Predictable Profitability

Condition Monitoring Systems for Wind Turbines

energy.industry.maritime.

From ROI to Profitability

The difference is in the data

Harsh environmental conditions, complex installations, massive dimensions: offshore projects pose major challenges to turbine manufacturers and operators alike. When it comes to competition between wind and other energy sources, cost reduction and minimal downtime play the most critical role.

A well-coordinated monitoring architecture, combined with systematic data evaluation, guarantees the precise recording of relevant state variables. Bachmann's holistic approach supports the design of an optimal, customized CMS architecture that promotes lifecycle extension of the entire plant.

CONTINUOUS MONITORING – PREDICTIVE MAINTENANCE

Lifecycle extension
Turbines operate safely for longer based on knowledge of the actual condition of machinery and infrastructure.

Maximum ROI
Planned predictive maintenance avoids machine failures, extending power feed to the grid.

Optimal production
Immediately utilize site data and knowledge from comparable turbines to boost productivity.

Lower maintenance costs
Decrease parts inventory and reduce costs of recurrent inspection and testing.

Fact-based decision making
Easy access to relevant data according to the required perspective (eg. service, investor) from any location, at any time.

Security concept
Out-of-the-box security.

1,200,000
daily trend data

3,000
valid notifications per day

6 %
failure rate reduction
after two years

> € 3 million
savings per year

> 10 GW
onshore and offshore wind
turbines served

> 95 %
detection rate across the
entire drivetrain

Experience × Artificial Intelligence

*Experience based on the installation of more than 120,000 turbines.
Decades of monitoring experience with over 9,000 wind energy projects
worldwide. Maximum-availability systems. Fundamental research
and Artificial Intelligence: Bachmann electronic, global market leader
in wind turbine automation, is building a new era in Condition
Monitoring for onshore and offshore wind.*

Data is good. Knowledge is better.

Comprehensive monitoring – designed and delivered!

Advanced hardware, professional analytics, Artificial Intelligence, on-site installation and measurement support, and certified remote monitoring services. Bachmann provides a comprehensive, knowledge-based Health Monitoring package for the proactive management of maintenance measures. Holistic monitoring concepts with extensive forecasting are absolutely critical for reliable maintenance planning, especially when it comes to offshore wind turbines. This is the only effective way to protect high investments and profitably operate plants in the long term.

Integrated intelligence

Bachmann combines our Condition Monitoring subsystems into powerful, centralized automation hardware. This removes the need for interfaces and significantly reduces complexity. Notifications and incidents are clearly matched and easier to evaluate. Operating data from identical turbines in the same wind farm can be interlinked and any potential power reserves from individual turbine sites identified. Manufacturers get to know their own turbines better and can optimize future generations.

Consolidated knowledge

With algorithms based on years of research, WebLog software delivers unprecedented insights into plant-related data. It detects the smallest anomalies in components, machines, turbine structures, and plant and building structures at an early stage. This allows the identification of unbalance, for example, or the estimation of remaining service life of the turbine rotor blades, without any downtime or production loss. WebLog logs damage symptoms, records all maintenance carried out on turbines, and recommends necessary maintenance work.

Clear overview

On-site operations at offshore platforms are an expensive undertaking. WebLog provides operators with comprehensible and clearly assignable alarms, minimizing the need for on-site visits for detailed problem-solving. The integrated ticket system tracks all necessary maintenance work in detail. It links together past tickets, including relevant communications, and enables an effective predictive maintenance strategy.

Comprehensive data protection

Bachmann works closely with our customers' IT infrastructure providers. Extensive firewall options, VPN access to the plant network and other security measures provide optimal protection for data traffic. Complete data autonomy is maintained at all times.

Experienced sparring partner

When it comes to wind power, we know what we're doing: Bachmann's Remote Monitoring Service team looks after

thousands of turbines around the clock, including more than 80 machine types from over 30 different manufacturers, with outputs from 0.6 to more than 8 MW.

Bachmann provides highly efficient, DNV GL-certified monitoring processes based on an accredited quality system. Comprehensively trained specialist teams produce detailed reports with sound action recommendations whenever required. Our global remote monitoring centers are fully accredited to ISO 18436-2. In response to minor anomalies, teams carry out in-depth risk analyses to safeguard ongoing operations.

New functions

With its DNV GL-certified complete CMS retrofit package, Bachmann helps operators of existing plants gain greater insight and explore entirely new possibilities. Thanks to future-proof hardware modules and flexible interfaces, each functionality can be customized and expanded into the future.

*»CMS improves profitability and helps to avoid surprises in production. We normally see complete amortization through the prevention of just one, **single** unscheduled production outage.«*

Contact us. We'll be very happy to talk to you.

MORE INFORMATION

CONTACT

Holger Fritsch
General Manager
Bachmann Monitoring

T: +49 3672 3186-0
sales.BAM@bachmann.info

bachmann.

www.bachmann.info