



Waddi Wind Farm

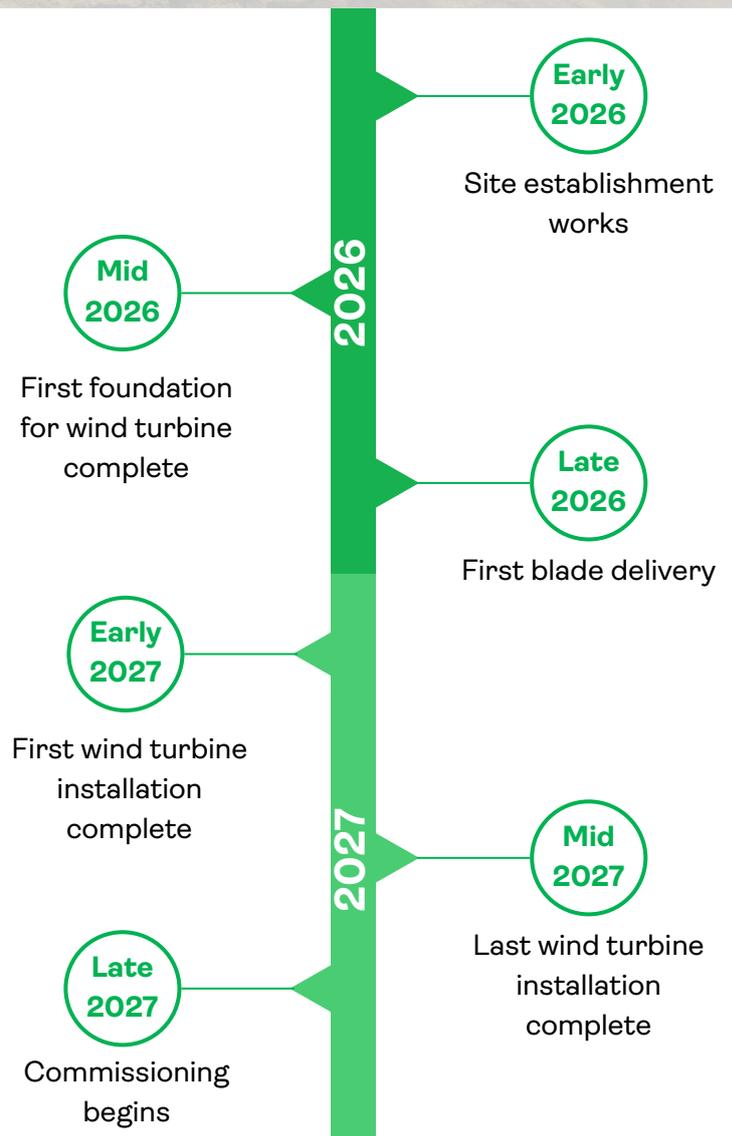
On-site construction

This factsheet summarises the on-site construction activities for Waddi Wind Farm.

To build Waddi Wind Farm, we need to install:

- 18 turbines
- Access tracks
- Hardstands (crane pad and assembly area) for the turbines
- An electrical substation
- A site compound
- Underground cables
- An overhead transmission line.

It will take approximately two years to build Waddi Wind Farm. A high level timeline is provided on the right.



Construction and commissioning

How a wind farm is built

Construction will occur in stages, as outlined below.

1

SITE PREPARATION

Access tracks are built to connect turbine locations and supporting infrastructure. This is to allow the delivery of components and servicing during the life of the wind farm.

Off-site, some intersections may need to be upgraded for use by construction vehicles and oversize over-mass vehicles (OSOM). An on-site concrete batching plant and other temporary construction facilities are set up at the start of construction to supply the project. Environmental and cultural heritage protection measures are put in place prior to construction.



2

TURBINE FOUNDATIONS

A foundation is built to provide a secure footing for each wind turbine. Typically, these are around 20 metres wide and three metres deep. A crane pad and assembly area, called a hardstand, are also constructed next to each foundation.



3

TURBINE ASSEMBLY

A wind turbine consists of a several tower sections, a hub, three blades and a nacelle (the box housing the generator). These parts are delivered separately, laid out in the assembly area, pre-assembled where possible, and lifted into place by a crane.



4

SUPPORTING INFRASTRUCTURE

Supporting infrastructure such as substations, monitoring masts, operations buildings and transmission lines are built to allow the wind farm to operate and export electricity to the grid.



5

ELECTRICAL CONNECTIONS

Underground electrical and fibre optic cables are installed to connect the wind turbines and carry electricity and control data to the substation. Overhead transmission lines are constructed to connect the wind farm substation to the grid.



6

COMMISSIONING

After all supporting infrastructure has been built and tested, wind turbines are commissioned individually to start supplying electricity. Temporary infrastructure, including buildings and access tracks, are removed and the site is rehabilitated.

What to expect during construction

Major project construction can be disruptive. The following questions explain what you will hear and see during construction and what techniques are used to manage impacts as much as possible.

What times will construction occur?

Works will be completed on a rotating roster (10 days on, 4 days off) from Monday to Sunday, 7am to 7pm. Any works occurring outside of these hours are considered 'out of hours' works.

Examples of when out of hours work could be needed are activities that can't be stopped until they are finished, including concrete pours or turbine deliveries and lifts.

We may apply for permission to do work out of these hours.

What will you hear during construction?

Construction activities you may hear during working hours include concrete batching, excavation, rock breaking, blasting, or movement of construction vehicles and machinery around the site. These activities will occur at different times and locations within the project area, meaning the noise will not be constant throughout the two years of construction.

What construction activities will you see?

The majority of construction activities happen on-site, however, you may see more vehicles on the Brand Highway and Mullering Road. There may also be dust associated with vehicles moving around site or construction activities.

Once we start erecting the turbines, you will see towers, turbines and cranes. Based on the height of the cranes used to build the turbines, lights may remain turned on at night to comply with aviation requirements.

How do you construct a transmission line?

A benefit of this site is that there is an existing transmission line nearby. This means we only have to build a short transmission line within the project area to connect to a cut-in location north of Cataby Substation.

Helicopters may be used to string transmission lines between towers, reducing the need for heavy machinery on the ground. Helicopters are used to do this because it:

- is faster than traditional ground-based methods
- reduces the need for new access tracks
- means less vegetation clearing and reduced impact on the landscape and the Mullering Brook Aboriginal cultural heritage site.

Where will materials come from?

Materials will come from various quarries throughout the Wheatbelt region of Western Australia.

Other items needed for construction, such as pipes, electrical components and steel reinforcement, will be sourced from suppliers across Western Australia, where possible. Turbines and some highly specialised electrical equipment will be imported from overseas.

Concrete will be made on-site using a temporary batching plant set up in the project's site compound. This plant automatically mixes sand, gravel and cement to produce the concrete needed for the turbine foundations.

How much water will you use and where will you get it from?

Water will be sourced from existing nearby water sources. It is expected construction will require up to 450,000 litres a day to manage dust suppression and to provide water for the concrete batching plant. The amount of water required will vary during construction depending on the activities being complete on-site.



Figure 1: An example of dust created when constructing a hardstand

Managing construction impacts

We will take practical steps throughout construction to minimise noise and dust impacts on nearby communities.

Noise

Noisy activities will be located away from sensitive areas, where possible. Work will generally take place within regular construction hours.

Use of horns, alarms and beepers will be kept to a minimum where it is safe to do so. Noise and vibration levels will be monitored, particularly if concerns are raised.

Regular site inspections will be carried out, and work methods will be adjusted if noise levels are too high. This may include rescheduling works, using quieter equipment, or installing temporary noise barriers.

Dust

Water trucks and other dust-suppression methods will be used to control dust from construction activities on public roads. Dust levels will be monitored visually, with controls increased if needed.

Vehicles carrying materials will be covered and equipment will be well-maintained to reduce emissions. Dust-generating activities will be planned around weather conditions, where possible.

Stockpiles are managed and disturbed areas will be rehabilitated as soon as practicable. No burning of waste materials will occur on site.



Figure 2: Turbine foundations being prepared.

How do you manage waste and run off during construction?

Construction materials will be reused or recycled on-site, where possible. Waste and recycling will be separated and regularly collected and taken to licensed facilities.

Regulated and liquid wastes will be safely stored, tracked and disposed of in accordance with *Waste Avoidance and Resource Recovery Act 2007 (WA)*. Work areas will be kept clean and tidy, with secure, vermin-proof bins provided. Waste storage areas will be regularly inspected and managed to prevent spills or litter.

Soil

Soil will be retained and reused on-site within the original property boundaries, where possible. Any soil identified as potentially contaminated will be managed in line with EPA WA requirements and safely transported to a licensed facility for disposal.

Run-off

Erosion and sediment controls will be installed and maintained throughout construction to protect land and waterways. Controls will be checked before and after heavy rainfall to ensure they are working effectively and to avoid the risk of impacts on nearby watercourses.



Figure 3: A crane erecting a turbine at Dundonnell Wind Farm in Victoria

What do you to protect the environment during construction?

As required by the *Environmental Protection Act 1986* (EP Act), mitigation measures will be put in place to ensure that all on-site activities do not pollute the environment in a way which causes or may cause environmental harm.

An Environmental Management Strategy has been developed for the project. Examples of environmental control measures include:

- Checking and approving environmental controls before work starts in new areas
- Clearly marking protected vegetation and setting up no-go zones
- Limiting clearing to approved areas only and kept to a minimum, where possible
- Using specialist wildlife handlers to safely manage and relocate animals if needed.

How will you manage biosecurity during construction?

Biosecurity risks associated with construction will be managed in accordance with the *Biosecurity and Agriculture Management Act 2007*. Biosecurity risks have been considered throughout development of the project. The site has been subject to detailed ecological surveys which have considered known biosecurity risks, including Weeds of National Significance and Declared Pests.

Within agricultural lands, biosecurity controls will be implemented through Property Management Plans developed in consultation with landowners. Before entering the project site, all vehicles, plant and machinery will be subject to a pre-mobilisation weed and seed inspection and must only access the site once deemed free of weed and seed material.

Within Crown lands, biosecurity controls are governed by the access licence between Tilt Renewables and the Department of Planning, Lands and Heritage. As part of those requirements, Tilt Renewables has agreed to implement dieback and weed management measures to address the potential introduction and spread of weeds and pathogens, including *Phytophthora* dieback.

How do you protect cultural heritage during construction?

The project was designed to avoid cultural heritage areas, where possible. Tilt Renewables has worked closely with the Yued Aboriginal Corporation and South West Aboriginal Land and Sea Council throughout development of the project to minimise potential impacts on cultural heritage.

As part of our Cultural Heritage Management Plan, co-designed with the Yued Aboriginal Corporation, ground disturbing activities within high risk areas will be undertaken in the presence of Yued monitors to ensure any unexpected heritage finds are appropriately recorded and preserved. During construction, no-go areas will be protected with fencing, and GPS control systems will be used for vehicles where practicable.



How do you prevent fires during construction?

Protecting the community, workers, and the environment is a top priority. A range of strict fire-prevention measures will take place during construction to minimise the risk of fire at all times, including:

Adhering to fire danger ratings

Construction activities are carefully planned around daily fire danger forecasts. High-risk activities (such as welding or grinding) are restricted or avoided on days of elevated fire danger.

Harvest and heavy vehicle movement bans and Total Fire Bans

We and our contractors are registered with the Shire of Dandaragan Harvest and Heavy Vehicle Movement Ban Notification System. All Total Fire Bans and Harvest and Heavy Vehicle Movement Bans will be strictly adhered to throughout construction.

Using safe construction practices

We implement a range of on-site controls to prevent sparks, heat or ignition sources, including:

- Avoiding the use of certain equipment or materials that could pose a fire risk in hot or windy conditions
- Ensuring machinery is well-maintained
- Keeping vegetation, dry grass and combustible materials cleared from active work areas.

What site rehabilitation will occur after construction?

Areas disturbed during construction that are not needed for the ongoing operation of the project, such as laydown areas, access roads and hardstands, will be rehabilitated as soon as practicable.

Rehabilitation will be carried out progressively across the site during construction and at the end of the project's life.

Sign up & stay informed



Stay informed about construction activities by scanning the QR code

Questions?

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