

Bendenine Wind Farm

Frequently Asked Questions

Wind Energy

How do wind turbines produce electricity?

Wind turbines generate electricity from the power of the wind. As air passes the blades of a wind turbine, the kinetic energy of the spinning blades is converted to electrical energy by the electrical generator located in the turbine's nacelle (also called the 'hub'). Each turbine is electrically connected to a substation where it is then transported through the electricity network to power homes and businesses.

Why wind energy?

There is a significant and growing demand in Australia for new electricity generation as ageing coal-fired power stations near the end of their designed operational life. Wind energy is one of the most cost-effective sources of electricity, thanks to advances in renewable technology and a maturing supply chain. Australia also benefits from some of the best wind resources in the world and has abundant land suitable for development.

Wind energy complements other forms of renewable and firm generation such as solar, hydro, and battery storage, by contributing to a more flexible, resilient, and reliable electricity grid. Together, these technologies help deliver consistent and affordable power across all times of day and seasons.

Renewable energy sources like wind are essential for helping Australia meet its state and national emissions reduction targets and play an important role in addressing climate change.

What is the life cycle of a wind farm project?

A wind farm project life cycle contains four key phases:

1. Project development and approvals (4-7 years)
2. Construction and commissioning (2-3 years)
3. Operation (30+ years)
4. Decommissioning and rehabilitation (6 months - 2 years)

What happens at the end of a wind farm's lifespan?

Once a wind farm reaches the end of its operational life, there are several options that can be considered. These include extending its lifespan by refurbishing wind turbines, or decommissioning the wind farm by dismantling infrastructure and rehabilitating the land.

Decommissioning involves removing wind turbines, site offices, and other infrastructure from the site. Disturbed areas, including foundation pads, are then covered and revegetated, allowing the land to return to its previous use. The wind farm owner is responsible for decommissioning and rehabilitating the site.

Are wind turbines recyclable?

Approximately 85 to 94% of a wind turbine is recyclable and can be recycled in Australia. In particular, the steel and copper used in the tower are highly recyclable.

A wind turbine's blades are made of high-strength, lightweight composite materials that are currently difficult to recycle. Wind turbine blade recycling is an evolving space and new materials and recycling methods are being trialled across the globe in an effort to minimise waste from wind energy projects.

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Where is the proposed Bendenine Wind Farm located?

The Bendenine Wind Farm development is located approximately 20 kilometres northwest of Yass in the Southern Tablelands region of New South Wales. The Project area sits between the townships of Binalong and Bowning on privately owned farmland primarily used for grazing and some cropping.

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Why was this location selected?

The site was identified based on several key factors:

- Strong and consistent wind resource – essential for efficient and reliable energy generation
- Proximity to the electricity grid and demand centres – helping reduce connection costs and improve energy delivery
- Compatibility with existing land use – allowing the project to co-exist with current agricultural activities
- Environmental and planning considerations – the site has been selected to help minimise impacts on native vegetation, wildlife, cultural heritage, and nearby land uses; detailed environmental studies will be carried out as part of the planning process
- Suitable land characteristics – including terrain and accessibility, which support efficient turbine placement and constructions

Will the community have a say on the Project?

Yes. Wind Prospect considers building strong relationships with the local community as fundamental to the success of the Bendenine Wind Farm. We are committed to open, transparent and ongoing engagement throughout the life of the Project.

We're currently working closely with landowners, neighbours, local councils and community groups to understand local interests, concerns and values. These conversations are helping to shape the early stages of project planning.

Importantly, there will be formal opportunities for community input as part of the NSW planning and approvals process, including during the public exhibition of the Environmental Impact Statement (EIS). Community feedback will play an important role in informing the design and assessment of the Project.

What will the Project include?

The Bendenine Wind Farm is expected to include up to 90 wind turbines, subject to feasibility studies, environmental assessments and ongoing community consultation. The Project also proposes to incorporate a Battery Energy Storage System (BESS) to support grid stability and store renewable energy for use during peak demand.

Additional infrastructure will include access tracks, underground cabling, a substation, and other ancillary equipment required during construction and operation. The Project will also need to connect to the electricity network, with the most appropriate connection point to be determined through detailed assessment and ongoing landowner consultation.

Can wind farms compulsorily acquire land?

No. Private wind farm developers such as Wind Prospect do not have the authority to compulsorily acquire land. Participation is entirely voluntary. Wind farms are developed through commercial agreements between the project developer and landholders who choose to host turbines or other project infrastructure on their property.

Planning and approvals process

What planning approvals are needed for the Project?

Wind farm projects in NSW undergo a rigorous environmental assessment and approvals process. The Bendenine Wind Farm project will require approval under the NSW State Significant Development (SSD) process, which is administered by the NSW Department of Planning, Housing and Infrastructure (DPHI). This assessment process includes:

1. Preparation of a Scoping Report to be submitted to DPHI outlining the proposed project
2. DPHI provides Secretary's Environmental Assessment Requirements (SEARs) to inform what is required to complete the Environmental Impact Assessment (EIS)
3. Completion site surveys and investigations to support the EIS
4. Submission of the EIS to DPHI
5. Public exhibition of the EIS and responses to submissions
6. Decision is then given from the NSW Planning Minister

Bendenine Wind Farm will also likely require assessment by the Federal Government for matters under the *Environment Protection and Biodiversity Conservation Act 1999*.

Where are we now?

Wind Prospect is currently undertaking a range of feasibility studies to inform the preparation of the Scoping Report. This report will outline the key aspects of the Project and identify matters requiring further detailed assessment in the Environmental Impact Statement..

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Community Benefits

How will the Project benefit the local region?

Wind Prospect is committed to sharing the benefits of the Project and understands the importance of developing these initiatives in collaboration with the local community. We will provide opportunities for input, with programs likely to include:

- Neighbourhood benefits, including support for neighbouring landowners, businesses, and villages in the direct vicinity of the proposed development.
- Broader community benefits, focused on sharing benefits beyond the immediate area.

The scale and design of the program would be shaped as the project progresses, ensuring that benefits are proportionate to the final development. We invite community input to help us shape a fair and effective approach. As an example, if the Project were to proceed at around 500MW, this would equate to over \$500,000 per year in community benefit funding.

Will there be local job opportunities during construction and operation?

Yes, the Project would create local job opportunities for activities such as civil works, electrical installation and turbine assembly, as well as procurement opportunities for local businesses. Ongoing jobs in operations and maintenance will also be created once the Project is operational.

Amenity, Environmental and Community Considerations

Do wind farms make any noise?

Yes, wind turbines do produce some noise, primarily from the movement of the blades and the sound of air passing the tower. However, this typically increases with wind speed, which also raises natural background noise, meaning it's often less noticeable.

Modern turbines are designed with advanced technology to reduce noise impacts. As part of the Environmental Impact Statement (EIS), specialist consultants will conduct detailed noise assessments to ensure the project complies with strict New South Wales regulations and minimises potential impacts on nearby communities.

Will the cultural heritage of the area be protected?

Yes. First Nations engagement is a key component of the wind farm planning process. Wind Prospect is committed to ensuring that the cultural heritage values of the area are protected, and any potential impacts are identified in the early planning and assessment phases.

How will construction impacts be managed?

The construction of the wind farm will be carefully managed to minimize any impacts on the local community, environment, and surrounding land uses. Several measures will be put in place, including:

- A traffic management plan will ensure that construction vehicles and equipment are safely transported to the site without disrupting local roads or communities.
- Dust and noise control measures such as water sprays and noise mitigation will be implemented to minimise dust and noise impacts.
- Ongoing communication with local residents: We are committed to maintaining close communication with local residents throughout the construction process. Regular updates and opportunities for feedback will be provided to ensure that any concerns are addressed promptly.
- Construction Environmental Management Plans will outline specific strategies for protecting local wildlife, vegetation, and water resources during construction.
- Site rehabilitation after construction to restore any disturbed areas, such as access tracks or staging areas, back to their original condition or better.

All of these efforts will be in line with local regulations and guidelines, ensuring that impacts are minimised and mitigated wherever possible.

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Will the wind turbines be visible from nearby properties or roads?

Yes, the turbines are likely to be visible from parts of the local area. New South Wales has detailed requirements for visual impact assessments, which will be carried out by independent specialists to understand how the turbines may be seen from surrounding properties and public roads. This process will help inform turbine placement and potential mitigation measures, such as layout adjustments or vegetation screening, to minimize visual impact in line with these regulations.

What is shadow flicker and will it affect nearby homes?

Shadow flicker can occur when the sun passes behind a turbine's rotating blades, casting a moving shadow. The potential for shadow flicker will be assessed as part of the EIS. The NSW Wind Energy Guideline requires shadow flicker to be less than 30 hours per year at any dwelling. This threshold is consistent with best practice standards and aims to minimise potential nuisance to residents.

Are there any health impacts associated with wind farms?

Wind farms have been operating in Australia and around the world for decades. Leading health authorities, including the National Health and Medical Research Council (NHMRC)¹, have reviewed available research and found no direct link between wind turbine operation and health issues.

Wind Prospect is committed to complying with all relevant noise, setback and environmental regulations to ensure the safety and wellbeing of nearby residents. As part of the EIS, independent specialists will assess potential impacts such as noise, shadow flicker and amenity, and propose mitigation measures where needed.

Do wind farms impact the local ecosystem?

Careful site selection plays an important role in minimising interaction with local ecosystems. Wind farms such as the proposed Bendenine Wind Farm are located primarily on cleared, agricultural land that is used for grazing and cropping for this purpose.

Biodiversity assessments are also central to the EIS process, and where potential interactions with the local the ecosystem are identified, we will implement measure to avoid and minimise those impacts.

¹ <https://www.nhmrc.gov.au/about-us/publications/nhmrc-statement-evidence-wind-farms-and-human-health>

Do wind farms increase bushfire risk?

Wind farms are designed and managed to meet strict fire safety regulations. Infrastructure is equipped with fire detection and shutdown systems, and operational procedures include bushfire response plans. Fire risk will be assessed as part of the EIS, and the project will work with local emergency services where appropriate.

Will the wind farm affect local land use and agricultural activities?

The wind farm is designed to coexist with existing agricultural activities, particularly grazing. Only a small portion of the total project area (approximately 2–3%) will be used for wind farm infrastructure, with the remaining land available for ongoing agricultural use. This approach ensures that local farming activities can continue alongside renewable energy generation.

Is it true wind farms never pay off their carbon debt?

No. Energy payback time refers to the time it takes for a wind farm to generate as much energy as was consumed throughout its full life cycle. This includes the manufacturing of components, transport, construction, operation, and decommissioning. Wind farms typically have an energy payback period of less than 12 months.

More Information

Where can I get more information?

We welcome questions and feedback at any stage of the Project. You can speak directly with the Bendenine Wind Farm team via:

E: info@bendeninewindfarm.com.au
T: 1800 497 133
www.bendeninewindfarm.com.au

