



Factoid

Q: What are renewable energy certificates, and why is Xcel offering Solar Rewards funding in exchange for them?

A: A Renewable Energy Certificate (REC) is a certificate that is proof that one-megawatt hour (1,000 kilowatt hours) of electricity was generated by a renewable energy resource such as solar or wind. Some companies voluntarily purchase RECs to offset their non-renewable electricity use, in order to demonstrate their environmental responsibility. The food retailer Whole Foods, for example, voluntarily purchased 509,104 MWh of RECs to offset 100 percent of its fossil-fuel electricity consumption.

Utilities such as Xcel, while perhaps also striving to be environmentally responsible, have an additional motivation to purchase RECs; many states require them, by law, to have a certain percent of their electricity generated by renewable resources. Such a requirement is called a "Renewable Portfolio Standard" (RPS). The state of Minnesota's RPS, for example, requires Xcel to have 30 percent of the electricity it sells be generated by renewable resources by 2020 (with at least 1 percent from solar), which is why the utility is eager to obtain your RECs!



Zenergy's 2011 Installs Total over 170 kW

Zenergy had a banner year in 2011—installing a record high of 170 kW. In addition to several rooftop solar P.V. projects such as the one featured above, the team installed many ground and pole-mounted solar arrays for Minnesota parks, DNR, cities, and residents.

Solar PV wasn't the only project the team worked on in 2011, however. They also installed RREAL solar thermal air systems, and are testing two new wind generators as part of ongoing research projects.

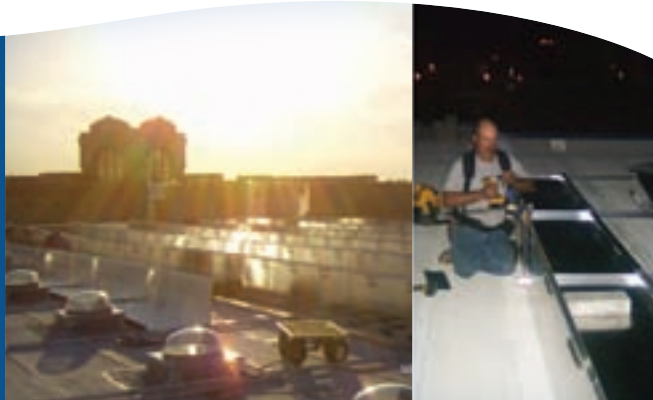
Each project, whether large or small, makes a permanent dent in the state's fossil-fuel emissions, helps to raise public awareness on renewable energy's viability, and brings us one step closer to converting to a clean energy economy—not to mention it saves the consumers many energy dollars over time.

Kudos to all who have made the smart decision to lead the way and choose clean energy!



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Zenergy Featured Profile



The Zenergy team worked sunrise to sunset installing 120 kW on St. Paul rooftops.

Spotlight on...Commercial Rooftops

The Zenergy team had a beautiful bird's eye view of the city of St. Paul for much of this past fall and winter, as they installed over 120 kW on the rooftops of three St. Paul city buildings—the Western District Police Station, the Rondo Community Library, and the St. Paul Public Works Service Garage.

The project was supported by the U.S. Department of Energy through the Solar America Cities project, in which the Twin Cities were selected as part of 26 major U.S. cities to accelerate the adoption of solar energy technologies for a cleaner, more secure energy future. The three Zenergy projects also received about \$270,000 in Xcel Energy Solar Rewards rebates.

After careful structural, wind load, and electrical engineering analyses, the project specifications were distributed, and Zenergy submitted and won the three bids. Unfortunately, the state budget shutdown caused the project to be delayed until August, so the team had to put in many long days in order to complete the projects before the year's end. Thankfully the weather cooperated, and there was very little rain, snow, or bitter cold for the team to work in.

The arrays were installed to the roofs using ballast systems (see back side "How it Works"),

so that no roof penetrations were required. Two buildings used roof rock for ballasting, but since the police department building didn't have roof rock, concrete block ballasts were used instead. Each is rated to produce 40 kW, with 25-year warranties.

Zenergy also installed a remote monitoring system by Deck Monitoring to enable the city to carefully track the energy output and greenhouse gas savings.

While many people don't think of solar power as being practical in Minnesota, The National Renewable Energy Laboratory has estimated that Minnesota rooftops could potentially provide 12,427 megawatts of installed solar power if all rooftop space available by 2015 was used.

The Minneapolis Saint Paul "Solar in the Cities Initiative" has an aggressive goal of increasing solar capacity 500 percent in the Twin Cities during the two-year grant period, by building a solar infrastructure, developing a strategic plan for large-scale solar deployment by 2015, and leading by example through solar installations on public buildings such as the Zenergy projects. With such forward-thinking leadership, it's easy to see why St. Paul's tagline is, "the most livable city in America!"

Funding Update

Federal Incentives:

- 30% federal tax credit for both residents and businesses which includes the complete cost (labor, balance of system components, etc.) of solar, wind, and many other types of renewable energy installations.
- 50% first-year bonus depreciation for businesses, same as above.

Xcel RDF Programs: Funds are quickly running out for the 2012 Solar Rewards program, so we recommend you get your applications in now! The program rebates

\$2.25/watt for solar PV installations connected to the Xcel grid, with an additional \$2.75/watt if Minnesota-made panels are used. Customers must agree to transfer ownership of the Renewable Energy Credits (RECs) generated from the system to Xcel for 20 years.

Other Utility Rebates: In addition to the Xcel programs explained above, Austin Utilities, Marshall Municipal Utilities, Minnesota Power, Owatonna Public Utilities, and Rochester Public Utilities also offer solar rebate programs.

See www.dsireusa.org for more information on all funding opportunities.

How it Works...Flat Roof Solar Installations

To get maximum energy, solar panels should be installed pointing toward the sun with a minimum of a 10-degree angle. Wind load and roof weight distribution requirements must be carefully assessed. The panels can be either attached directly to the roof with well-sealed fasteners; or to avoid roof penetrations all together, can also be held down with weighted "ballasts"—either concrete block or roof rock.



A solar installation with concrete block ballasting



A solar installation with roof rock ballasting



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FREE
Kill-a-Watt EZ

with a Complete Solar Site Assessment

One of the easiest ways to save money on energy (whether renewable or fossil-fuel) is to reduce your consumption. But since many small appliances don't show how many watts they use, it can be difficult to know which energy hogs to replace first.

The Kill-a-Watt EZ solves that by logging the watts an appliance uses over time, so you can make smart decisions about your energy dollars. It can also monitor the quality of your utility power.

Get yours free through March 2012 with your Zenergy Solar Site Assessment!

(Site assessment is \$185, and is credited back when you choose Zenergy as your installer.)

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