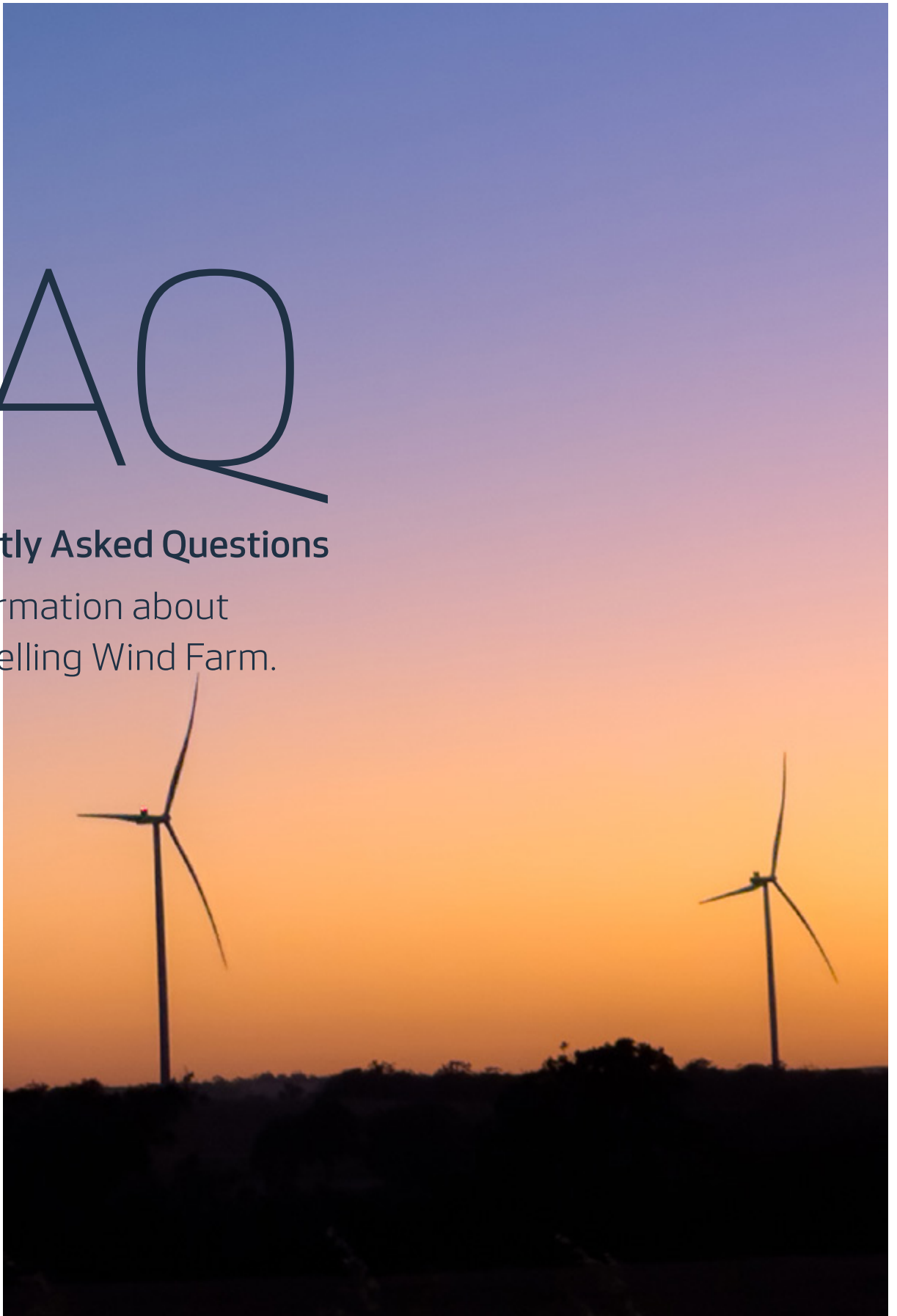


FAQ

Frequently Asked Questions

Key information about
the Bowelling Wind Farm.



Wind. It means the world to us.™



The project

The Project

Bowelling Wind Farm is a proposed renewable energy project in the Central Region of Western Australia

The project will consist of more than 30 wind turbines with a combined maximum capacity of over 130 megawatts (MW).

When fully operational, the project is expected to generate enough energy to power over 100,000 average Western Australian homes for a year.

Where is Bowelling Wind Farm located?

Bowelling Wind Farm is a proposed renewable energy project in Western Australia, approximately 170 km South of Perth, in an area classified as the Central region of Western Australia.

The project sits within the Shire of West Arthur and is in close vicinity to existing high voltage transmission infrastructure.

The existing access roads to the area allows for transport of turbine blades, towers, electrical equipment and movement of construction vehicles and deep-water sea port access.

How tall will the wind turbines be?

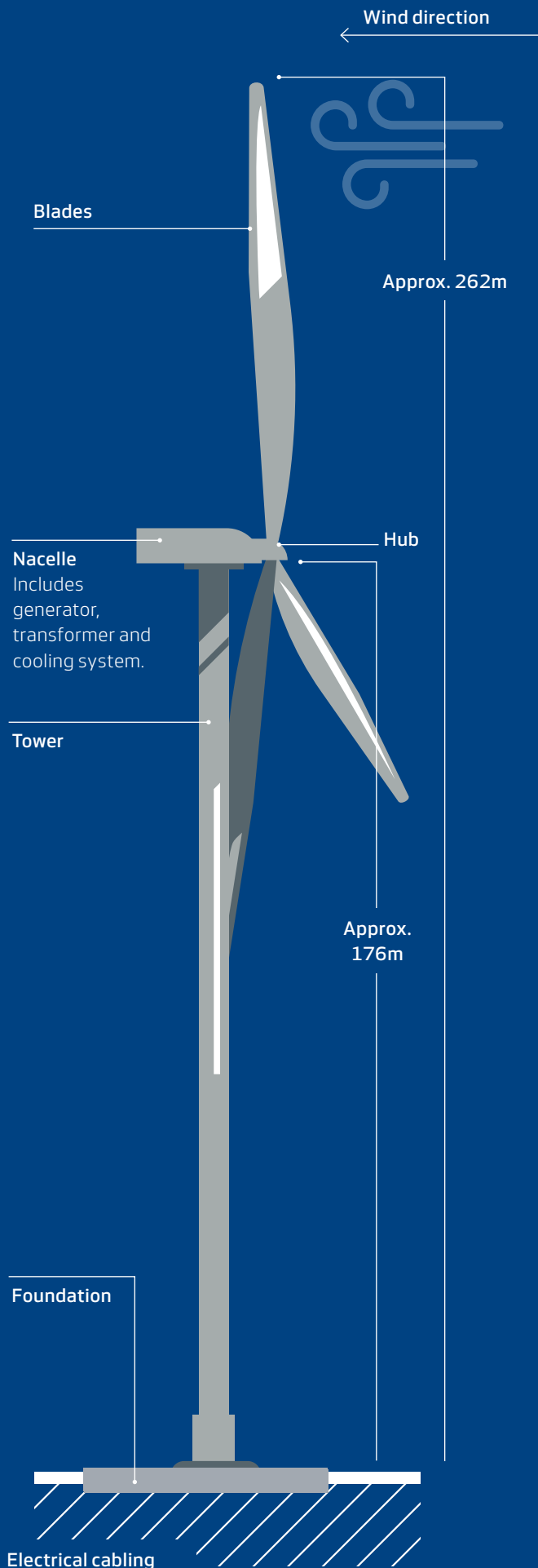
The project will likely utilise Vestas Enventus turbines. These have a hub height of around 176m, and a maximum blade tip height of up to 262m.

How will the project be assessed?

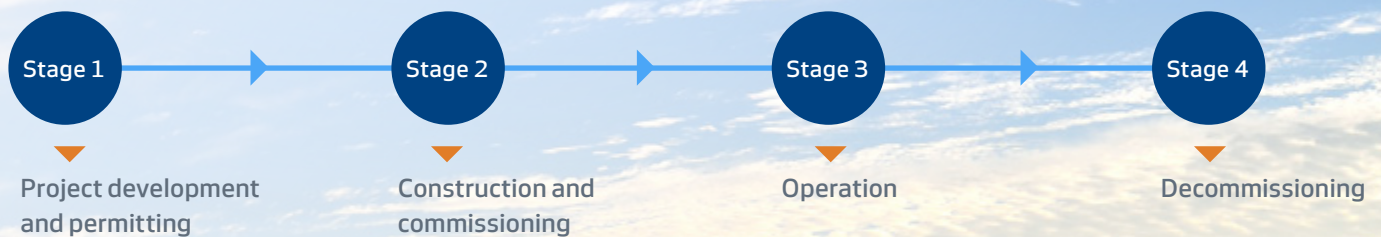
The project will be assessed under the Western Australian State Environmental Protection Act 1986 (EPA) and the Federal Environmental Protection and Biodiversity Conservation Act 1999 (EPBC).

Does the project require subsidies?

The project is not dependent on government subsidies for construction or operation. Where project finance is required, this will be procured through non-government lenders operating in the energy sector



What is the life-cycle process of a Wind Farm?



Stage 1 Project development & permitting

Developing a wind farm is a complex task that requires many years of planning and design.

The development stage of a wind project includes:

- discussions with potential host landowners;
- installation of wind monitoring equipment such as masts or remote sensing units;
- identification of potential wind turbine locations, and design of transportation and access routes and electrical infrastructure;
- consultation with local councils and State/Federal government stakeholders;
- engagement with the local community and project neighbours; impact assessments and studies to include: biodiversity, noise, visual, traffic, bushfire, heritage, and aviation;

- preparation of State and Federal permitting applications and documentation;
- grid connection studies in accordance with requirements set by the Australian Energy Market Operator (AEMO) and the local network service provider (Western Power);
- financial modelling;
- project funding and investment decisions.

Project development is complex and requires continuous adjustment to conform with the Western Australian Government's stringent development assessment process and the challenging technical requirements of connecting into the grid network.



Construction & operations

Safety

Safety is our highest priority and this includes a work safe culture for our team, contractors and when visitors come to site. We will prepare a detailed health and safety plan to identify and mitigate all potential safety risks, and we will ensure all construction employees and contractors are appropriately trained and qualified.

How do you minimise or avoid construction disturbance to the local community?

We will work closely with contractors, local communities, neighbours and local councils to plan and manage construction to minimise disturbance.

Construction management will include:

- regular and ongoing communication with the community;
- working during standard construction hours as much as possible;
- communicating with affected stakeholders where it may be necessary to work outside standard hours, or where work is expected to be disruptive;
- a rigorous safety culture;
- environmental monitoring.

Where will water be sourced from?

Water will only be required during the construction period for concrete batching and dust suppression. The project will source water from local supplies, subject to availability and within development consent constraints.

Are there any socio-economic effects on local towns?

There will be more people and vehicles in town and on the road during construction with limited scheduled works on Sundays and public holidays. This will mean more economic activity for local businesses and possibly higher occupancy rates in temporary accommodation. We will work with Council and our contractors to identify solutions and reduce impacts, and provide a strong economic benefit to the local area.

How will workers be accommodated for the project?

A workforce accommodation strategy will be developed as part of the development application. There may be an ebb and flow of workers and accommodation requirements but we expect that up to a third of the full-time workforce during construction will be from the local region.

Will there be noise from the turbines?

Although WA does not have specific guidelines for wind farm noise, the project will follow the most relevant Wind Farm Noise Guidelines which specify some of the most stringent noise criteria in the world. The allowable level is somewhere

between a whisper and a quiet library in terms of noise. This level is set to ensure that noise levels from wind turbines are compatible with surrounding land uses and to ensure that noise levels do not significantly affect the living experience of people residing in the area.

Will the wind turbines require lights?


As part of the assessments to be conducted, Bowelling Wind Farm will engage a specialist consultant to prepare an Aviation Impact Assessment. The assessment evaluates existing aircraft operations (both commercial airlines and local operators) in the vicinity of the wind farm. It is possible that the Civil Aviation Safety Authority (CASA) may recommend lighting for aircraft safety and if lighting is required, it will be installed on the turbine nacelle and will be shielded to reduce the amount of light visible at ground level.

Will the turbines affect local aerial spraying?

The assessments for the wind farm development will include an Aviation Impact Assessment, this will examine the potential impacts of aerial spraying. One way to ensure no impact to aerial spraying is by shutting down relevant turbines while spraying takes place, something we do regularly at wind farms across Australia.

>30,000 
people employed
worldwide

40+ 
years of experience
with wind energy

>90,000 
turbines installed in
88 countries worldwide

Stage 4

Decommissioning

How long will the wind farm operate?

The proposed wind farm is expected to operate for 30 years.

What happens at the end of life of the wind farm?

At the end of project operations of a wind farm, one of the following can occur:

1. The project is extended through a third-party engineering companies certification.
2. The project is repowered or redeveloped. It may be possible to replace some equipment and extend the project for a further period. Such extension would require a new development approval.
3. The wind farm is decommissioned.

What happens in decommissioning?

The asset owner of the wind turbines will be responsible for decommissioning of the wind farm. Decommissioning of wind farm infrastructure at the end of project life will be a legal condition of the development consent. In addition, contracts

with landowners also require that wind turbines and other infrastructure are removed at the end of the lease term.

A Rehabilitation and Decommissioning Plan will identify activities to be carried out on site post-construction and at the end-of-life decommissioning phase. Decommissioning will involve de-energising, disconnecting, dismantling, demolishing and removing wind turbines and other operational infrastructure. We will also rehabilitate roads and fencing in consultation with host landholders.

The proposed Vestas wind turbine is currently around 88% recyclable. This includes the steel that forms the tower and the aluminium and copper used in electrical equipment within the turbine. Turbine blades are the most challenging component to recycle. Vestas is advancing an innovative solution that renders epoxy-based turbine blades fully recyclable, and Vestas has pledged to eliminate all waste in its wind turbine production by 2040. On average, the wind industry generates significantly less composite waste than most other sectors including transport, electronics and building sectors.

The project and...

Cultural heritage

The project will continue to consult with local Indigenous groups and other stakeholders during construction and will engage a specialist consultant to assess potential cultural heritage impacts and mitigation measures. At all times, the project will be developed in compliance with cultural heritage protection laws.

Flora and fauna

Vestas Development will engage specialist consultants to undertake detailed surveys to establish the ecological attributes of the site. Based on the survey results, the project will be designed to minimise impacts on flora and fauna. Survey results and proposed mitigation measures will be assessed as part of the project's development approval.

Livestock

Wind farms complement grazing and other agricultural activities. The turbines occupy only a small amount of land, and landowners can continue their practices whilst the wind farm is operating.

Property values

Several studies have found no evidence to conclude that wind farms are linked to adverse impacts on property values (see Urbis 2016 and Preston Rowe Paterson 2013).



Wind energy

Why wind energy?

Wind is a clean and inexhaustible resource that generates zero pollution or carbon emissions during operation, and all emissions generated across the turbine lifecycle are offset in the first year of operations. Wind farms are considered one of the cheapest forms of new electricity generation and can produce energy at a significantly lower cost than fossil fuel generation.

How do wind turbines work?

Wind turbines convert wind into mechanical energy through blade rotation. The mechanical energy is converted into electricity via a generator in the nacelle (the housing at the top of the turbine tower). Energy generated in the nacelle is transformed to high voltage and sent to the grid.



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