

# 'Solar trees' sprout up in Santa Clara County-owned parking lots

Tracey Kaplan, Bay Area News Group, 8-21-11

The frustrating search for a shady spot to park is about to get easier. But the new trees being planted at nine big parking lots in the South Bay aren't leafy green saplings, they're big silver specimens with 12-foot-tall trunks and broad steel canopies that will shield cars from the sun -- and produce solar power.

Known as "solar trees" because they are topped with photovoltaic cells, the "groves" are sprouting up in parking lots at Santa Clara County government buildings and health clinics in San Jose and Gilroy, and at Elmwood jail in Milpitas.

The shade they create for cars is just a popular side benefit, though cutting off the sun's glare also will save some energy by reducing the need for motorists to turn on the air conditioning right away in hot weather. The primary benefit of the parking lot projects is that the power they produce will save the county about \$18 million in electrical costs over a 25-year period and reduce greenhouse gases.

"Most people think it's covered parking, and like it," said Lin Ortega, the county's utilities engineer/program manager.

The majority of solar power in California is still generated by rooftop panels. But parking-lot arrays have been springing up, including at UC San Diego, where they have been planted on the top floor of two parking garages, and at Google's Mountain View headquarters.

One leading firm, Envision Solar of San Diego, which invented the first solar tree, also makes sun-tracking "trees" that tilt to capture solar rays over the course of the day, producing about 18-25 percent more power, CEO Desmond Wheatley said. The county's first solar trees, installed on the top level of two parking garages at Santa Clara Valley Medical Center two years ago, do track the sun. But they are more expensive to maintain, so the county went with fixed trees this time.

By March, the county will have installed more than 15,000 solar panels in nine parking lots at eight sites. The estimated \$18 million in savings over 25 years is minor -- less than \$1 million a year in a county that now pays \$18 million a year for energy. But county officials point to the environmental benefits, saying the projects will reduce carbon dioxide by 4,116 metric tons -- the equivalent of taking 800 cars a year off the road. The projects also create at least 92 temporary jobs, they said.

The county is paying for the four smallest projects through a solar-power purchasing agreement with several cities known as a PPA. Under that arrangement, private firms build and own the solar arrays; the county and other cities buy the power at a discounted rate. However, the estimated savings from the PPA turned out to be negligible -- only about \$2 million over 20 years. Construction on those will begin in January.

So at the urging of supervisors Dave Cortese and Ken Yeager, the county financed its four largest remaining projects through a combination of government incentive programs, including \$7.4 million from the California Solar Initiative Program and interest-rate discounts on bonds subsidized by the American Recovery and Reinvestment Act. The county's share will be about \$13 million of the \$20 million cost, and it will own the arrays. Construction already has begun on Elmwood jail and on a two-lot project at the sheriff's office and nearby County Government Center.

"Ken (Yeager) and I urged them to look for a more fiscally beneficial situation," said Cortese, president of the

Santa Clara County Board of Supervisors. "We spend \$30 million a year on utilities (including garbage and sewer) so there's plenty of motivation to keep moving in the alternative energy direction."

Green as the parking lot arrays are, there's good news for the many county workers and visitors who haven't given up driving. The solar trees at the eight sites will eat up only six of more than 1,000 parking spaces.