UNLOCKING THE UK'S PATH TOWARDS NET-ZERO

Improving grid reliability and sustainability with a 100 MWh energy storage system

The Story

The UK has a world-leading target for a net zero power system by 2035—but to realise this ambition, the country must double down on energy flexibility this decade. To achieve a 100% renewable energy system, the UK will need 18 GW of battery energy storage capacity, according to modelling by Wärtsilä.

To help scale renewable energy capacity, Wärtsilä delivered a 50 MW / 100 MWh energy storage system to SSE in Salisbury, Wiltshire. It is the first of SSE's solar and battery projects to be directly connected to the grid and supports access to clean, reliable energy by balancing the intermittency of renewables.

Stabilising an increasingly renewable grid

Particularly as more centralised fossil fuel-fired power plants are shut down across the UK to reduce greenhouse gas emissions, energy storage is critical to maintaining frequency and stabilising the grid. The Salisbury energy storage system will provide grid services such as wholesale market trading, which will help balance renewable energy generation throughout the day.

The facility will utilise Wärtsilä's **GridSolv Quantum**, a fully integrated, modular, and compact energy storage system, as well as Wärtsilä's sophisticated energy management software, the **GEMS Digital Energy Platform**.

"Battery storage has a key role to play in helping the UK to decarbonise by ensuring we make the most of the increasing levels of renewable energy coming onto the Grid. SSE is investing £25bn over this decade (circa £7m a day) in low carbon infrastructure of this kind and we are delighted to be working alongside Wärtsilä to provide the balancing and flexibility services we need to help the UK get to net zero."

Richard Cave-Bigley,
Director of Solar and Battery at SSE

THE CHALLENGE	WÄRTSILÄ'S SOLUTION	BENEFIT
• Maintain frequency on the UK grid as fossil fuels come offline • Facilitate wholesale market trading to balance renewable energy generation • Assist sustainability goals	• Wärtsilä's GridSolv Quantum energy storage system is the most innovative, safe, and cost-effective offering on the market today • Wärtsilä's GEMS Digital Energy Platform allows SSE to remotely monitor, operate, identify, and diagnose equipment with unrivalled safety, reliability, and flexibility	• Add grid stability with instantaneous frequency regulation services • Enable more British energy consumers to access secure, low-cost renewable energy • Improve sustainability of SSE's energy services and add more renewable energy on the grid

Supporting sustainability goals

Wärtsilä's partnership with low carbon energy company SSE, one of the UK's largest utilities, marks an important step in the UK's path towards net zero. SSE has pledged to increase its renewable energy output fivefold and cut carbon intensity by 80% by 2030. As SSE's first grid-scale storage facility, the Salisbury battery project is an essential steppingstone for achieving its decarbonisation targets.

Fostering collaborative customer relationships

While this is the first partnership between Wärtsilä and SSE for a standalone energy storage system, the two companies have worked closely to scale up the UK's power system flexibility over the past decade. Last year, Wärtsilä delivered an 8 MW / 6 MWh energy storage system to Scottish and Southern Electricity Networks Distribution, the distribution subsidiary of SSE plc, at the Lerwick Power Station on the Shetland Islands to provide grid balancing services and reserve power.

Advancing the track record in the UK

Wärtsilä has a longstanding history supporting renewable energy integration and decarbonisation across the UK. Wärtsilä is currently working with a customer to build essential, transmission-connected storage capacity for a national network of rapid electric vehicle charging infrastructure. Wärtsilä is providing two 50 MW / 50 MWh and two 50 MW / 100 MWh energy storage systems along with grid balancing services to ensure the reliability of electricity generation and supply across the National Grid.

SITE SIZE:
50 MW / 100 MWh

SITE LOCATION:
Salisbury, Wiltshire

APPLICATIONS:
Storage+

SCOPE OF SERVICES:
Engineering, procurement, and construction (EPC)

DELIVERY:
2022

RELATED RESOURCES

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