

# The Truth Behind Solar Energy in SC

by Kent Smith

Ever feel helpless in the face of exploding fuel bills? Does PG&E make your blood boil?

What about solar energy? You've heard a lot about it no doubt, but how is it really doing in Santa Cruz County?

According to Frank Verprauskus, president of Alten ("The Alternative Energy People"), hundreds of people in the county are already using free sun power effectively.

The most popular type of system, he claims, is the kind that heats swimming pools, "several hundred of which are now installed in local homes because they make sound economic sense.

If you're paying \$100 plus per month to heat your pool water, a \$2000 solar system will pay for itself relatively quickly. Once your collector panels, storage tank and pipes are installed, the sun will heat your water virtually for free.

Since pool heating is beyond the concern, or grasp, of most locals, the system most applicable and the next most popular, is that for heating a home's hot water. Verprauskus estimates that there are about 100 of these already in operation county-wide.

One of them is owned by Richard Fleenor in west Santa Cruz. Fleenor says his two-panel, 80-gallon system "works fine" and he's "very happy" with it. It cost him about \$2000 initially, but he figures the \$20 a month savings are worth it, especially since the government paid for half of it through the 55 per cent state tax credit.

Ed Borovatz, former county supervisor, is another satisfied solar customer. His two-panel system has been providing hot water for two houses since last March.

"During the summer months, the hot water heater never seems to go on," says Borovatz. With savings of about \$2 a month, Borovatz estimates it will take at least 10 years, though, for solar to pay for itself.

Solar energy is also used to provide "space heating" for about a dozen homes in the county. But this type is the most expensive — averaging \$10,000 plus an installation — and the least justifiable economically.

Dave Burton, a Cabrillo teacher and solar consultant, says flatly that "active" mechanical space heating is "not needed" given our mild weather conditions.

Burton feels that so-called "passive" designs are best. Passive designs mean such things as facing your house due south for maximum sunlight and incorporating large massive walls to store solar heat during the day and radiate it at night. Burton is also working on "solar furniture" you can take

with you when you move.

Everyone in the local industry admits there have been problems in the past, such as poor workmanship and faulty design. Martin Mogaard, solar engineer for Clearwater Plumbing, acknowledges that "we've had our share of problems, but at this point most have been worked out."

Apparently, he's right. Gloria Lorenzo, coordinator for the DA's Consumer Affairs office, could find only one real complaint (faulty "booster pump") during the last six years and, through her office's intervention, a \$200 refund resolved it.

Robert Le Bleu, who has put in as many systems as anyone else, thinks the solar energy industry has relied upon "too much sales gimmicking." The number one problem, he believes, is "the public's lack of knowledge about what they want and what they get." Le Bleu feels that solar energy systems are very suitable for lower and middle-income people to defray the cost of their heating bills.

Howard Bailey, an engineer who helped design and install many of the local pool systems, however, feels that "very frankly, solar systems at this time are primarily limited to those who can afford it." As for solar for himself, Bailey says, "I'm on natural gas and I wouldn't even consider changing to solar."

If you don't have a lot of cash, one answer is to do it yourself. In fact, at least half of the present systems have been put in by do-it-yourselfers. One person who did and feels "great" about it is Jay Yancey who lives with his family near Watsonville.

Yancey put in his own "free standing thermo-sythen solar water heater" for about \$500 in materials and 50 hours of labor.

"We never run out of hot water," Yancey declares. Except for a "scrounged up tank" which leaked ("to be expected") and had to be replaced, he's had no trouble.

Yancey is one of about 50 students enrolled in Cabrillo's Solar Technology program. The students are serious, hard-working, and among the most enthusiastic on the entire campus.

According to teacher Dave Burton, there is a very high level of ecological consciousness in the county and solar has a bit future. "Every single-family dwelling," he predicts, "will have to become solar-oriented eventually."

Burton will be teaching a two-week "Solar Field Studies" class starting in January for interested professionals and consumers.

What is the future of solar in Santa Cruz?

Robert Le Bleu thinks that solar heating for pools will still be on the increase, especially since PG&E's recent doubling the price for "luxury gas usage."

Alten's Frank Verprauskus feels that the pool market is "saturated" but concludes that domestic hot water heating will be in great demand. New home designers will also want consulting services

to solarize their buildings.

Another trend already in evidence is a shake-out in the local industry. About half of the 20 companies which were offering services a year ago are now apparently out of business. One well-known Santa Cruz firm is reportedly about to close its doors in a couple of weeks.

Of the many plumbing outfits which geared up for solar, only two (George Allen and Clearwater) appear to be doing any business, and it's strictly a side-line.

Alten, APPI, and Le Bleu, along with Ecosystems, Air Tech, and Solar Construction seem to be the survivors.

Howard Bailey, who has left the industry, thinks that there's a big future for solar design for new homes. He mentions a west-side house with a large sloping roof, ideal for collector panels, but it was "aimed the wrong way!"

Great savings are possible, Bailey claims, because of the current situation's "enormous waste." Better insulation alone, he claims, can reduce fuel costs by 60 per cent.

Another trend might be too many solar students being produced. One major contractor claims he has at least one "solar engineer" a week applying for jobs.

Richard Merrill, another Cabrillo teacher, thinks that really isn't a problem. The Cabrillo program is aimed at least 50 per cent toward producing better consumers and do-it-yourselfers. "Even if there were no jobs, it would still be worth doing," says Merrill.

Merrill also predicts a significant future for solar energy in other areas, such as agriculture (crop drying and irrigation). Merrill presently is building his own passive solar house in the hills behind Cabrillo. The future of solar, he believes, is for it to become "something everybody can use," something "accepted as a way of life."

Solar energy has clearly gone beyond the theoretical stage in Santa Cruz. Reputable firms are busy, good courses are available, and hundreds of pioneers are happy with their systems.

The industry, however, is still struggling: installation problems occur and firms die. Apparently only dramatic increases in gas prices will put solar energy on a successful mass basis.

That day, however, isn't far away. □



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