



ACCELERATING A CLEAN ELECTRIC FUTURE WITH ENERGY STORAGE

Adding flexibility to the UK National Grid with Pivot Power

In June 2019, the United Kingdom (UK) committed to reach net zero emissions by 2050, going beyond what was required by European Union-level regulations. As the first G7 country to make such an ambitious goal, the UK looked to the energy industry's leaders to ensure success.

Storage-backed EV infrastructure

UK-based Pivot Power, part of EDF renewables, is helping Britain achieve their net zero target by 2050. Pivot Power is building essential, transmission-connected storage capacity for its Energy Superhub programme, a national network of grid-scale batteries and high volume power infrastructure for electric vehicle (EV) charging. The company turned to Wärtsilä for energy storage solutions.

Pivot Power has a portfolio of up to 40 sites it is developing across the UK. Each site will be outfitted with grid-scale energy storage systems, totalling up to 2 GW of storage, and connected to the UK high-voltage transmission system. In 2019, the company selected Wärtsilä to provide two 50 MW / 50 MWh energy storage systems, backed

by Wärtsilä's GEMS Digital Energy Platform, for projects located in Oxford and Kent. Two years later, the customer made a repeat order for two more 50 MW / 100 MWh systems located in the West Midlands.

The projects mark a significant investment in battery storage and clean transportation in the UK. Not only do they provide flexible capacity to support more renewable energy, but they are combined with high volume power infrastructure for rapid EV charging.

The (smart) balancing act

Integrating storage assets into the National Grid requires sophisticated management tools to balance supply and demand from both traditional and renewable generation. Wärtsilä's energy

storage solution provides frequency regulation and grid-balancing services. Two of the energy storage systems for Pivot Power employ Wärtsilä's GridSolv Max solution, and two employ Wärtsilä's GridSolv Quantum platform.

“At Pivot Power, we are committed to accelerating the transition to a clean electric future and the adoption of electric vehicles across the UK. These Wärtsilä energy storage systems allow us to harness cutting-edge technology to future-proof our investments in a changing energy market, supporting our long-term goal to reduce the UK's carbon footprint and bring us closer to net zero.”

*Adrien Lebrun,
Engineering Director at Pivot Power*

THE CHALLENGE	WÄRTSILÄ'S SOLUTION	BENEFIT
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- Facilitate the UK's transition to net zero emissions by 2050
- Increase capacity for renewable energy assets
- Support an increase in energy demand from EVs

- Wärtsilä's GridSolv solutions: add reliability to the grid via sophisticated storage design
- Wärtsilä's GEMS energy management: monitors and controls energy deployment to optimise production and support grid reliability

- Reduce carbon footprint in the UK
- Future-proof assets under a single portfolio: the GEMS Digital Energy Platform optimises the operational value and energy performance for the system's lifecycle.
- Provide grid balancing services and reliability to the UK National Grid

CUSTOMER: Pivot Power

SITE SIZE:

2 x 50 MW / 50 MWh and
2 x 50 MW / 100 MWh

SITE LOCATIONS:

Cowley, Oxford
Kemsley, Kent
Coventry, West Midlands
Sandwell, West Midlands

APPLICATIONS: Balancing services for the UK National Grid, including:

- Frequency response
- Electricity market trading
- Reactive power and electric vehicle charging services

SCOPE OF SERVICES: Engineered equipment delivery (EEQ) with a 10-year service agreement and performance guarantees

DELIVERY: 2021-2022

The fully-integrated modular and compact energy storage systems (ESS) optimise the storage technology, while GEMS leverages artificial intelligence, forecasting and machine learning to accurately monitor grid fluctuations and manage production from various assets in order to meet demand in the UK market.

The portfolio controls are specifically designed to adapt to changes in market conditions and rate structures,

effectively future-proofing energy investments for both energy providers and regulated utilities. The result is new revenue streams and the further integration of additional energy assets.

The versatility of GEMS to optimise various assets in changing market conditions enables Pivot Power to future-proof resources under a single portfolio and benefit from multiple revenue streams.

A legacy of clean, smart, flexible power

This is not the first time Wärtsilä has delivered balancing services to the UK grid or facilitated the country's transition towards emission reduction targets. In 2018, Wärtsilä successfully commissioned two 50 MW Smart Power Generation plants for energy services company, Centrica, to generate balancing power for the National Grid. Now, with Pivot Power, Wärtsilä is providing balancing services, and developing infrastructure to provide essential capacity for rapid EV charging.

By providing necessary grid reliability, flexibility, and balancing capacity across the National Grid, Wärtsilä is facilitating decarbonisation at scale.

The UK will be able to integrate more

renewables to the grid, while optimising existing renewable generation, to both reduce emissions and provide essential electricity capacity for rapid EV charging across the country.

The next era of energy in the UK has begun.



Sandwell, West Midlands



Coventry, West Midlands

RELATED RESOURCES

[Energy Transition Talk - Pivot Power](#)

[Flexible energy solutions clear the way for renewables in the UK](#)

[When energy storage meets electric vehicles: Smart solutions for critical infrastructure challenge](#)



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