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

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Solving the solar puzzle
by Mark Anderson - 9.27.07

This summer, when Oregon's legislature doubled the cap on its existing Business Energy Tax Credit (BETC), the door opened for a statewide solar energy boom.

Now, instead of a 35 percent credit on a \$10 million ceiling, qualified owners can reap 50 percent of a \$20 million cap. Combined with a 30 percent federal investment tax credit and incentives such as funding from the Energy Trust of Oregon and the Oregon Department of Energy's Small Scale Energy Loan Program (SELP), the state's outlook for solar projects has never been better.

But few have stepped up their solar investments thus far, as many would-be commercial developers lack sufficient tax burden and simply don't qualify for the lucrative credits. Instead, businesses are looking to third-party investors that have a sufficient tax appetite to front the capital for a solar array, monetize the credits and sell the power back to the host. Today, the search for mutually beneficial third-party models is in full swing.

"It's the difference between ownership and rental," says Kacia Brockman, the Energy Trust of Oregon's solar program manager. "Third-party ownership is not going to be the only or the favorite option in the market. But we've created a standard application process that should streamline the review and approval process for third-party-owned projects seeking Energy Trust funding."

One such project still in search of a third-party investor is poised to become the largest solar project in Oregon. The Portland Habilitation Center (PHC) recently completed a new 75,000-square-foot building with plans to add an 870-kilowatt solar array. Designed to hold nearly 5,000 photovoltaic (PV) panels, the south-facing roof tilts at an optimal angle.

The building also incorporates a variety of custom-built features designed for net metering and grid interconnection with the guidance of Portland General Electric (PGE). The system is expected to generate enough solar energy to power the new building, along with an existing 115,000-square-foot structure.

The project would cost about \$6.5 million, according to John Murphy, PHC president. About half the costs would be covered by the BETC, while another \$1.7 million would be recovered by the 30 percent federal tax credit, leaving PHC with \$1.5 million left to find. The Energy Trust says it plans to provide approximately 75 percent of the remaining cost. PHC says it wants to structure the deal as a flip model, whereby it would buy back the depreciated solar system from third-party investors after five years, when the tax credits are extracted.

"We'll be making a capital investment, and for a while we'll also be paying the market rate for the power," says Murphy, adding the project should prove to other companies the economic feasibility of large-scale solar. "The difference between the old 35 percent BETC and the new 50 percent is huge," he says. "That's the gap that needed to be met. We think it will work."

PGE says it doesn't view such projects as competition. In fact, the company encourages net-metered solar energy because it produces peak power, according to Bruce Barney, project manager in customer energy resources for PGE.

"Peak power becomes more valuable as our whole system gets more strained," Barney says. "It's making very good economic sense for commercial electric users to install PV, and PGE has the corporate mind-set that this is a good thing. So we try and do everything we can not to provide any roadblocks."

The Northwest's relatively low electricity prices present another hurdle to the success of third-party projects, says Shilpa Shah, Pacific Northwest business development director for MMA Renewable Ventures.

"To have this third-party financing model work, it really depends on what sort of power prices you can have to sell the power back to the entity that's hosting the solar system," Shah says. "And in the Pacific Northwest, prices are relatively low compared to California."

Yet another hurdle is the high price of PV panels. "I think that people are still digesting what the Oregon legislature has done with the incentive," says Tom Sidley, senior managing director at Aequitas Capital Management. He says the real driver for increased investment in solar arrays in Oregon and elsewhere is an expected reduction in the price of PV. The price per watt of solar panels has hovered around \$4.80 over the past year, according to market research group Solar Buzz.

Federal research and development funding for energy technologies, including solar, has decreased by about \$1 billion in 10 years, according to a study by Daniel Kammen, director of the Renewable and Appropriate Energy Laboratory at the University of California at Berkeley (See "[Can energy R&D stage a comeback?](#)," *nwcurrent*, February 2007).

Kammen and others claim there is a direct and strong correlation between investment in R&D and the cost of technologies available in the market. Kammen says a 50 percent increase in PV efficiency occurred immediately after a \$1 billion global investment in PV R&D from 1978 through 1985. Significant efficiency improvements account for 30 percent of the cost reductions in PV over the past two decades, according to Kammen's studies.

Until the price of PV does go down, those lacking a significant tax appetite will likely continue looking to third-party financiers and other innovative financing models to run their buildings on solar power.

According to Jeff Keto, assistant director of the energy loan program for the Oregon Department of Energy, keeping things simple might be the answer. Keto anticipates more businesses will recognize that third-party financing is a good business model because investors can reap the tax benefits.

"We've done several energy projects over the last 25 years that have elements of this third-party ownership," says Keto, who has seen the department's SELP program administer 70 solar loans. "The ones that keep working are the ones where the third party and the facility owner are already somewhat related in a business sense and it's not just a financial transaction."

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