Repurposed Dairy Farm Provides Solar-Powered Water for Desert Communities

Challenge
In the last few years, electricity rates have skyrocketed for the Phelan Piñon Hills Community Services District (PPHCSDTO in San Bernardino County. The district needed to reduce energy costs to continue to provide water to area residents and businesses at competitive rates and maintain community services like parks and senior community centers.

The SunPower Solution
Working with SunPower, PPHCSD built a large solar site on a retired dairy farm that now generates enough energy to offset 40 percent of the district’s water-related electricity costs through RESBCCT, an innovative bill credit program that allows energy generated at one site to offset electricity costs of other meters in the same district.

Customer Benefit
PPHCSDTO is now able to share the energy benefits from one solar array across the district to offset costs through its vast network of water wells and pumps, supplying water to thousands of residents in the Mojave Desert communities of Phelan and Piñon Hills.

Quick Facts
- **1.5MW on 5 acres**
  Total System Size
- **Ground Mount with Sun-Tracking Capability**
  Installation Type
- **$13 Million**
  Projected 30-Year Savings
- **2.5 Million tons**
  Annual Coal Emissions Offset
SunPower helped find the right site, the right project and the right program to help water district save millions over time

In California, years of unprecedented drought have led to a host of challenges, from water restrictions to wildfires. Utility prices have risen dramatically as communities around the state work to find new and better solutions to provide residents with the services they need in the most cost-effective manner.

Don Bartz, general manager of the Phelan Piñon Hills Community Services District (PPHCS), was searching for ways to reduce the district’s substantial electricity bill, which had increased nearly 30 percent in the last two years alone.

“We were looking for a solar solution to help the district,” says Bartz. “We were open to different options. We just wanted to make sure we figured out which kind of project would best suit our needs.”

The 128 square-mile district is the largest community services district in San Bernardino County, and oversees water, parks, recreation and street-lighting for the community of 21,000 on the edge of the Mojave Desert.

PPHCS came to SunPower to explore the possibility of installing solar and were presented with two options: install solar at individual sites throughout the district and save on electricity costs at those sites, or install one larger solar array and share the savings across the district.

Installing many systems across multiple sites would have required PPHCS to enter into a number of utility interconnection agreements, and each site would require its own geotechnical study, California Environmental Act Review, and operations and maintenance (O&M) agreements. The district would also have to gain community support in every location where solar would be installed.
With SunPower’s help, Bartz and his team realized that installing one large solar system at a single location would enable the district to simplify the development process. And through the Renewable Energy Self-generation Bill Credit Transfer (RESBCT) program, the district could share the savings of a single large solar array across the district’s 43 energy-consuming facilities, including water wells and boosting stations as well as office buildings, parks and community centers.

“The team at SunPower was a huge help in the entire process,” says Bartz. “They investigated the program and did a complete analysis of every one of our accounts, including what the usage is now, and what the usage is projected to be moving forward. Then they helped us find the perfect site for the project.”

Renewable energy until the cows come home

PPHCS owned a 160-acre parcel of land that used to be a dairy farm. The district secured low-interest financing for the development and construction of a 1.5-megawatt solar photovoltaic system on the property with SunPower. The system began operations in the fall of 2015.

The project, which covers nearly 5 acres of land with high-efficiency solar panels, connects to an existing electric meter on the site which only needs about 0.2% of the total energy produced by the solar plant. The other 99.8% is exported to the grid in exchange for bill credits used to offset electricity costs at other electric meters in PPHCS’s service territory through the RESBCT program, for a projected $13 million savings over the system’s life. The savings are based on a projected annual rate increase by Southern California Edison of 3%, far lower than the last few years’ rate increase of 18% and 10% in 2013 and 2014, respectively.
Beyond saving energy, the project also saves water by using SunPower self-running cleaning robots designed to keep the solar panels clean and optimized while using minimal amounts of water.

“It’s been an amazing experience,” says Bartz. “I’ve even told peers of mine in other districts that they need to look into solar, and that they don’t need to have in-house solar expertise to conduct evaluations on how to build the most beneficial project. Sunpower did all of that planning and evaluation for us. We couldn’t have done it without them.”