

# New zealand energy storage for load shifting

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Saft, a subsidiary of TotalEnergies, has been awarded a major contract by Meridian Energy to construct New Zealand's first large scale grid-connected battery energy storage system (BESS). Located at Ruakaka in the country's North Island, the 100 MW BESS will improve the stability of the national grid, as intermittent renewable power generation increases in New Zealand. The BESS is the first stage of a project that will include the construction of a co-located 130 MW solar farm by Meridian Energy.

Saft is providing a fully integrated solution for the Ruakaka BESS, including supply of battery and power conversion equipment, installation, commissioning, and 20 years operational services. Scheduled to enter service in 2H24, the BESS will have storage capacity of 200 MWh to support the local grid demand for around two hours.

This North Island asset will open multiple new revenue streams for Meridian, with the ability to load shift between price periods and participate in the North Island reserve electricity market. Meridian anticipates that the BESS will deliver annual revenues of up to US\$35 million.

Meridian Energy Chief Executive, Neal Barclay, said: "As intermittent renewable generation increases in New Zealand, this BESS will help manage supply fluctuations and reduce this country's reliance on fossil fuels. We have a bold vision for Ruakaka, with a grid scale solar farm planned to further speed up our transition to a low carbon economy. The shared infrastructure provided by the BESS will significantly improve the economics of the future solar farm."

The complete BESS solution supplied by Saft will include 80 Intensium® Shift battery containers, based on lithium iron phosphate (LFP) technology with 40 inverters Freemaq PCSK GEN3, 20 medium-voltage power stations and a power management system provided by third-party suppliers. Saft will integrate this equipment with Meridian and Transpower 33kV switchgears, SCADA and power station.

Suited to energy time-shifting, peaking and capacity support applications, Intensium-Shift 3 MWh containers are scalable building blocks. They can be installed in line-ups with power conversion equipment with a 50% smaller system footprint, while reducing 50% of site-related activities, allowing a faster deployment of utility scale storage plants.

Intensium-Shift containers benefit from Saft's safety concept with a unique combination of proven and tested safety devices, such as fire suppression systems or blast panels. Containers are fully populated in Saft's factories and use a modular approach, embedding batteries, thermal systems and digital control interfaces connecting to Saft's cloud-based data platform I-Sight. This end-to-end data management solution ensures real-time remote monitoring of system KPI's and enables optimised asset utilisation.



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with minimum OPEX and downtime.

Saft works in close partnership with customers, providing technical expertise and support from project inception and engineering, through implementation and commissioning to end-of-life, dismantling and recycling of containers.

The Winter 2022 issue of Energy Global hosts an array of technical articles focusing on wind, solar, energy storage, geothermal, and more. This issue also features a regional report on the Australian renewables sector.

January 12, 2023: Saft, a subsidiary of oil giant TotalEnergies, said on January 10 it had won a contract from New Zealand power firm, Meridian Energy, to build that country's first large-scale grid-connected BESS.

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