MERUS POWER

Active Harmonic Filter

Integration of renewable energy into the electricity grid and compliance with grid requirements in a large South African wind farm

In the first half of 2021, a power quality improvement system consisting of Merus™ A2 Active Filters was installed at the Jeffreys Bay wind farm on the east coast of South Africa to reduce harmonic disturbances caused by wind farm power generation and to help meet grid requirements. The delivered system is one of the largest in the world.

Challenge

In South Africa, as in the rest of the world, connection to the national electricity grid requires a renewable energy power plant to comply with regulations set by energy regulators. Without the approval of the regulatory authorities, the power plant will not be able to integrate the renewable energy it produces into the electricity grid.

Solution

Merus Power's local partner, RWW Engineering, supplied and installed a 2700A (400 V) Merus™ A2 Active Filter assembly at Jeffreys Bay, which enables the wind farm to reduce harmonic distortion and help it meet grid requirements for South Africa's renewable energy power plants.

Merus™ A2 Active Filter is a scalable solution to power quality problems designed to reduce system electrical losses and noise. The filter offers significantly more variety of functions and benefits than the standard filters on the market.

Result

Measurements made after installation showed almost no harmonic distortions or other power quality problems. The large 132 MW wind farm with sixty 2.3 MW turbines achieved full grid code compliance.

The Jeffreys Bay wind farm's Merus™ A2 Active Filter system is controlled via touch screen. The system does not need to be switched off or isolated to make any control changes, and the automatic control reacts in real-time to any changes to the wind farm or mains. The remote monitoring equipment enables system troubleshooting and control from Merus Power's headquarters.

"Merus Power's 2700A Merus™ Active Harmonic Filter has been installed at the Jeffreys Bay Wind Facility in 2021 by RWW Engineering and all required utility harmonic limits have been met."

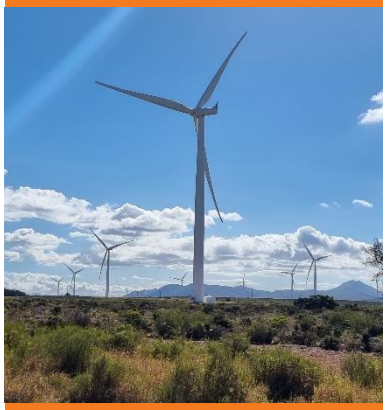
Kyle Lass – RWW Engineering

Application:
Wind farm

Location:
Jeffreys Bay, South Africa

Power quality issues:
- Harmonic distortions

Merus™ Solution:
- Merus™ A-series Active Harmonic Filters



Customer Benefits:

- Compliance with regulations and access to national electricity grid

Merus Power Plc

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