



OPTIMISING AND DECARBONISING THE DUTCH POWER SYSTEM WITH ENERGY STORAGE TECHNOLOGY

Grid stabilisation and renewable energy integration by GIGA Storage for Eneco, a leading energy provider in the Netherlands

In 2019, the Dutch government set a goal to reduce its greenhouse gas emissions by 49% by 2030, and 95% by 2050. The Netherlands also committed to eliminating natural gas from its energy mix entirely in favour of cleaner resources. The growth of renewable energy in the Netherlands, and likewise across Europe, has not only contributed to decarbonisation targets but also created congestion on electrical networks, making energy storage a necessity for grid reliability. Recent reports indicate that the Netherlands will need between 29 and 54 GW of energy storage capacity by 2050.

From traditional to sophisticated

GIGA Storage BV is helping the Netherlands reduce greenhouse gas emissions and transition to renewable energy by developing energy storage facilities to stabilise the grid. When GIGA Storage BV was awarded a contract to build an energy storage system to be co-located with wind and solar assets at the Widnet Smart Grid in Lelystad, they turned to Wärtsilä for a fully integrated battery solution and sophisticated energy management software.

“The GIGA Buffalo battery will help stabilise the Netherlands’ electricity grid and save up to 11,000 tons of carbon dioxide emissions per year. We’re pleased to work with Wärtsilä to implement this landmark project which will help us reach our goal of deploying 3 GW of energy storage in Europe by 2030.”

Maarten Quist, Chief Operating Officer at GIGA Storage

THE CHALLENGE	WÄRTSILÄ'S SOLUTION	BENEFIT
<ul style="list-style-type: none"> Facilitate the Dutch government's goal to reduce greenhouse gas emissions by 95% by 2050 Reduce congestion on electrical networks from the growth of renewable energy Regulate energy frequency and improve reliability 	<ul style="list-style-type: none"> Wärtsilä's GridSolv Quantum integrates lithium-iron phosphate (LFP) batteries, providing enhanced safety features and modular flexibility Wärtsilä's GEMS Digital Energy Platform optimises the power system, adds reliability to the grid and improves revenues Wärtsilä's Service+ GAP solution provides maintenance with performance guarantees 	<ul style="list-style-type: none"> Save 11,000 tonnes of carbon dioxide emissions per year* Ensure sustainability of Eneco's energy services and add more renewable energy on the grid Store the equivalent of the annual energy consumption of more than 9,000 households each year <p><small>*compared to a coal plant</small></p>

Driving stability and sustainability

Wärtsilä has supplied GIGA Storage BV with a 25 MW / 48 MWh energy storage system. It is utilised by Eneco, a leading energy provider, to make the company's services more sustainable and add renewable energy on the grid. The energy storage facility also helps to optimise the power system, regulate energy frequency and reliability on the grid, and improve revenues.

As the largest energy storage system in the Netherlands to date, the GIGA Buffalo battery stores the equivalent of the annual energy consumption of more than 9,000 households each year. It is estimated to save 11,000 tonnes of carbon dioxide emissions annually (compared to a coal plant).

Assets managed smartly

The GIGA Buffalo battery employs [Wärtsilä's GridSolv Quantum](#), a fully integrated, modular, and compact energy storage system. Wärtsilä's [GEMS Digital Energy Platform](#), a smart energy management system, uses machine learning and historic and real-time data analytics to optimise the complete system.

GEMS software enables GIGA Storage BV to remotely monitor, operate, identify, and diagnose equipment with unrivaled safety, reliability, and flexibility.

Finally, the system is optimised by [Wärtsilä's Service+ GAP](#) solution, which provides comprehensive system maintenance with performance guarantees.

Continuing a lifetime legacy

Wärtsilä is helping its customers improve grid flexibility across Europe, and has a 7.5 GWh portfolio of energy storage capacity worldwide.

Wärtsilä is facilitating the growing demand for renewable energy and helping the Netherlands achieve a 100% renewable energy future. The use of Wärtsilä's energy storage technology will enable the Netherlands to reduce emissions and provide green energy options for its residents.

SITE SIZE: 25 MW / 48 MWh

SITE LOCATION:

Lelystad, Netherlands

APPLICATIONS:

Renewables integration
Grid stability

SCOPE OF SERVICES:

Engineering Equipment Delivery (EEQ) and LTSA Service+ GAP

DELIVERY: October 2022

RELATED RESOURCES

[Wärtsilä enters the Dutch market to supply the country's largest energy storage system to support grid stability](#)



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