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OREGON—Rural Business Service

Alternative Energy



Top: Ben Metzger, Metzger Green Build (Solar Ki partner)
Bottom (from left to right): Laura Uhler, Owner, Solar Ki, LLC; Ken Dunder, Owner, Santiam Valley Ranch; Kathy Bridges, Owner, Santiam Valley Ranch, Bret Dixon, Area Director, USDA Rural Development; and Hopi, Australian shepherd

Solar, Wind Systems Eliminate Energy Costs for Family Aquaculture Business

Outline Of Need:

[Santiam Valley Ranch](#) began selling warm-water fish to stock ponds in 1982. Last year, this small, family-owned business southeast of Salem, Oregon, paid approximately \$3,000 in energy costs from their farm meter, primarily to maintain the biofilters, pumps, and the ozone and ultraviolet systems for their fish habitat, despite having already reduced their electric bill through the installation of a wind turbine. While owners Kathy Bridges and Ken Dunder wanted to expand their business, they first needed to find a way to reduce their operating expenses. They discovered they could do exactly that while also reducing their carbon footprint by better utilizing the natural resources available on their property.



Santiam Valley Ranch barn and wind turbine

How Rural Development Helped:

In 2010, a 20,000-watt wind turbine was installed on Santiam Valley Ranch with assistance from a \$20,000 Renewable Energy for America Program (REAP) grant from USDA Rural Development.

The wind turbine did not cover the full energy needs of their business, but Bridges and Dunder were eager to develop another source of renewable energy on their farm.

In May 2012, they purchased a 20,400-watt solar photovoltaic (PV)

system with assistance from a \$10,351 REAP grant awarded by USDA Rural Development.

“You can’t rely on just one source of alternative energy,” said Dunder. “You need complementary energy sources.” Their wind turbine, he explained, will generate energy on overcast winter days while their solar panels will pick up the slack in the summer, when there is very little wind in their area.

With the expertise of Laura Uhler, owner of Solar Ki, LLC, the installation of their solar PV system on two barn roofs was completed in April 2013, after both structures were reinforced and the 70-year-old electrical system was upgraded. A net metering agreement was then established with Portland General Electric where excess energy will be returned to the grid, giving Santiam Valley Ranch a credit they can draw on at night or at other times of limited sunlight.

“All of this would not have been possible without the funding provided by USDA and others,” said Bridges.

The Results:

In May 2013, the Santiam Valley Ranch aquaculture business did not receive an energy bill for the first time in its 31 years of operation.

“It’s all about using resources wisely,” Bridges said. “If people want to make a change, that change must begin with each of us.”

Moving forward, they hope to use their energy cost savings to expand their business with an indoor fish holding system and electric vehicles powered by their excess wind and solar energy.

“We are both very happy,” Bridges said. “I smile every time I walk past that wind turbine and those solar panels.”

Fast Facts

- Program: Rural Energy for America Program (REAP)
- Investment: \$20,000 grant (wind); \$10,351 grant (solar)
- Additional Funding: Grantee: \$4,652 (wind); \$22,540 (solar)
 OR Dept. of Energy: \$26,040 (wind); \$27,965 (solar)
 Energy Trust of OR: \$35,250 (wind); \$20,400 (solar)
 U.S. Treasury: \$36,087 (wind)
 Federal tax incentive: \$36,609 (wind); \$24,853 (solar)
- Partners: Solar Ki, LLC; OSU Energy Efficiency Center, Portland General Electric, NW Preferred Federal Credit Union, Kardon Construction
- Impact:
 - Eliminated farm energy bill in first month of combined solar and wind system operation, with more savings to come.
 - Created an energy independent business with significantly reduced carbon emissions.
 - Made a future business expansion financially feasible.