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Look up for power boost

Homeowners are investing in rooftop solar energy systems

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The Northwest has a reputation for being dark and rainy, but during the summer Portland's sun exposure rivals that of Europe and can even exceed the solar potential of the Midwest, New England and Mid-Atlantic states.

Jim Piper, a commercial photographer, had the sun in mind when he bought property off Northwest Cornelius Pass Road in 1980: "My first priority was south-facing," he says. He cleared the property and built with hand-hewn beams from felled trees. "I was a lot younger and a lot stronger."

Finished in 1985, the house uses passive solar energy and a small wood stove for heat.

"He definitely wanted to build a solar house," says Roberta Lampert, who married Piper a year after the house was completed. Today, they share the house with their two teenagers.

Now, Piper and Lampert are considering installing a solar electric system.

Aquila Velonis of Environmental Building Supplies visited them last month to assess their site for a possible solar system.

Using a device called a Solar Pathfinder, Velonis measured the site's sun exposure — they need 75 percent exposure or better to qualify for Energy Trust of Oregon incentives. To get maximum exposure for rooftop panels, Velonis identified several trees that would need to come down.

"That's three or four winters' worth of wood," says Piper, who burns about 1 1/2 cords per year.

Velonis also explained the available incentives and tax credits: For customers of Portland General Electric, the Energy Trust chips in an immediate \$2.25 per installed watt, up to \$10,000. The Oregon residential tax credit for solar is \$3 per watt, up to \$6,000, spread over four years. Beginning this year, there is a federal tax credit of 30 percent of the installed cost, up to \$2,000.

Incentive is icing

Since 2003, the Energy Trust has given incentives for about 100 solar electric systems and 120 solar water heating systems. For metro Portland, the Energy Trust expects to receive twice as many solar electric incentive applications in 2006 as in 2005.

"I was committed to go ahead and do this without any incentive," says Murray Hill resident Narendra Shah, whose 2.8-kilowatt solar system has been running since April. "With the incentive, it was even better."

Shah, a former engineer for Bechtel Corp. who moved every two years for work, waited until retirement to install a solar energy system.

The cost for Shah's system was \$22,900, before the Energy Trust rebate and state and federal tax credits.



DAVID PLECHL / LOCALNEWSDAILY.COM
Sherry and William Spencer's solar system went online in May 2005. The energy it produces helps heat and cool their Southwest Portland home, and any surplus kilowatts are sold back to Portland General Electric.

“Overall, \$8,413.50 will be completely out of pocket,” Shah says.

And there are other savings. Before solar, Shah’s PGE bill was \$40 to \$50 a month for the family’s 2,900-square-foot house. “Last month was only \$7,” he says. “I really like that.”

Shah was concerned about how the rooftop solar panels would look from the street, but they blend in nicely. “It looks very, very good,” Shah says. “A lot of people stop and look at the roof.”

Most home-based solar systems don’t have a battery backup to store excess solar power. Without battery storage, solar systems provide solar-generated electricity only while the sun is shining. These homes rely on PGE at night or when it’s cloudy — and the solar system shuts down if PGE experiences a service outage.

But the systems do allow homeowners to sell back to PGE any surplus solar energy generated during the day.

Demand on the way up

With the growing popularity of solar as an alternative energy source, and with an uncertain future for fossil fuel prices, there is high demand for solar panels and other equipment. Manufacturers are filling orders as quickly as they can, but consumers may have to be patient.

Shah estimates it took six months after signing his contract for his solar system installation. Sherry Spencer, who lives in Healy Heights with her husband, William, waited about four months for a system, which went online in May 2005.

Her southwest-facing windows keep the house warm in winter, “but in the summer, it gets extremely hot,” she says. With air-conditioning running up her electrical bills, she figured going solar “would be the right thing to do.”

Before installing a solar system, the Spencers’ monthly summer utility bills were averaging up to \$80. Now, they’re paying PGE about \$30 a month in summer.

In addition to taking advantage of incentives and tax credits, Spencer is selling her solar-energy renewable energy credits, commonly known as Green Tags. During a solar system’s first five years, homeowners can sell these “carbon-free bragging rights” to a third party. A typical 2- to 3-kilowatt system may bring \$700 to \$800 in Green Tags over five years.

“It’s the free-market part of the puzzle,” says Doug Boleyn, owner of Cascade Solar Consulting in Portland. Boleyn operates the nonprofit Northwest Solar Cooperative, which buys Green Tags from homeowners across the Northwest and sells them to programs like Bonneville Environmental Foundation. Companies and individuals can buy Green Tags from the foundation to support clean energy.

“It’s people who freely choose to buy greenness, and people who freely choose to sell it,” Boleyn says.

Solar isn’t for everyone

Portlander Dave Weber, who works with the Antarctic Research Program and volunteers with the Solar Energy Association of Oregon, acknowledges that solar systems are still expensive, even with the generous incentives and tax credits.

“It’s a pretty good deal in the long run, but you have to come up with about \$14,000 right away,” he says. “A lot of people just can’t do that.”

If you want to make a clean-energy difference, but can’t afford a solar system, Weber recommends other strategies — like using mass transit and PGE’s renewable power programs. “For a couple bucks a month,” Weber says, “I’m buying power from wind.”

“The No. 1 thing is start consuming less power,” Weber says. “Then start thinking about ways to use the sun.”

While Velonis is working up project specs for their property, Piper and Lampert have made their decision.

“We’re going to go ahead with it. We can afford to do it,” Piper says. “It might be somewhat aloof to say

it's not about the money, because if you don't have it, you can't do it. But it's really a lot more about being green."

"This is the thing we can do," Lampert says. "If everybody did the thing they could do, it would change the world."

Find out more

- The Energy Trust of Oregon is a public-purpose organization dedicated to energy efficiency and renewable energy generation.

www.energytrust.org

- The Bonneville Environmental Foundation is dedicated to increasing the supply and use of renewable energy by developing and marketing green power products.

www.b-e-f.org

- Environmental Building Supplies helps customers build or remodel in a healthy and more sustainable way. They focus on natural and renewable materials.

www.ecohaus.com

- Cascade Solar Consulting provides solar consultation services as well as solar energy system design and solar energy networking with other energy and building professionals.

www.cascadesolar.com

- The Oregon Department of Energy's Web site, Oregon State Solar Incentives, offers a listing of energy tax credits for Oregon homes and businesses, and information on Oregon's Energy Loan Program.

www.oregon.gov/ENERGY/RENEW/Solar/Support.shtml