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Solar power shines bright in dark economy  
Renewable energies industry prospers in Northwest Washington



Workers for Whidbey Sun & Wind in Coupeville install 13.2kw grid-interactive photovoltaic (PV) system modules on the roof of a home on Sunlight Beach (Mutiny Bay) in Freeland on Whidbey Island.

By Linda Partlow

A positive light has shined from the solar power and renewable energy industry during these dark economic times, even in Western Washington.

Despite the region's notoriously rainy, soggy climate, competition is growing among businesses focused on solar power and renewable energy products and services. Owners of Whidbey Energy & Wind LLC in Coupeville, Green Power Northwest in Mount Vernon, and Western Solar and Alpha Technologies, both in Bellingham, say they expect to continue expanding their businesses as this trend grows.

#### SOLAR-POWERED VIABILITY

The owners of the four above-mentioned businesses all agree Western Washington has excellent solar power production potential for three reasons:

- A majority of homes and businesses are connected to the utility power grid, and Washington utilities must provide customers with credit for excess renewable energy production at the same value the grid energy is sold. "Basically, you produce extra power during the summer, which pushes back out into the grid, spinning your utility meter backwards, giving you credits with the utility," said Joshua Miller, a design and installation engineer, and co-owner of Western Solar. "And then you use your solar credits up at night, on cloudy days or during the winter months."
- The region's long, clear, cool and generally dry summers provide optimal solar power production from photovoltaic (PV or solar electric) systems. "PV cells have higher voltage at lower temperatures," Kelly Keilwitz, owner of Whidbey Sun & Wind, said. "So, power production from solar modules is greater when they are cooler." This means our region can compete with hot, smoggy, dusty locations in

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The new 2009 Lummi Island Wild solar fleet prepares to start the wild salmon fishing season. Lummi Island Wild Co-op began retrofitting its fleet in 2007 after partnering with Alpha Energy, a division of Bellingham's Alpha

places like California.

- Washington state offers progressive incentives, including a sales tax exemption for materials and installation of renewable energy systems. Most important are production incentive payments for total solar energy (electricity) produced, Keilwitz said.

When Keilwitz launched his renewable energy systems business in 2000, he says there were about three other companies in Washington involved in renewable energy.

“Now, in 2009 across the state, there are easily 30-40 businesses that do renewable energy exclusively,” he said. “Plus other contractors, such as electrical and plumbing, who are devoting work to renewable energies.”

Keilwitz’s customer base has increased in excess of 50 percent annually during the past 10 years. Instead of expanding to a national market, the company’s stayed focused on the Northern Puget Sound area, primarily Island, Skagit, San Juan and Snohomish counties, with some work in Whatcom County.

Is it easy being green?

Green Power Northwest entered the competitive market April 15 of this year. Randy Merritt II, owner of Rhema Electric LLC in Mount Vernon, and April Axthelm, co-owner of Axthelm Construction Inc. in Mount Vernon, formed the company after working together on installation of a windmill on Axthelm’s home property. Their passion for green power and environmental responsibility led them to find a way to better serve their community. Services include design, permitting, product and installation, consulting services for “green” building, project evaluations and calculations of return on investment prior to project implementation.

“There’s no one place to go to understand what you have to do – from start to finish – for a [green] project,” Merritt said. “Our idea is to take the mystery out of going green for our clients.”

Merritt admits a solar cell in Seattle will not produce as much energy as one located in a city like Phoenix. At the same time education, economics and availability, not location, are the greatest barriers to widespread solar energy use in Washington, he says.

“Solar radiation in Seattle is better than that of any city in Germany, yet Germany is one of the world’s leaders in solar energy use,” he said.

Western Solar, a general contracting business that relocated in March to the 300 block of East Champion Street in Bellingham, now has a sales office in Seattle and an internship program with Western Washington University. The company’s Web site asks, “Does Solar Energy Really Work in Washington State?” Their answer: “Yes! On an annual basis, we receive 68 percent as much solar energy as the best location in the United States.”

Western Solar is currently working on a project to install solar electric panels on Skagit Valley College’s new Northwest Career & Technical Academy building. Alpha Technologies opened an Alpha Energy sales office in Phoenix last year, where sun exposure and state incentives provide an important market for the company. That doesn’t leave Washington all wet.

“Solar power can be effective in virtually any region with sufficient planning and realistic expectations,” Alpha Technologies President Drew Zogby said.

In 2007, Lummi Island Wild Co-op partnered with Alpha Energy to create the world’s first solar-powered wild salmon fishery. Last month, Co-op partners Ian Kirouac and Executive Director Keith Carpenter launched five more vessels retro fitted with solar panels.

“Reefnetting is already known as the most environmentally friendly method of harvesting seafood, and Lummi Island Wild is raising the bar,” Kirouac said in a press release. “The clean power this system provides will save the crew from ferrying thousands of pounds of batteries to shore every few days.”

#### LURES ATTRACT CUSTOMERS

The federal government provided one of the best incentives for homeowners and businesses alike to invest in solar power and renewable energies when it passed its stimulus package this year, removing the \$2,000 cap on tax credits. Now, 30 percent tax credits are available on materials and installation. The sales tax credit for solar heating systems ended June 30, and the 30 percent rebate incentives end in 2016.

Keilwitz sees annual return on investment (ROI) at 5 to 10 percent for home-sized, renewable energy systems, depending on system size and current energy costs.

“Traditionally, in the past, energy costs have been going up about 5 percent a year, probably more,” Keilwitz said. “About 10 years down the road, the return on that

Technologies.

Green Power Northwest team Randy Merritt II and April Axthelm’s first project was installing a power-generating windmill at Axthelm’s home.

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investment grows because you're offsetting more expensive energy in the future, not just electric."

The ROI for businesses is even better, according to Miller, but unfortunately, most businesses want to see their returns in about three to five years. Although the payback is around seven to eight years, "(Businesses) receive all the same incentives, but (they) can also depreciate the cost of the system in five years, and are eligible to apply for a grant instead of the 30 percent tax credit," Miller added. Zogby and Merritt point out that although Washington's incentives are great, the ROI is lower because the state's utility rates are lower compared to other states, such as Arizona.

Merritt consults with clients to ensure they have the best energy-efficient products resulting in rebates from utility companies, and he and Axthelm are working on searching for grants, rebates and funding for Native American tribes. Merritt says private agencies have funding available for solar projects.

"Our key is to dig a little deeper," Merritt said. "Local tribal governments are looking hard at fixing their costs."

A community solar program offered through Western Solar debuted in June at the Home & Landscaping Show in Lynden. The program is limited to standardized system projects for about 10 to 15 customers in a neighborhood and can lead to savings of 15 to 30 percent for those customers. By keeping the number of customers low, Hardy and Miller say they're able to buy materials and permits in volume so electrical contractors can move from house to house. Their plan is to make proposals at neighborhood meetings.

#### R&D, Trends AND THE FUTURE

Alpha Technologies is the only one of the four companies delving into research and development. The company focuses on commercial and industrial applications and specializes in off-grid systems, such as hybrid systems used on islands. The hybrids are a combination of solar batteries and generators.

"We are continually developing higher-efficiency products to serve our customers' needs," Zogby said. "For solar power, this includes the integration of solar power with the energy grid, integrating solar power with other energy-generation methods and advanced monitoring systems that show energy production and potential system maintenance needs."

Zogby says the biggest concern though, for potential businesses, is space and location for solar modules.

"Our elevated racking systems provide space for solar modules, while also providing parking protection," he said. "Parking lots ... present a great opportunity to convert a maintenance-cost center into a solar power-generating profit center."

As for the future, Zogby wants to see a consolidation of the industry.

"Alpha currently sees the industry as still in its infancy and is warming into a main-stream industry ... with room to expand on products and services," he said.

Both Axthelm and Merritt agree as energy requirements increase, those ahead of the game – especially homeowners – will have more incentives to pull from.

"Homeowners better take note ... personally, what I think we're going to see is the older homes aren't going to be desirable anymore," Axthelm said.

Despite such a prediction, Miller warns against anyone rushing into a major commitment without research.

"Putting a solar electric system on a home or business should be the last step for eliminating the customer's remaining electric load after they have already looked at other energy-saving options," he said.

Miller and Hardy say silicon-crystalline modules are currently in use by 90 percent of the industry. A new thin-film unisolar module, which turns an entire roof into a solar panel, works better for low-light conditions and runs about the same price as a PV system but will become cheaper in the future.

Although the bulk of work at Whidbey Sun & Wind has been residential, Keilwitz says he has noticed a dramatic increase in small-commercial/institutional work requiring larger systems on institutional buildings and expects the trend to continue. He also said PV systems are growing in popularity thanks to the falling prices of components, their long lifetimes and reliability, low maintenance requirements and the growing awareness of environmental issues. His company has installed about 20 wind turbines in the North Cascade and lowland Puget Sound areas.

"People are still cautious about the economy," Keilwitz said, "but at the same time, the awareness of the environmental cost of business as usual is becoming more and more apparent, and people are understanding the necessity of implementing renewable energy or using renewable energy."

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