Marmadua
Energy Park

Frequently Asked Questions

The project

Who is Cubico?

Cubico Sustainable Investments (Cubico) is one of the world's largest privately owned renewable energy companies, working in nine countries across four continents.

Our asset portfolio includes onshore wind, solar photovoltaic, battery energy storage and transmission/distribution networks.

Covering the entire energy chain, from development and construction to operation, we add clean energy to local electricity grids, decreasing the world's reliance on carbon intensive energy sources, such as coal and gas.

Our Australian projects currently include the Wambo Wind Farm, Marmadua Energy Park and Middle Creek Energy Hub in Queensland, Curyo Wind Farm in Victoria and a number of early-stage developments across New South Wales, Queensland and Victoria.

As a project developer and long-term operator of our renewable energy assets, we aim to build trust and maintain strong relationships with our host communities at every stage of our projects' lifecycle.

Why is the Marmadua Energy Park needed?

The Marmadua Energy Park is an important part of Australia's transition to a clean energy future. Renewable energy projects generate electricity without the need for mining, extraction, or burning of fossil fuels, helping to significantly reduce greenhouse gas emissions.

Currently, Queensland has the lowest share of renewable energy of any state in Australia, at around 25 percent, and remains heavily reliant on coal.

Queensland continues to progress its energy transition, with significant investment in renewable energy generation, storage and transmission infrastructure across the state.

On a national level, Australia is committed to reducing greenhouse gas emissions by 43 percent by 2030 and achieving net-zero emissions by 2050, with a strong focus on renewable energy as the foundation for this transition.

Why did Cubico choose this site?

The project site consists mainly of cleared land used for grazing and broadacre cropping, minimising the need for vegetation clearing and allowing the project to integrate with existing land uses wherever possible.

The location was selected for its strong wind resources, low environmental sensitivity and suitable access to existing transmission infrastructure. These factors support a more efficient design and help reduce potential impacts on the surrounding landscape.

How big is the project?

The Marmadua Energy Park will comprise up to 100 wind turbines and the potential for a battery energy storage system (BESS). The project is expected to generate 700MW in wind energy, which would power approximately 480,000 homes.

What is a battery energy storage system?

A battery energy storage system (BESS) captures energy from renewable sources and stores it in rechargeable batteries (storage devices) for later use. The stored energy can be released back into the grid during periods of low wind or high energy demand, helping to stabilise the power supply and ensuring consistent availability.

The development process

What is involved in the development process?

The development of a large-scale wind energy project involves a number of stages, including feasibility investigations, technical and environmental assessments, community engagement, planning approvals, construction, operations and eventual decommissioning and rehabilitation.

Feasibility and early investigations

Early desktop studies, Geographic Information System (GIS) mapping and grid enquiries are undertaken to understand site suitability and constraints. Initial engagement with landholders and Traditional Owners may begin and indicative draft project layouts are prepared.

Wind monitoring tools, including wind monitoring stations, LiDAR (Light Detection and Ranging) meteorological masts and other on-site equipment, are used for to help assess wind resource availability and site conditions. Investigations for a potential battery energy storage system (BESS) may also be undertaken as part of the project's ongoing development and assessment process. The size, layout and infrastructure associated the project will continue to evolve as technical, environmental and community considerations are assessed.

Design and development

Preliminary on-site investigations and technical studies are undertaken and may include investigations relating to cultural heritage, biodiversity, environmental and other potential impacts. Early engagement with the community, landholders and other key stakeholders also occurs during this stage, helping inform project design and identify local considerations.

Project layouts are refined to respond to site conditions, network requirements and feedback from landholders, neighbours, Traditional Owners and the community. Financial and risk assessments help confirm the project's viability, and landholder agreements may be updated to align project needs with farming operations and preferences.

Planning and assessment

Formal planning applications and a range of detailed studies, including environmental, cultural heritage and social impact assessments, are prepared and submitted to relevant authorities, supported by the findings from earlier studies. Community and stakeholder consultation continues throughout this stage, and project designs may be adjusted in response to feedback or assessment outcomes.

Engagement activities may include one-on-one and group meetings, community drop-in sessions and pop-up events, newsletters and updates, information displays, surveys and a dedicated project website.

As part of the planning and approvals process, Cubico has undertaken a Social Impact Assessment (SIA). The engagement undertaken for the SIA builds on prior project engagement, as well as two phases of targeted community engagement activities undertaken for the Construction Worker's Accommodation Options and Workforce Accommodation and Infrastructure Reports.

Cubico is continuing to work closely with Western Downs Regional Council (WDRC) to develop a Community Benefit Agreement (CBA) for Marmadua Energy Park, helping ensure the project delivers meaningful and lasting benefits for host landholders and the broader community.

All large-scale renewable energy developments must meet relevant state planning and environmental approval processes, which typically involve consultation with government agencies, local councils, landholders, Traditional Owners and the wider community. Comprehensive technical studies are undertaken across areas such as biodiversity, heritage, noise, visual amenity, traffic and fire risk.

In Queensland, renewable energy projects are typically assessed through the State Assessment and Referral Agency (SARA), with some projects also requiring assessment under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Large-scale renewable energy projects can take time to progress through government approvals, depending on project size, technology and the complexity of environmental and planning considerations.

Construction

Once approvals are received and commercial arrangements are in place with contractors and equipment suppliers, construction can begin.

During this stage, Cubico works closely with landholders to help minimise disruption to existing farming operations, agree on access arrangements and manage seasonal activities where possible. Traffic management, biosecurity measures, safety controls and environmental management plans are implemented throughout construction, and landholders are kept informed of key milestones and expected timeframes.

Construction is anticipated to take approximately 24 months, subject to final project design and approvals. If developed, a potential BESS component may be delivered as part of, or separately to, the wind farm construction program.

Typical construction activities may include:

- **Access roads and site preparation:** Temporary or permanent access roads constructed to transport equipment and materials to site. These roads are often retained for ongoing maintenance once the project is operational.
- **Foundations and turbine installation:** Reinforced concrete foundations are constructed for each wind turbine before towers, nacelles and blades are installed.
- **BESS infrastructure:** If included as part of the project, prefabricated battery storage units and associated electrical infrastructure would be delivered and installed on site.
- **Electrical connection:** Underground and/or overhead cabling connects project infrastructure to an onsite substation, which links the project to the wider electricity grid.
- **Operations and maintenance facilities:** Buildings and infrastructure may be constructed to support ongoing monitoring, maintenance and storage activities.
- **Commissioning:** Equipment and systems are tested before the project enters the operational phase.

Operations

Once operational, Marmadua Energy Park would generate renewable electricity, with a potential BESS component able to store electricity for use when needed. Routine inspections, monitoring and maintenance activities are undertaken throughout the project's operational life.

For host landholders, agricultural activities can generally continue around infrastructure in line with agreed arrangements. Cubico maintains ongoing communication regarding access requirements, maintenance activities and any future upgrades.

Decommissioning and rehabilitation

At the end of the project's operational life, infrastructure would be removed and the land rehabilitated in accordance with approval conditions and landholder agreements. Cubico is committed to responsible end-of-life management for renewable energy infrastructure.

The decommissioning process is the responsibility of the project owner. If future repowering or life extension of the project were proposed, this would require agreement with host landholders and may also require additional planning and approval processes.

Wind farms typically operate for approximately 25 to 35 years before being repowered or decommissioned. Decommissioning generally includes the removal of turbines and above-ground infrastructure, with the land rehabilitated in accordance with approval requirements and agreements with landholders.

If developed, a BESS facility would typically operate for a shorter period and, at the end of its operational life, batteries and associated infrastructure would be removed and the site rehabilitated. Materials may also be recycled or repurposed where possible.

Throughout the life of the project, Cubico engages closely with landholders, councils, Traditional Owners and the local community, sharing information, seeking feedback and considering both operational requirements and the interests of those living nearby.

This approach helps support responsible project development and alignment with state planning requirements.

What studies are required?

The Marmadua Energy Park project must obtain extensive approvals at local, State, and Commonwealth levels to ensure compliance with all relevant legislation and regulations. A key component of the approval process involves independent specialists conducting various environmental studies to identify potential impacts.

Cubico undertakes a variety of assessments to inform our design and planning, ensuring potential impacts can be avoided and mitigated. These assessments relate to:

- Agriculture
- Aviation, if applicable
- Bushfire and other fire hazards
- Cultural heritage
- Environmental and ecological studies, including fauna and flora, bat and bird, and target species (for example, vulnerable and threatened species)
- Hydrology
- Landscape and visual impact
- Noise
- Geotechnical surveys
- Traffic and transportation
- Erosion and sediment control

Many of these are underway and we will keep the community updated on their outcomes.

How will the project impact local flora, fauna and biodiversity?

The Marmadua Energy Park project must meet biodiversity assessment requirements under both Queensland and Commonwealth legislation, including assessment processes under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), where required.

Cubico is undertaking a range of environmental studies to better understand existing flora, fauna and habitat values across the project area. These studies include investigations relating to birds, bats, vegetation communities and other wildlife species, and help inform the project's design, planning and assessment process.

The findings from these assessments help identify opportunities to avoid and minimise potential impacts during construction and operations.

Measures may include carefully locating infrastructure, establishing exclusion zones and buffers, maintaining wildlife movement corridors and implementing operational management measures where required.

Where impacts cannot be avoided, environmental offset requirements may apply in accordance with relevant legislation and approval conditions.

Cubico continues to work with specialist environmental consultants and relevant government agencies throughout the project's development to help ensure environmental impacts are appropriately assessed and managed.

Will cultural heritage be considered?

Cubico takes a localised approach to engagement, understanding that different communities and regions have diverse cultural practices, histories, and stories.

Cubico's partnerships with First Nations Peoples go beyond the statutory requirements of Cultural Heritage Assessments and associated strategies. We build genuine relationships which foster opportunities for First Nations participation.

During the development of the project, Cubico will continue to work closely with the Barunggam and Bigambul people, along with archaeologists and heritage specialists to expand on our understanding of the project site and its cultural significance.

Will the project require a lot of water, and where will it be sourced from?

Cubico recognises that Australia's water resources are precious, and the sustainable use of water is essential for our environment, farmers and the economy.

At this stage, we are assessing different options to source the water that will be required during construction.

Several factors will inform this decision, including the project's location, local water availability, and environmental considerations. This is something that also forms part of the project's planning and approval's process.

We are committed to exploring sustainable water management practices and will provide more specific information about the water source once those details become available.

Are there any health risks associated with wind farms?

Independent reviews by leading Australian and international health and scientific organisations, including Australia's National Health and Medical Research Council (NHMRC), have found no consistent evidence that wind turbines cause adverse health effects.[1]

In Australia, wind energy projects must meet strict planning, environmental and noise requirements. Detailed assessments are undertaken before approval to help ensure turbines operate within applicable standards and guidelines, with ongoing monitoring conducted during operations where required.

For projects such as Marmadua Energy Park, specialist studies are undertaken during the planning and approvals process to assess matters such as noise, visual amenity and other potential impacts. These studies help inform project design and support compliance with relevant Queensland and Commonwealth requirements.

Overall, evidence indicates that wind farms can operate safely alongside homes, farms and local communities when appropriately designed, assessed and regulated to Australian standards.

Are renewable energy projects noisy and how is noise managed once operational?

Renewable energy projects in Australia must comply with state-based noise regulations and approval conditions. Detailed noise assessments are undertaken during the planning and approvals process, with ongoing monitoring conducted during operations to confirm compliance with applicable noise limits.

Wind turbines generate sound as the blades rotate through the air. The extent to which this sound is noticeable can vary depending on wind speed, direction, topography and surrounding vegetation. In many cases, turbine noise is mitigated by the localised background noise, most of which comes from the wind itself. Advances in turbine technology have also helped reduce noise levels over time.

If a BESS component forms part of the project, some sound may also be generated from equipment such as cooling systems and electrical infrastructure.

During both development and operations, specialist consultants undertake detailed noise modeling and assessments to ensure the project complies with relevant Queensland noise guidelines and approval conditions. Where required, measures such as equipment selection, infrastructure placement and acoustic treatments may be incorporated into the project design to help minimise potential impacts.

To ensure public health and wellbeing, stringent noise regulations are in place. The World Health Organization recommends that noise levels from wind turbines should not exceed 45 decibels (dB). Queensland's State Code 23 aligns with this standard, setting nighttime noise limits for nearby homes at 45 dB(A) or 5 dB(A) above background noise.

Typical dBA levels:

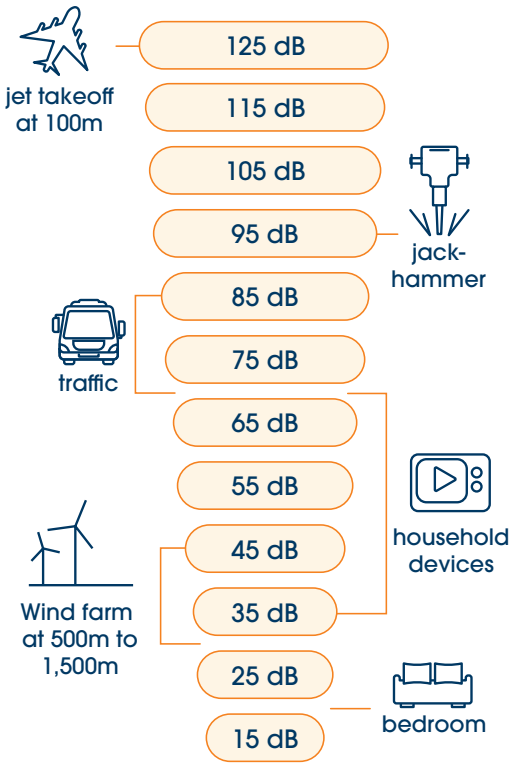

Diagram adpated from:
National Health and Medical Research Council, 2015, *Information paper: Evidence on wind farms and human health.* **www.nhmrc.gov.au/about-us/publications/nhmrc-statement-evidence-wind-farms-and-human-health**

Queensland Department of the Environment, Tourism, Science and Innovation, 2019, *Noise Measurement Manual.* **www.detsi.qld.gov.au/_global/policy-register/policy-register-pdf?getdoc=2195&name=eis-tm-noise-measurement-manual.pdf**

1. **Source:** www.nhmrc.gov.au/about-us/publications/nhmrc-statement-evidence-wind-farms-and-human-health

The proposed Marmadua Energy Park is surrounded by dense bushland prone to fires. Could it make fighting a bushfire harder?

Bushfire risk and emergency management are important considerations in the planning and design of Marmadua Energy Park. Cubico works closely with relevant fire and emergency authorities as part of the project's planning and approvals process to help ensure bushfire risks are appropriately assessed and managed.

Modern wind turbines are fitted with automatic fire detection and internal suppression systems which stop fires inside turbines and reduce the risk of fires propagating from the turbine housing. There are monitoring systems in wind turbines that slow or stop the turbine if temperature and wind speeds are above safe levels. Turbines are also constructed on cleared pads so, in the unlikely event of a fire, there is little fuel for the fire to spread.

Wind turbines can be shut down during emergency situations or high wind conditions if required. If a fire is nearby, the project operations manager can turn the turbines off quickly. The blades are locked in a Y position, so they are safer for aerial firefighting crews to fly around. The turbines are like any other tall infrastructure in the landscape, including transmission and meteorological towers, and their coordinates are logged with airspace authorities.

Access tracks and roads constructed as part of a wind farm may also assist emergency access and can act as fire breaks in some circumstances.

Like other infrastructure in rural landscapes, wind farms are required to comply with relevant fire safety, emergency management and planning requirements throughout development and operations.

Will turbines affect property values?

Studies show that the impacts of large-scale renewable energy projects are small and temporary, being generally limited to the construction phase. By early operations stage, property values are typically the same as they were prior to construction and some areas even experience increased property values due to improved local infrastructure and economic growth.

What about the energy it takes to produce and maintain a wind farm?

Wind turbines are very efficient at generating energy and "pay back" the energy required to build them in just a few months. For example, a study done on Vestas wind turbines (models: V117-4.2 MW, 136-4.2 MW, V150-4.2 MW) showed they generate more energy than what is required to build, operate and dispose of them after only five to eight months of operation.

What is the environmental payback period on a wind turbine?

Wind turbines typically offset their manufacturing emissions within the first year of operation, with some achieving this milestone in as little as two months. A 2012 study demonstrated that a 2MW turbine can recoup its carbon footprint in just seven months (Guezuraga, Zauner, & Polz, 2012). As technology advances and the manufacturing process becomes increasingly reliant on green energy, the efficiency of wind turbines is expected to continue improving, further reducing their overall environmental impact.

Will there be any local jobs or opportunities for local businesses?

Marmadua Energy Park is expected to create up to 300 jobs during construction, with additional ongoing operational and maintenance roles once the project is operational. Construction and operational opportunities may include roles in:

- Engineering
- Electrical and mechanical trades
- Construction and civil works
- Transport and logistics
- Equipment operation
- Project management
- Administration and support services

The project would also create opportunities for local contractors, suppliers and service providers, including fencing, vegetation management, accommodation, catering, transport and other support services.

Cubico is committed to supporting local participation wherever possible and encourages local businesses and suppliers to register their interest through the project website to stay informed about upcoming opportunities.

Can wind turbines be recycled?

About 85 to 94 percent of a wind turbine can be recycled into steel, aluminium, copper and cast iron.[2] The industry is looking closely at opportunities to recycle turbine blades, including some research into shredding down blades to be used as raw materials in the cement manufacturing process. Around the world, companies are developing recyclable wind turbine blades and deploying these to new wind farms.

How will the local community benefit from the Marmadua Energy Park?

The Marmadua Energy Park will deliver a range of benefits for the local and broader community, including:

- **Local jobs**: Up to 300 jobs during construction, 15 ongoing operational positions.
- **Skills development:** Partnerships with education and training providers to create renewable energy, engineering and construction careers.
- **Local suppliers:** Clear procurement targets and dedicated supplier register to maximise regional opportunities.
- **Early community funding:** Our Grants and Sponsorship Program for communities surrounding the Marmadua project launched in 2024. To date, around $49,500 has already been invested directly into local community events and initiatives.
- **Long-term benefits:** In line with Western Downs Regional Council's community benefit policy, Cubico is developing a Community Benefit Agreement, supporting long-term benefits for the local community.

  Initiatives that could be supported through the Community Benefit Agreement include:
  - Road and telecommunications upgrades
  - Housing diversity and affordable community housing
  - Funding for health services
  - First Nations workforce support
  - Support for local wildlife initiatives
  - Education support, including high school and TAFE collaborations
  - Recreation and sporting facilities
  - Community Sponsorship Fund
  - Education Fund

How can locals have a say in planning and decisions?

As a developer, owner and operator, Cubico is committed to early, effective and meaningful engagement throughout the development of Marmadua Energy Park. We recognise the importance of building long-term relationships with landholders, neighbours and the broader community.

Community engagement has already commenced and will continue throughout the planning, assessment, construction and operational phases of the project. Feedback from landholders, Traditional Owners, community members and other stakeholders helps inform project planning and design, including considerations relating to infrastructure locations, access arrangements, environmental management and community priorities.

There will be a range of opportunities for people to learn about the project, ask questions and provide feedback. These include community information sessions, one-on-one meetings, newsletters and project updates, surveys, pop-up events and a dedicated project website.

As part of the formal approvals process, community members will also have opportunities to review and provide feedback on relevant assessment documentation and planning applications in line with Queensland and Commonwealth requirements.

How can I stay updated on the project?

You can stay up-to-date in a number of ways, including:

- via the dedicated project website, phone hotline and email address
- meetings, phone calls, emails and letters
- community pop-ups and information sessions
- join the mailing list for project updates and newsletters
- fact sheets, FAQs, brochures and other resources.

2. **Source:** https://cleanenergycouncil.org.au/news-resources/new-report-vast-majority-of-wind-turbines-can-avoid-landfill-in-australia

How can I contact the project team or raise a concern?

Cubico values open, respectful and responsive communication with landholders, neighbours and the broader community throughout the development of Marmadua Energy Park. We have processes in place to help ensure enquiries, feedback and complaints are acknowledged, recorded and managed in a timely and professional manner.

Community members can contact the project team through several channels, including:

- a dedicated project phone number for urgent or time-sensitive matters
- a dedicated project email address
- project representatives who can be contacted directly
- community information sessions and other engagement activities.

Cubico also maintains systems to record and track community and stakeholder communications to help ensure matters are appropriately managed and responded to.

Where a concern or complaint is raised, Cubico aims to acknowledge enquiries promptly and work with community members to understand and respond to the issue. Response timeframes may vary depending on the nature and complexity of the matter, however the project team will keep people informed throughout the process.

Further information about Cubico's community engagement and complaints handling processes is available on the project website or on request.

If you're interested in being involved and staying up to date on the Marmadua Energy Park project, please contact us at:

Phone: **1800 282 426**
Email: **marmadua@cubicoinvest.com**
www.marmaduaenergypark.com.au

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