

Casper couple add solar power

by Carol Crump
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Bev Mathisen designed the house in east Casper that she shares with her husband Doug McLaughlin and golden retriever Duffy.

The floor-to-ceiling, all-around windows provide passive solar warmth in the all-electric home.

She made sure the open floor plan had extra wide hallways, a disabled accessible bath and no steps to accommodate Doug's dad, who lived with them for a time when they moved from Douglas.

"It's good for old people and dogs," she said of the home.

The house that the retired dentist designed also is good for the environment and the family pocketbook.

Last April, McLaughlin contracted with Gene Theriault and SunPower Energy to begin installing 20 solar panels on the south-facing roof of the home's three-car garage.

The remainder of the panels, which were back-ordered until recently, will be installed as soon as the wind dies down enough to make work on the roof safe.

When the panels become fully operational, the payback will come from a federal income tax credit and a one-third to one-half drop in the monthly electric bill.

Tax break and financial benefits

McLaughlin, a Casper attorney, also drives a light-blue Ford Hybrid. He said that the scarcity of resources, the cutback on coal-fired plants and potential for power rates to continue going up got him interested in solar power.

The house already had extraordinary opportunities to use the sun, and he discovered that there were tax incentives available for solar power generation, similar to the credit he received for buying a hybrid vehicle.

Even with only half of the photovoltaic panels in place, the couple already are seeing benefits.

Through an agreement with Rocky Mountain Power, the household is credited kilowatt for kilowatt for the energy the sun generates through the panels.

With 20 panels that are angled for the winter sun, and the sun shining all of the time, the system could produce 3,800 kilowatts an hour.

With half of the system in place, the home has been generating about 1,200-1,300 kilowatts per hour, said Mathisen, who has been tracking the couple's bills and comparing them to prior years.

There is a small charge to recoup some of the utility's costs for physical plant -- like poles and wires that connect to the grid.

"We'll see a dramatic effect with the whole system," with complete payback of the cost possible in 15-18 years, McLaughlin said.

The panels are slanted for the five daily hours of winter sun because they are more conductive in cool air.

During the daytime, unless the oven or the air conditioning is on, McLaughlin estimated that all of the home's electricity comes from the panels.

At night, they buy from Rocky Mountain Power as needed.

Any surplus from the conversion of the sun's direct current to the home's alternating current goes directly into the utility's grid for credit.

"We get the first use of the power we make during the day," McLaughlin said.

"With solar panels, a wind turbine and batteries for storage, you wouldn't have to be on the grid at all."

The federal tax incentives are an added bonus that McLaughlin and Mathisen will enjoy because of the timing of their project.

As of Jan. 1, 2009, systems that are fully operational to generate electricity will qualify for a no maximum, 30 percent tax credit.

McLaughlin's system will qualify because it won't be fully operational until the last panels are up and the permanent inverter system is connected to the grid.

In addition to the federal tax credit for solar generation that the Casper family will enjoy right off the top on their 2009 tax return, there are other federal and state incentives for renewable energy projects.

Lower cost projects, like installing more energy efficient windows and switching to newer refrigerators are included, along with higher dollar projects, like wind turbines and hybrid cars.

Programs vary from state to state, but Wyoming is one of the states that has passed incentive legislation.

The Database of State Incentives for Renewables and Efficiency (www.dsireusa.org) lists available federal and state programs from tax credits and sales tax exemptions to low interest loans and purchase rebates.