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Eldorado Valley solar facility nears completion

Project developers hope to have center producing power by year's end

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Workers at the El Dorado Energy Solar Expansion Project in Eldorado Valley started testing North America's largest thin-film photovoltaic solar power plant earlier this month in hopes of having it online producing electricity by the end of the year.

The solar facility started construction in late July and took only three months, from late August to late November, to install 22,320 steel posts, 127 miles of solar panel support rails, 286 miles of cabling and 167,400 modules, or solar panels, that when assembled end-to-end resemble row of crops in a field.

"We put them in like it was an assembly-line production," Project Manager Tony Perrino said. "We started in the far southeast corner and worked our way to the north. When you put in 4,000 modules a day, it goes quick."

Whereas construction employment totaled about 110 when the installation process was in full swing, the facility will need only one person for monitoring and minimal maintenance purposes when it becomes fully operational.

Since the key to energy production is in the technological sophistication of the module itself, the ground installation is fairly simple, Perrino said.

The steps are setting the posts, adding the brackets that keep the solar panels at a constant 30-degree angle, attaching the support brackets, setting the 27-pound modules in place, wiring up the panels with cable leading to an inverter that changes DC, or direct current, to AC, or alternating current, and sending it on to the power substation that links a transmission line to the end user.

In this case, both the solar facility and its sister gas-fired plant next door share the same on-site substation, which, when built more than eight years ago, had additional switchgear installed for any additional load in the future.

According to Michael Allman, president of Sempra Generation, a subsidiary of San Diego-based Sempra Energy, the 10-megawatt facility is just the beginning of a bigger and better solar power plant.

"This is just the beginning of what we hope will be a large investment," Allman said in a telephone interview. "This is the largest thin-film plant in any one location and we have hopes of expanding it from 10 megawatts to 60 megawatts, which would make it the largest photovoltaic plant in the world. We haven't committed to the project yet, but we hope to in the new year."

The expansion would be on 380 acres to the east, south and west of the current 88-acre solar facility that wraps around the 480-megawatt, gas-fired power plant.

The land, which was the subject of an amended lease agreement with the city that was approved Sept. 23, will bring Boulder City nearly \$569,000 the first year when the lease goes into effect June 23, city officials said.

As of late November, Sempra Generation still didn't have a customer for the 10 megawatts that could supply the needs of about 1,500 homes, but its transmission line is connected to both the Nevada Energy and the California Independent System Operator, or CAISO, grids that provide access to the Nevada and California power markets.

CAISO is a nonprofit public-benefit corporation that runs the majority of California's high-voltage wholesale power grid, which provides a link between power plants and the utilities that serve more than 30 million consumers.

Allman wouldn't disclose the price tag of the 10-megawatt facility or what he thought the larger plant would cost, but he did say the cost of the thin-film technology is less than the concentrated solar power technology used at the Nevada Solar One project across the street.

"We looked at both concentrated solar power and photovoltaic and it was our belief that photovoltaic was the least expensive electricity to develop from solar power," said the 48-year-old executive, who has worked for Sempra Energy since 1998. "The reason we like photovoltaic is because it doesn't use water except for twice a year when the panels need to be washed and they get that from the rain. It's also emission-free."

With the completion of the El Dorado Energy Solar Expansion Project, Clark County, and more specifically Boulder City, has become the hot spot for solar development in Nevada.

Outside Boulder City, two major photovoltaic systems include the 14-megawatt Nellis solar power plant that covers 140 acres with a silicon-based panel that converts sunlight to electricity and the 3.1-megawatt photovoltaic system that uses similar technology at the Las Vegas Springs Preserve and within the Las Vegas Valley Water District's reservoir distribution system.

In Boulder City, site of the current and future 60 megawatts of thin-film solar power produced by Sempra Generation, there's the 64-megawatt Nevada Solar One project that uses a curved trough to concentrate the sun's light on a tube of special oil that heats up to convert water into steam, turning a generator to make electricity.

In addition to those plants located in the city's 3,000-acre Energy Zone, Boulder City is looking to have solar power developed on a 2,095-acre parcel at the south end of the Eldorado Dry Lake bed and on 3,200 acres a mile or two north of that site that has been targeted by NextLight Renewable Power LLC of San Francisco for a 250-megawatt, water-cooled solar facility using technology similar to Nevada Solar One's.

And there's a reason for the interest in Eldorado Valley.

"This area in Nevada is about one of about a half-dozen areas on the globe that's perfect for solar power generation," Perrino said. "And Boulder City is lucky because Eldorado Valley is one of them."

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