

BULLETIN

The energy and planning resource for Western utilities

SOLAR GARDEN TO POWER COLORADO TOWN'S MUNICIPAL BUILDINGS

The city of Manitou Springs, Colorado, Redirecting to a non-government site recently took the historic step of signing a contract to receive up to 100 percent of city facilities' energy needs from community solar.

A 3,000-panel array, being built by locally based SunShare Redirecting to a non-government site community solar company, will provide Manitou with 0.5 megawatts (MW) of renewable energy. The city will pay 5.6 cents per kilowatt-hour (kWh) to its power provider Colorado Springs Utilities, Redirecting to a non-government site which will distribute the power. Springs Utilities agreed last fall to buy renewable energy certificates (RECs) amounting to 4 cents per kWh from SunShare, allowing the project to move forward.

Construction on the 2-MW solar garden will occur over the summer, and the facility is expected to begin generating in October.

GROUNDBREAKING DECISION

The Manitou Springs City Council unanimously approved the agreement with SunShare on April 15. According



The fully subscribed Venetucci Solar Garden is one of two pilot projects SunShare built and operates for Colorado Springs Utilities. (Photo by SunShare)

to SunShare, Manitou Springs may be the first city in the U.S. to choose to source 100 percent its energy needs from community solar.

The decision marked the culmination of a public process lasting several months including presentations to Manitou Springs City Council, public comments and a work session. However, it was a comment by a city official three years earlier that set the deal into motion. Manitou Mayor Pro-Tem Coreen Toll said that she wanted governments and businesses to be able to buy power from solar gardens just as homeowners and school districts were allowed to do.

In a news release announcing the decision, Manitou Mayor Marc Snyder

observed that the program could serve as an example to the community and other cities. "Not only will our city facilities be powered by solar, but thanks to Colorado Springs Utilities, every resident and business in Manitou Springs now has the ability to join us in this community solar program," said the mayor.

LAYING GROUNDWORK

The framework for Manitou's solar purchase began with a pilot project in 2011. Springs Utilities partnered with SunShare to build and operate two community solar gardens totaling 1 MW. SunShare sold individual Springs customers 0.4-kW shares up to 120

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percent of their average annual energy use. Customers receive a credit on their monthly bills for their shares' generation, and may transfer their shares to another address or another Utilities customer if they move.

The two pilot gardens are fully subscribed, and government agencies like the city of Manitou Springs and businesses will be able to buy shares in the new 2-MW facility. "Community solar has been extremely popular in Colorado Springs," acknowledged Jerry Forte, CEO of Colorado Springs Utilities. "We're proud that we were one of the first communities to create this option for our customers with SunShare."

To make the solar garden program more accessible to more customers, Springs Utilities added the option of a performance-based incentive this year. "That change helps to mitigate some of the upfront costs of buying into the solar garden," explained David Grossman, a spokesman for Springs Utilities.

STATEWIDE SUPPORT

Manitou's decision to go solar in its municipal facilities, and the support the city received from Springs Utilities, is part of the larger success story of community solar in Colorado. The



state legislature passed the country's first Community Solar Gardens Act in 2010, an act that inspired 16 states from Minnesota to California to create similar programs.

The pilot program Springs Utilities launched in 2011 was the first of its kind for a municipal utility, but more utilities—both public and investor owned—are following suit. SunShare has additional projects underway with Xcel Energy and Fort Collins Utilities totaling more than 13 MW, enough capacity to serve more than 3,000 homes.

WIN-WIN...WIN!

Going solar will help Manitou meet its goal of reducing its carbon emissions 30 percent by 2020 six years ahead of schedule, based on a 2008 carbon inventory. The city is currently discussing an arrangement with SunShare to use the array to power its streetlights, as well. "That would be a great opportunity because it would reduce our carbon footprint by more than 60 percent," said Mayor Snyder. "Streetlights are handled under a different agreement than other municipal facilities, however, so it will take some negotiations to work that out."

As good as these decisions are for

the environment, they make economic sense, too. Although the city still pays Springs Utilities for distribution, its energy costs will be fixed. "I am pretty confident this will help us not only meet our carbon reduction goals, but also save us money," Mayor Snyder said.

The growth of solar farms in its territory is good for Spring Utilities, too. Because the municipal utility serves more than 100,000 meters (214,600, to be precise), the state's renewable portfolio standard applies to it. The RECs purchased from SunShare are helping Springs Utilities meet the goal of 20 percent of its retail electricity sales from renewable sources by 2020. "We are about at 10 percent renewables, now, counting our hydroelectric power from Western," said Grossman.

He added that solar power has some coincident peak generation with the utility's load so it helps meet demand in the growing city.

David Amster-Olszewski, President and CEO of SunShare, praised Colorado Springs Utilities, Manitou Springs and its citizens for their leadership in recognizing the benefits of community solar. "Working with the city of Manitou Springs has been an absolute pleasure and I can't wait to help them achieve their goals," he said. ⚡

ENERGY SERVICES BULLETIN

The Energy Services Bulletin is published by Western Area Power Administration for its power customers.

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GEOTHERMAL INDUSTRY TO GATHER IN RENO FOR NATIONAL SUMMIT

Policy makers, power industry leaders and professionals from the geothermal and utility fields will gather at the fourth annual National Geothermal Summit, Redirecting to a non-government site Aug. 5-6, to discuss the opportunities and challenges facing geothermal industry growth. GEA summit

The Geothermal Energy Association Redirecting to a non-government site (GEA) is presenting the event at the Grand Sierra Resort in Reno, Nevada. "The Biggest Little City in the World" is the global business center for geothermal and is home to 12 major geothermal developers and operators. Also, the geothermal energy plants surrounding Reno produce enough power to support the city's residential load.

GEA Executive Director Karl Gawell pointed out that the U.S. leads the world in geothermal electricity, and the Western states are trailblazers for the technology. "But there is much work to be done for geothermal to reach its potential," he added. "It is imperative to bring together policy makers and business leaders to examine the challenges that are holding back geothermal. GEA's goal is to facilitate constructive dialogue on some of geothermal's biggest hurdles."

The GEA Summit is co-hosted by Ormat, and Western is among the sponsors of the event. "The summit provides our customers with a forum to engage industry professionals and policymakers on issues and topics that could create additional opportunities for geothermal development in Western territory," said Western Renewable Energy Program Manager Randy Manion.

TAKING ON BIG QUESTIONS

Western customers Imperial Irrigation District Redirecting to a non-government site (IID) and Los Angeles Department of Water and Power Redirecting to a non-government site (LADWP) are also sponsors, along with the City of Reno Redirecting to a non-government site, Economic Development Authority

of Western Nevada Redirecting to a non-government site, Nevada Geothermal Council and the Geothermal Resources Council Redirecting to a non-government site. Confirmed speakers include Barry Dong, LADWP Manager, Geothermal/Biomass; and IID Energy Manager Carl Stills, among others. U.S. Senate Majority Leader Harry Reid (D-NV) will provide a video greeting.

Summit speakers and breakout sessions will address a range of topics critical to today's industry. Presentations covering the future of renewable portfolio standard policies, new U.S. codes and standards for geothermal energy, leasing and permitting improvements and the outlook for new renewable power procurements in the Western states are on the agenda. Other topics include achieving the potential of the Salton Sea, next steps to move geothermal forward in Nevada, and the outlook for federal and state legislation to support geothermal growth.

HONORING INDUSTRY STANDOUTS

During the Summit, the Geothermal Energy Association will announce the winners of its GEA Honors awards program. Geothermal business leaders can submit nominations now. The deadline to submit a nomination for GEA Honors is July 7.

GEA Honors categories include:

- Technological advancement (GEA members only) by an individual or company that has pioneered new ideas or innovative technology in geothermal energy
- Economic development (GEA members only) by an individual or company that has contributed to the development of local, regional or national markets through geothermal systems
- Environmental stewardship (industry wide) by an individual or company that has promoted environmental sustainability through geothermal systems



**GEOTHERMAL
ENERGY
ASSOCIATION**

**NATIONAL SUMMIT
August 5-6 • Reno, NV**

- Special recognition (industry wide) of an individual or company for outstanding achievements in the geothermal energy industry

TAPPING POTENTIAL

New initiatives in Nevada, California and Oregon are moving to recognize the value of the largely untapped geothermal resource base. GEA and the industry are optimistic that state policies could spark another period of growth in geothermal power over the next decade.

Year-end data shows that Nevada has proven itself as one of the most business-friendly environments for the geothermal industry, with the number of developing projects (45) more than double that of California (25). Additions in Nevada, as well as neighbors Utah, California, and New Mexico kept the industry on the map domestically in 2013, and future growth looks promising.

Contrary to surfacing rumors that California and Nevada have reached their potential capacity, the states still have a significant amount of known untapped geothermal resources. Overall, GEA estimates about 50 percent of California's known resources, 60 percent of Nevada's, and 60 percent of Utah's are untapped and could be used domestically or exported to surrounding states.

For information about Summit sponsorships, please contact Kathy Kent Schott. To schedule an interview or request press credentials, please contact Shawna McGregor at The Rosen Group, 917-971-7852. ⚡

STUDY SHOWS EVOLVING EXPECTATIONS OF ELECTRICITY MARKETS

Industry consultant Deloitte LLP Redirecting to a non-government site has released its annual reSources Study of electricity customers in the U.S., and it holds some interesting clues to what consumers think about their energy use and their power providers.

RESIDENTIAL

A significant finding is that in spite of the perceived economic recovery, residential customers still want to keep their electric bills down. Most people say they routinely turn off lights and shut down electronics that are not in use, and they anticipate that their home energy use will not increase in the next year. Nearly half of the respondents were considering measures that required more of an investment, such as home insulation or appliance upgrades.

Keep in mind, however, that other studies—notably by The Shelton Group Redirecting to a non-government site—show that consumers tend to think they are more efficient than they are. That perception can make it hard for utilities to promote efficiency measures and rebates. A utility program that helps residential customers track their energy use in real time might make them more receptive to other energy services offerings.

COMMERCIAL

Most commercial customers interviewed for the survey said their businesses had energy management goals. With the goal of cutting costs and maintaining their competitive edge, businesses reduced their energy use by 12 percent in 2013, compared to 9 percent in 2011. More than 60 percent of respondents rated their company's energy

management efforts a four on a one-to-five scale where five is the highest score.

The study found that the maturity of energy management programs varied widely from business to business. Only about one-quarter of the surveyed companies required all their capital plans to consider energy management goals, and about one-third factored the current low cost of natural gas into their future plans. Utilities have a clear opportunity to help some of their most energy-intensive customers with long-range planning.

RENEWABLES GAINING

Another trend makes finding new ways for utilities to serve their customers more pressing. The study showed a growing interest among both residential and commercial customers in being self-reliant for their energy needs.

Although only 3 percent of the residential customers were actually investing in solar panels, more than one-quarter saw that as an action they might take in the future. The percentage was even higher among Generation Y consumers. Cost continues to be a barrier to solar installation across all groups—for now.

As with energy management, businesses have even more motivation to build their own energy supply, and the barriers are dropping. More than four in 10 business respondents are generating some portion of their electricity onsite, up from 33 percent in 2013. The highest proportion of businesses with distributed generation was in the healthcare, technology, media and telecommunications industries.



Photo by Deloitte LLP

MORE THAN KILOWATT-HOURS

There was some good news for utilities that are interested in expanding their traditional business model—customers said they were open to buying other products from their power providers.

The study asked about services such as cable TV, internet access, telephone service, home security systems and home automation systems. However, an enterprising power provider might consider adding energy planning and management services, solar gardens or electric vehicle chargers to that list, too.

A small percentage of customers reported increasing frequency in outages, but more than half blamed extreme weather events, not their utilities. Backup generators, the preferred strategy for coping with outages, are another product utilities might consider leasing.

A story in Utility Dive Redirecting to a non-government site offers more analysis on the reSource Study, along with some useful graphs. Download the study summary, or contact Deloitte to obtain the full report. ⚡

DOE ISSUES DRAFT SOLICITATION FOR RENEWABLE ENERGY, EFFICIENCY PROJECT LOAN GUARANTEES

Innovative renewable energy and energy-efficiency projects that could reduce, avoid or sequester greenhouse gases may be eligible for up to \$4 billion in loan guarantees from the Loan Programs Office (LPO) of the Department of Energy.

The LPO issued a draft Renewable Energy and Efficient Energy Projects Solicitation on April 16 to support renewable energy and energy-efficiency technologies that are catalytic, replicable and market ready.

Businesses often have difficulty obtaining full financing to commercialize innovative technologies. Conventional lenders do not want to take on the perceived risks associated with technology that has never been deployed at commercial scale. LPO loan guarantees give energy innovators a path to bring their products to market, while creating solutions to the nation's challenges and stimulating the economy.

ELIGIBILITY

To be considered for a loan, projects must:

- Use an innovative technology or system
- Reduce, avoid or sequester greenhouse gases and support the President's Climate Action Plan
- Be located in the U.S., but may be foreign owned
- Be able to repay loan principal and interest

The solicitation seeks applications covering a range of technologies that reduce greenhouse gas emissions and significantly improve on existing technologies already deployed in the U.S. The LPO has specifically identified five areas of focus:

Advanced grid integration and storage

The focus is on renewable energy systems that incorporate technologies such as demand response or local storage to mitigate issues related to

variability, dispatchability, congestion and control. These advanced system designs will improve the grid compatibility of renewable energy and open up a larger role for renewable generation. Qualifying projects may include:

- Renewable energy generation, including distributed generation, incorporating storage
- Smart grid systems enabling greater penetration of renewable generation through any combination of demand response, energy efficiency, sensing and storage
- Micro-grid projects that reduce carbon dioxide emissions at a system level
- Storage projects that clearly enable greater adoption of renewable generation

Drop-in biofuels

The goal of this category is to develop biofuel products that are more compatible with today's engines, delivery infrastructure and refueling station equipment. Eligible projects would provide nearly identical bio-based substitutes for crude oil, gasoline, diesel and jet fuel; or produce intermediate fuel feed stocks that can be integrated into existing oil petroleum refineries. These types of projects would not be restricted by current ethanol and biodiesel blend levels.

Qualifying projects may include:

- New bio-refineries that produce gasoline, diesel fuel or jet fuel
- Bio-crude refining processes
- Modifications to existing ethanol facilities

Waste-to-energy

This area focuses on projects that turn waste products such as landfill methane and segregated waste into an energy source. These types of technologies will enable commercial-scale use of waste materials that are otherwise discarded and produce

significant clean, renewable energy. Qualifying projects may include:

- Methane from landfills or ranches via bio-digesters
- Crop waste-to-energy and bio-products
- Forestry waste-to-energy and co-firing

Enhancement of existing facilities

These technologies will incorporate renewable generation technology into existing renewable energy and efficient energy facilities to significantly enhance performance or extend the lifetime of the generator. Qualifying projects may include:

- Incorporation of power production into currently non-powered dams
- Inclusion of variable-speed pump-turbines into existing hydroelectric facilities
- Retrofitting existing wind turbines

Efficiency improvements

Incorporating new or improved technologies to increase efficiency and substantially reduce greenhouse gases is the focus of this category. Qualifying projects may include:

- Improve or reduce energy use in residential, institutional and commercial facilities, buildings or processes
- Recover, store or dispatch energy from curtailed or underused renewable energy sources
- Recover, store or dispatch waste energy from thermal, mechanical, electrical, chemical or hydro-processes.

This list of potential projects is not exhaustive. Ultimately, the LPO will evaluate applications on a project-by-project basis.

See DOE DRAFT SOLICITATION, page 6

DOE issues draft solicitation from page 5

UNDERSTAND THE PROCESS

The LPO is accepting public comment on the draft through the end of May. Public meetings to answer questions and obtain comments on the draft are being held on May 6 in Twin Cities, Minnesota, and May 7 in Stanford, California. The first project

submission deadline is expected to occur at the end of the summer.

To provide applicants with timely responses, the application process is divided into two stages. The first part will determine the project's initial eligibility and whether it is ready to proceed. Applications that clear Part I then proceed to Part II, which includes the full application process. Viable projects that are granted a conditional commitment from DOE then undergo the complete underwriting process and negotiation of

terms for the loan guarantee.

The Renewable Energy and Efficient Energy solicitation is authorized by Title XVII of the Energy Policy Act of 2005 through Section 1703 of the Loan Guarantee Program. The LPO currently manages a more than \$30 billion portfolio of approximately 30 closed and committed projects nationwide, including leading edge renewable energy projects and advanced vehicle manufacturing facilities. ⚡



AROUND THE WEB

WESTERN'S EQUIPMENT LOAN PROGRAM

AroundTheWebOne of the great things about the Internet is that, unlike hard copy resources, you can update it in minutes with a few keystrokes. Another handy feature is the ability to create a network of resources around a specific topic—that's why they call it the web. The new training resources page in our Equipment Loan Program is an excellent example. The latest addition to the Equipment Loan site offers videos and fact sheets to help Western customers get the best results from the tools they borrow from the program.

PRE-SCREENED BY ENERGY SERVICES

As with any topic, there are hundreds of posts related to energy audits and the equipment used to do them. We combed the web to find the most relevant, informative resources so you don't have to.

The Department of Energy, the Building Performance Institute Redirecting to a non-government site, Southface Institute Redirecting to a non-government site and Montana Weatherization Training Center Redirecting to a non-government

site are among the organizations that produced the resources. Some videos came from equipment manufacturers like the Energy Conservatory and Fluke. The Energy Services team, and especially Equipment Loan Manager Gary Hoffmann, reviewed them all for accuracy and clarity. "We were looking for training resources that explained the basic operation of a piece of equipment in a way that the user doesn't have to be an engineer to understand," said Hoffmann.

CRASH COURSES

The resources are organized by tool—blower doors, infrared (IR) cameras, duct testers and power meters. Under "Other resources" are links to training libraries that contain presentations covering several types of equipment.

Most of the videos are available free of charge and run from a few minutes to half an hour. These resources are for brushing up on how to set up or operate a tool, or get a quick overview of a model you may not have used before. Online training is not a replacement for auditor certification, but it can be a helpful supplement for trainees who have not had a lot of field experience.

Speaking of the field, the best thing about online training is convenience. You can access the resources from your smartphone, or pad if you have wireless network access. The resources are available any time of the day or night in your office or home, as well.

WEB KEEPS GROWING

New resources pop up on the Internet every day, and we will be on the lookout for additions to the new page. It is a big web, though—worldwide, in fact—so we are counting on our customers to alert us to resources they find valuable.

Better yet, Energy Services would love to post training resources created by our own customers. Nobody understands utility needs like utilities. We are looking for concise "how-to" videos that demonstrate tool operation, or unique uses for diagnostic tools. Post them on your own website, YouTube or another sharing site, and provide us with the link. As a bonus, Energy Services Bulletin would feature a story on your utility's foray into film (video) making.

Contact me, Kevon Storie with your suggestions for equipment training videos and links to your own efforts. ⚡