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Renewed mission: Be free of fossil fuel

Subsidies, rebates help LV resident convert house

By JOHN G. EDWARDS
REVIEW-JOURNAL

Since he was a high school sophomore in San Diego, Les Lazareck wanted to work in the renewable energy industry.

He studied alternative energy design while earning a bachelor's degree in mechanical engineering at the University of California, Santa Barbara. His main project used wind power to desalinate water.

After graduating, however, he ended up initially pursuing a career in computer systems and software.

But Lazareck, 45, still plans to take an active role in promoting renewable energy, by installing a solar power system at his home in southwest Las Vegas.

"My goal in life is to be free of fossil fuels," Lazareck said.

Lazareck said the system he is installing at his home will help him reduce his consumption of petroleum, natural gas and coal and become more energy independent.

The mechanical engineer, however, also expects that his new solar energy installation will save him money and provide other benefits.

The solar power system will protect him against potential increases in electric rates and help cut his dependence on fossil fuel power plants that throw off carbon dioxide, which many scientists say leads to global warming.

Lazareck's home system will use photovoltaic electric panels that convert the light from the sun into electricity.

Thanks to government subsidy programs, solar panels are a cost-effective way to reduce energy bills, Lazareck said.

Homeowners who install solar panel systems qualify for tax breaks from the federal and local governments and rebates from the electric utilities.

Starting Jan. 1, consumers can get even a larger tax credit from the federal government. One of the provisions added to the financial bailout bill that was passed this month increases the maximum credit available for home solar systems that start operating next year.

Under current law, \$2,000 is the maximum tax credit homeowners can get for solar electric installations. Systems installed after Jan. 1, however, will qualify for a 30 percent tax credit with no limit.

To calculate the tax credit, however, the homeowner must first deduct the rebate from Nevada Power Co., which does business as NV Energy. The electric utility next year will give residential power customers a rebate of \$2.10 for each watt of PV power installed. The current rebate is \$2.30 per watt, but the utility already has more reservations than the maximum kilowatts set aside for residential and small business rebates allocated for the year ending June 30. Based on next year's rate, NV Energy would give an \$8,400 rebate to customers who install a 4 kilowatt solar power system.

So if the system costs \$36,000, the rebate would reduce the homeowner's out-of-pocket expenses to \$27,600.

Consumers' costs would be further reduced, though, because the Internal Revenue Service next year will give homeowners a 30 percent tax credit on solar power systems. On a 4-kilowatt system, the tax credit would equal \$8,280, bringing the cost of the system down to \$19,320.

Each kilowatt of solar power will produce about 2,000 kilowatt hours of electricity a year, said John Hargrove, renewable generation program manager for NV Energy.

Solar power systems also reduce homeowners' monthly electricity costs.

A 4-kilowatt system will produce 8,000 kilowatt hours yearly, with each kilowatt hour costing about 10 cents per kilowatt for power generated by NV Energy. So that saves the homeowner about \$800 yearly in power bills.

Based on that \$800 per year, a 4-kilowatt solar power system would pay for itself in 24 years (divide \$19,320 by \$800), sooner if power rates increase as they almost certainly will.

Lazareck, however, did a similar calculation, assuming a 7 percent annual increase in retail power rates and higher power production from the solar system.

He concluded that a consumer could recover all of their costs for a 3.6-watt system in 15 years. He applied earlier when NV Energy made a rebate of \$3 per watt, and he expects to recover his costs for his own 5-kilowatt system in an even shorter period -- 12 years.

Photovoltaic panels have 20-year warranties and typically last longer than that with regular maintenance, according to NV Energy.

In addition, solar PV systems will increase the resale value of a home, industry analysts say. But Nevada state and local government agencies don't assess property taxes on solar power systems.

On the other hand, NV Energy's calculations don't reflect the expense of borrowing money to pay for solar power equipment.

Everything considered, "it's pretty much a personal decision" on whether to buy a solar system, Hargrove said.

Lazareck is installing a 5-kilowatt PV system on his rooftop, the maximum size that qualifies for residential rebates. Although NV Energy officials say a 5-kilowatt system would not meet all of the electricity needs of a single-family residential home, Lazareck believes his system will generate more electricity than he and his wife use in their 2,500-square-foot home because of its high energy efficiency design. Lazareck intends to use excess power for a plug-in hybrid car that he will buy in a couple of years.

The mechanical engineer recommends that homeowners hire experts to improve the energy efficiency of their home before contracting for a PV system. His company, Home Energy Connection, conducts energy audits and subcontracts to make energy efficiency improvements in homes, which often include sealing ducts, floors, walls, windows and ceilings.

Chris Brooks, director of Bombard Renewable Energy, also is considering the business angle. He said there has been a big increase in the number of inquiries he has received from potential customers

since Congress approved the 30 percent tax credit.

Many homeowners, however, have seen their access to home equity lines dry up during the ongoing credit crisis, making it hard for them to afford a PV system.

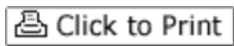
Brooks explained: "This wonderful turn of events for the solar industry comes at a time when people have no money to build anything."

With the tax credit in place for another eight years, though, Brooks believes Bombard has time to wait for an economic recovery.

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