SunPower Solar Systems Help Lake County Reduce Energy Demand by More Than 90% at Three Facilities

Since 1997, California’s Lake County Sanitation District (LACOSAN) has led the nation in recycling wastewater for environmental and energy benefits. Its steam-powered recycling of effluent at the Geysers geothermal power plant has already avoided over 8 billion pounds of greenhouse gas emissions. Keeping a conscientious eye on both the environment and the economy, as a next step LACOSAN installed solar power systems across two of its facilities and worked with Lake County to install an additional system to power the County jail. With 15.5 acres now hosting high-efficiency SunPower® Tracker solar technology capable of generating over 4 million kilowatt-hours per year of clean solar electricity, the County and LACOSAN are well-positioned to help reduce their overall environmental impact, while significantly reducing energy costs for both District ratepayers and County taxpayers.

BENEFITS

- Reduces more than 90% of the electricity load across three facilities
- Provides enough electricity to power almost 10,500 homes over 30 years
- Provides the County and LACOSAN with a long-term hedge against rising power prices
- Provides savings to local tax and ratepayers of up to $5M over 20 years
- Decreases the County’s dependency on California’s utility grid by over 2 MW’s
- Contributes to Lake County’s increasing commitment to sustainability and environmental practices

PROJECT OVERVIEW

Location: Lakeport, CA
- Northwest Wastewater Plant (North & South sites)
- Southeast Wastewater Plant
- Lake County Correctional Facility

Completed: December, 2008
Installation Type: Ground Trackers
System Size: 2,169 kW across 4 sites
PV Surface Area: 15.5 acres
Number of Panels: 9,430
Products: SunPower® T0 Tracker, SunPower® T20 Tracker
COuNTy-WIDE ENERGy NEEDS

LACOSAN’s service obligations dictate that their systems operate 24/7. In 2004, the District began evaluating renewable energy options that might offset increasing electricity costs, particularly related to their wastewater reuse system and wastewater treatment plants. A feasibility study determined that the payback from a hydroelectric power plant would be marginal. Still hoping to find an effective renewable solution, District administrators looked to solar generation and visited several existing solar power installations in California. “We saw solar as being very cost-effective, plus we wanted to create a sustainable energy and community infrastructure,” says LACOSAN Special Districts Administrator Mark Dellinger. “During our research, our Board of Supervisors became aware that similar needs existed at the County jail facility.” As a result, LACOSAN began working with staff from both the Sheriff’s Office and the County Administrative Office to include the jail within the solar project, and to evaluate energy-efficiency improvement opportunities.

PPA MAKES SOLAR AFFORDABLE

After realizing the economics and payback of incorporating solar power into their energy portfolio would work, the County’s and LACOSAN’s “greatest concern was the financing structure of the deal,” says County Supervisor Denise Rushing. “We ultimately determined that the best way to finance the project was through a SunPower Access™ power purchase agreement (PPA)” whereby the County and District are purchasing only the electricity – without the obligation of buying, operating or maintaining the solar systems and equipment itself. By hosting these systems on its sites, financed by one of SunPower’s top-tier financial partners, the County and LACOSAN are realizing immediate savings on their electricity bills with no initial capital expenditure. They also are locking in electricity rates at an affordable price – with an option to buy out the systems after their 20-year PPA term. The SunPower Access™ PPA program also allowed the County and the District to save valuable time in securing full project funding.

THE RIGHT PARTNeR, IMMeDIATe SAvINgS

The County and LACOSAN sent out a request for proposal to several solar vendors, and SunPower was selected as the highest ranked choice for full-service integrators, due to their experience, reputation and high-efficiency solar technology. “We were looking for a turnkey operation, and a firm that could finish the work quickly,” Dellinger says. “The other solar providers were simply not as responsive as SunPower.” Part of the agreement with SunPower also included an energy efficiency audit of the County Jail facility. Dellinger adds that all four of the solar sites across the 15.5 acre installation were completed and operational within eight months, which he termed “very commendable.” Best of all, the solar arrays will supply an average of 91 percent of the electricity required at each facility. “The first time I saw the meter spinning backward was very exciting,” Dellinger says. “All in all we were very happy with SunPower’s business interactions, their proactive attitude in delivering the system, and the results we have seen to date.”

“It seemed impossible, but even before our SunPower solar panels were fully sequenced – and with a layer of ice on top of them – they were already generating electricity.”

— Mark Dellinger, District Administrator Lake County Sanitation District