

Water heaters put solar energy within reach

January 21 2009, by Wendy Lemus

Andrei Mitran of Cary says he has no desire to live "off the grid." But when choosing a replacement for his 18-year-old hot water heater, the computer programmer says he decided to look into purchasing a solar unit.

Mitran, whose personal investments are heavy in the energy industry, knew that with the state and federal tax credits offered, the bottom-line cost of a solar water heater would be low and that he would see an immediate savings on his electric bill.

Through his investment-driven research on the energy industry, he thinks the price of coal may rise, pushing electric bills higher in a few years.

"I might as well do what I can do now," he said of his recent purchase.

Mitran and his wife Sue had the unit installed at their home a couple of weeks ago. The purchase was more his decision than hers.

"I don't think she knows what it is and how it works," he said of his wife -- but that may not be a far-off description of the average person's knowledge of the technology.

Mitran probably knows more about solar power than the average person.

The technology has been around in some form for hundreds of years, but he says Europeans have adopted it more readily than Americans.

He also knows that modern methods of heating with solar have improved greatly in the last few decades, and he says U.S.-made products are finally catching up. A couple years ago, he probably would have bought a foreign-made system. But he chose one made in the United States and manufactured by a Cary company, Solarh2ot, Ltd.

Energy from the sun. Last year's skyrocketing gas prices and the national debate about foreign oil dependence turned renewable energy into a sizzling hot topic.

While going completely "off the grid" -- a term referring to no more dependence on power companies -- may be a bit extreme, the debates have some households thinking about how they can play even a small role in environmental conservation.

In North Carolina, solar hot water systems are among the most popular uses of solar thermal technology, according to N.C. State University's North Carolina Solar Center.

"It is possible to meet 60 percent of your hot water needs with just one collector. The energy you save from not heating that water with electricity can pay back the cost of the system in 5-10 years," the center's Web site states.

"Solar hot water is the best bang for the buck because it is a lower entrance fee," said Jason Epstein, owner of Outer Ring Energy in Raleigh, which installed the Mitrans' unit, at a cost of about \$6,200 before tax credits are figured in.

The Mitrans won't be heating their water solely with solar. Their system includes a backup tank with an electric heating unit. But Andrei Mitran says that since they are feeding that tank with the water heated by the solar unit, they expect their electric hot water needs will be minimal.

While the Mitrans' purchase was influenced by the need for a new water heater, Epstein -- who went into business about a year ago -- said people contact his business for a variety of reasons.

"I get the full spectrum," he said. "A lot of people think the only reason people do this is because of the tax incentives. It's not just about that. Some people feel they want to be more independent of the [power] grid. Then you get people who are thinking about lowering their carbon footprint."

Epstein himself falls into that last category. Epstein says he and his wife are conscious about their own habits' wear and tear on the environment. They were able to get their electrical usage on their 2,500-square-foot home to just under 1,000 kilowatts per month, which is lower than average for that size home, he said.

Although solar hot water heaters are the current top sellers, Epstein says he is equally excited about a solar hot air system that can help lower heating bills and for which tax credits are also available. It complements a home's current heating system and can be installed either wall mounted, roof mounted or remotely.

Epstein says that for some homeowners, a lower heating bill can be a quality of life issue: "The difference between buying Froot Loops or [fresh] fruit" for some families, he said.

With their recent purchase, the Mitrans expect to save \$700-\$800 a year on their electric bill. But Epstein points out other, less obvious benefits, such as the water savings at the power plant.

A nuclear power plant such as Shearon Harris uses millions of gallons of water for cooling, with each "end user" consuming about 3-6 gallons for every kilowatt hour of electricity consumed, according to U.S.

Department of Energy statistics. With the energy saved by the Mitrans' solar unit, Epstein calculated a savings of between 10,000 and 20,000 gallons of water per year at the power plant.

Mitran says he'll consider a photovoltaic generator if the price comes down or if the tax breaks become more attractive. Photovoltaics convert the sun's energy into electricity, which can help reduce demand from power companies, and reduce utility bills. However, according to the N.C. Solar Center, the initial cost of the system can be expensive and therefore prohibitive for many homeowners.

For now, he's happy with his decision to bring a little sunshine into his home and realize a savings to boot.

"I'm not one of those people that just wants to get off the grid and live off the land," he said. "I like modern technology."

NORTH CAROLINA RENEWABLE ENERGY TAX CREDIT:

North Carolina offers a tax credit of 35 percent (subject to ceilings) of the cost of renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during the taxable year through 2010. The credit is subject to various ceilings depending on the type of system. In addition to solar, the credit applies to wind, hydroelectric, biomass and biofuels equipment. (source: ncsc.ncsu.edu)

HOW IT WORKS:

--Andrei and Sue Mitran, Cary homeowners

--The purchase: Solar hot water unit

--Specifics: For their needs, the Mitrans purchased a Solarh2ot unit with one collector and two tanks

--Cost before tax credits: About \$6,200

--Cost after tax credits: Roughly \$3,300

--Estimated annual savings on their electric bill: \$600-\$800

--Return on investment: About three years

--Extra benefit: The Mitrans say they needed a new hot water system, which would have run about \$800, so they figure their net cost on the solar unit is about \$2,500.

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