



Bulldog House Goes Solar

Student builders add solar energy with help from Franklin PUD



Summertime temperatures in Pasco can often top 100 degrees, but Mary and Jaime Cardona were able to stay cool this year without worrying about their electric bill also going through the roof.

That's because the home they bought last spring – built by students at Pasco High School – is equipped with solar panels that meet most of their household needs, and even spins their electric meter backwards when their rooftop system is producing surplus power.

The first month after moving into the 2,200 square-foot house on Desert Plateau Drive, the Cardonas say their electric bill from the Franklin County Public Utility District was \$63 – less than half what

their neighbors paid. With a separate solar-powered hot water system, they say their natural gas bills have been averaging about \$5 a month.

“We’re looking forward to what happens this winter,” said Jaime, a chaplain for the

Oregon Department of Corrections. “It’s still all pretty new and we’re still learning. We need to run through a full year, but so far, it’s had a really big impact on our electric bill.”

That’s actually good news for the Franklin County PUD, which

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provided the five 200-watt photovoltaic panels and solar hot-water system with a \$15,000 grant from Conservation Rate Credit funds through the Bonneville Power Administration.

While the Cardonas receive the benefit of lower electric bills, the PUD is learning about rooftop solar systems. The home is the first newly constructed home in Pasco with a solar system integrated with the electric grid.

In a BPA newsletter last summer, Todd Blackman, the PUD’s Energy Services

Specialist, listed some of the questions that had to be answered, including:

• Deciding how to implement net metering

- Purchase the photovoltaic panels and solar water heating systems via the Internet, since there were no local vendors
- Training students, electricians and plumbers how to install the systems;
- Showing students and teachers how to design the system and install the various components;
- Understanding how federal tax credits and state production incentives work.

The Cardonas noted that the PUD is continuing to work with them to fully



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understand the solar systems and helping with the paperwork to receive the state and federal incentives.

“It’s a learning process for everyone,” Jaime said. “When we went to buy insurance, the insurance people had no idea what to do (about insuring the solar panels).”

A project of the Pasco High School vocational education program, the 10th annual “Bulldog House” – named for the high school mascot – was designed in part by Pasco middle school students at Girls Design Camp, a summer program offered by Columbia Basin College.

The PUD worked with Pasco School District students and staff to install additional energy efficient measures to bring the house up to Energy Star Northwest Homes standards.

Energy Star homes must be at least 15 percent more energy efficient than homes built to the 2004 International Residential Code, and include additional energy-saving features that typically make them up to 30 percent more efficient than standard homes.

It was all the energy efficiency features that convinced the Cardonas to buy the house less than two weeks after it was finished.

“We weren’t really thinking about buying a house” explained Mary Cardona, who said she stopped by when the students and their teacher, Construction & Energy

Education Manager John Weatherby, were having a small party to celebrate a successful open house.

Mary, who proctors placements tests at Columbia Basin Community College, said she liked the idea that the house was built by the students, “but what really caught my attention was the energy efficiency. We’re all becoming more aware about using the resources that nature provides us.”

The Bulldog House program allows students to participate in general and subcontracting work, from construction safety fundamentals and nailing the first board on the house, to completing the finish work and landscaping.

Over the years, Franklin PUD has worked closely with Pasco High School to build energy efficiency into the Bulldog homes.

Introducing the students to alternative energy resources and especially solar energy was a next logical step, said PUD Energy Services Manager Darroll Clark.

Blackman said the PUD is hoping the high school incorporates solar energy into future Bulldog houses, but that won’t be happening this school year because the rooflines on the design approved by the Pasco Vocational Building Program Board aren’t compatible with solar panels.

“It’s always a challenge incorporating solar into house design,” Blackman said, “we all still have a lot to learn.”

“We’re not only training our future solar techni-

cians,” said Franklin PUD Manager Jean Ryckman, “but also broadening the entire community’s awareness of alternative energy sources.”

Ryckman is a former Pasco School Board member who now sits on the Pasco Vocational Building Program Board that oversees the Bulldog House program.

As for the Cardonas, they have kept the big purple and white bulldog painted on a concrete pillar in their garage and proudly tell people they live in a student-built house.

“It’s not just the solar panels,” said Mary Cardona. “Inside is very nice too. They did a really good job. We’re happy to be Bulldog fans.”



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