EAST OREGONIAN

Sun powering more electrical projects in the NW each year

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KENNEWICK, Wash. - Innovative solar-powered projects are heating up in the Pacific Northwest.

Speakers addressed them and their hope for the future Feb. 9 at the 10th Annual **Harvesting Clean Energy** Conference at the Three Rivers Convention Center.

Alan Hickenbottom, founder and president of Tanner Creek Energy of Portland, offered some solar energy basics, saying there are three types.

The first, which became popular in the 1970s, is solar thermal water heating, mainly for residential use.

The second is concentrated solar power, which is more common in southern Oregon and latitudes below 45 degrees. The 45th parallel runs across Oregon from just north of Baker City through Dale to Salem and Lincoln City.

Third, he said, is photovoltaics, or using light-collecting panels that convert solar energy to direct current, which batteries and vehicles use. Coupled with an inverter, which changes DC power to alternating current, makes the power available to homes, businesses and industries.

Photovoltaics are Tanner Creek Energy's bag. It installed the 330 solar panels for Umatilla Electric Cooperative last year just east of UEC's headquarters in Hermiston.

"We've become very fond of ground-mount units," Hickenbottom said. "Nobody falls and the ground doesn't leak."

Early photovoltaic arrays often were roof- or wall-mounted.

He also described three manners in which the owners of solar panel arrays can sell excess power to others by tying their power plant to the nearest electrical lines.

By using net metering, he said, the power producer gets credit on his electrical bill for what he delivers to the grid in excess of what he uses. Individual utilities have different plans, Hickenbottom said.

Second, he said, are power-purchase agreements, but they are more common for power

generated for resale from industrial systems with capacities of greater than 2 megawatts.

"It's actually not for the faint-of-heart right now," he said.

A new method is the feed-in tariff, which pays based on power production.

"It should pay off your system in 15 years," Hickenbottom said. "Your CPA's probably the most important person in this whole process."

The next speaker, J.D. Sitton, president and CEO of Infinia Corp. of Kennewick, said solar energy production amounts to about 1 percent of the world's energy mix.

"Our view is that it should be 15 percent or more," he said, adding that his company's target is solving big problems with solar energy.

Sitton displayed photos and drawings of the Stirling engine, which his company has been developing for the past quarter century. It's a non-piston energy producer that's powered by heat. It's designed to be used in conjunction with solar-energy collector.

Sitton said the Stirling engine has 2 1⁄2 times the efficiency of a photovoltaic system. His company is operating six pilot units in Kennewick and hopes to begin commercial production this year.

Wrapping up the discussion was Gary Nystedt, who talked about the Ellensburg's Community Project. It involves a ground-mounted 36-kilowatt solar array just north of Interstate 90 in Washington. It has produced more than 193,000 kilowatts in its two-year lifetime.

Nystedt said solar power is a wonderful renewable energy, but it's expensive, costing about $6.50 per watt to install. Other barriers are the lack of qualified installers and placement. Sometimes, a building's roof is not oriented for mounting solar panels, he said, and there may not be room on the ground.

He recommended using property that has almost no value. Ellensburg's solar array is erected on a flood plain.

"This project has taken off much faster than we expected," Nystedt said. "Your key partner is the utility. If they're not supportive, what you're trying to do is not going to be successful."