



Upper Great Plains taps South Sioux City for Administrator's Award

South Sioux City has performed energy audits on all city buildings and facilities, and made improvements to systems such as lighting and heating and cooling, to save energy. (Photo by Ammodramus)

WAPA Administrator Mark Gabriel will present WAPA's prestigious Administrator's Award to South Sioux City, Nebraska, Oct. 18 at the Delta Hotels in South Sioux City. The presentation is part of 2017 National Bioenergy Day, an event that will be attended by local, state and federal officials and high-ranking industry representatives. Gabriel will also deliver the keynote address, "The Importance of Renewable Energy Diversification," at Bioenergy Day. The event will also include a tour of the new Green Star Energy gasifier power plant.

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South Sioux City's extensive trail network earned the first "Bicycle Friendly Community Award" in Nebraska in 2006, and hosts many rides, runs and other events throughout the year. (Photo by South Sioux City)

Despite its small size—a population just over 13,000—South Sioux City has consistently delivered innovation along with affordable, reliable power year after year, warranting the honor the award confers on a WAPA customer. But these accomplishments feel almost secondary to the vision that made them happen. South Sioux City is well known among its peers and many other WAPA customers for being exceptionally forward thinking and tenacious at finding and leveraging win-win partnerships.

Leading in renewables

South Sioux City is pursuing clean, low-carbon electricity with a unique mix of projects.

A 2.3-megawatt (MW) photovoltaic array is only the latest example of the town's efforts to reduce its carbon footprint. The 21-acre solar park began operation in January and generates the equivalent of 5 percent of the city's total electricity needs. South Sioux City also recently selected a firm to build 15 MW of new wind power and signed an

agreement to begin receiving generation from it in 2018. Both the wind and the solar projects are public-private partnerships.

In a region where agriculture and related businesses are the leading industries, biomass represents an energy resource that South Sioux City has captured through different projects. Three major food processing plants divert animal, grain and other wastes to an anaerobic digester that extracts methane from the stream and feeds it into the natural gas pipeline. The nearby Siouxland Ethanol Plant displaces up to 9 percent of its natural gas needs for ethanol production with landfill gas from the LP Gill landfill.

The Scenic Park campground was the site of a pilot program in 2015, using a gasifier woody biomass system to generate 50 kilowatts of electricity from wood waste from storm damage. The unit was so successful that South Sioux City entered into an agreement with Green Star Energy to build a 3-MW gasifier. The new power plant will take city and industrial waste wood and dead and dying trees destined for the

landfill and convert it into electricity.

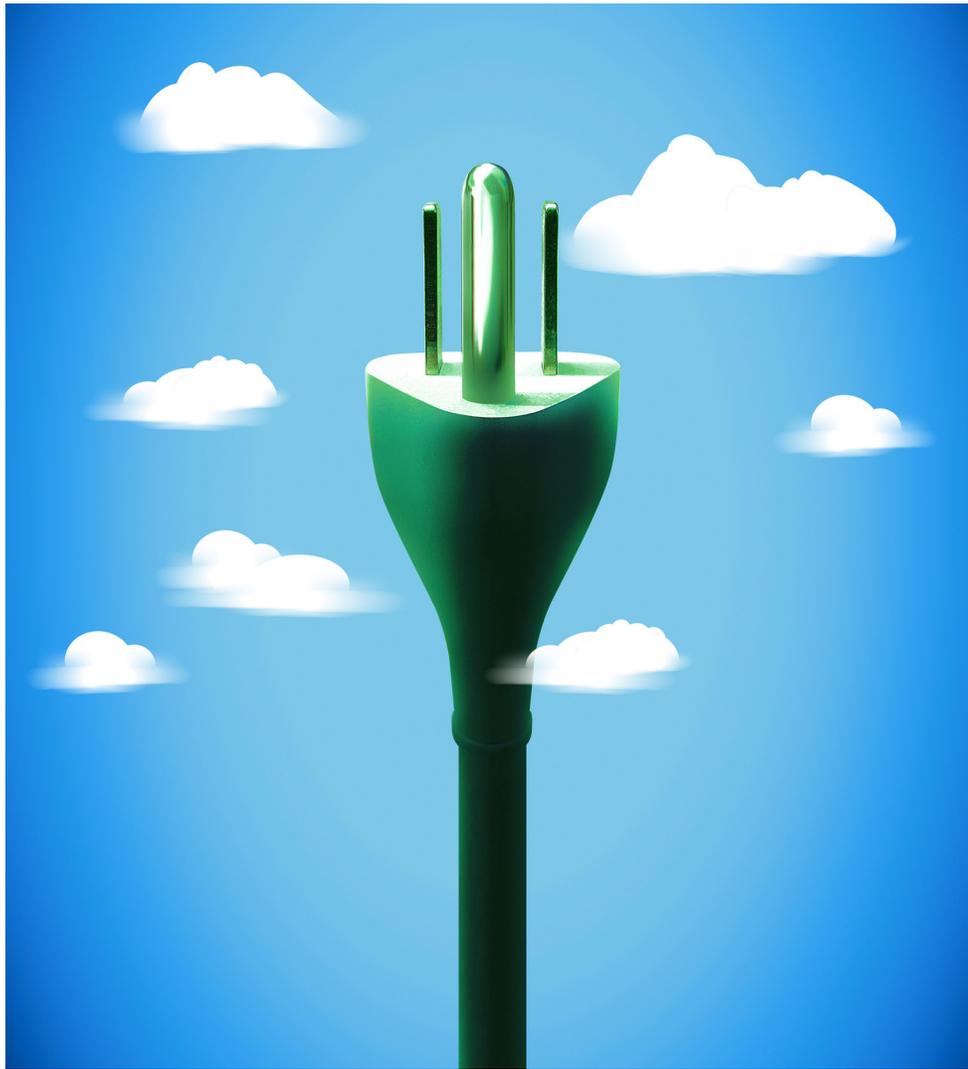
Another potential project with Green Star Energy shows that South Sioux City has not lost sight of the tried-and-true renewable resources. The partners are seeking funding to build an innovative hydropower generator along the Missouri River that flows through the south end of the city. The run-of-river turbine design resembles a boat dock, would be safe for fish and aquatic animals and could produce enough electricity to save South Sioux City about \$450 each day.

Conserve, reduce, manage

Energy innovation in South Sioux City is not limited to developing new resources. Planning and wise use are just as important to creating a cleaner, sustainable energy supply.

When peak demand needs to be curtailed, the city takes a two-pronged approach. First, a major industrial load voluntarily ramps down its demand by 11 percent to save not only its own energy costs but the energy costs for

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LES looks to cloud for better program implementation, evaluation

Maintaining a successful utility efficiency program involves a never-ending quest to improve the customer experience and evaluate the effectiveness of each measure. Moving its Sustainable Energy Program to the cloud has given Lincoln Electric System (LES) of Nebraska a win on both fronts.

Launched in 2009, the Sustainable Energy Program was intended to show that energy efficiency and demand-side management were viable alternatives to building new generation and buying expensive energy to meet peak

demand. "It had a healthy participation rate relative to our expectations from the beginning," said LES Energy Services Manager Marc Shkolnick. "But you still have to keep refining and evaluating."

Always room to improve

In its current iteration, the program provides incentives to residential and commercial customers for whole-building sealing and insulation and high-efficiency heat pumps and air conditioners. Lighting and prescriptive energy-efficiency measures are available to commercial and industrial customers, as well.

For end users, participation in the program is simple and straightforward by design. Customers select a participating contractor to install the measure, LES pays the incentive to the

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contractor when the work is completed and the contractor passes it on to the customer as a credit on their invoice. Beyond searching the online trade ally list, the customer does very little paperwork, and that did not change with the move to the cloud. “The big difference for end users is that the system makes it easier to keep our trade ally list up to date,” Shkolnick noted.

For contractors and utility staff, however, the cloud system has significantly streamlined the process, Shkolnick said. “There was something of a learning curve the first year, with transitioning to a paperless system,” he recalled. “Once the contractors got their information entered, it became much more efficient for them.”

Given that more than 90 percent of the customers who use the Sustainable Energy Program come in through contractor recommendation, LES has a big stake in improving their trade allies’ experience. Make life easier for the people who are driving customer engagement in your efficiency program and your program will become stronger, too.

Learning from data

Evaluation, measurement and verification is one of the greatest challenges of customer program management, and one of the biggest attractions of automating program administration. In the two years since LES converted the Sustainable Energy Program to cloud management, the system has confirmed hunches and revealed trends.

The post-project survey the customers can complete online has proven highly useful to Shkolnick. Air conditioning customers respond at a high 20-percent rate. One question in particular—“How much impact did the incentive play in your choosing the higher-efficiency unit?”—has allowed LES to adjust the deemed energy savings attributed to the program. “You know there are ‘free riders’ who were going to spring for a high-efficiency



The Sustainable Energy Program offers incentives for whole-building insulation and sealing to both residential and commercial customers. (Photo by DOE Weatherization Assistance Program)

unit, incentive or not, but we now have a better idea of how many participants that is,” he said.

Another lesson from data is that incentives play different roles in motivating residential customers as opposed to commercial customers. This is a fact that experienced program managers already grasp intuitively, but, “The difference is just stark,” Shkolnick declared. “Businesses clearly look at efficiency as an investment, while a lot of homeowners give as much weight to comfort, convenience and other intangibles.”

A significant number of customers have given their names and addresses on their surveys, allowing LES to contact them for testimonials to include in future outreach. But negative responses are just as valuable. “Customer experience is the part of the program where we have the most control,” explained Shkolnick. “If someone rates their experience as poor, we can contact them, find out what went wrong and use that knowledge to improve our customer service.”

Future is cloud-y

In choosing the cloud system, Shkolnick observed that flexibility was a top priority. “We are in an ever-changing industry, so we needed a system that would be easy to modify from year to year,” he said.

The LES Technology Services department was very helpful in developing the requests for proposal (RFPs) and evaluating bids to ensure that the system was easy to use for trade allies, had robust reporting abilities and had a reasonable price tag. “One thing we learned in the RFP process is that the market space is not overly populated with services targeting utility programs,” Shkolnick acknowledged.

Perhaps software developers will take note and address that gap in the near future. A great deal of industry attention has been focused on systems and devices that track consumer energy use and assist with load management. But LES knows that building more responsive, effective customer programs is just as important, and the cloud has helped the utility do just that. ■

Online training takes aims at energy, water use in food service

According to the Food Service Technology Center (FSTC), an energy-efficiency and appliance testing facility funded by Pacific Gas and Electric, the industry has a \$40 billion utility bill and is five to 10 times more energy intensive than other commercial customers. Since food service employs one in 10 U.S. workers, the chances are good that you have at least one restaurant in your service territory. That gives you the opportunity to help an important customer segment succeed, support your local economy and conserve critical resources.

Teaching food service employees to manage energy and water costs the same way they manage their food cost has the potential to reduce billions of dollars of waste annually. But behavior change takes education, and delivering training to a diverse, busy and mobile workforce is a big challenge, to put it mildly. FSTC has tackled this challenge by introducing online sustainability training to turn food service professionals into energy-efficiency experts: FE3 certification.

Industry-wide application

Based on 28 years of lab and field work, energy surveys and design consultations by industry experts, FE3 has built a practical curriculum focused on results. Like most industries, food service encompasses not only those involved in day-to-day operations, but also a wide network of supporting trades and employees. FE3 training can help all of these professionals understand their role in improving sustainability.

Restaurant owners, managers and

staff will learn how to operate and maintain an efficient kitchen and how to choose more efficient equipment. Utilities and suppliers will learn about the industry's energy challenges so they can develop programs and services to help restaurants become more profitable. Facility designers, equipment manufacturers and service agents can gain skills that will make them resources for restaurants seeking to increase sustainability.

Culinary and hospitality schools can add the sustainability curriculum to their programs. FE3 derived the online course material from classes taught live to university, college, community college and culinary students for over a decade.

Convenient, comprehensive learning

Recognizing that hectic schedules can be a big barrier to training in the food service industry, FE3 makes the six modules available online 24/7.

Each module covers a different area of food service energy and water

use with interactive exercises. Topics include:

- Intro to energy efficiency – How energy use relates to sustainability and why energy efficiency is a necessary component of a commercial food service sustainability program
- Efficient and effective lighting – The basics of electric lighting and how to choose lighting products that use less energy, look good and meet the special needs of commercial food service
- Efficient refrigeration – The basic principles of refrigeration and how to select and maintain energy-efficient refrigeration systems
- Water conservation – The basic principles of water use and conservation in a food service operation and how to select and compare energy- and water-efficient dish machines



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- Energy-efficient cooking equipment – The basics of food-prep and cook-line energy use and how to reduce cooking appliance operating costs
- Commercial kitchen ventilation – The basics and best practices to optimize kitchen ventilation systems

The material is narrated, loaded with easy-to-understand graphics and employs gamification and avatars to make learning more fun. Modules conclude with a short exam that reinforces learning.

After successfully completing the FE3 training, students will understand

basic energy terms and have practical skills that will positively impact their restaurant's bottom line. They will be prepared to choose the right lighting for specific tasks, calculate the cost of water leaks, properly maintain refrigeration, select energy-efficient cooking appliances with online tools and troubleshoot and optimize commercial kitchen ventilation systems.

Help for key accounts

Although FE3 training was developed by the California-based FSTC, the curriculum is relevant to food service employees across the country, as are many other resources the center offers.

Utility key account supervisors should explore FSTC, bookmark it and share it with their food service customers. Let restaurant owners and operators in your territory know about the recommendations for energy-efficient kitchen equipment, design guides for water and ventilation systems, equipment test results and a variety of calculators. Tell them about the presentations from FSTC seminars and webinars archived online. Share the industry links and publications with your local coffee shop or five-star dining establishment. In an industry with notoriously thin margins and high turnover, utilities can make a difference. ■

South Sioux City *from Page 2*

the city as a whole. On the residential side, the municipal utility has placed demand meters into service to control peak demand from air conditioner use. Both strategies have helped the community to contain electric costs.

The municipal utility has performed energy audits on all city buildings and facilities to identify energy-saving opportunities. Improvements included adding variable speed drives, converting street and signal lighting to LED and installing LED office lighting. Energy-efficient heating and cooling measures and practices have also been implemented in city buildings.

To address the need for backup support and electric demand relief during peak times, the city is designing a 5-MW, state-of-the-art natural gas-powered generating station. Excess generation from the unit will be offered to the Southwest Power Pool markets.

Practicing stewardship

South Sioux City was the first city in Nebraska to implement a paperless city council. In addition to reducing environmental impacts, the approach

simplifies the archiving of council activities and makes it easier for the public to access more information. A voice-activated council chamber video recording system allows citizens to access live and archived meetings.

Tree health and sustainability are important to South Sioux City, which has qualified for the Arbor Day Foundation's Tree City USA designation for 25 years and earned the Growth Award for 10 years. For the past eight years, the city has planted one new tree for every 30 residents.

Residents enjoy the city's two community gardens and the more than 200 fruit trees the city planted in 2014. The orchard is part of a facility designed in partnership with the University of Nebraska – Lincoln to provide storage and opportunities for youth outdoor learning activities. The new building is the first compressed laminated timber structure in Nebraska. Ash tree planks salvaged from emerald ash borer kill and milled by the Nebraska Forest Service side the building. The project received the 2017 Community Enhancement Award from the Arbor Day Foundation.

Quality of life is part of environmental health too, and South Sioux City actively promotes healthy lifestyles. The city's extensive network of developed trails earned the first "Bicycle Friendly Community Award" in Nebraska in 2006. The trail system connects to 60 miles of trails in four cities and three states, and hosts many rides, runs and other events throughout the year.

Partners make it happen

Innovation doesn't occur in a vacuum and partnership is as critical to South Sioux City's efforts as vision is. City Administrator Lance Hedquist acknowledges that the city's success with energy efficiency and renewable energy projects results from the support and trust of the mayor, council and staff who share his passion to make the city a great place to live and work.

South Sioux City's collective approach to innovation, partnerships, governance and trust would be impressive in a city many times its size. In a small municipality, it deserves recognition: WAPA is proud to honor South Sioux City with the Administrator's Award. ■

Webinar

Improve chances for success of your community solar project

Oct. 5

11 a.m.-12 p.m. MT



The Community Solar Value Project is back with a free live webinar on Oct. 5.

What Makes the Biggest Difference in Achieving Community Solar Success? will feature utility industry journalist Herman K. Trabish discussing case studies he covered for Utility Dive. You are leaving WAPA.gov. CSVP leaders will join Trabish to share case studies that illustrate their best-practice picks.

The discussion will be divided into coverage of the following questions and more:

- Where's the balance point between utility freedom and regulatory push?
- Which lessons-learned are most often ignored—and at what price?
- Which utilities have found the best pricing solutions, and how?
- How do you speed up the program-design process?
- Do pilot programs help or hinder?

Besides looking inside the machinery of successful community solar programs, speakers will explore the question of what kinds of policies most help—or hurt—community solar program innovation.

The webinar will also include an advanced look at CSVP's new Solutions Toolkit, which offers practical approaches in the six top challenge areas CSVP has identified through its work with utility partners. In addition to some familiar analytic methods and guides that CSVP has field tested this year, the toolkit features brand new resources to help utility program designers make community solar better.

This webinar is free, but registration is required. Don't miss this opportunity to learn the keys to making the most of your community solar project. ■



Plan your celebration for Energy Efficiency Day 2017

October 5 is fast approaching, and the message for Energy Efficiency Day 2017—save energy, save money—is one your customers will surely appreciate.

Following the success of last year's first-ever national event, the American Council for an Energy Efficient Economy is looking to expand participation and awareness of the event. More than 175 were official supporters in 2016. Your utility could join the more than 175 government agencies, companies, power providers, cities and other organizations that supported Energy Efficiency Day in 2016.

Outreach includes a website, a Facebook account, more official declarations and a challenge to save energy in homes and businesses. An ACEEE blog post lists four suggestions for challenging your community to save energy.

- **Sign up on the new event website** as an individual or as an organization. You will receive ideas and fun facts to share on social media as Energy Efficiency Day gets closer.

 ENERGY EFFICIENCY DAY
Save energy. Save money.

October 5

- **Urge your residential and commercial customers to take the Lightbulb Challenge or the Office Lighting Challenge.** Challengers agree to replace at least one light bulb with an LED. If each US household purchases just one LED bulb, consumers could save \$500 million annually.
- **Ask state and local leaders to officially proclaim Oct. 5 Energy Efficiency Day.** Hawaii Governor David Ige did so in 2016, and Pittsburgh Mayor Bill Peduto has already done it for this year.
- **Share your own energy efficiency story.** Promote your news about Energy Efficiency Day and the benefits of saving energy—and money—through blog posts, emails, newsletters and social media. Create your own content with videos, photos, graphics or other messages. Sign up on the EE Day website to get more material you can use from ACEEE.

You can use your imagination, too—creativity and humor are welcomed. And don't forget to share your ideas with ACEEE and WAPA. We would love to highlight your activities in an Energy Services Bulletin story. ■

Upcoming deadlines

- **Oct. 2** – WINDPOWER 2018 presentation proposals due
- **Oct. 5** – Energy Efficiency Day 2017
- **Oct. 9** – Tribal Energy Development Capacity
- **Oct. 10** – Proposals for improving undergraduate STEM education requested

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