

Wind Farm Operator Reaps Results and ROI with Wind Turbine Retrofit Solution

RESULTS

- Has maintained an availability close to 100% since the upgrade
- Commissioned in only six hours



APPLICATION

Wind turbine retrofit of a decommissioned Vestas V44 turbine

CUSTOMER

US-based wind farm operator

CHALLENGE

A US-based renewable energy provider purchased a decommissioned Vestas V44 turbine that had been sitting unused for two years following several performance issues, including multiple outages and low availability.

Initially, the wind farm operator attempted to repair the poorly performing wind turbine. The company rebuilt the hydraulics, pitch system and brakes; adjusted the original control system; and also performed smaller tasks such as changing fluids, rewiring and cleaning the turbine. Despite these efforts, there were still issues with the existing wind turbine controller, including:

- Difficulties acquiring spare parts
- Random controller faults
- Controller 'overload'
- No remote connection
- No feasible repair options
- Issues with a faulty rotor current control unit

It was clear another course of action was required. The company turned to a control retrofit solution.

"The solution gives us opportunities. With the retrofit in place, we can accomplish so much more in the future."

-Wind farm manager

SOLUTION

The energy provider selected an Ovation™ WP3500 controller solution from Emerson. The solution uses the latest software and technology innovations and included a service app tool designed specifically to speed up the maintenance work tasks for service personnel. The solution enabled the energy provider to override the faulty rotor current control unit and increase power, while making all unit data available through Ovation™ Green SCADA software.

Commissioning took six hours—much shorter than what is typically required—and was conducted by the customer's engineers with online and phone support from Emerson wind experts. The wind farm operator noted "great documentation and great support all the way through" from Emerson.

After retrofitting the V44, the turbine performed at nearly 100 percent availability. The service app was used for periodic maintenance tasks and received high grades from the service team for its functionality and high user-friendliness.

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