ELECTRIC POWER ENGINEERS

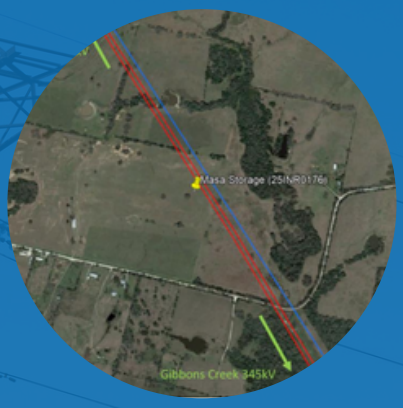
CASE STUDY

Integrating a Battery Energy Storage System to the Texan Grid

Electric Power Engineers, LLC (EPE) recently completed a comprehensive facility study for Garland Power & Light (GP&L) to integrate Savannah Oaks Solar Project, LLC's proposed +/- 251.14 MW Masa Storage Battery Energy Storage System (BESS) into the existing Limestone Plant to Gibbons Creek 345 kV line in Madison County, Texas. The study navigated intricate design, costing, and scheduling factors, promising a seamless integration by the project's expected commercial operation date in September 2025.

CHALLENGE

The Masa Storage facility, a promising BESS project by Savannah Oaks Solar Project, LLC, sought a reliable interconnection to the Texan grid. The challenge involved designing an interconnection for the facility that would be efficient, cost-effective, and in line with the Public Utility Commission of Texas (PUCT) Substantive Rule 25.195. A tight timeline, precise cost estimates, and ensuring compliance with multiple regulations made it a multifaceted challenge.



SOLUTION

EPE approached the challenge of Masa Storage's interconnection by proposing the establishment of a new substation to tap into the Limestone Plant to Gibbons Creek 345 kV line.

This new substation, designed right adjacent to the main line, would stretch just 0.02-mile. At the heart of this design was a ring-bus configuration, consisting of three 345 kV line terminals and a trio of 345 kV circuit breakers, with OPGW communication.

In addition to a robust infrastructure blueprint, EPE's facility study covered comprehensive engineering design assumptions, precise cost estimates, a distilled electrical Single Line Diagram, and charted a tentative 18-month construction itinerary.

The team assessed considerations from property acquisition to permitting, ensuring the study remained versatile and adaptable to potential disruptions.

RESULTS

The outcomes of the facility study were promising. The client is equipped with an actionable roadmap for the forthcoming integration of the Masa Storage facility. The design, optimized for both efficiency and reliability, promises a seamless interconnection to Texas' existing grid. Regulatory hurdles were thoroughly addressed, ensuring the recommendations fell in line with the stringent standards of PUCT. The 18-month timeline assures stakeholders of commercial operation by September 2025.