Boomer Green Energy Hub

A photomontage showing what the wind farm would look like from Apis Creek Road, Mount Gardiner.

The Boomer Green Energy Hub is a large-scale renewable energy generation project proposed for a group of pastoral properties about 30 km south-west of Marlborough in Central Queensland. It involves land in the Central Highlands Regional Council and Livingstone Shire Council areas.

Work underway for the project includes wind resource monitoring, cultural heritage studies with the Traditional Owners, the Barada Kabalbara Yetimarala People, environmental assessment work, consultation, and technical studies for civil and electrical design. As this work is being done, the project's design is being refined and modified. The current design includes up to 145 wind turbines and associated infrastructure.

Assessment of the development application

The development application will be subject to rigorous and comprehensive assessment by the Queensland Government, with requirements outlined in *State code 23: Wind farm development* and the associated Planning Guideline. State code 23 aims to ensure a wind farm is appropriately sited, designed, constructed and operated, including:

- Safety, operational integrity and efficiency of air services and aircraft operations.
- Risks to human health, wellbeing and quality of life are minimised by ensuring acceptable levels of amenity and acoustic emissions at sensitive locations.
- The development avoids, or minimises and mitigates, adverse impacts on the natural environment (fauna and flora) and associated ecological processes.
- The development does not unreasonably impact on the character, scenic amenity and landscape values of the locality.
- The safe and efficient operation of local transport networks and road infrastructure.

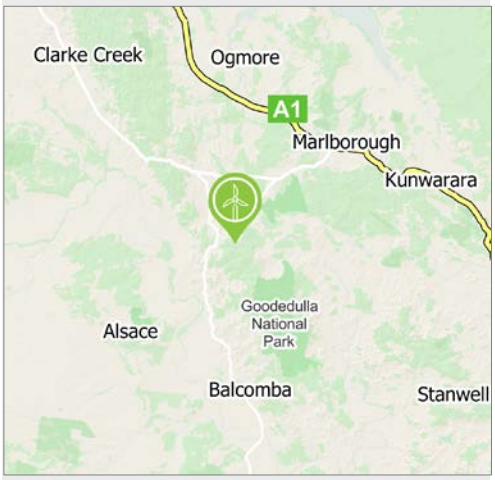
Various technical and specialist assessment reports will be required including for ecology (flora and fauna), use of agricultural land, erosion risk, natural hazards, acoustic amenity, electromagnetic interference, shadow flicker, workforce accommodation, scenic amenity, transport networks, aviation safety, community impacts and decommissioning. Several management plans will also be required, including for construction, fauna, vegetation, rehabilitation, water, sediment and erosion control, bushfire, traffic and decommissioning.

Environmental assessment by the Commonwealth

Potential impacts on matters of national environmental significance (MNES) protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) must also be assessed by the Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW). DCCEEW has determined that it will assess the proposal through an Environmental Impact Statement (EIS) (EBPC no 2022/09396).

Note – the development application and environmental assessment for the Commonwealth will both be placed on public exhibition for comment prior to a decision.

Location



- Capital investment of ~ $3 billion.
- Estimated to generate up to $500 million in local and regional expenditure.
- Estimated to create up to 450 jobs during construction and about 20 ongoing jobs for operation.
- Generation capacity of up to 1,000 megawatts.
- Community benefit program.
- Construction start target: 2027
- Target for completion: 2031
- Initial project lifespan: 25-30 years.

Ecology

Avoiding, minimising and mitigating impacts to the natural environment and fauna species that might utilise the project area is a priority, and comprehensive and thorough assessment of potential ecological impacts is required by both the Queensland and Australian Governments.

The ecological assessment work is done by specialist ecologists and survey teams over multiple seasons, and in accordance with state and federal guidelines.

As findings from the work become available the project's design is refined and modified to avoid sensitive ecological areas or key habitat for particular species.

The project team is committed to collaborating with ecology stakeholders and host landowners to implement responsible strategies to mitigate impacts and a key aim of the project will be to achieve net gains for biodiversity in the area over the longer term.

*For more information, please see the **Ecology** information sheet.*

Erosion and sediment control

The project area is located within the upper Mackenzie River sub-basins of the greater Fitzroy Basin and mostly drains west to the Mackenzie River. The largest waterway running through the project area is Leura Creek. A Baseline Aquatic Ecology Assessment has been completed to understand existing water quality and aquatic ecology.

During construction, areas at high risk of erosion will be avoided and water quality maintained through appropriate erosion and sediment control measures, to avoid detrimental impacts on waterways in the local catchment area.

The development application requires a comprehensive Erosion Risk Assessment, including mitigation measures.

Prior to construction an Erosion and Sediment Control Plan (Construction) and a Rehabilitation Plan must be completed.

Prior to operation a Site Stabilisation Plan (Operations) and a Stormwater Management Plan must also be developed.

Landscape and visual impact

The development application requires assessment of the wind farm's visual impact on the landscape. For this, photomontages are produced by technical specialists to show what the wind farm would look like from representative public viewpoints where it may be seen.

Photomontages combine photographs with a digital representation of the wind farm called a wireframe, which is produced using specialist industry software and based on precise wind turbine locations and dimensions to give an accurate and correctly scaled representation.

Aboriginal cultural heritage

Ark Energy recognises the continuing connection that Aboriginal and Torres Strait Islander Peoples have to their land and Traditional Custodians are important project stakeholders.

The project team is working with the project area's Traditional Owners, the Barada Kabalbara Yetimarala Peoples and their representatives, to ensure the protection and maintenance of cultural heritage sites within the project area and to establish an agreement that will provide meaningful benefits.

Noise

Wind turbines are much quieter than most people expect. Noise output from a wind farm can be predicted using acoustic modelling, and a technical noise impact assessment by acoustic specialists is required for the development application.

The technical criteria and methodologies for noise assessment are prescribed by State code 23, which states: "*The applicable acoustic criteria has been established based on national and international best practice, including a detailed review of the various standards, guidelines and frameworks in place throughout Australia, New Zealand and abroad*".

The noise limit at any non-involved residence is the greater of 35 decibels (dB) or the background noise plus 5 dB at night (10pm-6am) and 37 dB or the background noise plus 5 dB during the day (6am -10pm). The diagram below provides the noise levels in dB of various familiar sounds for reference.

Compliance with noise limits must be demonstrated before approval can be granted and again post-construction.

Health

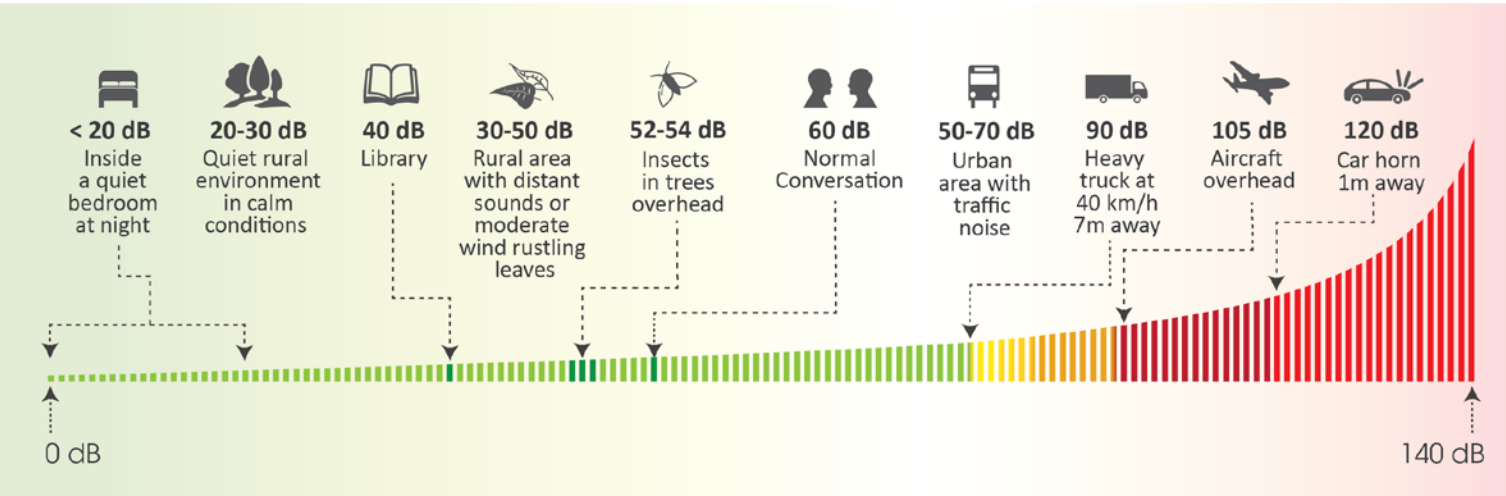
The relationship between operating wind farms and human health has been the subject of extensive review by medical and research organisations including Australia's National Health and Medical Research Council and the Australian Medical Association.

Both have published statements in relation to wind farms and health, stating that there is no consistent evidence that wind farms and wind turbine noise cause adverse health effects in humans.

Similarly, there is no evidence that wind farms cause adverse health impacts to livestock or domestic animals.

Water usage

Water supply will be determined in consultation with regulatory authorities, landowners and other stakeholders. Options for water supply are being reviewed and expected to be a combination of local groundwater and surface water capture, subject to availability. Relevant approvals and permits would be sought for the sourcing of water in accordance with state legislation.



Co-existence opportunity - Hosting wind farm infrastructure is a productive land use that's complementary to grazing and provides a reliable supplementary income. Livestock are unaffected by wind turbines and often use the towers for shelter and shade.

Fire safety and management

Renewable energy facilities are designed to mitigate fire risk.

Wind turbines are constructed from fire resistant materials and operated by sophisticated monitoring systems that automatically follow shut down procedures in response to operational issues and can be remotely shut down in the event of fire in the area. They also provide a safe path to ground for lightning strikes and access tracks serve as natural fire breaks.

Grid-scale battery energy storage systems have cutting-edge temperature management, safety and fire suppression systems.

Comprehensive emergency, fire and risk management plans would be developed in consultation with relevant authorities including Queensland Fire and Emergency Services (QFES), and QFES would manage firefighting on the site in the same way as any other area, using ground and air-based resources subject to weather conditions, and avoiding wind turbines in the same manner as other obstructions such as buildings or powerlines.

Construction traffic

Preferred transport routes and site access points have been identified and will be finalised in consultation with the involved port and local stakeholders.

A strategy for heavy and oversize or overmass vehicles must be prepared for the development application, and detailed traffic impacts assessment and management plans will be required as conditions of an approval. These will be compliant with legislation and local government planning schemes, developed in consultation with local councils and other key stakeholders, and cover all aspects of construction and traffic management including working hours, noise, traffic and dust.

Preparation for project construction may also require road upgrades and construction of new internal access roads. New roads will be the standard trafficable width, or wider where required due to topography or for cabling, safety, fire management, or erosion and sediment control.

Electromagnetic interference

Electromagnetic interference (EMI) refers to interference by operating wind turbines with the transmission of magnetic waves emitted from a source such as television, radar or radio signals. A technical EMI assessment is required, and it is not anticipated that there will be any issues with EMI impacts.

Workforce accommodation

Construction of the project would take three to four years. Onsite accommodation is proposed for the construction workforce, which is estimated to peak at 450.

End of operation

Wind turbines have an operational life of approximately 25-30 years. Options at the end of this period include extending the life of the facility through refurbishment, repowering with new infrastructure or decommissioning.

If the operator decides not to extend or refurbish the facility it will be decommissioned, usually within 12-18 months of ceasing operation. Decommissioning and waste management plans will be required as a condition of approval and associated costs are the responsibility of the asset owner. Decommissioning would involve the establishment of a decommissioning fund by the operator, and the removal of above ground infrastructure including wind turbines, electrical infrastructure and maintenance buildings, to return the site to its former state where practicable.

Wind turbines are predominantly made of recyclable materials, and approximately 90% of materials are recyclable (CEC 2025). Research and developments in technology continue to advance recyclability of wind turbine components. Most – if not all - of the materials would be reused, repurposed, recycled and recovered.

What can this project bring to the community?

COMMUNITY BENEFITS – A program for significant and meaningful benefits, designed in consultation with local stakeholders, to contribute to the community's socio-economic development and leave a positive legacy.

JOBS - Expected to generate up to 450 jobs during construction and about 20 ongoing jobs for maintenance and operation.

ECONOMIC BOOST – With a capital investment of around $3 billion it is estimated the project would generate up to $500 million in local and regional expenditure, value-add and household income, such as work for contractors and increased patronage for retail, service and hospitality businesses.

BENEFITS FOR TRADITIONAL OWNERS – Agreements with the project area's Traditional Owner groups to provide opportunities and meaningful benefits.

RENEWABLE ENERGY - Renewable sources are the cheapest source of electricity and more is needed to reduce carbon emissions and meet growing electricity demand. Growth in renewable energy capacity will put downward pressure on electricity prices and deliver more affordable, cleaner, reliable electricity.

NET GAINS FOR ECOLOGY – A goal of the project will be to achieve a net gain for biodiversity and key species in the project area over the longer term. This might involve various initiatives including rehabilitation of the initial construction disturbance, strategic environmental offset management areas, and improved land management regimes for fire, weed and pest control.

More information about renewable energy

Energy Fact Check is a website to help answer questions about the energy transition, and provides information on the energy system, electricity costs, renewable energy and storage.

Visit energyfactcheck.com.au or scan QR below.

ENERGY FACT CHECK

Planning & assessment

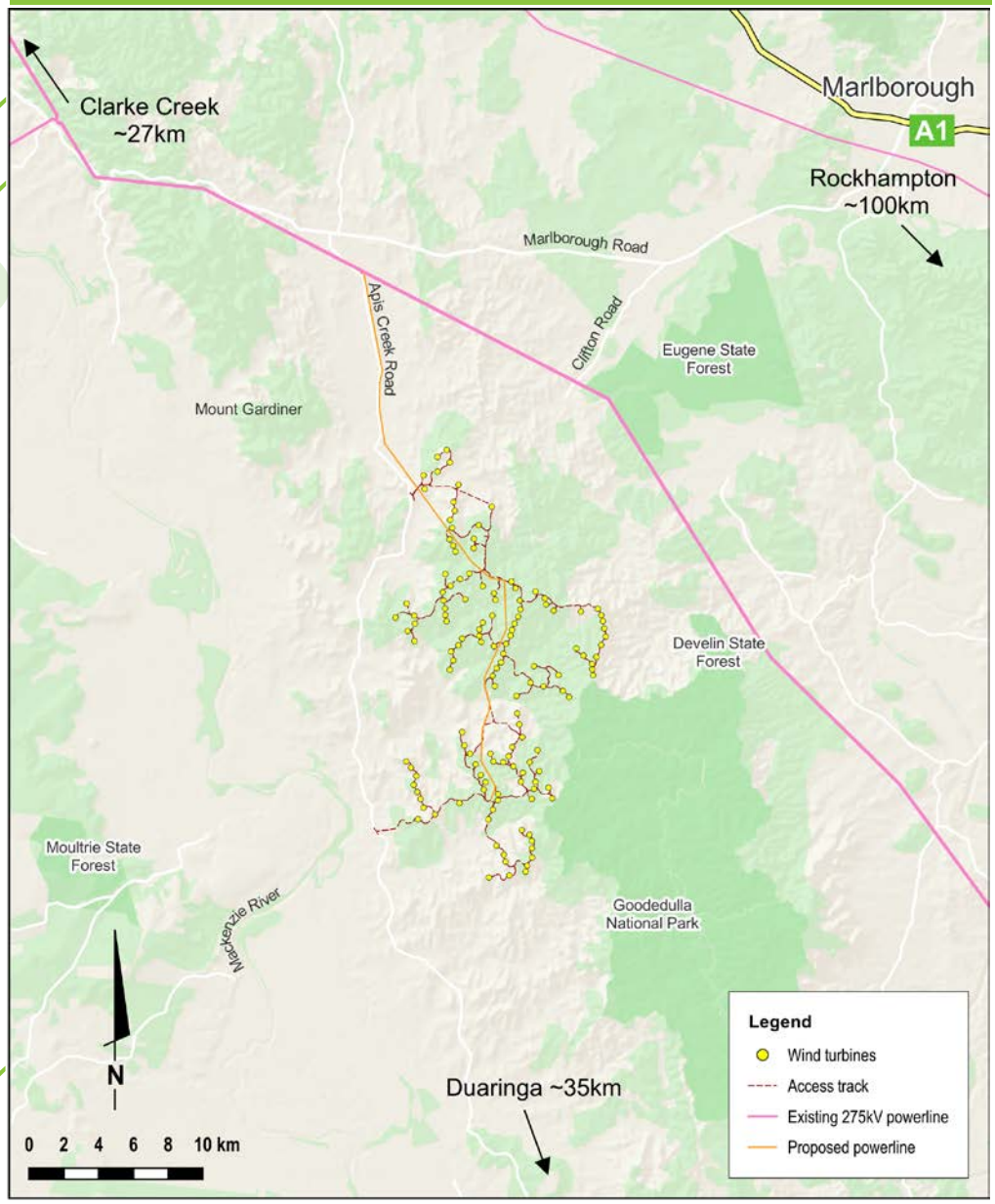
Queensland Government

1. Site selection, initial concept, preliminary investigations ✓
2. Pre-lodgement meetings ✓
3. Studies and technical assessments to fulfil requirements (State code 23) — WE ARE HERE
4. Development application and assessments lodged
5. Requests for further information (if required) and response
6. Documents accepted and placed on public exhibition
7. Response to submissions, further information (if required)
8. Final documents submitted
9. Assessment
10. Decision notice issued

Australian Government

1. Referral to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for review under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) ✓
2. Decision and advice on assessment pathway: *Determined a controlled action with assessment by Environmental Impact Statement (EIS).* EBPC no 2022/09396. ✓
3. Assessment work for the EIS — WE ARE HERE
4. Draft EIS submitted for adequacy review
5. Requests for further information (if required) and response
6. EIS accepted and placed on public exhibition
7. Response to submissions, further information (if required)
8. Final EIS submitted
9. Determination

Boomer Green Energy Hub indicative wind turbine layout



The project area involves several properties south-west of Marlborough. The land is currently used for livestock grazing, which is a complementary land use.

Connect with us

Ark Energy appreciates the importance of involving community members and local stakeholders. We are focused on providing opportunities for community members to participate in the process and maximising the local and regional benefits. Questions and feedback are welcome at any time and can be sent directly to the project team. We also encourage you to stay up to date by registering for project newsletters - details below.

Boomer Green Energy Hub

Visit – Boomer Green Energy Hub Office & Information Centre, 1/24 William Street, Rockhampton CBD.

Telephone - 1800 731 296

Email - info@boomerhub.com.au

Website - boomerhub.com.au or scan QR code right

Newsletters – register at arkenergy.com.au/mailing-list-details for e-news or send the project team your mail address and a request to be added to the direct mail (post) list.

Scan QR code to visit the project website

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