

POWERING AHEAD

DEVELOPER : Windlab and John Laing Group
PROJECT COST : \$75 million



The Kiata Wind Farm consists of nine 3.45MW V126 wind turbine generators connected into the National Electricity Market through the 66KV network running between Horsham and Nhill. The project will supply enough electricity to power over 20,000 Victorian homes and will have the largest and most efficient wind turbines in Australia each standing approximately 180m tall.

The \$75 million Kiata Wind Farm is a 30MW wind energy project located 50km north west of Horsham, Victoria. The turbines provide enough clean energy for over 20,000 households and are the largest and most efficient wind turbines in Australia. Windlab, an Australian energy development company, are responsible for the development of the project. They co-own the Kiata Wind Farm along with investors John Laing and a group of 25 local shareholders.

Windlab utilise atmospheric modelling and wind energy assessment technology to identify ideal locations across the country for the development of wind farms. Work on this project began three years ago when the site was first earmarked as appropriate.

“We began preparing the site in November 2016 after the financial close with investors. However, this project began about two to three years before that. A number of our planning and design engineers were already busy negotiating with both the local council and landowners,” explained Martin Vries, Windlab’s site Construction Manager.

The project was not overly large with approximately 100 people working onsite at any one time however over the course of the project, up to 300 inductions were carried out. Construction was a global effort with the turbines and cells arriving from Denmark, the wind towers from Portland, Victoria and the turbine blades arriving from Spain.

Given the nature of the location of wind farms, there are always a series of challenges that face the construction team. “The biggest risk is almost always the last construction element – the lift. We had towers that are 120m high and blades that were 63m long, lifting the blades that high into the air to connect to the hub at the top of the wind tower is a challenging process,” explained Martin. “As you are there to construct a wind farm, you are in an area of high wind. It is a critical part of the construction that is at the mercy of the elements. Bad weather can severely disrupt our schedule.”

The wind energy industry is tightly regulated, Windlab worked closely with regulator,

Australian Energy Market Operator (AEMO), who are responsible for providing generator licenses to every power station in Australia. “It is an extensive undertaking with tests and model discussions and if underestimated it can cause programme delays – testing of the turbines cannot be conducted without a licence,” explained Martin.

For Windlab, the key to reducing these risks is through transparent and rigorous project management. “We created a transparent schedule and forecasted the areas with the most risk. Those critical items were continuously monitored and everybody was focussed on finding the right solutions. As a result of this approach, one of our high risk jobs, the energisation of the sub-station, was completed early. That was achieved through working with Powercor from a very early stage in the project.”

The V126 turbines, which stand at a total height of 180m, are currently the largest in Australia. Developed by Vestas, the 126m rotor enables greater wind capture, which in turn produces more energy at a reduced cost. The result is exceptional profitability in areas with low wind, and new frontiers for wind energy investment.

Windlab have offices in Australia, South Africa and America and became a public company in August 2017. Current projects include the Kennedy Energy Park, it is a world first utility-scale hybrid wind, solar and storage project. Operations will begin in late 2018.

KWF is owned by John Laing, Windlab and local Shareholders. John Laing is an international originator, active investor and manager of infrastructure projects. Its business is focused on major PPP infrastructure projects and renewable energy projects, across a range of international markets including Asia Pacific, Europe and North America.

For more information contact Windlab, Level 4, 60 Marcus Clarke Street, Canberra City ACT 260, phone 02 6175 4600, website www.windlab.com

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SUPPORTING GREEN ENERGY PROJECTS

Australia takes full advantage of the country's renewable resources. Wilson Transformers Company (WTC) can see many large scale wind and solar projects being built to help meet the renewable energy target. Over the last few years WTC have partnered with some of Australia's leading developers and contractors to supply their products to their wind and solar sites.

The \$75 million Kiata Wind Farm is one of the projects the company has worked on recently. WTC supplied two 22MVA 66/33kV power transformers. The units – weighing 43.5 tonnes each, were transported to the Kiata Wind Farm site fully assembled and unloaded to the foundation by jack and skate. Following installation onsite, the site acceptance testing was conducted under WTC's supervision to ensure a successful operation of the transformers.

WTC were also honoured to host a media event to announce the financial closure of the Kiata Wind Farm at their Power Transformer factory in Glen Waverley, Victoria, where the company had the Victorian Minister for Energy, Environment & Climate Change, Lily D'Ambrosio, Shaun Leane MP and the representatives of WindLab, Vestas and other parties involved in the project.

WTC are very proud to support the development of renewable energy in Australia and partner with leading developers and contractors. Being a local manufacturer, they are able to provide on-ground support

within 24 hours. The company have a dedicated team of people for field operations and support services with specialist equipment to respond to the full range of transformer site works. WTC's manufacturing facilities also provide them with the ability to offer factory refurbishments in Australia, including vapour phase dry outs.

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