Trinasolar

CASE STUDY

OSHMAN FAMILY JCC
CALIFORNIA, USA

OVERVIEW:

The Oshman Family JCC in Palo Alto, CA installed a solar array using Trinasmart technology to overcome numerous hurdles and provide clean energy to the community.

LOCATION
Palo Alto, CA

TYPE
12 flat rooftops

SIZE
397.5kW

PRODUCT
Trinasmart

 # OF MODULES
1,840 60 Cell - ALLMAX Trinasmart 250W

COMPLETION DATE
February 2013

SITUATION

Protecting the environment for future generations by providing clean energy to our communities is a priority. While solar photovoltaic (PV) technology allows individuals, businesses and community organizations to produce clean energy on their own, not every rooftop can accommodate it. The Oshman Family Jewish Community Center (OFJCC) is an example of a sustainable, ecologically conscious hub for culture, recreation, education, and community engagement in Palo Alto, CA that wanted to explore solar. "We believe putting solar on the OFJCC is the right thing to do both environmentally and socially," said Zack Bodner, CEO of the OFJCC. "It will educate our children and the broader community about the benefits of clean energy, hopefully encouraging further adoption of solar in the area!"

TECHNICAL CHALLENGES

Similar to many buildings, the roof of the JCC and the entire Taube Koret Campus for Jewish Life is not 100% perfect for solar, with many obstructions and few flat open areas to lay down a traditional solar array. "While the environmental and social benefit of solar clearly drove the desire to install this system, we needed it to make economic sense as well," said Mr. Bodner. In order to maximize the output and project viability, each small open area across multiple roofs would need to be put to use in the most efficient way possible. "This roof, like many commercial rooftops, posed a number of technical challenges from an installation standpoint. Standard panels were not the most effective solution. We needed something smarter," said Mark Byington, president of Cobalt Power Systems.

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PRODUCT SOLUTION

The many challenges presented by this project were overcome with Trinasmart technology powered by Tigo Energy, which improves the project economics and expected generation. By clamping voltage and increasing string length from the traditional 14 modules to 18 modules, the project used 27 fewer strings, 3 fewer combiner boxes, and 13,500 feet less wire. This reduced significant material costs while also allowing for a much quicker installation. In addition to balance of systems savings, the system is expected to produce about 3 percent more power due to panel level optimization, reducing the impact of module mismatch where one underperforming module can reduce the performance of an entire string. "With the many benefits of Trinasmart technology that this project highlights, from improved project economics to increased generation on non-ideal rooftops, we see it as the future of commercial solar. We look forward to installing many more such systems," said Byington.



FINANCIAL CHALLENGES AND SOLUTIONS

A hefty down payment for a solar system was also a challenge that needed to be overcome for the project to happen. Normally projects overcome this by financing with tax equity, but this vehicle is normally reserved for larger projects with institutional investors rather than individuals. THiNKnrg CEO Zach Rubin noted the complexity of the project, "We had to bring together so many parties to make this work, from financiers to technology partners to installers." Ultimately, Conergy, a leading global solar photovoltaic downstream company closed one of the first leveraged tax equity partnership structures with individual investors who could utilize the investment tax credits making the project economically viable. "Having a bankable partner like Trina Solar brought the right partners to the table and made the project possible from a project economics perspective," said Rubin.

RESULTS

Completed on February 25, 2014, the installed system covers 12 roofs of the Taube Koret Campus for Jewish Life, supplying about 20 percent of their energy needs. A Power Purchase Agreement (PPA) will provide power at 4 cents per kilowatt-hour, which is half the current utility charge. Overall, the system will save the OFJCC over $1.5 million over the 20-year contract. The solar installation also helped the Taube Koret Campus for Jewish Life achieve a LEED Silver rating for the entire complex. "With the largest Trinasmart installation in North America to date, Trina Solar is proud to continue to innovate on our high-quality product portfolio and work together with strong partners to make amazing projects like this happen," said Trina Solar Director of Global Marketing Jing Tian.