

## Why wind energy?

- Wind energy is a free alternative to fossil fuels providing insulation from fuel price shocks.
- Wind energy is not water intensive and does not pose a risk to the environment with potential hazardous spills and pollution. In contrast to fossil fuel generators wind farms are compatible with other land users, like farming.
- More than 200,000 wind turbines have been commissioned around the world providing ample evidence that the wind turbines are a clean and safe generation of technology.

## How do wind turbines work?

- Turbines have internal controls that monitor the wind direction and speed, with electricity production beginning at winds above 14km/h.
- The amount of electricity produced continues to increase until the turbines reach maximum capacity. This varies by turbine type and size but is typically 36-54km/h.
- Stronger winds do not turn the blades faster. The blades rotate at a regular 15-18 revolution per minute and operate at capacity until the wind speed reaches 90km/h. The turbines automatically shut down and turn out of the wind when the wind speed goes beyond 90km/h.

## Overview

**Capacity:** • 27.5MW (Lake Bonney) • 46 MW (Canunda)  
**Owners:** • Lake Bonney 1, 2, 3 – Infigen Energy (100%)  
• Canunda – Engine (72%) and Mitsu & Co Ltd (28%)

### Turbines: Vesta V66 at Lake Bonney 1:

- Blade Length 32 metres
- Tower height 60 metres to hub
- Start-up wind speed 14km/h (4m/s)
- Maximum power wind speed 90 km/h (25 m/s)

### Vestas V90 at Lake Bonney 2 & 3:

- Blade Length 45 metres
- Tower height 67 metres to hub
- Start-up wind speed 14 km/h (m/s)
- Maximum power wind speed 90 km/h (25m/s)

### Vesta V23 at Canunda:

- Blade Length 40 metres
- Tower height 67 metres to hub
- Start-up wind speed 14km/h (4 m/s)
- Maximum power wind speed 90km/h (25m/s)

**Material:** • Tower – Steel  
• Blade – fiberglass reinforced fibre epoxy / carbon fibres

### Rotor diameter & rotation:

- V66 is 66 metres. One rotation every 3 seconds
- V90 is 90 metres. One rotation every 4 seconds
- V23 is 23 metres. (Rotation TBC with ENGIE.)

### Employment – Lake Bonney:

- Jobs during construction: 400
- Jobs during operation: 20 at site and 25 locals contracted/part-time jobs 20



### Millicent Visitor Information Centre

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**Open:** Monday – Friday, 9.00am – 5.00pm  
Weekends and Public Holidays, 10.00am – 4.00pm  
Closed Christmas Day



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# Windfarm Tourist Drive

clean & green



# Lake Bonney WIND FARM

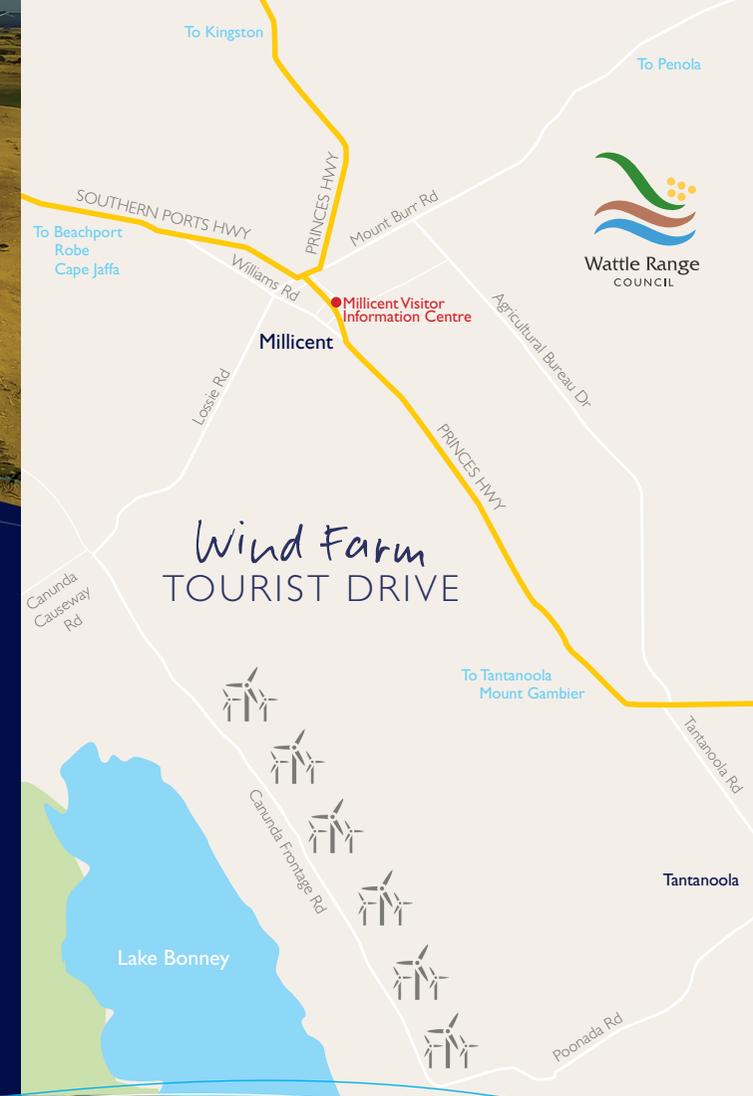
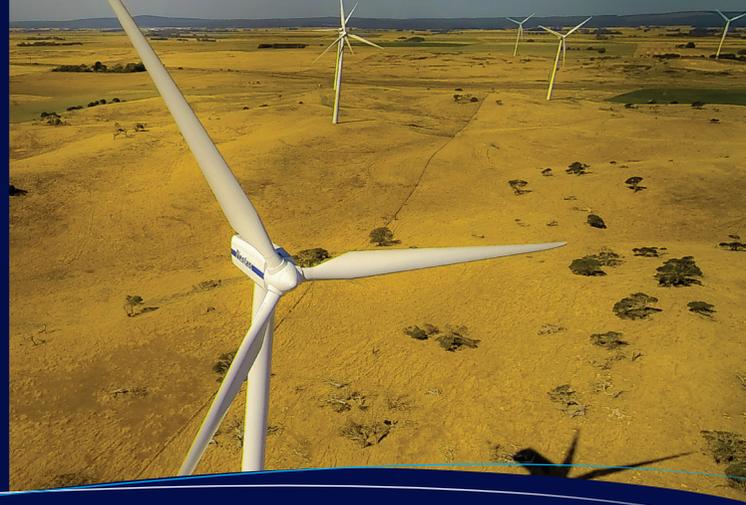
The Woakwine Range is located on the Limestone Coast, one of Australia's most prominent wind farming regions. The coastal area benefits from consistently strong winds coming off the Southern Ocean – ideal conditions for wind energy generation.

The wind farms on the Woakwine Range make up 18% of the state's wind capacity. The 135 spectacular wind turbines in Canunda (23) and Lake Bonney 1, 2 & 3 (112) are located about 2km from the eastern shore of Lake Bonney SE, near Millicent and Tantanoola. The windfarms have a combined installed capacity of 325 MW and generate just over 850 gigawatt hours (GWh) of electricity, which is equivalent to supplying power to 120,000 homes per year.

The towers of the Lake Bonney wind turbines were manufactured by Keppel Prince at Portland, the wind farm transformers from Wilson Transformers and cabling from Nexans Olex in Australia.

Work on the Lake Bonney wind farm commenced in 1989, the Development Approval was granted in June 1999 by Wattle Range Council. The Canunda and Lake Bonney wind farms were opened 31 March 2005. The wind turbines are connected by an underground 33 kilovolt (kV) electricity cable with the electric substation, where the voltage is stepped up to 132kV volts to be submitted into the Mayurra substation and then onto the grid.

It takes a wind turbine three to six months to produce the amount of energy that goes into its manufacture, installation, operation maintenance and decommissioning after its 25-year lifetime.



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