

Lake Bonney Wind Farm



Location	near Millicent, South Australia
Client	Babcock & Brown Windpower
Contract	Design and Construction
Total Cost	\$17m
Duration	August 2003 - February 2005



The Lake Bonney Wind Farm development is the first stage of a greenfields wind farm located near Millicent, South Australia.

The development comprises 46 wind turbine generators, each capable of generating 1.75 MW of power, giving the wind farm a total capacity of 80 MW. Electricity generated from the wind farm will be delivered to the South Australian electricity grid via the Mayurra Substation, which is located at the site.

The wind turbine generators are manufactured by a Danish company, Vestas Wind Systems A/S, and partially assembled in Australia. Each wind turbine has a three-bladed rotor with an overall diameter of 66 m, driving an asynchronous 4-pole generator via a combined planetary and helical gearbox. An automatic pitch regulation system allows the angle of the rotor blades to be constantly varied to suit the prevailing wind conditions, thus optimising power production and minimising noise levels. Leighton Contractors is responsible for the design and construction of all of the civil works and the electrical works for the project.

These works include:

- geotechnical survey, investigation and verification;
- design and construction of the turbine tower foundations, each containing approximately 200-m³ of reinforced concrete;
- route selection, design and construction of 17-km of access roads and hardstand areas;
- route selection, design and construction of the switchgear, cable trenches, switchroom, earthing grid and lightning protection systems for the electrical collection system;
- construction of the 415V and 240V supply systems to the facility;
- design and construction of four 70 m high masts on which meteorological monitoring equipment is installed;
- design and construction of an operations and maintenance building and yard facility.