



GREEN: SOLAR

Golden State at the forefront of solar power innovation and integration.

By Lynn Machon

As Californians, we tend to take our beautiful weather for granted. Clear, sunny days are pretty much par for the course around here, particularly throughout the summer months.



But in the grand scheme of life, our abundance of sun-filled afternoons means more than just a chance to enjoy a year-round outdoor lifestyle. It signals an opportunity for our Golden State to make a difference globally by being at the forefront of solar power innovation and integration.

The sun provides a free, reliable, non-polluting and sustainable energy source that, when utilized, reduces electricity costs, pollutants into our environment and our reliance on fossil fuels.

And best of all, with today's incentives, rebates and financing programs, it's more affordable than ever for homeowners to jump on the solar bandwagon.

Roseville's Solar Commitment

A hotspot for solar integration, the City's commitment to the environment and to sustainable energy resources is nothing short of impressive. Both the Green Roseville program and Green Fund provide unique opportunities for residential and business customers alike to support the development of renewable energy (www.roseville.ca.us).

Customers who sign up for the Green Roseville program, commit to receive 100 percent of their energy through renewable sources such as the solar arrays on top of the Civic Center, Fire Station No. 6 and the Silverado Middle School. And through the Green Fund, customers may voluntarily contribute 1 cent per kilowatt hour of their current monthly electrical usage to help develop future solar projects in Roseville.

As a result of our community's commitment to solar, our area is now home to some of the world's leaders in solar product manufacturing and installation in addition to innovative new solar communities such as those built by local developers Lennar Homes, Elliott Homes, Christopher Homes and Premier Homes.

In fact, SCHOTT Solar, one of the world's leading manufacturers of photovoltaic cells and parabolic trough receivers (which allow solar energy to be stored), has its North



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America solar division headquarters right here in Roseville.

Another local company with a national presence is Roseville's Solar Power, Inc., which recently installed a 400 kWh solar system to meet the needs of the 43,000 square-foot Placer County juvenile detention facility.

How Does Solar Work?

It may surprise you to discover how easy it is to become an official solar customer. Solar technology is a relatively simple concept which uses photovoltaic (PV) cells, most commonly in the form of either rooftop panel installations or stand-alone ground mounts, to attract sunlight and turn it into electricity.

The solar cell-generated current then flows to an inverter, which converts it from direct current (DC) to alternating current (AC), appropriate for household use.

In a complete residential solar installation, the PV system is wired directly into the home's existing breaker box and connects into the local energy grid. When the sun shines, the home generates its own energy, and when the sun goes down, the home draws from the local utility.

Through a process called "net metering", if a homeowner's solar system produces more energy than is used during the month, the meter runs backwards and energy is



diverted back to the utility grid and credited to the customer.

A neat way to learn more about renewable technologies is to visit Roseville's Utility Exploration Center, located in the Martha Riley Library building, next to Mahany Park. The center offers self-guided tours and hands-on exhibits and has plans for a future outdoor extension, called Ideascap, which will include exhibits on solar energy and other sustainable living principles.

The Cost of Harnessing the Sun

According to Solarbuzz (www.solarbuzz.com), an international solar research and consulting company, the average price of solar power installations has decreased steadily for the last 15 years. This is a key consideration during a time when most electric utility companies are raising rates in an attempt to recoup higher fuel costs.

To estimate the cost of retrofitting an existing home with a solar power system, the home's current electrical usage must first be determined. The larger the load, or electrical drain, the larger the solar system needed to meet the demand.

For instance, according to Roseville Electric, a typical household in Roseville uses an average 800 kilowatt hours (kWh) of power each month, or 9600 kWh per year. In general, a PV system that covers 100 square feet produces about 1,400-1,600 kilowatt hours per year. On average, the 600 square feet of space needed to meet the average home's needs would cost anywhere from \$25,000 to \$50,000 to install, after any tax credits and rebates.

To help determine your own system needs, you can use the solar estimator at www.findsolar.com or the Clean Power Estimator

from the Consumer Energy Center at www.consumerenergycenter.org.

As a way to make going solar a more affordable option for Californians, a series of tax credits and incentives are offered by both the federal and state government that in some cases essentially cut installation costs in half. Additionally, Roseville Electric offers further rebates to encourage customers to use solar as a sustainable energy source.

Individual solar companies also are helping take the hit of the initial cost by offering financing plans and even leasing options for solar system installations. Solar City is one local company offering a lease program that reduces most upfront costs associated with installing a new solar system.

Solar-Powered Appliances

Homeowners who are not ready for a complete solar retrofit for their home, can still significantly lower utility bills by taking advantage of individual solar-powered components and appliances.

These days, solar power can be used to heat pools, run pool pumps, run and heat hot water, power landscape lighting, power water features, and even power some outdoor grills and other appliances.

In addition to installing complete residential solar energy systems, locally-owned Solar Pro features their own SolarMaxx pool heating system that significantly saves heating costs, a major expense for most pool owners.



As with any contractor, homeowners should first do their homework before hiring a solar installer. Foremost, seek a referral from your local utility or someone you trust, and then check with the California State Licensing Board at cslb.ca.gov to make sure the contractor is licensed and in good standing.

Lack of certain knowledge or a solar specialty license could impact your ability to obtain cost-reducing rebates. It is also wise to check with your homeowners association about possible guidelines or limitations for exterior installations.

Although the initial investment in solar energy may seem costly up front, the long range benefit to the environment and our community as a whole is priceless. And as demand for renewable energy increases, its availability and affordability will escalate as well.

While companies and individuals around the world work to reduce our global footprint and our nation's reliance on fossil fuels, harnessing the energy of our free, limitless sun is definitely a bright idea. ■