

Harnessing the sun

October 5 2009, By Andy Mead

The American Solar Energy Society's 2009 National Solar Tour took place Oct. 3 in 3,000 communities.

The tour in Lexington, Ky., included a just-finished house that is "nearly net zero," which means it produces so much energy from the sun that it requires almost no manufactured energy. There also was a house that has been remodeled, and a house with a heating and hot water system that is new in this country.

The latter is at the 16-year-old home of Ron Hoffman.

He has what he says is the first residential U.S. installation of a Sun Equinox Heating System (called a Rotex Sanicube in other countries). Hoffman also is the Kentucky distributor for the equipment.

It is an 80-gallon water tank but, unlike a water heater, the water is pumped to the roof, where it comes in contact with fluid-filled tubes that have been heated in solar collectors.

Two stainless steel tubes run through the tank. One supplies hot water, with an occasional boost from a gas-fired tankless water heater.

The other takes hot water through an air handler that provides warm air to heat the house.

A unit like his, with the current 30 percent federal <u>tax credit</u> and a \$500 Kentucky tax credit, costs \$9,000 to \$10,000, Hoffman said.



He said he was replacing two gas furnaces and was expecting to spend \$6,000 or more on those. With the free energy he's getting from the sun, he expects to break even in about five years.

The unit itself is out of sight in his garage. The solar collectors are almost invisible on his steep roof.

"There's been a concept that if you have a solar collector ... it's kind of like having a chicken coop in the front yard or cars up on blocks, but they look like skylights," he said.

Another house on the tour was John Scott's 70-year-old bungalow.

Three years ago, he got a solar hot water heater. This year, he got <u>photovoltaic panels</u> on his roof that create electricity.

The prices, he said, were \$3,100 or the hot water system, and \$13,000 for the photovoltiacs.

With a federal tax credit, he recouped 30 percent of the cost of both. The credit used to have a \$2,000 cap, but there is no limit now.

"If I thought about this in terms of dollars and cents, why would I want to do that?" he said. "But the larger issue to me is climate change and burning coal. From mountaintop removal to mercury in fish, I think the most obscene thing we're doing in this world is burning coal."

Scott's photovoltaic system also has been operating since last spring, cutting his summer electricity bills in half. But he notes that it's been an exceptionally cool summer, and his air conditioner has seen little use.

Scott also has a net-metering system. That means when he produces more electricity than he uses, some of it goes back out the line that



brings juice to his house.

His meter runs backward during those times, and the panels on his roof might be keeping a light on in a neighbor's house.

The thing he likes best about the system is a display that keeps track of how much carbon dioxide he has avoided putting into the air by using energy from the sun instead of a fossil fuel.

In the middle of last week, it read 1,144 pounds saved.

"It sounds like a lot, but it's really not," he said. "But hell, it's better than zip."

GET AUDIT, REFERENCES

Ron Hoffman had this advice for someone considering solar energy:

• Consider a professional home energy audit to find energy leaks before installing new technology.

• Check references of dealers and installers. If possible, use an installer certified by the North American Board of Certified <u>Energy</u> Practitioners. You can find our more at <u>www.nabcep.org</u>.

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