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Environment



Solar Power Up

Energy From the Sun Keeps Alameda Humming

On a cold, foggy morning in Alameda, it is hard to imagine harvesting the sun's solar energy to light a home or run appliances. And Sheldon Norberg and Kevin Good, the duo running Sun's Free Solar in Alameda, acknowledge that when it comes to using solar power, the more sunshine and the longer the hours of sunlight each day, the better. Still,

according to Good and Norberg, partners in Alameda's first residential solar installation business, even on the gray, short days of winter, enough sun hits most local roofs to make an investment in solar panels a worthwhile consideration.

"Alameda homeowners can count on a yearly average of five hours of peak sunlight per day," Norberg says, and with a new financial incentive program mandated by the state, the time may be right to make the move to sun-powered energy.

Although solar power as a renewable energy source has been around for hundreds, maybe thousands of years, the use of solar cells—or photovoltaic cells—that convert light into electric current has picked up steam during the last decade in response to rising energy prices and concern over global warming.

The state of California took a definitive stance on the future of solar energy in January 2007, when the Governor's Million Solar Roofs Program was launched with the goal of generating 3,000 megawatts of continuous solar electrical power (enough to supply 1.5 million homes) by 2017, with 400 megawatts of that energy coming from new home construction. That would equal 160,000 new energy-efficient solar homes within the next 10 years. The aims of this program are to improve California's energy outlook and to help lower the cost of solar installations for consumers by providing rebates, or financial incentives, through the California Solar Initiative.

Alameda resident Ed Owens, the father of three young children and a longtime supporter of all things green, sustainable and recyclable, was eager to join the solar power movement. "I am not really a tree hugger," Owens confesses, "but our family has always thought about ways to lessen our impact on the planet." Owens discussed solar panel installation with Sun's Free Solar for several months but admits that the cost of a system was a barrier. "The rebates pushed us over the edge. Our rebate of over \$8,000 covered about one-third of the cost of our system." Owens, who uses a clothesline for drying laundry and has a monthly electric bill that averages \$50 to \$60, hoped to generate enough energy from his solar installation to equal his family's electrical consumption. So far, he is very pleased with the results. "Saving energy is just what we do," Owens says. "Trying to conserve energy is a lifestyle choice. And with Alameda at sea level, it is hard not to think about the impact of global warming."

Owens is an Alameda Power and Telecom customer, and the locally operated utility, following the provisions of the state initiative, instituted a rebate program for Alameda residents and businesses, which

took effect in January 2008. Over the next 10 years, AP&T plans to offer rebates totaling \$4.2 million for solar installations, for commercial and residential customers. AP&T rebates are funded by a billing charge, which works out to less than \$5 per year for most customers. The allocation of rebates will be based on a first-come, first-serve basis.

AP&T, which currently boasts a power supply system that consists of 80 percent clean and renewable sources, including geothermal, anticipates that the increase of solar power use in Alameda during 2008 could result in energy savings equal to serving the power needs of 50 typical households.

One of the biggest appeals of solar energy is the generation of power from a free and renewable source, a source that does not rely on the burning of fossil fuels, which contributes to global warming, or on the damming of rivers and streams. But even with rebates, solar installations can be expensive, averaging about \$24,000, according to Good and Norberg.

So it is important to evaluate the short-term costs, and the long-term paybacks, of installing a solar system. "One way to tell if a potential customer can benefit from solar energy is to look at an average monthly electric bill," Norberg says. "Anything over \$85 dollars makes solar energy a good option to consider." Additionally, adding solar panels can add to a home's value. "Solar installations outdo deck additions and kitchen and bath remodels in terms of financial return on home improvements when a house is sold," he adds.

When it comes to evaluating a home as a good candidate for solar power, the top priority is the roof, not the weather. "Any kind of roof, shingle or tile, will work. At Alameda's latitude, however, a south- or west-facing roof is best to compensate for foggy mornings," says Norberg. Flat or pitched, either will do, too, as long as the compass orientation is good. "Some of our most dedicated green clients have northeast-facing roofs, or shade from neighbors' trees. It is heartbreaking to tell them it just won't work," he says, "because they don't get enough direct sun exposure during the day."

Homeowners and businesses investigating solar and anticipating applying for AP&T rebates must have energy-efficiency audits conducted by AP&T (at no cost) and must meet specific requirements for installation, including roof orientation and shading. By the end of 2008, AP&T anticipates that it will process about 48 applications from residential and business customers. Each application takes approximately three to six weeks to work its way through an approval system that includes a check off from the AP&T engineering division, assuring the proposed photovoltaic installation meets state standards, as well as a permit from Alameda's Planning and Building Department.

Jumping through bureaucratic hoops can be off-putting to some, but not for Dr. Robert Abbe, whose daughter is married to Kevin Good. Abbe raised his family to be environmentally aware. "Conserving and preserving the planet is a whole family effort," he says. "Our goal is to have as little impact on the Earth as possible." For Abbe, the potential of a rebate was not a major factor in the decision to install solar panels. Although Abbe's solar energy powers every appliance in the house and produces enough surplus electricity on some days to actually feed energy back into the AP&T power grid, his bottom line is an investment in his children and grandchildren's future.

"I am voting with my dollars for a green alternative," he says. "A rebate is frosting on the cake."

Irwin Ordeman, another solar enthusiast (and Sun's Free Solar's third Alameda customer), decided to install photovoltaic panels in conjunction with a new roof project—a strategy Norberg and Good say makes all sorts of sense. "The cost of electricity is going up. I'm spending money now and fixing the price of power for the future," Ordeman says, adding, "My dad built this house, and I plan to keep it for the foreseeable future. I am trying to make the whole house more energy efficient."

A national nonprofit organization is also the beneficiary of the push to solar in Alameda. On June 28, GRID Alternatives, an Oakland-based company, sponsored SOLARTHON 2008, a fundraising event to install solar systems on eight Habitat for Humanity homes in Buena Vista Commons. The solar installations will generate more than \$130,000 in clean, renewable power over the expected lifetime (approximately 30 years) of the systems, which amounts to removing close to 400 tons of greenhouse gas emissions. The AP&T rebate, paid to Habitat for Humanity, will be approximately \$7,200 per house. "GRID Alternatives focuses on installing solar electric systems in low-income communities where households are the most

adversely affected by high energy prices,” says company spokesperson Jenny Spitz. “We believe making energy choices that are good for the environment can go hand-in-hand with improving the lives of those living in low-income communities.”

When it comes to living green now, and creating an Earth-friendly legacy for generations to come, solar power boosters agree this is an energy source whose time has come. And rebates can certainly ease the transition to a smaller carbon footprint. Free and renewable, the future looks bright for solar in Alameda.

—By Noelle Robbins
—Photography by Philip Kaake

Solar Toolbox

Sun’s Free Solar

(510) 496-6008, www.sunsfreesolar.com

California Solar Initiative

www.gosolarcalifornia.ca.gov

Alameda Power & Telecom Solar Rebate Program,

www.alamedaapt.com/electricity/solar. For a free energy audit, call (510) 748-3947.

GRID Alternatives

1610 Harrison St., Oakland, (510) 550-8535, www.gridalternatives.org

“What’s The Payback? How to calculate the return on your solar electric system before you buy,” by

Andy Black

Solar Today Magazine, May/June 2006, www.solartoday.org

Energy Efficiency and Renewable Energy

U.S. Department of Energy, www.eere.energy.gov/consumer/your_home/electricity