities and listed flora and associated habitat have been avoided. This has resulted in low potential for significant impacts to occur on listed communities and species.

The final layout presented avoids the majority of known threatened flora species locations or populations within the site. During the final design and micro-siting of infrastructure there may be further opportunities to minimise impacts to ecological values. Land impacted within the construction buffer would be rehabilitated in a manner that promotes regeneration of native vegetation.



Pictured above: *Eucalyptus pauciflora* forest and woodland

Avifauna

Seven eagle nests were identified within the project site and a further 10 within 1 km of the site boundary. Nest activity assessments for the known nest sites have been undertaken annually and eagle utilisation studies have included eight seasons of on-ground monitoring and flight path mapping surveys from 22 observation locations on site. Significant effort has been made to understand how eagles use the landscape to aid in the design of the project and avoid, minimise and mitigate risk to eagles.

The initial 67 wind turbine layout was designed with a 1 km buffer to eagle nests. Identifying the areas most frequently used by eagles resulted in the layout being revised down to 50 turbines to avoid areas of the site most regularly used by eagles. Further refinement down to 47 locations was a result of visual impact assessment outcomes.

The wind farm application also includes in the disturbance footprint a minimum indicative 24 wind turbine curtailment device layout across the site. These units use high precision cameras to monitor and identify eagles approaching the rotor swept area of a wind turbine and slow or stop the respective wind turbine to avoid harm to the eagles. This technology is in effective use at the nearby Cattle Hill Wind Farm.

An Eagle Monitoring and Management Plan includes carcass management, interval flags or 'flappers' on overhead power lines and on met mast guy wires. If further measures are required there is an adaptive management option of a scientific study investigating the flight avoidance behaviour of eagles when one of the blades on selected turbines is painted black.

The assessment of impacts to eagles concludes that the Tasmanian wedge-tailed eagle, which is listed as endangered under the Commonwealth EPBC Act, is the only listed species which may have significant residual impacts and therefore require offsets. The offsets proposed are consistent with those in place for other wind farms in Tasmania and comprise a contribution of \$100,000 to the Wedge-tailed Eagle Research Fund (administered by nongovernment organisation NRM South) in the event of any eagle mortality resulting from a wind turbine collision.

TSP Act (State legislation) and EPBC Act (Commonwealth legislation) listed species considered to have the potential to use the site are: the curlew sandpiper, eastern curlew, Latham's snipe, Australasian bittern, red-capped plover, double-banded plover, azure kingfisher, Tasmanian masked owl, swift parrot, orange-bellied parrot and grey goshawk. Assessment shows the risk of impacts to these species is considered very low or low.





Noise

The noise made by wind turbines is an important issue and of interest to the community. The EIS requires a technical noise assessment to be prepared for consideration by the EPA's specialists.

Marshall Day Acoustics was engaged to undertake the noise assessment in accordance with relevant legislation, policy and standards. The assessment considered both construction and operational noise impacts.

As the turbine to be installed on site is not finalised, a candidate turbine is used in the assessment of noise in this case the Vestas V162 6.2MW was selected.

The purpose of a noise standard is to ensure the limit is appropriate for the protection of sleep and amenity of residents. The noise limit at dwellings, known as sensitive receivers around the site is $35 \text{ dB}_{\text{LAPO}}$ or the ambient background noise plus 5 dB, whichever is greater. This is in line with other Australian jurisdictions and is the most stringent noise limit criteria for wind farms globally.

The New Zealand Standard 6808:2010 Acoustics – Wind farm noise (NZS 6808) with a noise limit of 40 dB $_{\rm LA90}$ was originally nominated in the PSGs. However, in March 2020 the EPA adopted a new lower base noise limit of 35 dB $_{\rm LA90}$ for wind farms in Tasmania.

Background noise monitoring was undertaken at seven locations around the site and in accordance with NZS 6808 included sensitive receivers involved in the project, such as turbine host landowners, and also non-involved neighbouring sensitive receivers.

Assessment of operational noise involves applying the noise levels from the candidate wind turbine at all 47 wind turbine locations and using modelling to determine the noise associated with operation of the full wind farm at dwellings around the site.

Using the modelled noise generation contours for the candidate wind turbine, the highest predicted noise contours at all non-involved receivers was found to be below the base

Further detail is available in the EIS:

- Section 6.4 of the main report
- Appendix D Noise Assessment by Marshall Day Acoustics
- Appendix E Background Noise Assessment by Marshall Days Acoustics

noise limit of 35 dB LA90. The potential for significant impact to sensitive receivers as a result of wind turbine noise is therefore considered negligible.

A few dwellings which are owned by participants in the project have agreements with regards to noise generation which permits the noise levels at those locations to be higher than the EPA nominated standard. The highest modelled noise level for an involved receiver is $38.2 \text{ dB}_{\text{LA90}}$, which is within the 40 dB _{LA90} level nominated in NZS 6808. All other dwellings are within the EPA threshold of $35 \text{ dB}_{\text{LA90}}$.

Following the selection of the turbine to be installed, the noise assessment will be repeated and must demonstrate again that the wind farm will comply with the noise limit. After installation and completion of construction, the wind farm will be tested for compliance once more and then subject to ongoing noise compliance monitoring.

The noise impact assessment also considered construction vibration levels, onsite construction noise levels and offsite construction noise levels. Noise levels from construction equipment, machinery and activities is predicted using methods from relevant standards. The predicted range of construction sound levels at the nearest non-involved sensitive receiver is up to 45 dB _{Laeq}. Management and mitigation measures would be followed to avoid noise nuisance during construction in accordance with the Tasmanian regulations, including adherence to work time restrictions and hours for operation of machinery.

The relationship between wind turbine noise and human health effects has been the subject of extensive review by independent medical and research organisations including the Australian Medical Association (AMA) and the National Health and Medical Research Council (NHMRC). Both the AMA and NHMRC have published statements that conclude there is currently no consistent evidence that wind turbine noise causes adverse health effects in humans.

For more information visit:

- AMA Position Statement Wind Farms and Health (2014) - www.ama.com.au/position-statement/ wind-farms-and-health-2014
- NHMRC Statement Evidence on Wind Farms and Human Health (2015) - www.nhmrc.gov.au/ health-advice/environmental-health/wind-farms

Visual

Landscape and visual impact

A comprehensive landscape and visual impact assessment was undertaken by Inspiring Place based on industry standard techniques used in Tasmania, developed in part by Forestry Tasmania, and using a system that considers affects to the landscape scenic quality, its character, and peoples' likely reaction to changes to these.

Assessing a layout of 50 wind turbines Inspiring Place indicated that three locations adjacent to the Highland Lakes Road would score a high significance of impact rating if left unmitigated. A few other locations were considered to have a moderate rating and the rest considered to have a low rating. Overall, the project was considered to have a moderate to high significance of visual impact without any management or mitigation measures in place.

In response to this Ark Energy removed the three wind turbines considered to be too close to the road. With these wind turbines removed and another wind turbine set further back from the road, the project's residual visual impact was assessed as being moderate.

Photomontages

Photomontages have been produced to show what the wind farm would look like from representative public viewpoints. These images combine photographs, taken with a lens considered to most closely match the view of the human eye, with an image of the candidate turbine accurately located using a digital representation of the wind turbine layout and topography called a wireframe. Wireframes are generated using specialist software which combines the precise locations of turbines with accurate dimensions of the candidate wind turbine model to give a correctly scaled representation.

PHOTOMONTAGE: St Patricks Plains Wind Farm - from Highland Lakes Road near Steppes Hall, facing North West. Please view the comprehensive photomontge in the EIS documentation.





PHOTOMONTAGE: St Patricks Plains Wind Farm - from Poatina Road facing South. Please view the comprehensive photomontge in the EIS documentation.



- Section 6.15 of the main report
- Appendix H Visual impact assessment by Inspiring Place.

PHOTOMONTAGE: St Patricks Plains Wind Farm - from Penstock Lagoon (Lily Pond) facing North East. Please view the comprehensive photomontge in the EIS documentation.



Other Matters



Socio-economic benefits

Total expenditure for the development of the project was modelled at \$540 million, with 14% or \$80.5 million of that spent directly within Tasmania. The modelling suggests that as a result of the project, gross state product in Tasmania would increase by \$64.4 million over the construction period, driven by expenditure in materials, professional services, the workforce and associated upstream and downstream industries such as accommodation, services and transport.

It is estimated that the project would create up to 200 full-time jobs during construction and up to 43 direct / indirect full-time jobs during operation – at least 20 of those employed directly by the wind farm.

The project has also committed to a **community benefit fund** of \$3,000 per year per installed wind turbine (indexed to CPI). Based on 47 wind turbines installed this would amount to **\$141,000 annually plus CPI** and more than \$3.5 million over a 25-year period.

 Further detail is available in Section 5.3 of the main report and, Appendix F - Social and economic impact assessment by SGS Economics and Planning.

Traffic

The project would have three main sources of construction traffic: delivery of oversized wind turbine components, delivery of construction machinery and raw material, and workforce transport to and from the site.

It is expected that wind turbine components would be shipped to the Port of Bell Bay on the Tamar River in northern Tasmania and transported to the site in early morning convoys via the same route used for the Cattle Hill Wind Farm: Bell Bay Road, East Tamar Highway, Midland Highway and Highland Lakes Road via Bothwell.

Delivery of equipment and machinery would generally be isolated trips from suppliers locally and further afield, at the start and end of the project. Based on the candidate wind turbine, delivery would require 611 over-sized components. Delivery of raw materials would be a more constant requirement with approximately 29 laden trips per day, depending on the vehicles used.

It is anticipated that workers will be accommodated locally and during peak construction workforce transport could be up to 400 light vehicle movements per day (200 to and from the site).

All five entrances to the site would require road or junction upgrades and upgrades required outside of the site would be covered in separate approvals.

Construction can only commence after the detailed plans required have been finalised and approved. These would cover all aspects of construction including working hours, noise, traffic, dust management, and measures to mitigate and manage biosecurity risks and the spread of weeds or pathogens.

 Further detail is available in Section 6.14 of the main report and, Appendix G – Traffic Impact Assessment by Hubble Traffic.

Fire risk

Fire risks during the construction and operational phases would be managed in line with relevant health and safety legislation. An Emergency Response Plan would be developed and incorporate a Fire Management Plan completed in consultation with the Tasmania Fire Service and local fire chiefs.

The Tasmania Fire Service responded to a query about the wind turbines noting:

- they are not expected to adversely affect fire behaviour nor create major ignition issues;
- they are constructed with fire resistant materials and operated with automatic shutdown and isolation procedures in the event of malfunction, they can be remotely shut down in the event of fire in the area;
- they can attract lightning during thunder storms and provide a safe path to ground for lightning strikes;
- turbines may result in a limitation to aerial firefighting however only for the area immediately around the tower infrastructure and they can still be approached from various directions to within a safe operating distance;
- new access tracks and fire planning would improve access for firefighting crews and serve as natural fire breaks.

In conclusion the project would pose a low risk of fire ignition with the appropriate mitigation measures in place and would not present significant limitations to fire services in the event of bushfire in the region.

Further detail available in the EIS, Section 6.16

Water

The site contains a variety of waterbodies including the Shannon River, creeks, lagoons and ephemeral wetlands. The potential for surface water impacts would be generally localised and limited to the construction phase. The design of the project has taken these areas into account. Major waterways and waterbodies including the Shannon River, Wihareja Lagoon and Allwrights Lagoons have been avoided completely and construction will avoid works within or adjacent to other waterways and water bodies where possible.

A total of approximately 85 ML of water would be required for the concrete foundations and all other construction activities. The current proposal is to source this water from the Shannon River within the project site, from an offtake site managed by Hydro Tasmania in conjunction with the building contractor. Once operational, the project poses a low risk to groundwater and all water requirements would be met using collected rainwater, supplemented by deliveries during periods of dry weather.

 Further detail is available in the EIS, Sections 6.6 and 6.7 of the main report and Appendix J – Hydrogeology report.

Decommissioning and rehabilitation

There would be two main stages of rehabilitation, the first during and post-construction and the second at decommissioning or at the end of the operational life of the project.

The project has been designed to have an operational life of 25+ years however this could be extended for a further 25+ years through upgrade and replacement of infrastructure.

A Decommissioning and Rehabilitation Plan would be provided to the Director, EPA for approval within three years of completion of construction. The decommissioning process would involve the removal of wind turbines, electrical infrastructure and buried cables, and the site would be returned to its former state where practicable.

Wind turbines are predominantly made of recyclable materials and approximately 85-94% of today's wind turbines are recyclable. Research and developments in technology continue to advance recyclability of wind turbine components. Most of the materials would be reused, repurposed, recycled and recovered.

Key Points

- Up to 47 wind turbines with a generation capacity of up to 300 megawatts plus up to 60 megawatts of battery storage.
- Proposed turbines have a hub height of 150 m, blade length of 80 m and installed tip height of 231 m.
- Capital expenditure of \$540 million with approximately 14% or \$80.5 million of that expected to be spent within Tasmania.
- A community benefit fund of \$3,000 per year per installed wind turbine (indexed to CPI) for the life of the wind farm. Based on an installed 47 wind turbines this would amount to \$141,000 annually plus CPI and more than \$3.5 million over a 25-year period.
- Estimated to generate up to 200 full-time jobs during construction and up to 43 direct / indirect full-time jobs during operation – at least 20 of those employed directly by the wind farm.
- Avoidance of impacts to the majority of listed flora and also to habitat for listed fauna with disturbance prioritised on non-native over native vegetation communities.
- Minimum 1 km buffer to known wedge-tailed eagle nest sites and installation of wind turbine curtailment technology to minimise collision risk.
- Proposed offset contributions of \$100,000 to the Wedgetailed Eagle Research Fund in the event of any eagle mortality resulting from a wind turbine collision, and a one-off payment of \$250,000 to the 'Save the Tasmanian Devil' program.
- · Noise compliance at all non-involved dwellings.
- Neighbour participation payment agreements offered for dwellings within 3 km of a wind turbine.
- Site has excellent grid connection opportunity, high wind resource and freehold land, providing a high yielding project.
- Significant contribution to Tasmania's renewable energy supply and targets, putting downward pressure on electricity prices.
- Big opportunities for local providers of accommodation, services and equipment.
- Assists to drought-proof hydro assets.
- Assists to enable hydro generation to capture higher value.

How does the project compare to the Cattle Hill Wind Farm?

Originally approved in 2010, Cattle Hill Wind Farm (CHWF) demonstrates the growth in efficiency of wind turbine technology with St Patricks Plains Wind Farm (SPP) having around the same number of turbines but providing almost twice the energy.



St Patricks Plains Wind Farm

We acknowledge that community members nearest to renewable energy projects such as this wind farm are the champions of action on climate change and we acknowledge their willingness to accept the changing electricity generation landscape required to reduce emissions and address this vital issue.

We encourage you to make a submission on any aspect of the project including support, concerns, or comments. The full EIS, its appendices and planning documents can be downloaded from the project website at stpatricksplainswindfarm.com.au





For more information visit stpatricksplainswindfarm.com.au



More information

Tel: 1800 731 296.

Visit: St Patricks Plains Wind Farm Information Centre, 16a Patrick Street, Bothwell. 10am-4pm Fridays (and on Saturdays during the exhibition period only) please check the website.

Email: info@stpatricksplainswindfarm.com.au Website: stpatricksplainswindfarm.com.au

