

Loganton household retrofits with solar panels and brings relief to their budget.

By SHAWNA T. TURNER -
sturner@sungazette.com

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LOGANTON - A local home is using three systems to generate its energy from the sun. Within a year, it may be designated as a net zero home or a home that consumes no energy from the energy grid and transmits no carbon emissions.

The home in question is not somewhere like California or Arizona, where the benefits of the sun's rays could be felt all year long. It is in Central Pennsylvania - and more homes in the area can be just like it, according to Keevin Larson, president of K.C. Larson Inc.

"This is a very common house in this area - basically a three-bedroom ranch, which makes it neat. It is not a house that someone started from scratch and made sure it was facing in the right direction," said Jeannette Fraser Carter, Pennsylvania College of Technology's director of outreach for K-12.

Larson did a green-themed presentation on the house for a Penn College program called Educator in the Workplace, where teachers go to various industries to learn about them while bridging the gap between industry and education.

The concept of the project began about two years ago when Loganton homeowner Thomas Hardisky contacted Larson for the cost of photovoltaic solar and geothermal systems, according to Larson. A year later, Hardisky called back and was ready to begin the project.

However, during the year the price of the project changed. Due to a reduction in solar panel costs, the solar system would cost less and Larson said he could use solar to help heat the house, putting more panels on the roof and installing a new high efficiency heat pump so Hardisky could get more value for his money, according to Larson.

Upfront, it costs more. But with the incentives and rebates, the entire system cost less than transitioning to a geothermal system would.

"He is not going to have an energy bill. With the geothermal, he would still have an energy bill. Because of the rebates, incentives and tax credits, after the first year, it would definitely cost less (than it would have with the original plan)," Larson said.

Many times when a system is installed, there is no energy bill in the summer but come winter, there is one because it takes more energy to heat the building 40 to 60 degrees above the outside temperature than it does to cool it down 20 degrees below the outside temperature, according to Larson.

Larson installed a photovoltaic solar system, which produces electricity; solar thermal panels, which heat the hot water and an air-to-air heat pump uses solar-generated electricity to supplement heating and cooling of the house, according to Hardisky.

"The solar thermal panels are different from the PV panels because the PV panels have photo cells that convert sunlight into electrical energy. Antifreeze runs through the solar thermal panels. The sun heats up the antifreeze and stores it into storage tanks and heats large volumes of water," Hardisky said.

Hardisky noticed considerable savings already.

"It hasn't actually come to me yet. But, my electric bill has been zero since April, when I got it installed. As far as power, I am way ahead. Right now, I am about 1,500 kilowatts ahead, meaning that my electric meter has turned backward about 1,500 kilowatts," Hardisky said. "On average, I have used about 500 kilowatts per month, prior to the system being put in."

Before, Hardisky did not have air conditioning, according to Larson.

Elizabeth Biddle, Penn College K-12 project manager, said the key for Hardisky's house and similar projects in the area is that they are retrofitted to the houses that are already here.

The vast majority of energy efficiency needs to come from retrofitting because a small percentage of the houses in the area are new construction, according to Carter.

"Really you have to retrofit what is there. That is what is so exciting about this house. People do not believe that in Central Pennsylvania you could be zero. You can do it in Pennsylvania. Germany has less sunlight than we have and are using PV panels very extensively as a way for energy efficiency," Carter said.

There will be an open house to display the house on Aug. 14 from 11 a.m. to 3 p.m. Details on the event will be released closer to the date.

Interested individuals may register for the open house at www.kclarson.com.