field news

Leading European wind turbine operator choses Brüel & Kjær Vibro

Brüel and Kjær Vibro have been awarded a project to monitor 142 wind turbines at Enel Green Power (EGP) in Italy. “This order is of high strategic importance to both the operator and B&K Vibro” says Peter Allpass, Business Line Manager for the wind turbine monitoring group. “EGP is a major global operator of wind turbines with a diversified portfolio of assets that require a single monitoring solution to facilitate data correlation and improve asset reliability.” Peter continues: “Solution flexibility is core to our design concept and has enabled the successful implementation of monitoring systems on numerous wind turbine parks comprising a range of turbine and component manufacturers. This project will open doors to similar opportunities with this and other customers.”

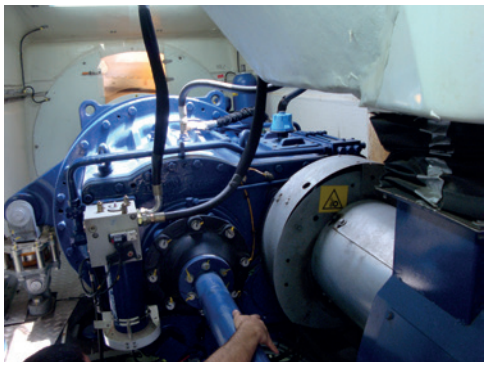

Figure 1. Site survey for installing the monitoring system hardware and sensors in the different types of wind turbines (left to right: Gamesa Type 1, Gamesa Type 2).

Extensive wind power installations

Enel Green Power (EGP) is currently a global market leader in renewable energy production, with an installed capacity of approximately 9GW in Europe and the Americas. 25,000 GW/h are generated each year from hydro, solar, wind and geothermal power sources. EGP meets the energy consumption of over 8 million families, thus avoiding 16 million tons of CO_2 emissions a year. More than half of the EPG plants are located in Italy (almost 380 plants), resulting in an installed capacity of 3,068 MW. Over the past decade wind power has seen the greatest growth at EPG, with 720 MW installed capacity in Italy spread out over a number of different wind farms.

System installation

Following a full site survey on four EGP wind parks, installation commenced on 142 wind turbines. Brüel & Kjær Vibro is training the customer to install the monitoring system themselves. The wind parks consist of the wind turbines shown in Table 1 on the next page.

There are two hardware installation packages provided:

- **Small Turbines** – This is for smaller wind turbines which are less than 1 MW, with monitoring confined to the high speed portion of the drive train.
- **Large Turbines** – This is for the larger wind turbines, where the entire drive train is monitored.

Monitoring services

Comprehensive monitoring and diagnostic services are provided to the operator from our global Surveillance and Diagnostics Service Cen-

Figure 2. Site survey for installing the monitoring system hardware and sensors in the different types of wind turbines (left to right: GE 1.5 S, Repower).

Wind Farm Name	Turbines	Model	MW
Frosolone	45	Gamesa G52	0.85
Caltavuturo	45	Vestas V52	0.85
Sedini	43	GE SL and SLE	1.5
Trapani	9	Repower MM92	2.05
Total	142		159.45

Table 1. List of wind turbines to be monitored by Brüel & Kjær Vibro at EGP.

tres. This includes around-the-clock fault monitoring, fault diagnostics, root-cause analysis, alarming and maintenance recommendations.

Future perspectives

Upon EGP gaining sufficient monitoring expertise and realising the full benefits of an online condition monitoring system, if interested, the new VibroSuite platform will enable a seamless transition towards undertaking their own diagnostics. It will provide EGP with all the flexibility needed to make decisions regarding their condition monitoring strategy today without necessarily knowing what direction they will take 3 years from now.

We are very proud of being selected by Enel Green Power for monitoring these wind turbines and are looking forward to providing them with our high quality diagnostic service, lead time to maintenance and increased uptime for the wind turbines in this project and future ones. The possibility also exists to integrate their hydroelectric power station monitoring with our hydro monitoring solution.

Acknowledgement

We would like to thank Tonino for his contribution in making this article. ■

Tonino Parente
Hydro, Wind and Solar Operation & Maintenance group in Italy
Enel Green Power