

## 'Energy saver' leads by example

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HARRIMAN, Tenn. — Several years ago, a Harriman man ended a long, successful career in software development and took on a mission that helps the environment.

In 2005, David Bolt, 49, started Sustainable Future, a company that provides products, services and education to help reduce energy consumption and carbon emissions, and is now focused on helping people build "zero-energy homes," which can create as much energy as they consume.

Currently, Bolt, a former software developer who has degrees in electrical engineering and computer science, is getting ready for an Oct. 4 open house at his home on Sugar Grove Valley Road, just north of Kingston along the Emory River.

The open house, from 10 a.m. to 1 p.m., will feature a walk-through of his family's home, which includes environmentally friendly renovations from solar panels to bamboo flooring to a waterless urinal. There will also be a display area, Bolt said in an interview at his home last week.

The goal is to raise awareness, let people see some of the equipment firsthand and spur people into action.

"It is real, and it does work," Bolt said.

The open house is part of the American Solar Energy Society's National Solar Tour.

In Oak Ridge, Sustainable Future has put together a proposal to offer solar panels to prospective owners of new townhomes being built at Groves Park Commons on Tuskegee Drive. The developers have agreed to offer the panels as a standard option, Bolt said.

During a tour of his Harriman home last week, Bolt showed a reporter the systems and renovations designed to save electricity.

"This home is basically a big experiment," he said.

There's a 120-gallon water tank that can hold three to four days worth of hot water heated by rooftop thermal panels powered by the sun.

There's also:

- a modified shower stall that retains heat and humidity;
- a battery charging system powered by the sun through photovoltaic panels on the roof;
- a combination washer and dryer that uses little water and plugs into a 110-volt outlet;
- an efficient air-conditioning system that, among other things, can vary the blower fan speed to control humidity;
- two electric meters, including a utility grid meter than can spin backward and a solar meter that tracks electricity generated by the rooftop photovoltaic panels; and
- modifications to the attic, rooftop and eaves that, though not yet all complete, will moderate the air temperature in the attic.

Little touches throughout the house also help save electricity. For example, a basement microwave is plugged into a power strip, which is turned off when the microwave is not in use. Even if not used but left plugged in continuously, the microwave would draw the equivalent of about 4.5 pounds of coal per month, Bolt said.

Bolt has determined that making coffee uses 350 watt-hours of electricity and keeping it warm uses another 350 watt-hours. So, rather than leaving the coffee pot on, Bolt and his wife, Barbara Lamb, pour fresh, hot coffee into a thermos, saving power while keeping the brew warm.

"That cuts the energy to drink coffee in half," Bolt said with a laugh.

The Bolts are still plugged into the power grid and can consume electricity generated by the Tennessee Valley Authority. But they also get paid 15 cents a kilowatt-hour through a TVA power distributor for electricity generated by the rooftop photovoltaic panels.

Bolt said the family home has had negative utility bills and has a cumulative negative bill of approximately \$250, Bolt said.

"We haven't paid a utility bill since April 2006," he said.

Bolt said he has invested about \$100,000 on his home, with about one-third of it spent on solar panels and the rest on structural work and general renovations.

The \$30,000 or so spent on solar panels is roughly the price of a new car, Bolt said.

"For the price of a car, I've become energy-independent," he said.

Bolt said he and his family are trying to live on 10 kilowatt-hours of electricity per day. That's the equivalent of about 10 pounds of coal per day and also the average of what the solar panels produce.

Bolt's primary motivation is to help the environment.

"I feel like the Earth is hurting right now, and this is a way to help the Earth," he said.

For more information on Sustainable Future, its services and products, or the open house, visit the Web site at [www.sustainablefuture.biz](http://www.sustainablefuture.biz).

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