



S&C Delivers 4.1-MW Solar Plant Using Proven Turnkey Approach

S&C Featured Solution: Solar Interconnection

Location: Sandwich, Massachusetts

Customer Challenge

Independent power producer Green States Energy (GSE) planned to build a 4.1-MW solar photovoltaic (PV) power plant on historic Cape Cod in Massachusetts, a state with strong solar-development incentives. The plant would supply clean energy to the local grid, operated by NSTAR Electric and Gas, to power 500 homes under a net metering program in Sandwich, the Cape's oldest town. GSE's project also would move Massachusetts closer to its renewable energy goal of 400 MW of solar PV power generation.

The Sandwich project qualified for the state's Solar Renewable Energy Certificates (SRECs), which GSE would start selling upon project completion. To meet its aggressive energization timeline and maximize its return on investment, GSE needed a proven partner that could provide a turnkey renewable energy integration solution able to tolerate New England's unpredictable winter weather. GSE also needed an expert in the many regulatory and environmental aspects of utility-scale solar PV projects.

S&C Solution

After S&C Electric Company completed GSE's 2.6-MW solar PV plant in New Mexico ahead of schedule, the power producer enlisted S&C to manage the entire Sandwich project. GSE was confident that S&C's turnkey approach, combined with its deep expertise in renewable energy integration, efficient project management, and regulatory issues, would ensure success. S&C had worked previously with NSTAR and had conducted solar-interconnection studies for its service area, making S&C an ideal fit for the job.

More than 15,000 solar panels were used to build GSE's solar power plant.



“Despite being challenged by severe winter storms, the work completed by S&C on the Sandwich PV plant again exceeded Green States Energy's expectations.”

Steve Clevett, CEO, Green States Energy

S&C provided all engineering, procurement, and project-management services for the 4.1-MW plant. Based on its collaboration in New Mexico, S&C chose solar-energy developer Green Earth Developers LLC (GED) as its general contractor and construction manager. GED installed the racking systems and PV panels and managed construction of the DC systems and AC interconnection. S&C's engineering team reviewed all subcontractors' electrical and civil designs, and it developed the medium-voltage design and relay settings.

Green States Energy chose S&C to deliver the Sandwich solar PV plant because of its reliable turnkey solutions for renewable energy integration.



S&C procured all major equipment and materials, including more than 15,000 PV panels for the ground-mounted, fixed solar array spanning 16.5 acres. It also procured the seven 500-kW inverters, two pad-mounted transformers, the racking and support system for the PV panels, and the data-monitoring system. For switching and protection, S&C supplied Vista® Underground Distribution Switchgear and PME Pad-Mounted Gear.

Halfway through construction winter arrived early, bringing severe storms and the area's third-heaviest snowfall on record. One storm damaged sections of the solar array, and months of snow and freezing temperatures delayed repairs and project completion until spring. However, S&C still finished all of the electrical work during the winter and delivered all major equipment on time. The company also collaborated with multiple governing authorities to address the project's regulatory and environmental aspects, including protecting an endangered-species habitat.

S&C worked closely with GSE, NSTAR, GED, all governing authorities, and subcontractors to bring the plant online as swiftly as possible. They tested all of the electrical, communication, and monitoring systems extensively to ensure the design met production goals. By spring, S&C interconnected the plant with the grid, allowing it to supply power to Sandwich.

Results

S&C successfully completed the project on a turnkey, fixed-price basis, meeting GSE's requirements. While the unexpectedly harsh winter caused delays, S&C finished the project in the shortest possible timeframe. GSE was very satisfied with the results and began selling SRECs in the spring to maximize its return on investment. By supplying solar power to NSTAR's grid for 500 Sandwich homes, the plant also is helping Massachusetts reduce carbon emissions and reach its renewable energy integration goals.



A view of the completed solar power plant with interconnection equipment.

