

Going Solar:

STORAGE OWNERS SEE BENEFITS BEYOND THE ENVIRONMENT

By Hazel Becker

With the cost of electricity going up and the cost of solar equipment going down, some self-storage owners are installing solar systems at their facilities. Solar industry experts expect this trend to pick up steam in the next few years.

Non-residential installations of photovoltaic (PV) panels, which turn sunlight into electricity, have grown over the last two years. One factor in this growth has been federal and state incentive programs aimed at encouraging companies to move toward greater use of clean and renewable energy. The upward trend in prices of electricity and fossil fuels has added a financial incentive to the equation.

Non-residential solar installations have grown primarily at commercial facilities with large expanses of roof, including big-box stores and self-storage facilities, according to Monique Hanis, director of communications for the Solar Energy Industries Association. Once the equipment is installed, the company knows what its energy costs will be for the next 25 years, she said. This became particularly important in self-storage when the facilities started to become more sophisticated and to offer more services, such as temperature control, according to Hanis.

Use of solar energy at self-storage facilities dates back at least to 2004, when SunEdison built 12 solar installations at storage locations in California. The following year, the company installed solar equipment at five U-Store-It locations in California using a financing arrangement known as a solar power services agreement (SPSA). Under this model, SunEdison finances, builds, and maintains

solar equipment and provides energy to the facility under a long-term contract.

Spreading Out

Though most early installations of solar equipment were in the Sun Belt, state incentive programs have spurred development in other parts of the country in recent years. Energy independence was on Conrad Watson's mind when he installed a 5,800 kilowatt solar system at his Storage Plus facility in Watertown, Mass. Since his solar equipment went online in August, "We have free electric, free air conditioning, and it offsets our heating bill by about 40 percent," Watson says. He said the installation covers about 1,800 square feet of office space, including infrared heaters that cut down on his use of fossil fuels to run the boiler.

Watson's decision to install solar panels was spurred by a rebate he received from the state through the Commonwealth Solar Energy Program that picked up

\$19,000 of his installation costs. Because he is a licensed builder, he was able to install the equipment himself for about \$35,000, and he expects his payback time to be about a year.

In North Carolina, Kurt Regensberger has installed photovoltaic panels at three of his seven Security Self Storage locations, with capacity to produce almost 10 kilowatts of electricity at each location. His systems are hooked up to Progress Energy's grid so that he can sell any power Security doesn't use to the utility company, boosted by subsidies from the non-profit N.C. Green Power. Along with the business aspects of the installation, Regensberger notes its environmental benefits and advertises with the motto, "Store Green, Feel Great!"

Other self-storage facilities also promote the environmental aspects of their solar installations. The Web site for Payless Self Storage in Richmond, Calif., states: "We've built a solar power generating system that

Annual U.S. Grid-tied PV by Application (Capacity in MW-DC)						
	2003	2004	2005	2006	2007	2008P*
Residential	15.4	24.1	27.4	36.9	56.8	70.3
Non-Residential	26.9	31.6	51.1	67.0	91.4	180.5
Utility	3.0	1.8	0.6	0.2	8.7	10.0
Total	45.3	57.5	79.1	104.1	156.9	260.8

Source: Interstate Renewable Energy Council



not only covers our usage, but also feeds electricity back into the grid. We're energy positive! We pass these savings on to our customers, offering you a better value with a lighter carbon impact on the environment." Stowaway Self Storage says it has solar integrated roofing systems at its five New Jersey locations, "equivalent to eliminating the emissions of more than 1,000 cars or comparable to not importing 10,000 barrels of foreign oil over the life of the system."

Following exceptional growth in the generating capacity of installed photovoltaic systems in 2008, solar energy market researchers expect continued strong growth for at least the next four years. According to EuPD Research, the installed capacity of photovoltaic systems in the U.S. is projected to increase by about 50 percent per year through 2012, and the installed capacity is expected to surpass 5,000 megawatts/peak in 2012.

One reason for optimism is projections by iSuppli, an electronics industry research firm, that prices of solar panels will drop in 2009, falling from \$4.10 per watt in December 2008 to as low as \$2.50 per watt by the end of this year. While this means the PV equipment industry's overall revenue will likely plunge, the price decline should be good news for companies looking to put in new solar equipment.

Another reason for the projected surge in installed solar capacity is the advent of power purchase agreements (PPAs), including those used by SunEdison to spur its business since 2004 and to serve self-storage clients since 2005. AltaTerra Research Network, which provides insights and information on sustainability and clean technology, reported in December 2008 that more than 70 percent of the non-residential solar market in 2008 could be attributed to PPAs.

Although AltaTerra does not have data specific to the self-storage industry's move toward solar energy, a company representative says that "just looking at it informally, we see that it has greatly increased over the past year." Further, she says, "Looking forward, what we see are smaller hosts, which could include self-storage as well as other kinds of facilities, as providing almost unlimited potential for growth in the

industry." Ryan Park of REC Solar believes self-storage is a perfect fit for solar, especially climate-controlled self-storage facilities that have big energy bills.

Future growth could come from big self-storage companies as well as smaller operations. U-Haul International—the second-largest self-storage company, with more than 1,000 facilities—is looking into solar installations for some of its locations. According to U-Haul spokeswoman Joanne Fried, the company is researching solar options and meeting with solar companies to find the right solution. "We're extremely sustainable," Fried says. "As much as we would like to go forward, we want to do

it right when we do it, so we're still in the research phase."

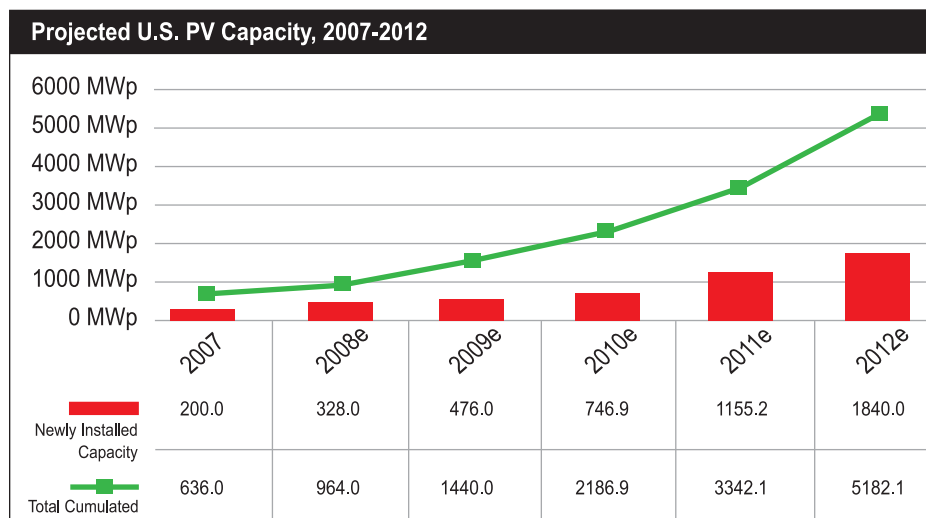
Whether self-storage owners are concerned about the environment and U.S. dependence on foreign oil, or looking for lower energy bills and additional revenue from selling excess capacity to a power company, by all accounts, the use of solar energy in self-storage will continue to grow in the next few years. ■■



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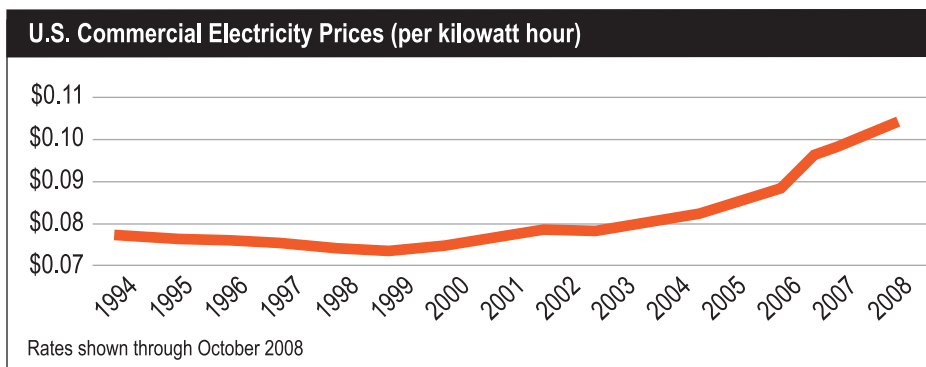
Annual Non-residential U.S. Grid-tied PV Installations by Size (Capacity in MW-DC)						
Size	2003	2004	2005	2006	2007	2008P*
< 500 kW	20.5	26.2	40.1	42.5	57.0	97
> 500 kW	8.3	6.3	9.5	21.8	38.8	91
	28.8	32.5	49.6	64.3	95.8	188
		12.8%	52.6%	29.6%	49.0%	96.2%

Source: Interstate Renewable Energy Council. Note: Numbers are the installations each year, not the cumulative installed capacity at the end of each year.
* 2008 numbers are preliminary and include some estimates



Source: EuPD Research, *Photovoltaics in the USA*, November 2008

Specifications in Megawatts at Peak



Source: DOE Energy Information Administration, 1/15/09