

San Francisco Chronicle

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THURSDAY, MAY 29, 2008



Photos by BRANT WARD / *The Chronicle*

Elbin Blatz washes off one of 994 panels in the floating solar cell array at Far Niente winery in Oakville. The array produces all the electricity the winery needs.

Winery goes solar with a twist

by *Jim Doyle*
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Take nearly 1,000 photovoltaic panels and mount them on 130 pontoons floating in a Napa Valley irrigation pond, and what do you have?

A first-of-its-kind solar power array and the latest example of why Northern California's wine industry — with its scores of entrepreneurs and mavericks — is a leader in embracing solar power.

Representatives of the Far Niente winery in Oakville pointed out the unique aspects of a \$4.2 million solar venture during a tour Wednesday in advance of today's ceremonial unveiling of the project.



The Far Niente winery was built in 1885 and is on the National Register of Historic Places.

In addition to the 994 floating panels, 1302 panels are mounted on an acre of land nearby.

All told, the water-and land-mounted solar array can produce up to 477 kilowatts at peak output — providing more than 100 percent of Far Niente's electrical needs. It provides power to the historic winery (built in 1885), the tasting room, a carriage house with a collection of classic cars, a commercial kitchen, expansive azalea gardens, fountains, irrigation pumps and 40,000 square feet of wine-aging caves that are three football fields long.

"I was nervous about making this presentation to my partners because it's a lot of money and could be used to purchase a vineyard," said Larry Maguire, presi-

Greg Allen, winemaker and president of Dolce late-harvest wines, which is made at the Far Niente estate, says the solar array project took about 2 1/2 years from start to finish. "We started out with a goal, and every hurdle was an opportunity to find a creative solution," he says.



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dent of the winery. "If you're just trying to deal with profitability, certainly short-term profitability, you probably wouldn't make this decision. But if you're thinking about long-term profitability — and with a social conscience — that's where you'll probably come to the conclusion that this is a good thing.

"From our point of view, we don't need to be concerned about a quarterly report," he added. "We're privately held. We have five owners. All of us would like to see more private business taking a position to resolve our energy problems and global warming issues."

Far Niente, which liberally translated from Italian means "without a care" or "with nothing to do," is a winery and 13-acre estate known for its Cabernet Sauvignon and Chardonnay. It produces about 35,000 cases of wine a year.

Small-scale floating solar fountains and pumps have been deployed by others previously. And according to Wired magazine, Swiss researcher Thomas Hinderling has been retained for \$5 million to begin construction on a prototype of a solar island in the United Arab Emirates. But mounting 994 solar panels on pontoons is a first.

Building the solar arrays on water preserved about 1 1/2 acres of valuable Cabernet vineyard acreage from being sacrificed for land-mounted arrays, which would have cost the winery about \$150,000 a year in lost earnings.

Covering the irrigation pond also is likely to result in less water loss due to evaporation - and less algae growth.

Project took 2 1/2 years

Greg Allen, winemaker and president of Dolce late-harvest wines, which is made at the Far Niente estate, said the solar array project took about 2 1/2 years from start to finish. And he praised Far Niente's partners for sticking to their objective to offset 100 percent of the winery's electrical needs with solar power.

"There were so many opportunities to throw in the towel because of technical complexities, regulatory hurdles and runaway costs," said Allen, a MIT-trained engineer. "We started out with a goal, and every hurdle was an opportunity to find a creative solution."

The winery began looking into implementing solar power in late 2005 and hired innovator Gopal Shanker of Recolte Energy to help coordinate the project. The firm planned

to install solar panels on one acre of vineyard, but it needed additional acreage for the system to be able to supply sufficient power to meet the winery's energy needs.

Dirk Hampson, one of Far Niente's partners, focused on mounting the additional solar panels on water.

Shanker pulled together a design group that included an architect, a structural engineer, a waste-water engineer and a solar system designer. The team considered building a huge carport over the irrigation and waste-water recycling pond as a firm foundation to mount solar panels; designing steel or aluminum trusses to span the 16-foot-deep pond from bank to bank and attach the solar panels to it; or creating a cable suspension system to support the panels.

But it was clear that additional outside expertise would be needed. Proposals were solicited from eight prominent solar energy firms.

Eventually, Far Niente's investment was designed and installed by SPG Solar of Novato, using the "Floatovoltaic" technology developed by Thompson Technology Industries, Inc. Both firms are owned by Dan Thompson, a former electrician.

The solution at Far Niente consisted of Sharp solar panels - each

measuring 3 by 5 feet and producing 208 watts - mounted on foam-filled pontoons made of plastic, ribbed drain pipe that's commonly used in the vineyard.

Rebate from PG&E

Creative financing and a leaseback agreement also contributed to the project's feasibility. The five winery partners received an almost \$2 million cash rebate from PG&E for solar projects at Far Niente winery and its sister winery, Nickel & Nickel; they also received a federal tax credit and accelerated appreciation. Nickel & Nickel's \$3 million array uses land-mounted solar panels only.

Bank of America Leasing & Capital LLC ended up purchasing Far Niente's solar units, which the winery leases and has a buyback option after seven years.

Among the Napa Valley wineries that have used solar power are Long Meadow Ranch, Grgich Hills and Frog's Leap.

"The wine industry is definitely on the leading edge in terms of adopting and accepting solar and renewable energy solutions," said Iris Chan, an SPG Solar marketing coordinator. "They really want to take care of their land, and what better way than with renewable energy?"