

# Keppel Prince Engineering

## Doubles Wind Tower Welding Capacity

Success Story



### »» CHALLENGE

- Increase productivity to keep up with demand in the rapidly expanding renewable energy infrastructure industry
- Reduce the reliance on trade-qualified labor
- Minimize downtime and supply issues
- Cement Keppel Prince Engineering as a leader in sustainable infrastructure engineering solutions



David Mills, Production Supervisor and Wayne Johnston, Operations Manager at Keppel Prince's Darts Road Workshop in Portland.

### »» SOLUTIONS

- Install six Power Wave® AC/DC 1000® machines using L-61® Wire & 960 Flux
- Further upgrade with three additional Power Wave® AC/DC 1000® power sources

### »» RESULTS

- More than doubled sub arc welding capacity and provided an overall increase in productivity
- Increased production to two wind farm towers per week with a further increase to three towers with the further upgrade
- Reduced trade-qualified labor requirements ensuring human resources available to cope with the demand
- Ensured consistent quality
- Reduced electricity consumption

While Australian company Keppel Prince Engineering has definitely been in the right place at the right time to capitalize on the growth of renewable energy infrastructure, the purchase of six Power Wave® AC/DC 1000® machines has enabled the company to maintain and grow their competitive advantage. With a major upgrade of their facilities just completed, including three more Power Wave® AC/DC 1000® machines, Keppel Prince in the tiny community of Portland, Victoria, has gone from strong to stronger.

Keppel Prince Engineering was first set up in Portland in 1979 – just half a dozen guys with welding expertise servicing the local smelter. With a

population of just over 10,000 people, the town is situated on the picturesque South-west Victoria coast, located just above the 40 degree south latitude known as the “roaring 40’s” – an ideal location for the production of renewable energy from wind.

It has now grown to a business employing about 500 people, in part due to a massive opportunity that developed with a wind farm project being implemented just a few kilometers down the road. Keppel Prince won the contract to fabricate fourteen of the wind towers.

“We were at the right place at the right time. We did a good job and the orders just kept coming,” said David Mills, Production Supervisor. Since that time, the company has worked on towers for many wind farm projects in Australia such as Challicum Hills, Yambuk, Starfish Hills and even further afield such as the Te Apiti project in New Zealand.

It was vital that Keppel Prince upgrade their equipment to increase productivity to keep up with the demand. “We did have a bit of a hodge podge of equipment and all single wire.”

**“We talked to Lincoln Electric because they have the best sub arc gear and we made a quantum leap in our technology by installing the six Power Wave® AC/DC 1000® machines eighteen months ago.”**

David Mills, Keppel Prince Engineering

The tandem machines not only allowed the company to more than double the welding capacity, the organization was able to achieve even greater quality consistency in the 100% full penetration sub arc welding processes.

“With these machines, the ability to set welding parameters and lock in procedures saves a lot of time while the Waveform Control Technology® minimizes welding issues like arc blow,” said David.

“These factors all ensure consistently high quality. These towers need to be able to withstand an amazing amount of stress and every weld is ultrasonic weld tested. Quality fabrication is absolutely essential.”

The implementation of the tandem process enabled production to increase to two of the massive towers, each ranging between 65-80 meters in length with a weight of around 150 tons, per week. With Keppel Prince Engineering’s multi-million dollar upgrade of their facilities, including the purchase of three additional Power Wave® AC/DC 1000® power sources, rotators and manipulators as well as extending the shed by 60 meters, they will be increasing production to three towers per week.

**“As well as easily paying for themselves, another key factor is that we do not need to employ highly skilled welding professionals.”**

“These machines have significantly reduced the trade-qualified skill requirement, which was vital if we were going to keep up with demand. It is easy for operators – just pressing a button.”

Keppel Prince’s location presents other challenges as well. “With any manufacturing business machine reliability is a major factor, but it is especially important in a location like this,” said David Mills.

“Being in Portland gave us the leg up into the renewable energy industry but because we are in a relatively remote location you cannot afford to have a lot of

issues with your machines.”

“The Power Wave® AC/DC 1000® has significantly reduced downtime. Our old controllers were constantly getting us into trouble – never been a problem with these new ones.”

“The service from Lincoln Electric is also impressive,” continued David. “Technical assistance is always there and if we need a part or something, it is normally here the next day. Previously we had little or no support.”

It is a similar story with consumables.

“We swapped over to Lincoln Electric wire and flux

because there are never any supply issues,” said David.

“The computer system with the Power Wave® AC/DC 1000® machines also greatly assists with inventory. You can see exactly how much wire has been used. It is pretty intuitive to program and you can see exactly what has happened in a shift.”

“Being able to switch polarity also saves some time. It is not something we do constantly, but it saves about an hour of mucking around time every time we switch,” said David.

Keppel Prince Engineering, with the assistance of the Power Wave® AC/DC 1000®, has effectively positioned itself as a leader in renewable energy infrastructure. “It didn’t hurt that these inverter-based machines substantially reduce electricity consumption compared to our old machines – another positive in engineering sustainable energy solutions.” ■



Keppel Prince more than doubled their sub arc welding capacity and increased overall productivity with the Power Wave® equipment platform.



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