Vestas
Condition Monitoring Solution

Integrated continuous turbine monitoring and service recommendations for optimal wind park operation

Benefits of Vestas CMS:

- Minimised turbine downtime due to timely planning of maintenance needs.
- Improved efficiencies in maintenance logistics .
- Risk mitigation of major equipment damages.

The Vestas Condition Monitoring Solution (CMS) includes supervision of turbine components, data processing and input for incident response coordination to optimise the operation of wind parks. Advanced sensors continuously monitor power train, yaw and pitch systems, enabling proactive detection of service needs.

Predictive maintenance

Vestas CMS can identify service needs up to 6 months in advance. Early detection means component inspection, spare parts ordering and repair works can be planned with more flexibility, taking advantage of climatic conditions and equipment availability. This minimises turbine downtime and facilitates efficiencies in service logistics. Predictive maintenance enables faster reaction to component failure, mitigating the risk of major equipment damages.

Wind. It means the world to us.™

Availability of Vestas CMS:

Vestas CMS is available both for new and after-sales installation for the following turbines:

V52-850 kW®
V82-1.65 MW®
V80-2.0 MW®
V90-2.0 MW™
V100-2.0 MW®
V110-2.0 MW®
V120-2.2 MW™
V90-3.0 MW®
V105-3.45 MW™
V112-3.45 MW®
V117-3.45 MW®
V126-3.45 MW®
V136-3.45 MW®
V117-4.2 MW™
V136-4.2 MW™
V150-4.2 MW™
V150-5.0 MW™
V162-6.2 MW™
V162-6.8 MW™

*The number and position of the sensors can vary per turbine type. Vestas CMS technology described refers to the latest solution configuration, applicable for Vestas EnVentus turbines and some Vestas 4 MW platform turbines.

Full solution integration

Vestas CMS is designed to smoothly transfer information to the VestasOnline digital applications and work in coordination with Vestas Services, facilitating a simple turbine condition overview and timely decision making. The CMS sensors continuously monitor the turbine condition and the CMS data transfer system sends the information to Vestas Remote Operations Centre (ROC). Vestas ROC analyses the condition data and generates monthly status reports and alarm reports when a failure is identified, recommending mitigation actions. Vestas Service Centre is prepared to respond on alarm reports providing an effective solution. Both monthly and alarm reports are available through VestasOnline.

Accurate and reliable failure detection

Vestas CMS technology comprises one oil wear debris and seven vibration sensors installed on the gearbox, the main bearing, the generator, the yaw and the pitch system*. The information collected by these sensors allows Vestas ROC expert technical teams to identify more than 20 different failure modes, unique to the turbine type. This level of detail on the turbine incidents maximises the precision of decision making and facilitates a more optimal maintenance planning. Accuracy in the identification of issues is enhanced through turbine-specific adjustment of condition levels and the implementation of advanced models for failure detection. Vestas CMS is certified by DNV-GL and has been proven in more the 18,000 Vestas turbines installed worldwide (as of 31 December 2019).

Customisable incident response

Vestas CMS offers a large suite of standard services of real time turbine monitoring through the Vestas ROC. These include 24/7 remote monitoring and failure notification, automated reporting, remote resets and serious incident emergency response. Additional advanced Vestas ROC services such as customised reporting frequency and alarm protocol, software uploads, substation monitoring and switching, power control options and voltage set points are available as an option.

For more information

Vestas ROC offers market specific remote monitoring and control solutions for the largest wind turbine brands. For more information contact your local Vestas Sales and Service office.

Vestas Wind Systems A/S
Hedeager 42 . 8200 Aarhus N . Danmark
Tlf: +45 9730 0000 . Fax: +45 9730 0001
vestas@vestas.com . vestas.com

03/2020 – EN

Wind. It means the world to us.™