

Retrofitting a Danish Turbine Family

A Retrofit solution from Mita-Teknik meant that a before troublesome turbine is now the site's top-performer.

Wind Turbine Retrofit - V44

On the mainland of Denmark lives wind park owner Mr. Henry Kuhr. Mr. Kuhr has always been dedicated to alternative energy and besides owning several turbines, he is also chairman of the board of a biomass power plant project.

Mr. Kuhr wind park consists of several Vestas, V44-600 kW turbines originally installed in 1996 and 1997, which have been running smoothly for many years providing green energy.

After many years of continuous operation, the turbines needed more and more service and care. The electrical system in particular was malfunctioning and became very expensive to service.

"I had a huge problem with one of my turbines underperforming and it was very difficult to get hold of spare parts and to supervise the operation. The performance went down and costs went up, so it was only natural that I looked for ways to improve performance." Mr. Kuhr says.

The Decision

Due to long experience in the market, Mr. Kuhr decided to retrofit one of his turbines with the latest Mita-Teknik WP4100 MK II control and supervision system. The complete control system was changed including:

- › Main Controls
- › Grid Connection System
- › Control Software
- › Condition Monitoring
- › Gateway SCADA System

Certified Solutions

Working closely together with the certification bodies in measuring and inspecting the turbine during the project, the retrofit solution was fully certified in May 2012.

Outstanding Results

After the retrofit by Mita-Teknik, the turbine is now one of best performers on site. Mr. Kuhr has total overview of production, service and the state of components over the Internet.

By choosing Mita-Tekniks Retrofit Solution the turbine now produces more power, more efficiently and with greater control. Mr. Kuhr has regained control and is assured support, spare parts and most importantly he has secured his financial stability in the future.

"I am seriously considering upgrading my other turbines with the Mita-Teknik Retrofit Solution before it is too late!" Mr. Kuhr says.



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The Vestas Family

The V39-500KW, V42/V44-600 KW and the V47-660KW are a family of highly successful wind turbines manufactured by Vestas.

The turbines are upwind, 3-bladed, pitch controlled and with an active YAW system. They were installed in huge numbers during the 1990s and many of them are still in operation worldwide. Mita-Teknik has successfully retrofitted this family of turbines with new control and supervision systems.

Control and Software System

We replace the original Cotas control system with an up-to-date system that provides extensive processing power, full access to all operational data, easy service and complete remote control.

Special application software for this family of turbines has been developed, ensuring maximum performance for each type.

Many of the turbines are equipped with Optislip - a device that controls the slip inside the generator by controlling resistance electronically. This device has proven to be very expensive as a spare part, but Mita-Teknik uses the latest control strategies to bypass this unit, when it fails, without measurable changes to the loads, power quality or output.

Grid Connection System

The Grid Connection system will be replaced with our patented WP4060 Grid Connection module. Through monitoring and soft connection to the grid it protects the turbine and ensures that power quality meets utility company demands.

In areas with strict grid codes or many grid drops, the existing grid connection system can be upgraded with our LVRT solution that provides Low Voltage Ride Through and grid code compliance.

Condition Monitoring

This family of turbines are equipped with gear boxes from various manufacturers e.g. Hansen, Jake, Winergy or Valmet. These can cause stops or even breakdowns due to wear and tear over the years.

Renew, recharge and regain control of your investment with Mita-Teknik Retrofit.

By installing our condition monitoring system, existing faults and emerging faults can be identified in time. Together with surveillance of components like contactors and actuators, unplanned service can be dramatically reduced, increasing the availability of the turbine.

SCADA System and Data Availability

With the new control system on board, all operational data from the turbine is now available to the owner of the wind turbine. The turbine can easily be accessed and monitored through our Gateway SCADA system or be integrated into another supervision system without any limitations.

For more information about Retrofit, please contact our Sales department:

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