



## Kicking off a **service partnership** with flying colours

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CUSTOMER

Major wind generator OEM

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LOCATION

Australia

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INDUSTRY

Renewables

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KEY SERVICES

1. Generator refurbishment

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2. Balancing

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3. Wind turbine repairs

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4. Repair and overhaul services

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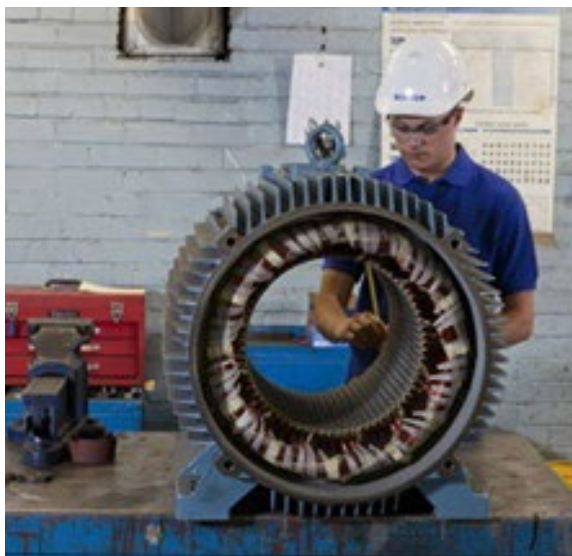


## THE CHALLENGE

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# Finding a **trusted local service** partner

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One of the world's largest wind turbine original equipment manufacturers (OEMs) needed a technically capable and trusted partner to repair and refurbish its wind generators, to support customers operating massive wind farms across Australia. With no specialized expertise and repair facilities in the country, it previously had to send assets to Europe for servicing. This caused long lead times and had the potential for wind farm operators to be penalized for failing to deliver on ambitious availability targets. Thus, the OEM was looking for a local service provider with expertise in generator repairs and testing, including the ability to complete an overspeed test. Its required capabilities included:

- Mechanical and electrical repairs
- Full rewinds
- Specialist welding
- Electrical testing
- At-speed balancing



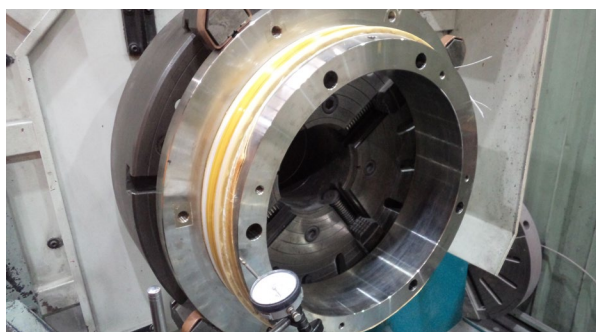


# Enhancing generator reliability and service life

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- To meet the OEM's requirements, the Sulzer team needed to not only pass the qualification procedure, but also carry out repairs and a generator overhaul.
- This included the use of laser cladding for metal repairs instead of conventional metal spraying. This ensured a smaller heat affected zone, as well as improved durability and strength.
- The Sulzer team in Sydney took a three-stage approach to balancing the rotor, enabling them to surpass OEM expectations.
- A key demonstration of Sulzer's capabilities was an overspeed test on the overhauled generator. During this, the variable frequency drive (VFD) controlled the rotor speed with a maximum frequency of 75 Hz, as required by the OEM.
- The team took vibration data before and after the overspeed test, with a target of 1.5 mm/s broadband RMS. Tests showed that the overhauled machine not only met this target, but produced better results than most units sourced straight from the factory.
- The no-load testing procedures included remote monitoring and control for:
  - Safety stops
  - Vibration data
  - Bearing and winding temperatures
  - Speed
- Sulzer's local facilities and expertise in generator repairs passed the OEM's stringent acceptance criteria qualifying it to provide local support.



# In-country support slashes repair times

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## CUSTOMER BENEFITS

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Sulzer has enabled the generator OEM to provide a local repair service for its products, reducing costs for customers and improving sustainability.

Having a local, trusted partner to repair its generators avoids the need to ship these machines from Australia to Europe, which is time-consuming and costly. The OEM can offer a much more competitive service for its customers and significantly reduce the carbon footprint of any repairs.

The refurbished generators are expected to have the same service life as a new asset, 20-25 years.



## PROJECT KEY FACTS

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### GENERATOR LIFE-EXTENSION

>20 years

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### OVERSPEED TESTING REQUIREMENTS

2'236 rpm

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### GENERATOR RATING

3 MW

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### Customer quote

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*I would like to say "Thank You" to the whole Sulzer team that was engaged in this qualification. It was a long process where both Sulzer and our own teams worked together to ensure compliance with our stringent requirements. This is the first generator model repair process that has been formally qualified after successfully passing all routine testing. I appreciate your hard work, patience and commitment to meet customer requirements!*

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**Senior Supplier Quality Engineer**  
Onshore Wind Turbine OEM

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