



Battery energy storage solution



Flexibility



Power density



Sustainability



30,7 MW / 62,6 MWh
mtu EnergyPack QG



168 Battery units



7 Converters



mtu EnergetIQ
EMS, Microgrid Cloud

VLISSINGEN
NETHERLANDS



EMPOWERING DUTCH GRID RELIABILITY

mtu EnergyPacks at the Core of a New Grid-Scale Energy Storage Plant

Executive summary

Rolls-Royce designed and built a facility in Vlissingen, located near the southern coast of the Netherlands, for the Dutch project developer and operator of energy storage systems, SemperPower, in 2023. In order to balance the Dutch electric power grid and enable the integration of further renewables in the energy system, SemperPower opted for the **mtu** EnergyPack QG, a battery energy storage system (BESS) complete with **mtu** EnergetIQ Plant Manager.

What

Turnkey delivery of a battery energy storage plant

Where

Vlissingen, the Netherlands

Why

Energy trading
Frequency regulation

Main benefits

- Complete solution from one supplier
- Smart system control through **mtu** EnergetIQ Plant Manager
- Flexible setup



A Rolls-Royce
solution



INTEGRATING RENEWABLE ENERGY WITH BESS

Battery Energy Storage Systems (BESS) are crucial for integrating renewable energy. Since spring 2023, a Rolls-Royce solution has been stabilizing the Dutch power grid, ensuring reliability amid growing wind and solar power generation.

Initial Situation

The Netherlands is one of the countries in Europe that is well-positioned for the utilization of renewable energy. Both wind and solar power play a crucial role in supplying power to the coastal state. Wind energy alone covers a large amount of the Netherlands' electricity demand. To maximize their utilization, SemperPower, a company based in Utrecht, established an energy storage plant in Vlissingen near the southern coast of the Netherlands.

SemperPower develops and operates energy storage projects for industrial customers and operators of wind and solar parks. "We see it as our task to accelerate the energy transition. We do this by using energy storage systems that store sustainable energy in times of surplus and release it when the market needs it," explains Dennis Schiricke, CEO of SemperPower B.V. The best solution for the park, which contributes to achieving this goal, was found in an **mtu** EnergyPack.

Solution

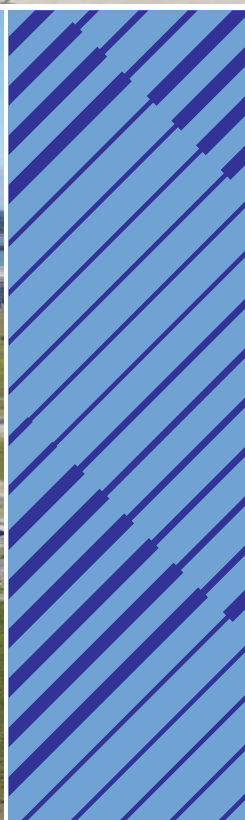
The entire battery energy storage plant was delivered by Rolls-Royce as a complete, turnkey solution, which included the whole balance of plant scope (e.g. civil works, electrical works, foundation, substation, security system, etc.). The **mtu** EnergyPack QG forms the backbone of the solution, which included the whole balance of plant scope (e.g. civil works, electrical works, foundation, substation, security system, etc.). Our flexible battery energy storage systems (BESS) serve as grid-scale solutions that can support the infra-structure of entire regions or, in the case of the Netherlands, even countries. Depending on the customer's needs an **mtu** EnergyPack QG can be flexibly scaled to any size.

The installed solution in Vlissingen has a total capacity of 63 MWh, ensured by 168 battery units. The **mtu** EnergyPack QG offers easy integration, fast installation and the highest reliability for the entire system, a prerequisite for the ideal integration of renewable energy.

GREEN POWER FOR AN ENTIRE REGION

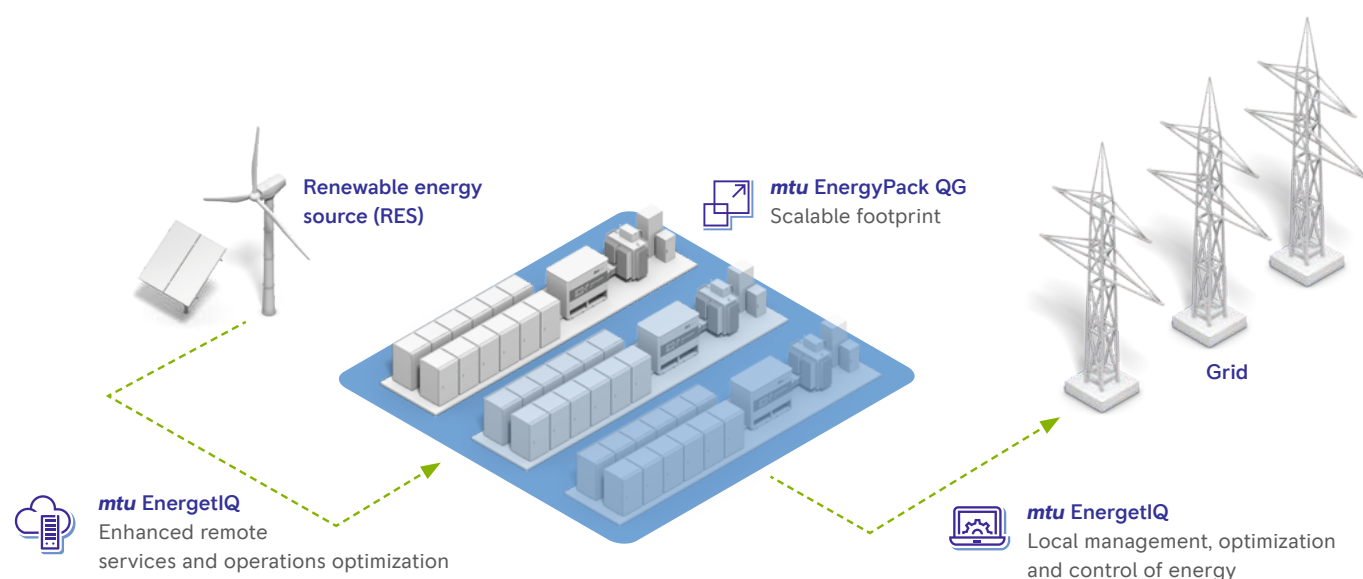
Storing renewable energy when it is abundantly available is only the first step towards a sustainable power supply. The smart control, performed by the **mtu** EnergetIQ Plant Manager, unlocks the full potential of battery energy storage systems.

At the time of commissioning, the the **mtu** EnergyPack QG system for SemperPower was the largest in the Netherlands and one of the largest in Europe. The order also included general contractor services and additional infrastructure. To ensure optimal performance and user-friendliness, the system is controlled by the **mtu** EnergetIQ control platform. This platform ensures that the 168 battery racks and the seven inverters operate in unison and seamlessly integrate with the customer's management system. Energy from wind and solar sources is stored during optimal weather conditions and released when the winds have stopped or the sun is not shining.



UNLIMITED SCALING MEETS PROJECT-SPECIFIC NEEDS

The **mtu** EnergyPack QG is a battery energy storage system designed for grid-scale applications.



A complete plant design may consist of multiple building blocks. Each block is designed for a nominal charge and discharge rating of up to 4.4 MVA. The power conversion system can be combined with either rack or container-based battery systems sized according to the desired C-Rate.

The thoroughly tested and certified batteries feature integrated control, fire suppression, cooling, and heating systems. As standalone operational units and due to their modular design, they can easily be replaced in case of failure, ensuring reliable operation with the highest availability of your batteries.

Our team of experts will help you design a system that meets your project goals and maximizes your site's potential.

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