CASE STUDY
RENEWABLES

S&C ELECTRIC COMPANY
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S&C Rapidly Completes Collection-Point Substation for Solar Farm in Hawaii

S&C Featured Solution: Solar Generation Interconnection

Location: Oahu, Hawaii

Customer Challenge

Connecting renewable energy plants to the grid is vital for U.S. states like Hawaii that have renewable portfolio standards. Hawaii aims to have renewable energy sources provide 40 percent of the state's electricity by December 31, 2030.

The developer of a 5-MW Solar Farm in Oahu sought to have their plant constructed and operational in just four months. To meet this aggressive in-service date, the developer needed to substantially reduce the lead time for the collection-point substation, including equipment procurement, installation, and commissioning.

Aerial view of 5-MW Solar Farm in Oahu, Hawaii.

S&C SOLUTION

The developer valued S&C's extensive expertise in utility power systems and renewable power interconnection, and approached S&C for assistance. S&C worked with the developer and the local utility to develop a preliminary design for the collection-point substation using S&C's System VI™ Switchgear. System VI Switchgear would not only accelerate project completion, but would reduce the cost and footprint of the substation as well. After the preliminary design was approved, S&C was contracted to engineer, procure, and manage the construction and commissioning of the switchgear.

System VI Switchgear is based on S&C's field-proven Vista® Underground Distribution Switchgear, which has been used in thousands of applications worldwide, including wind and solar energy plants. The System VI Switchgear solution provides high-voltage protection and control in a pre-engineered package that's smaller and more economical. Since it features a relay enclosure, the S&C solution eliminated the need to design and construct

"S&C's System VI Switchgear made the three-month construction schedule for this project possible by reducing the lead time of the equipment and allowing for the construction of the substation in a fraction of the time it would normally take."

—Dan Girard, Director of Renewable Energy and Energy Storage Business Development, S&C Electric Company

S&C swiftly installed System VI™ Switchgear to energize a Hawaiian solar farm on schedule.

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a costly control building. S&C was able to deliver the switchgear in just 10 weeks to help meet the customer's energization deadline.

One of the challenges of the project was procuring material . . . and delivering it quickly, half-way across the Pacific Ocean. With its extensive supplier network, S&C was able to rapidly procure and deliver the necessary components. Construction of the switchgear started in September and was completed in just three months.

S&C's engineering groups and project managers worked hand-in-hand to coordinate the preparation of drawings and switchgear construction. S&C commissioned the project, as well as set up the Supervisory Control and Data Acquisition system that permits the utility to monitor and control the substation as needed.

Valued Outcome

S&C completed the collection-point substation ahead of schedule. The plant was energized and, at the time of its completion, was the largest solar farm on the island of Oahu. According to EPA estimates, the solar farm will offset almost 190,000 tons of carbon dioxide emissions and 400,000 barrels of oil over the 20-year term of its power purchase agreement. The solar farm has brought the State of Hawaii one step closer to having 40% of its energy come from renewable sources by 2030.

Collection-point substation featuring S&C's System VI Switchgear.

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