Brasilia texas energy storage

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Amidst a rising frequency of extreme weather events, increasing penetration of intermittent resources and the need for fast-responding generation in Texas, the state needs more flexible resource solutions like energy storage for grid support and energy resource optimisation.

With over 500 megawatt-hours (MWh) of capacity as a combined project, Madero and Ignacio is the largest fully-merchant and market-facing energy storage facility built to date. The facility"s multi-hour continuous dispatch capability provides the longest duration of any energy storage assets currently operating in ERCOT.

The facilities are optimised with both Eolian and W?rtsil?"s software solutions. W?rtsil?"s GEMS Digital Energy Platform is a critical aspect of the system, which monitors and controls the flow of energy, enabling these projects to provide grid support during periods of grid instability. With W?rtsil?"s Storage+ Solution, the projects will deliver key ancillary services required for grid stability, such as fast frequency response and frequency regulation. The Madero and Ignacio sites are the first systems to use GEMS to qualify for fast frequency response in the ERCOT market.

The project includes W?rtsil?"s GridSolv Quantum, a fully integrated modular and compact energy storage system that offers the lowest life cycle costs, fastest deployment times, highest quality control and maximum flexibility. GridSolv Quantum is certified to UL 9540 and 9540A by Eurofins MET Labs along with CSA, and is fitted with several safety features.

Improve grid stability in Texas after several extreme weather events with fast-ramping resources that can quicklyadjust to unforeseen conditions driven by supply or demand volatility

W?rtsil? Energy and Eolian LP have partnered on a new 200 MW grid-scale battery system. They claim that it is the largest merchant energy storage facility in the world.

Eolian LP, a portfolio company of Global Infrastructure Partners, has finished building what will purportedly be the largest merchant energy storage facility in the world. The Madero and Ignacio energy storage plants have a combined power capacity of 200 MW. The grid storage projects will participate in the retail energy power market in the Electric Reliability Council of Texas (ERCOT) grid.

Each phase of the combined storage project is greater than 250 MWh, and the combined facilities have two-hour discharge, putting the system at well over 500 MWh, a W?rtsil? Energy spokesperson told pv magazine USA. However, the spokesperson declined to provide a specific value for the total discharge of the combined system.

Eolian first contracted with battery systems supplier W?rtsil? Energy in February 2021 to procure batteries for

the large merchant power system, with construction of the project taking approximately 26 months to complete, according to the supplier. The Madero and Ignacio facilities" multi-hour continuous dispatch capability provides the longest duration of any energy storage assets operating under ERCOT, and as a combined site, the project is the world"s largest (by MWh) fully merchant, market-facing energy storage facility in the world, the supplier said.

The Texas project is the first US storage installation to make use of the Investment Tax Credit (ITC) for standalone utility-scale energy storage systems, which was introduced in the Inflation Reduction Act of 2022. The grid storage facility reacts instantaneously to sustain electricity output and keep the lights on when power generation fails or cannot respond quickly enough to rapidly changing conditions.

"Texas needs more flexible capacity solutions like energy storage for grid support and energy resource optimization," said Risto Paldanius, vice president Americas for W?rtsil? Energy. "This will help the state as it faces the natural replacement cycle of older inflexible generators and adapts to more frequent extreme weather events."

The Maderos and Ignacio projects use W?rtsil?"s smart energy management system, the GEMS Digital Energy Platform, to monitor and control the flow of energy, while providing grid support during periods of grid instability. The facilities will also deliver ancillary services required for grid stability, such as frequency response and regulation in the ERCOT grid.