

Green Living

FAR NIENTE IN OAKVILLE

Rather than remove vines to make way for panels, Novato company is floating system on water

A WINERY'S SOLAR SOLUTION

By **MATT VILLANO**

FOR THE PRESS DEMOCRAT

For many wineries, embracing technology from the sun comes with a cost to the land. Solar panel arrays reduce energy costs and improve the environment by decreasing reliance on traditional forms of power. However, most installations require the removal of valuable acres of vineyards -- a sacrifice that can cost a winery thousands of dollars each year.

This is why a patent-pending technology from Novato-based SPG Solar Inc. is gaining so much attention.

The system, dubbed Floatovoltaic, consists of a solar array that floats on pontoons sitting on the surface of a winery's irrigation pond. Dan Thompson, SPG's chief executive, said the technology enables vintners to capture solar energy while keeping their vineyards full of vines.

"It's the best of both worlds," said Thompson, a former union electrician in San Francisco. "All of the power and environmental benefits with none of the acreage loss."

Invented in 2005 by SPG sister company Thompson Technology Industries, the Floatovoltaic system applies traditional solar technology in an innovative way. Technicians secure ordinary photovoltaic panels to foam-filled, high density polyethylene pontoons and launch the pontoons into a pond. The technicians then lock the pontoons together like a fishing dock.

As they collect sunshine, the panels generate direct current, or DC, power. On the edge of the pond, a standard power converter transforms this energy into alternating current (AC) power, and distributes it from there.

FLOATING AN IDEA

While no Floatovoltaic system is fully operational, the first implementation is set to debut later this month at Far Niente Winery in Oakville.



The Floatovoltaic system floats solar panels on pontoons that sit on the surface of a pond. **GREG ALLEN**

In the winery's 100-acre Martin Stelling Vineyard, technicians have floated nearly 1,000 solar panels over a .7-acre pond. Combined with one acre of about 1,300 panels on land, the array will generate 400 kilowatts at peak output.

Larry Maguire, Far Niente's president, said the energy will be enough to offset the winery's annual power usage and provide a net-zero energy bill from PG&E.

"The ultimate goal is to stop consuming," said Maguire, who noted that after rebates from the state and PG&E the entire system cost Far Niente about \$2 million. "By achieving one goal, we're getting a second benefit from the pond that collects water we use to irrigate our vines."

According to preliminary SPG research, Far Niente could anticipate other benefits. Covering the irrigation pond with solar panels should reduce evaporation. And covering the pond might reduce algae growth.

Because the Far Niente implementation is the first of its kind, Thompson said that many of these potential benefits are only theoretical.

"In many ways they are like the guinea pig," he said. "We know how the system should work, but we won't really see if our theories are right until we get it up and running."

DOING THE MATH

One undisputed benefit will be cost savings. Maguire said Far Niente would have had to remove an additional acre of cabernet sauvignon grapes if it hadn't floated panels on the pond. He estimated that each acre of vineyard produces roughly \$150,000 worth of wine annually.

"When you look at the opportunity costs we would have thrown out the window, we're saving in more ways than one," he said.

If the Far Niente array performs as expected, Thompson said SPG plans to market Floatovoltaic technology to a host of businesses and entities across the state. Already, he said, representatives from the Kern County Water Agency near Bakersfield have expressed interest.

"Reservoirs, ponds, anywhere there's a large body of water, this technology can work," he said. "It's the best of both worlds."

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