



## Specification Sheet

# GEMS Storage+ Solution

Wärtsilä Energy Storage and Optimisation (ES&O)'s **GEMS Storage+ solution** empowers users to get the most out of their grid-scale energy storage systems with a rich library of included operation logics, integration with connected hardware such as safety equipment and renewable energy generation assets, and advanced asset monitoring capabilities.

## Applications

- **Frequency response** by following a frequency droop curve.
- **Frequency regulation** by following an AGC signal over SCADA or the internet.
- **Voltage response** by following a voltage droop curve.
- **Voltage regulation** by following a reactive power or power factor signal over SCADA or the internet.
- **Energy shifting** to cover **peak shaving** or **transmission deferral needs**.
- **Optional grid-forming** inverter integration for markets in which voltage source inverters are desired on the grid.  
**Optional black start** capability to ensure the continued supply of local loads with power even during grid outages.
- **Custom operations** can be designed to fit site specific needs.
- **Emergency handling** reacts to plant failures, unexpected renewable generation interruptions, or load changes to ensure grid reliability.
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## Key Advantages

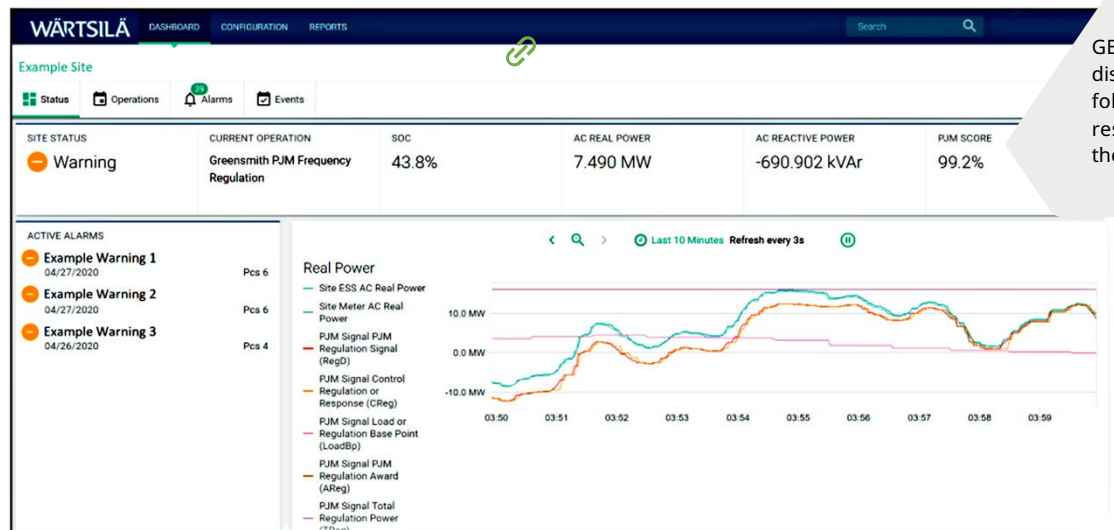
**Maximise revenue** by utilising the flexibility of the GEMS platform to stack and combine available operations.

**Transparent insights** through the use and versatility of the GEMS user interface, API, and SCADA capabilities to smartly manage and optimise various assets under a single portfolio.

**Industry-leading expertise** given Wärtsilä's experience in renewable power generation, energy storage and engines, plus control and computing technologies.

## GEMS Intelligence

GEMS products provide a variety of advanced features that make Storage+ an ideal solution for many of our customers, including **intelligent automation** through the use of the GEMS Rule Engine, which allows your system to change operations based on market, environmental, and other conditions.



## Related GEMS Products

**Wärtsilä GEMS Power Plant Controller** software for generation asset control, local operation, monitoring, protection and data collection on site installed in the **GEMS Rack**.

**Wärtsilä GEMS Grid Controller** software for microgrid control installed in the GEMS Rack for black start enabled sites.

**Wärtsilä GEMS IntelliBidder** software service for auto-bidding powered by machine learning.

**Wärtsilä GEMS Fleet Director** software for data storage, multi-plant fleet management, remote control, data analytics, and forecasting installed in the cloud.

**Wärtsilä's Quantum energy storage system** as a comprehensive battery energy storage system.

**Wärtsilä GEMS Island+ Solution** for sites that operate both in grid-tied and off-grid configurations.



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