

Schaeffler Global Technology Solutions

Wind Power

Condition Monitoring with FAG WiPro on Wind Farms in Australia

The client is a major player in the renewable energy market in Australia with hydro and wind power sites across Australia and the world. In 2006, the company generated 198 MW of hydro energy with the objective to reach over 500 MW within five years. Wind power generation amounts to 103 MW at present. Whilst the target is 300 MW by end of 2008, potential wind energy generation amounts to 800 MW.

Challenge for Schaeffler

At one of their wind farms, the customer was experiencing repeated failures, among others on the bearings of the generators. To prevent unplanned shutdowns and costly secondary damage, the client decided to test the FAG WiPro system and service of Schaeffler Australia.

Schaeffler Solution

To convince the client of the capabilities of the FAG WiPro system, two demonstration units were installed in two selected towers – Tower 1 with a potentially defective gearbox and Tower 9 with a brand new gearbox. A four-month trial period was agreed with the commitment to purchasing 14 units if the demonstration proved successful. GSM modem communications were used to send data directly to the Schaeffler Online Monitoring Centre in Adelaide. In Tower 9, a faulty generator bearing was detected immediately. Schaeffler supplied a replacement bearing and, during a scheduled shutdown, installed it with minimal cost and inconvenience to the customer.



Technical Information about the Plant

Windfarm 1:

Completed 2001

Generators:

14 x AN Bonus 1,3 MW

Total capacity:

18,2 MW

Windfarm 2:

Completed 2003

Generators:

35 x NEG Micon 1,5 MW

Total capacity:

52,5 MW

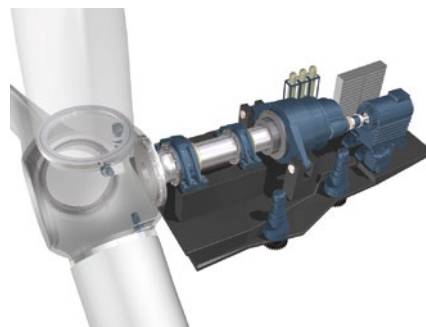




Gearbox



Online monitoring system FAG WiPro



Interior view wind energy plant

Customer Benefit

Further monitoring is revealing several faults within the existing farms. Their early detection prevents time-consuming and costly failures, secondary damage and loss of production. Downtime can be kept to non or low production days of light wind.

What's special

The customer was convinced by the success of the project and the quality of service provided by Schaeffler. Not only did the customer order 14 units for the site in question but additionally 35 units for another site. Moreover, the excellent work by Schaeffler in Sydney has led to ongoing sales of Schaeffler bearings, lubricators and grease to the client. This solution can be transferred to other wind farms as well as mining and manufacturing industries, ski lifts and other slow moving equipment.

Technical Information about the Solution

Monitoring System:

FAG WiPro: 49 units

Monitored units:

- Planet bearings in gearbox
- Generator bearing