

# Little missed *sunshine*

New Boeing technology brings down the cost of solar-generated electricity—and helps power a university *By Derrell Carter and photos by Paul Pinner*



**PHOTOS:** (Left) A high-concentration photovoltaic solar panel is moved into position on the campus of California State University, Northridge. Thirty-three panels are being installed to provide power for the university and to help the community meet state renewable energy standards. (Middle) Jeff Frericks, director, Boeing Energy, and Ian Simington (foreground), CEO of NTR Solar, evaluate the first solar array installed at the 100-kilowatt power facility. The panels use XR700 high-concentration photovoltaic solar technology supplied by Boeing subsidiary Spectrolab. (Right) Sam Alvarez, environmental test engineer, performs a test on a solar array to ensure it tracks the sun: "As we install them, we want to make sure they're putting out the amount of power they were designed to."

In California's San Fernando Valley, a new solar installation using Boeing technology is taking shape that will help a local university meet a state mandate to use more energy derived from renewable sources.

It's also an example of how Boeing's Energy Solutions unit, part of Defense, Space & Security, is developing renewable energy technology that can be integrated into national power grids.

Energy Solutions is using its expertise in solar technology to develop and install 33 high-concentration photovoltaic solar panels on the campus of California State University, Northridge, for a 100-kilowatt power facility that will provide renewable power for the university and the local community.

"This collaboration with Boeing is crucial because it allows us to provide peak [consumption period] energy, green energy, to help the university and the state meet renewable portfolio standards," said Tom Brown, executive director of facilities for California State University, Northridge.

The high-concentration arrays, designed and built by Boeing Energy Solutions and Boeing Research & Technology,

use XR700 high-efficiency photovoltaic solar cell technology supplied by Boeing subsidiary Spectrolab in Sylmar, Calif. The technology brings down the cost of solar-generated electricity by concentrating more sunlight on fewer cells.

Each 18-foot-by-8-foot (5.5-meter-by-2.5-meter) solar panel can produce approximately 3.5 kilowatts of electricity, or enough to power an average-sized home.

Each of the 33 solar arrays features 24 panels of lenses and mirrors that concentrate sunlight onto 1-square-centimeter (0.16-square-inch) photovoltaic cells.

To maximize sun exposure, the arrays are mounted on mechanical trackers that follow the sun throughout the day.

"It's pretty promising," said Sam Alvarez, Boeing environmental test engineer. "Everyone talks about developing alternative energy sources, but we're proving we have the capability and expertise to do it."

The power facility is scheduled to begin operating in the third quarter. ■

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