

BULLETIN

The energy and planning resource for Western utilities

WIND, SOLAR ACQUISITIONS MAKE SENSE FOR LINCOLN ELECTRIC SYSTEM

Starting down a future of potential environmental regulations and uncertain production tax credits, Lincoln Electric System Redirecting to a non-government site (LES) in Lincoln, Nebraska, is surging forward on “greening up” its power portfolio.

The municipal utility closed 2014 with a power purchase agreement to add 173 megawatts (MW) of wind energy and 5 MW of solar energy to its power supply resource portfolio by 2016. The move will reduce coal resources from 43 percent of LES’s installed nameplate capacity to 34 percent.

This latest acquisition is not part of a predetermined goal, but simply a good business decision, observed LES Administrator and CEO Kevin Wailes. “When viewed as a package, our wind and solar contracts are expected to save LES customer-owners approximately \$429 million over the next 25 years,” he pointed out when announcing the agreements.

LES Communications Manager Kelley Porter added, “Responding to

customer input and being good environmental stewards is part of doing business as a public power utility.”

WIND BRINGS DEVELOPMENT

The wind additions, spread across two contracts with developer Invenergy Redirecting to a non-government site, involve the 73-MW Prairie Breeze II Wind Energy Center in northeastern Nebraska and 100-MW Buckeye Wind Energy Center in north-central Kansas. The projects will bring LES’ total wind portfolio to 304 MW, and increase the utility’s renewable generation portfolio to the equivalent of 48 percent of LES’ retail energy.

Prairie Breeze II is an expansion of Invenergy’s first Nebraska wind farm, which began operation in May 2014. The developer expects to complete Prairie Breeze II by the end of 2015. The project will create an estimated 90 jobs during the construction phase, and is expected to require seven permanent full-time employees to operate and maintain the 41 turbines.

LET THE SUN SHINE

Cost savings from the wind agreements will help supplement customer participation in LES’s new SunShares community solar program. LES



Elkhorn Ridge is one of five wind facilities currently supplying green power to Lincoln Electric System. In 2015, LES will add another 173 MW from the Prairie Breeze II in Nebraska and Buckeye in Kansas. (Photo by Nebraska Public Power District)

launched the program in partnership with its customers to bring a community solar project to the Lincoln area. The 5-MW solar array—the largest in the state—will provide the utility with valuable solar experience.

The solar contract was in response to an LES survey indicating customers were willing to support more local solar energy. About 44 residential customers take advantage of LES’s renewable generation program and net-metering policy, but the city has a lot of older neighborhoods with large trees, Porter noted. “The solar project offers an affordable alternative for customers who would like to be involved with solar but don’t have the ideal circumstances,” she said.

The enthusiastic response to the solar farm indicates that a good many LES customers fall in that category. The program launched on Aug. 1, 2014. “We

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LAKE CITY, COLO., INSTALLS WEATHER STATION FROM EQUIPMENT LOAN PROGRAM

Gunnison County Electric Association Redirecting to a non-government site (GCEA) has joined the list of Western customers who have borrowed a weather station from our Equipment Loan Program to teach students and their parents about the weather in their community.

Equipment Loan Manager Gary Hoffmann traveled to Lake City, Colorado, in November to deliver the unit and help technicians from GCEA install it on a theater. The station collects data on temperature, humidity, wind speed, rainfall, solar energy and more. The information is available on the Weather Underground website Redirecting to a non-government site .

Lake City Community School students, teachers and district officials attended an unveiling event for the weather station organized by Philip Virden, the theater owner. Teachers plan to incorporate the weather station data into science lesson plans. The data will help the next generation of consumers gain a better understanding of how the weather relates to energy use and renewable energy generation.

When school is out, GCEA will continue to use the weather station data to monitor conditions for service calls in the Lake City area. GCEA Energy Use Specialist Alantha Garrison hopes the data can help cooperative members to

better understand their utility bills, as well. Both Garrison and Virden are observers for the National Weather Service, so they appreciate the value of accurate weather information.

We look forward to following GCEA and the community as they put their weather data to use in the coming year. You can read more about the weather station in the GCEA News (Page 9). To learn more about education tools available from Western's Equipment Loan Program, contact Gary Hoffmann. ⚡



Western Equipment Loan Manager Gary Hoffmann (left) and GCEA Energy Use Specialist Alantha Garrison talk to Lake City Community School students about the town's new weather station. (Photo by Gunnison County Electric Association)

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held a press conference to announce it on Aug. 2, and 1,200 customers had signed up by the time we signed the agreement," Porter recalled.

Marketing of the solar installation was not limited to the news conference. LES enlisted the same local environmental groups and citizens who had pushed for the project to speak to community groups. Promotion also included a two-month blitz of social media, radio interviews, posters, newspaper ads and bill stuffers.

FUTURE BUILDS ON PAST

Now that LES has had a chance to gauge the real interest in the solar project, the promotion has entered its second phase. "The site is highly visible from Interstate 80, so the community can watch as the project is constructed and feel like a part of it," Porter said.

The solar farm will significantly increase the amount of solar power in the municipal utility's resource mix. In addition to the customer rooftop systems, LES recently added 50 kilowatts of solar energy through a rooftop solar array on one of its service buildings.

LES prides itself on a history of aggressively building its renewable energy portfolio, starting with two utility-owned and customer-financed wind turbines in 1998. The new solar program further diversifies an energy supply that includes 4.8 MW generated by the Bluff Road Landfill waste-to-energy facility, commissioned in 2013.

The new wind and solar contracts are only the latest example of the municipal utility's move toward greater sustainability. In a changing industry, this openness to innovation has helped LES control costs, ensure reliable power delivery and keep rates affordable for its customer-owners. As Wailes explained, "We make decisions to best reflect the values of our community." ⚡

ENERGY SERVICES BULLETIN

The Energy Services Bulletin is published by Western Area Power Administration for its power customers. The mailing address is Western Area Power Administration, P.O. Box 281213, Lakewood, CO 80228-8213; telephone (720) 962-7508.

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Editor: Kevon Storie
Designer: Grant Kuhn
ENERGY SERVICES
Western Area Power Administration

HAVE YOUR SAY: SUGGEST TOPICS FOR PRE-FORUM WORKSHOP AT UTILITY ENERGY FORUM

May 13-15, 2015
Tahoe City, Calif.



The 35th annual Utility Energy Forum Redirecting to a non-government site is just around the corner and there is still time to shape the agenda.uef

WHAT'S ON YOUR MIND?

The program planning committee is accepting topic suggestions for the Pre-Forum Workshop for utility and government employees. The session is a roundtable discussion where power providers and government representatives can talk candidly about the issues that concern them most.

Community solar, distributed generation, net metering, new utility business models, partnering to stay in the game and microgrids are just few of the subjects that might be on attendees' radar. But don't stop there—this is your chance to learn from colleagues who wrestle with the same demons, and to take home new solutions, and possibly, new partners.

Paul Reid of Azusa Light and Power Redirecting to a non-government site and Ron Horstman, Western's Energy Services Manager, are co-chairing the workshop. No topic is off limits, no idea too "out there," for these UEF veterans, so expect a no-holds-barred session that will rock a few boats.

Use this online survey Redirecting to a non-government site to share what is keeping you up at night. Remember, participation in the Pre-Forum Workshop is limited to utility and government employees. Speak your mind, and complete the survey by Feb. 5.

AND THAT AIN'T ALL...

Of course, the Pre-Forum Workshop is only the appetizer for the information banquet that is the Utility Energy Forum. Utility managers and marketers, energy manager and program developers and customer service professional return to the forum year after year to stay current on the latest trends in the energy utility industry.UEFbot

This year's theme, Transformation is NOW, will weave through sessions that challenge traditional thinking and encourage participants to find innovative ways to cope with the rapidly changing energy utility industry. If you have never attended the UEF. this

is a good year to start, and if you are planning to attend, register today. Early bird discounts end March 14.

As if outstanding professional development and networking opportunities were not enough reason to attend, Lake Tahoe is beautiful in May and registration includes all (terrific) meals, as well as lodging at Granlibakken Resort Redirecting to a non-government site.

Share your concerns today, and then join other utility and government employees to brainstorm the answers May 13-15. See you in Granlibakken.



Transformation is NOW



IRRIGATION WORKSHOP INTRODUCES WATER APPS FOR GROWERS

Western teamed up with Nebraska Public Power District Redirecting to a non-government site (NPPD), the Department of Agriculture's (USDA) Rural Energy for America Program (REAP), Clean Energy Ambassadors Redirecting to a non-government site and Central Platte Natural Resource District Redirecting to a non-government site last November to present an irrigation workshop for agriculture energy customers of NPPD members.

REAP Irrigation Energy Cost Savings: From Testing Your Pumps to Financing and Completing the Project offered an overview of load management and efficiency opportunities; the REAP program, including eligible projects and application guidelines; and a case study on a solar pumping system. Participants learned about REAP success stories and utility incentives, met equipment vendors and watched NPPD Energy Consultant Ronald Rose, Kelley Messenger of the USDA and Equipment Loan Manager Gary Hoffmann demonstrate pump testing methods.

Troy Ingram, of the University of Nebraska, Lincoln, (UNL) introduced two new mobile apps the UNL Extension program Redirecting to a non-government site developed to help growers manage their irrigation systems. Utilities and their agriculture customers can benefit from these easy-to-use tools, even if they were unable to attend the workshop.

PRICING WATER

The IrrigateCost app Redirecting to a non-government site models center-pivot and gated pipe irrigation systems and the most commonly used energy sources. Using information such as acres irrigated, pumping lift, system PSI, pump and pivot life, and inches applied, the app computes total irrigation cost, along with the total cost of owning and operating a system. It also breaks down costs by irrigation well, pump, gear head,

pump base, diesel engine and tank and system and calculates per-acre annual cost and per-acre-inch annual cost.

Growers make a number of management decisions based on the annualized costs of owning and operating an irrigation system, starting with whether or not to develop land for irrigation. For a system to be economically feasible, the net income from increased yields due to irrigation development must exceed the additional costs of owning and operating the system over its expected life. Once development is underway, the app can help determine design choices, including selection of energy source for pumping water, the type of distribution system, and so on. Other uses for the app include:

- Calculating a fair crop-share rental agreement
- Knowing what to charge for watering a portion of a neighbor's field
- Estimating costs to pump an acre-inch of water to help you determine how many additional bushels of a crop are needed by applying one more inch of water at the end of the irrigation season

The app is available through most phone carriers' app stores. iPod and iPad users can get IrrigateCost from the Apple iTunes store Redirecting to a non-government site for \$1.99. In The Google App Store Redirecting to a non-government site offers a version of the app for Android users, also \$1.99.

PRICING EFFICIENCY

IrrigatePump Redirecting to a non-government site helps to calculate the efficiency of a pumping plant and to determine the potential savings from upgrading the system.

Whether a pumping plant uses diesel, electricity, gasoline, natural gas or propane, chances are it is using 25 percent more energy than expected by the Nebraska Pumping Plant Performance Criteria Redirecting to a



IrrigateCost breaks down the total cost of owning and operating an irrigation system to help growers determine if developing land for irrigation is going to be economically feasible. (Photo by Google App Store)

non-government site (NPC). A pumping plant meeting the criteria delivers the expected amount of useful work, measured as water horsepower hours, for the amount of energy consumed. The NPC is based on field tests of pumping plants, lab tests of engines and manufacturer data on three-phase electric motors.

The user enters six numbers related to pumping lift, pressure at the discharge, acre-inches of water pumped, fuel price and total fuel used. The app then calculates a pumping plant performance rating, provides an estimated cost to bring the pumping plant up to standard and the number of years for payback on the investment at various interest rates.

Both apps provide anonymous results that users can capture and email to their own devices. The cost of IrrigatePump is \$1.99 through Apple, Google or phone carriers.

Ingram noted that these apps are new and have not been through a full growing season yet, but he has used

See IRRIGATION WORKSHOP, page 6

CATCHING UP ON INDUSTRY NEWS

Welcome to 2015, a time to start fresh and explore new territory. Whether that means launching or updating efficiency programs, seeking out more education or bringing attention to your successes, here are some news items to help you on your way.

EFFICIENCY INCREASES IN 2014

Watch for new appliance efficiency standards from the Department of Energy. In 2014, DOE issued a total of 10 new or updated standards, including commercial refrigeration, electric motors, external power supplies, furnace fans, metal halide lamps, wall-unit air conditioners and walk-in coolers. Altogether, these 10 standards will help reduce carbon dioxide emissions by more than 435 million metric tons and save American families and businesses \$78 billion in electricity bills through 2030.

Source: Appliance Standards Awareness Project 1/16/15

REGULATIONS MATTER

According to the Edison Foundation Institute for Electric Innovation (IEI), fixed-cost recovery mechanisms play a significant role in supporting electric efficiency. The 2014 IEI report Redirecting to a non-government site found that investment in energy efficiency depends on state policies that allow utilities to pursue efficiency as a sustainable business as well as state mandates for energy efficiency.

Fixed-cost recovery mechanisms, such as decoupling and lost revenue adjustment, help a utility recover the marginal revenue associated with fixed operating costs. Utilities appear to be more willing to invest in programs to reduce energy use if state regulations allow them to recoup their losses.

The American Council for an Energy Efficient Economy (ACEEE) bolsters the IEI report, with nine of the top 10 states on its 2014 State Energy Efficiency Scorecard Redirecting to a non-government site having a fixed-cost recovery mechanism.

Source: SmartWatt Energy News, 1/15/15

DIVE INTO HOT WATER

Drought will continue to be a major concern in 2015, so events that focus on water use may well become the hot ticket. The ACEEE Hot Water Forum Redirecting to a non-government site (HWF) is now in its sixth year of gathering experts to discuss making water hot, distributing it with low losses, and employing efficient fixtures and practices. Professionals from manufacturing; distribution (plumbing); electricity, gas and water utilities; government; and the research communities will meet in Nashville, Tennessee, Feb. 22-24 to learn from each other and build momentum for market transformation.

The conference emphasizes both the technical efficiency potential and the policy implications of service hot water technology and practices, and how people use hot water. In recent years, key topics have included:

- Standards and rating methods
- Grid-interactive electric water heating
- All about heat pump water heaters
- The latest in innovative technologies
- Efforts to improve residential water heating efficiency
- An international perspective on water heating

Utilities still have a great deal to learn about the water-energy nexus and its potential for cost and resource savings.

Since 2008, this conference has provided a venue for all members of the hot water community to collaborate and share new ideas.

Source: American Council for and Energy Efficient Economy, 1/17/15

LEARN SOMETHING NEW

If professional development is on your list of resolutions, check out the pre-conference training sessions that kick off the National Conference of the Association for Energy Services Professionals Redirecting to a non-government site (AESP) in Orlando, Florida, Feb. 9-12.

The sessions include:

- Behavior Change and Energy Efficiency Programs
- Intro to the Principles of EM&V (Evaluation, Measurement and Verification)
- Leadership Training for Exceptional Team Performance

The fee for each course is \$545, and continuing education units will be available. You don't have to attend the conference to take advantage of the workshops, but AESP events are always great for networking and expanding your horizons.

Source: Association for Energy Services Professionals, 1/14/15

GET RECOGNITION

Submit your successful peak load and demand response management programs, initiatives and achievements for the 12th annual PLMA Awards Redirecting to a non-government site. The Peak Load Management Alliance (PLMA) is accepting nominations through March 2 for the following categories:

- Program Pacesetter – recognizes outstanding programs that effectively support and deliver peak load management
- Technology Pioneer – recognizes innovative applications of technology with demonstrated potential to scale
- Outstanding Thought Leader – recognizes the impact of projects, outreach campaigns and individual contributions that have the potential to shape the industry's future

You don't have to be a PLMA member to nominate a program, and self-nominations are appropriate. One or more awards will be presented in each category with sub-categories for Utilities, Regulators, Independent System Operator/Regional Transmission Operator, Aggregator, Marketer, Consumer, Solutions Provider, Manufacturer, Individual, Organization or Project.

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WEBINAR DESCRIBES UTILITY TRENDS IN ADOPTING COMMUNITY SOLAR PROGRAMS

Feb. 4, 2015
2 p.m. MST

Western Area Power Administration and the Solar Electric Power Association (SEPA) are teaming up to present a webinar that explores the utility's role in the community solar market segment on Feb. 4, 2015, from 2:00 to 3:30 p.m. Mountain Standard Time.

The community solar model offers utilities an innovative way to engage with customers who want to invest in renewable energy but, for a variety of reasons, may not be able to install rooftop arrays. Community solar programs offer utility customers the opportunity to buy "shares" in a centralized project, often called a solar farm or solar garden. Utilities around the

nation are using these programs to meet growing consumer interest in supporting renewable energy.

SEPA has been tracking the spread of these projects across the United States since early 2012. With nearly 60 active programs, utilities represent 87 percent of all community solar programs now online.

Utility Trends in Adopting Community Solar Models Redirecting to a non-government site will open with Becky Campbell, SEPA Senior Manager of Research and Advisory Services, defining community solar and explaining why some utilities see it as a valuable customer engagement tool. Using case studies of actual utility programs to support the discussion, she will highlight nationwide utility trends in program adoption.

Presentations will cover additional data, including actual participation statistics that SEPA collected through a 2014 survey of utility program administrators. Attendees will also learn about design characteristics common to some of the nation's most successful community solar programs.



Randy Manion, manager of Western's Renewable Resource Program, is urging Western customers to attend the webinar to learn more about this strategy for adding solar power to utility resource portfolios. "Several of our customers have already launched community solar programs, including Colorado Springs Utilities, Poudre Valley Rural Electric Association and Kit Carson Electric Cooperative," he noted. "Their members have been enthusiastic, and many projects are fully subscribed before construction is complete."

There is no cost to attend the webinar, but registration is required. ⚡

Industry news from page 5

The awards will be presented at the 16th PLMA Spring Conference Redirecting to a non-government site, April 28-29, 2015, in Tucson, Arizona.

If you are interested in joining PLMA, the nonprofit now offers membership in three tiers. Utilities and other program providers may now join as associate, advising or sustaining members. Membership offers access to networking events and training, and the opportunity to participate in committees and working groups at various levels.

PLMA provides resources and advocacy for organizations involved in demand response initiatives, recently announced a change to its membership structure.

Source: Peak Load Management Alliance, 1/16/15 ⚡

Irrigation workshop from page 4

them and other agriculture apps on his own farm. Crop Water, an app UNL developed for scheduling irrigation—specifically for Nebraska soils—has been particularly helpful, he added.

FARMING GOES HIGH-TECH

There are now apps for almost every aspect of farming and ranching, from monitoring invasive species in your area to logging machinery maintenance, and most are free or inexpensive. Utilities might consider giving agriculture customers apps that are related to energy and water management like IrrigateCost and IrrigatePump. Apps could be great

small incentives and customer relationship builders.

Just remember that not all apps are created equal. Croplife magazine Redirecting to a non-government site suggests doing a little homework before selecting an agriculture app. Or, better yet, contact your local university extension service to find out what they recommend or offer. Farming is a tough job, and growers will appreciate anything their utilities can do to help them operate more efficiently and effectively. ⚡

EDITOR'S NOTE: *Apps aren't the only thing you can offer your ag customers. Contact Energy Services if your utility is interested in sponsoring an irrigation efficiency workshop like the one NPPD presented in Grand Island.*