

Remote Monitoring Solution for BESS Energy Storage Systems in Estonia

Article Overview

Remote monitoring solutions for BESS in Estonia enable real-time system oversight, predictive maintenance, and optimized energy dispatch through AI-driven platforms and secure connectivity.

Overview of BESS Remote Monitoring

Battery Energy Storage Systems (BESS) are complex networks of batteries, inverters, and control devices that require continuous monitoring to ensure safety, efficiency, and longevity. Remote monitoring solutions allow operators to access real-time data on State of Charge (SoC), State of Health (SoH), Round-Trip Efficiency (RTE), and degradation trends, enabling proactive maintenance and operational optimization. These systems are particularly valuable in Estonia, where renewable integration and grid stability are priorities.

Key Technologies and Platforms

1. HMS Networks Solutions HMS provides Anybus network gateways and Ewon remote access solutions that enable secure connectivity across multiple protocols (CAN, BACnet, KNX, PROFIBUS, PROFINET, EtherNet/IP, Modbus). This allows centralized control, remote configuration, and data logging for predictive maintenance. Galvanic isolation and device protection ensure system reliability and safety.

2. volytica vdx sentry volytica offers advanced battery analytics and predictive maintenance tools. Their platform provides automated monitoring, smart alerts, and expert recommendations, detecting thermal anomalies and capacity imbalances at the module level. This approach has been shown to prevent failures and reduce operational costs, making it suitable for large-scale BESS deployments.

3. Mondas BESS Mondas provides AI-driven real-time monitoring for commercial and industrial battery farms. It supports manufacturer-independent monitoring, enabling operators to track multiple BESS systems on a single platform. The software detects early signs of degradation, optimizes self-consumption, and ensures compliance with warranty terms.

4. ABB eStorage OS ABB's eStorage OS integrates monitoring, protection, and energy management algorithms. It supports cloud connectivity, microgrid integration, and real-time system automation, making it suitable for hybrid renewable-BESS setups. The platform provides diagnostics, analytics, and operational intelligence for both on-premise and remote management.

5. Enery Rummu BESS Case Study In Estonia, the Rummu BESS (9 MW / 18 MWh) demonstrates a practical implementation of AI-based 24/7 monitoring and cross-market optimization. The system integrates with a 20 MW PV plant, enabling automated dispatch decisions and participation in ancillary services markets, highlighting the benefits of remote monitoring for hybrid renewable storage systems.

Benefits of Remote Monitoring

- o Predictive Maintenance: Early detection of anomalies reduces downtime and extends battery life.

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- o Operational Optimization: AI-based platforms optimize charge/discharge cycles and energy dispatch .
- o Safety and Compliance: Continuous monitoring ensures adherence to warranty and safety standards .
- o Cost Efficiency: Reduces on-site service visits and operational costs through remote diagnostics .
- o Scalability: Supports both small commercial systems and large utility-scale BESS parks .

Conclusion

For Estonia, remote monitoring solutions for BESS combine secure connectivity, AI-driven analytics, and multi-protocol integration to enhance reliability, safety, and economic performance. Platforms like HMS Networks, volytica, Mondas, ABB eStorage OS, and local implementations such as Rummu BESS provide proven frameworks for operators seeking real-time insights, predictive maintenance, and optimized energy management. These solutions are essential for integrating renewable energy, stabilizing the grid, and maximizing the value of energy storage assets.

With specialists in SCADA, condition monitoring, performance analysis, system design and more, you can trust RES to safely

With a battery energy storage system (BESS), you could pay less for electricity, make the transition to 100% renewable energy, and

The ABB eStorage OS energy management system feeds battery energy storage systems (BESS) with intelligence and is a critical

Battery Energy Storage Systems (BESSs) are critical in modernizing energy systems, addressing key challenges

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Remote condition monitoring (RCM) of battery energy storage systems (BESS) involves continuously collecting data

Battery Energy Storage Systems are key to integrate renewable energy sources in the power grid and in the



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user plant in a flexible,

BESSMEN can remotely trigger and retrieve millisecond-level waveform data from the PCS and controllers. Experts can “replay” the

Estonia utility Eesti Energi has completed the procurement for its 26.5MW/51MWh BESS

What is Battery Energy Storage System (BESS) Battery Energy Storage System (BESS) is a technology that stores electrical energy

A Battery Energy Storage System (BESS) monitoring solution is essential for overseeing and managing the performance, safety, and

Large battery storage projects in Estonia and Latvia have moved forward as the Baltic energy system prepares to

The BESS providers in this segment generally are vertically integrated battery producers or

Battery Energy Storage System (BESS) Monitoring and Integration Challenges Why does a Battery Energy Storage System (BESS)

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