



S&C Connects 20-MW Solar Plant to Arizona's Grid

S&C Featured Solution: Solar Generation Interconnection

Location: Marana, Arizona

Customer Challenge

The original developer of the Picture Rocks Solar Farm wanted to connect their 20-MW plant to the local utility grid by the end of 2012. Housing nearly 90,000 photovoltaic modules, the new plant would provide power sufficient for 3,500 homes, and help meet Arizona's goal of generating 15% of the state's energy from renewable energy sources by 2025.

But to meet the energization deadline, the developer needed the assistance of a renewable energy integration partner capable of quickly engineering, procuring, and constructing the connection substation—including the controls and metering which tie the plant's collector system to the utility's transmission substation. To secure the project funding, this partner would need to be able to rapidly prepare a preliminary substation design, along with cost and work scope estimates. The developer sought assistance from S&C Electric Company.

S&C Solution

S&C was able to compress the typical 90-day project to just 50 days.

With its vast renewable energy expertise and input from the utility, S&C developed the preliminary substation design. S&C also provided the estimates that the developer needed to secure financing for the project. This preliminary design work was instrumental in meeting the energization deadline, since it allowed procurement of substation materials and equipment to commence almost immediately, including the controls and metering equipment which connect the plant's 34.5-kV collector system to the utility's 46-kV transmission substation.



Aerial view of completed 34.5-kV / 46-kV substation and solar plant.

"If not for S&C's long-standing relationship with the local utility, this project would not have been approved and completed in the timeframe the developer needed."

*Daniel Girard, S&C's Director
Renewable Energy &
Energy Storage Business Development*

In addition to supplying field-proven S&C System VI™ Switchgear and a 69-kV S&C Series 2000 Circuit Switcher, S&C procured a 20-MVA power transformer, a grounding transformer, all substation steel, and medium-voltage underground cable.

Because S&C worked closely with the utility during the design phase, approval to construct was received promptly. The construction phase was further accelerated by S&C's ability to manufacture and ship the System VI Switchgear—which is designed

S&C completed the Picture Rocks Solar Farm connection substation and tied it into the local electric grid ahead of schedule.



specifically for solar plants—in a compressed timeframe. Based on S&C's Vista® Underground Distribution Switchgear that's used in thousands of applications worldwide, System VI™ Switchgear helps standardize the design of solar plants and cut installation time. And since System VI Switchgear features a relay enclosure, S&C was able to construct the substation without the need for a control building . . . reducing costs and construction time.

Throughout the project, S&C maintained on-site safety and quality control. S&C also conducted substation equipment testing and commissioning. In addition, S&C tested all of the relaying and monitoring systems to ensure proper operation.

Valued Outcome

S&C surpassed the developer's expectations by completing the Picture Rocks Solar Farm connection substation project six weeks ahead of schedule, within budget, and without any recordable safety incidents. Swift project completion enabled the developer to energize the plant before the December 21, 2012 deadline, and maximize their return on investment.

Picture Rocks Solar Farm currently provides 20 MW of clean energy to Arizona's grid, helping meet the state's renewable energy goals.



Watch the project being built

Scan this code on your smart phone or tablet to watch a time-lapse video of the [construction of this project](#).

