ONEPROD KITE

Unrivalled diagnostic capabilities for wind turbines !

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Brand of ACOEM

ONEPROD KITE Long live the turbine!

Wind turbines have been designed to last from 20 to 25 years. But as many operators have discovered the actual lifespan is more likely ranging from 10 to 15 years. This under-performance is mainly due to the premature wear and fatigue of components. Moreover, the related maintenance costs tend to be much higher than expected after the warranty period, thereby altering the original return on investment calculation made by the operators.

Good news, now there is a solution to recapture the promised ROI operators originally expected: ONEPROD KITE

By monitoring a wind turbine with ONEPROD KITE:

- Faults can be detected months before any action has to be carried out.
- Production uptime can be increased, thanks to scheduled and targeted maintenance
- Operating lifetime of the turbine can be extended by preventing catastrophic and costly damages.

The accuracy and the diagnostic capabilities of the ONEPROD KITE also allows for maintenance process optimization with:

- Better spare parts management
- Pooling of replacement operations
- Removing systematic maintenance controls and their related costs

"From 2010, we never faced any unexpected failure"
R.Stein, Reliability Expert, ENGIE (ex GDF Suez)

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ONEPROD KITE
Designed for wind turbines

Easy installation

ONEPROD KITE can be installed in the nacelle without any additional cabinetry. Its compact size makes it very convenient to place. Providing easy DIN rail mounting and visual indications, the installation can be done quickly and reliably. ONEPROD KITE also can interface with any PLC to collect the process data, saving costs on additional instrumentation.
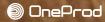
Reliable

Unlike other industries, wind turbines are not easily accessible whenever you want. Therefore wind turbines need reliable monitoring systems that can run autonomously for a long term service. ONEPROD KITE has been designed specifically for wind turbines. Dustproof and Waterproof to IP51 grade, fan-less cooling system, resistant to lightning strikes, and embedded storage without a conventional spinning hard-drive: KITE is designed for extended, reliable performance!

- **12 Monitoring Channels to monitor the drivetrain, structure & nacelle.**
- **Withstands the wind turbine environment**
- **Easy Cabinet-free installation: DIN Rail mounting**
- **Better diagnostic performances with synchronous acquisition on all channels**
- **Extended measurement storage capabilities in case of communication loss**

ONEPROD, THE BEST ADVICE

With more than 30 years of experience in condition monitoring, ONEPROD offers turnkey solutions for the reliability of wind turbines: Installation, commissioning, training and analysis can be provided worldwide to support operators in the deployment of their condition monitoring projects. As an independent provider of condition monitoring solutions, ONEPROD gives you unbiased recommendations on the maintenance of the turbine's main components.

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...with ONEPROD NEST software
Unrivalled diagnostic capabilities

A proven monitoring methodology

Part of the diagnosis process is to identify and detect any mechanical abnormality and which component generated it. The continuous change of operating conditions, however, creates a real nightmare for the analyst. Most systems just acquire as much data they can and leave the responsibility to the expert to rummage through an endless amount of data and indicators.

Scanning in real-time the operating status of the machine, KITE's built-in intelligence allows catching the best data for diagnostic purposes. Irrelevant information measured during changing conditions can automatically be filtered out and eliminated. All captured data is tagged with extreme precision, allowing retention of only the most relevant information. The wind turbines' health status can be collected with a very high accuracy relying on just a few key targeted indicators.

Defect Detection Grid (2DG) as presented to the expert in ONEPROD NEST Analyst software

Wind turbines are usually monitored under narrow conditions, typically at 30% and 80% load. The KITE is the only system with no limits to the number of operating conditions managed. In addition to standard monitoring, it is possible to track yaw movements or structural / nacelle movements for troubleshooting purposes.

Accurate diagnosis of low speed parts with the time domain analysis

Classical techniques have reached their limits for wind turbines analysis and especially low speed parts monitoring, mainly for 2 reasons:
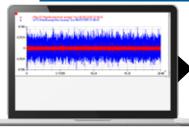
- To be performed in a reliable way, frequency domain analysis must be done in strictly steady speed conditions. The quick variation of speed and load of the wind turbine cannot be managed correctly as the acquisition time required to monitor low speed parts is important (20 seconds typical with state-of-the-art best practices)
- Low energy phenomenon resulting from shocks on low speed parts can hardly be detected

To counter these weaknesses, ONEPROD KITE provides indicators automatically processed in the time domain, such as the smart ONEPROD Shock Finder™ Algorithm (SFI), or band-kurtosis providing smooth alarming.

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The Shock Finder™ is reliable even in unstable conditions and allows for early fault detection:

Six to ten months typically before any action has to be carried out on the low speed parts of the turbine.

Damage confirmed on the main bearing

Monitoring of a wind turbine using ONEPROD Shock Finder™

*Main bearing signal measurement
Shocks (in red) are buried in the raw signal (in blue)*

Automatic shock filtering

Easy-to-understand results

ONEPROD NEST Supervision: Assistance to decision making

Automatic feedback of machine condition is not enough for making the right decision.

The ONEPROD NEST Supervision module offers an innovative, concrete solution for handling this critical economic issue by giving decision makers visual, easy-to-understand access to the expert advice. The latest diagnostics and maintenance recommendations are permanently available. Multiple fleets' health status is instantly accessible from anywhere worldwide, even for the monitoring of remote and distant windfarms.

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ACOEM

Smart monitoring, diagnosis & solutions

In today's complex and increasingly fast-moving world, it is essential to keep risks under control. ACOEM helps customers in the industrial, environmental and defence sectors make the right decisions and take the right actions:

- to ensure the productivity and reliability of industrial machines
- to prevent noise and vibration pollution
- to protect personnel, sites and vehicles in military theaters of operation
- to contribute to the development of effective, robust & noiseless products

All around the world, ACOEM's 450 employees are at the forefront of innovation in monitoring, maintenance and engineering through 01dB, ONEPROD, FIXTURLASER, MEAX and METRAVIB.

For more information, visit our website at acoemgroup.com

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