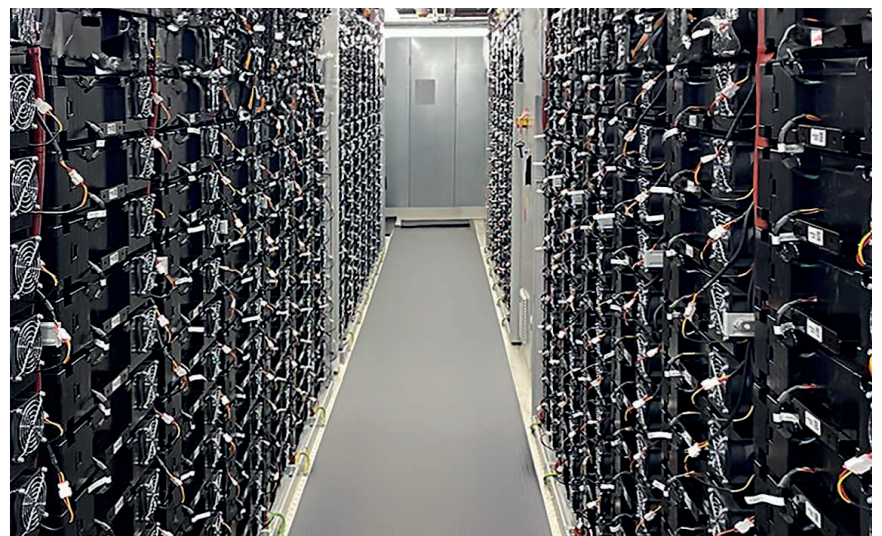


Noord Holland BESS Project

Heerhugowaard, Netherlands



Integration of a battery energy storage system with flywheels for grid Frequency Regulation services and load displacement

The Challenges



In the Netherlands, flywheels encounter significant challenges in providing frequency regulation services to the grid. Their primary limitation is the restricted energy storage capacity, allowing only short-term power supply or absorption, inadequate for prolonged frequency deviations. Additionally, flywheels require advanced control systems for effective grid integration and consistent performance.

The Dutch grid, characterised by intermittent renewable energy sources like wind and solar, demands more robust energy storage solutions. Therefore, incorporating a battery system is essential.

Batteries offer larger energy storage and can sustain longer-duration support, complementing the flywheels' quick response capabilities. This hybrid approach can enhance grid stability and ensure efficient and reliable frequency regulation services.

The Solution



Leclanché designed and delivered 10MW - 9 MWh Battery Energy Storage System (BESS)

to support flywheels in providing frequency regulation services in Noord Holland, Netherlands. This system offers substantial energy reserves, complementing the flywheels' rapid response capabilities by supplying sustained power during prolonged frequency deviations.

The integration of Leclanché's BESS with flywheel technology ensures seamless operation, enhancing grid stability and reliability. Leclanché's Energy Management System (LEMS) offers advanced monitoring and control systems that optimise the performance and facilitate the synchronisation between the two technologies.

Such a hybrid solution effectively manages fluctuating supply and demand, supporting the Netherlands' increasing reliance on renewable energy sources and ensuring efficient and reliable frequency regulation services.



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