

# BULLETIN

The energy and planning resource for Western utilities

## SMART MESSAGING INSPIRES GLENDALE WATER & POWER CUSTOMERS TO SAVE ENERGY

Talking to customers about controlling their energy use can make utilities feel like parents—you repeat yourself like a broken record and you suspect your audience is just rolling their eyes and tuning out your words of wisdom. Facing summer peaking season and historic drought, Glendale Water & Power Redirecting to a non-government site (GWP) was determined to find fresh ways to engage its customers.

Fans cool people, not rooms. Please turn them off when you leave the room.

### PARTNERING TO REACH GOALS

Home energy management supplier CEIVA Energy Redirecting to a non-government site helped GWP develop a campaign that drew on communications techniques from none other than Disney Studios. Dean Schiller, who runs the company, is a former Disney executive. He recently shared several tips for successful story telling with



Participants in GWP's customer engagement program see messages like this in an In-Home Energy display digital picture frame. The display also gives homeowners real-time energy use data to help them save energy and money. (Artwork by CEIVA Energy)

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Smart Grid News, Redirecting to a non-government site which included advice on being practical, topical, clever yet accessible, and relevant to consumers of all ages.

Those tips sound like a recipe for getting dialogue going with customers, which is what GWP had in mind when it formed the partnership with CEIVA Energy two years ago. Funding for the program came from grants GWP received from the U.S. Department of Energy and the California Energy Commissions to help fund the utility's modernization programs.

Glendale Public Benefits Coordinator Atineh Haroutunian

explained that the municipal utility had three goals for the program. "We wanted to increase our residential customers' engagement and satisfaction, improve their awareness of energy and water use, and encourage conservation and shift use to off-peak hours," she said.

### PILOT PROGRAM CHANGES BEHAVIOR

GWP launched the program in early 2013, deploying the platform in about 90 residences. The Homeview system collects data directly from the home's digital meter, analyzes the information

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and converts it into compelling messages and visuals. The cloud service then dispatches these conservation messages to the homeowner on several platforms including a “glanceable” In Home Display in a digital picture frame.

The real-time energy-use data and conservation messages got the participants to take notice—and make changes. The information convinced one family that it was time to retire their energy-hog space heater. Another customer told Haroutunian that she placed the display near her children’s room to teach them about energy use in a concrete way.

GWP engaged an independent research company to evaluate the program. They found that 74 percent of customers recalled the conservation messages, and 88 percent of those who remembered the message liked it. Among program participants, awareness of hourly electricity costs grew by 85 percent after the deployment. After joining the pilot program, 83 percent of respondents said they changed their behavior to reduce energy and water use. Also, participants overwhelmingly reported that installing Homeview was easy, a critical but sometimes overlooked factor in program success.

## ENERGY SERVICES BULLETIN

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Conservation messages also remind customers that wasting water can cost as much as wasting electricity. (Artwork by CEIVA Energy)

## TIME TO GROW

Numbers like that spell success and persuaded GWP to expand its customer engagement program earlier this year. Using newsletters, direct mail and a little help from the local media, Redirecting to a non-government site GWP’s conservation team recruited 500 new customers to install the Homeview platform.

The utility worked with CEIVA Energy to craft conservation messages that align with its current priorities, such as saving water or managing air conditioning use. Throughout the day, customers see the messages as part of their picture rotation, along with information about how much energy they are using. GWP reinforces these messages by distributing them in social media and community outreach newsletters.

A new feature in Phase Two is the integration of a programmable thermostat with the Homeview display. “By tying specific heating and cooling behavior directly to energy use, we are giving customers one more tool to understand their habits and make changes that will reduce their energy costs even more,” Haroutunian said.

## BENEFITS FOR ALL

The beauty of a successful customer program is that it is good for the utility that provides it, too. CEIVA Energy offers additional utility services that GWP can use to improve its operations and make future programs more effective. The Entryway smart meter integration software allows GWP to analyze home energy use, monitor home energy management devices and deliver residential demand response. Product licensing, implementation, integration, training and ongoing maintenance and service are part of the package, as well.

The most valuable outcome of the partnership, however, may be finding the “magic mix” of technology and message that inspires homeowners to be conscious of their energy use. Instead of feeling like it is scolding its customers about turning off the lights, Glendale Water and Power will now be having a conversation with informed partners. And that is something worth talking about. ⚡



## AROUND THE WEB

### THE NEED PROJECT [www.need.org](http://www.need.org)

Utilities would have an easier job if consumers were better educated about energy use. Teachers are always on the lookout for comprehensive science materials to use in the classroom. The NEED Project bridges those interests with energy education curricula that can forge a strong partnership between utilities, students and teachers.

#### FAR-REACHING GOALS

The mission of the NEED Project is to promote an energy conscious and educated society by designing objective, multi-sided energy education programs. Energy companies, government agencies and organizations work with NEED to create timely and balanced curriculum materials that focus on easy-to-implement program modules and professional development opportunities for teachers. To deliver these programs, NEED builds networks of students, educators, business, government and community leaders.

Almost 35 years ago, the project began as National Energy Education Day, a one-day celebration of energy education. The fundamental principle of NEED programming is to encourage students to explore, experiment and engage, and encourage teachers to embrace student leadership in the classroom. NEED's work in after-school programs, student clubs, scouting groups, and home school networks also continues to grow.

#### FOR TEACHERS

Because energy affects every aspect of our lives, NEED curriculum resources are available for all classrooms and grade levels, from kindergarten to high school and beyond. Students may explore the physics and chemistry of energy, calculate savings from energy-efficiency measures, write and

perform plays about energy or discuss the impact of energy use on history and society.

Educators will find the curriculum guides grouped by grade level—primary, elementary, intermediate and secondary—topic or subject. A blueprint for success provides an outline of a basic energy curriculum unit and the NEED Graphics Library offers high-resolution graphics for classroom presentations and handouts.

Supporting material includes curriculum correlations to all state science content standards and national common core standards. Several of the most popular curriculum guides are available in Spanish. A current catalog provides book and kit pricing.

#### FOR STUDENTS

To encourage students to take a greater interest in energy use, the NEED Project offers games, activities, recognition and study guides. The resources were created in collaboration with several partners, including Energy Kids, a program of the U.S. Energy Information Administration, and Energy Quest, from the California Energy Commission.

Energy Infobooks cover basic scientific concepts like motion and light, energy history, alternative and conventional energy resources and energy conservation. Students at all levels can find ideas for science fair projects in guides developed with a grant from the National Network of Energy and Environmental Education Professionals. Projects range from simple experiments with ice melt and changing colors to advanced explorations of technologies like waste-to-energy and cryogenics.

For students who are inspired to take energy learning beyond the



Students participating in NEED's National Youth Awards Program for Energy Achievement attend a ceremony in Washington, D.C.

classroom, the NEED project holds an annual National Youth Awards Program for Energy Achievement. The program combines academic competition with recognition to acknowledge everyone involved in NEED during the year. Students and teachers set goals and objectives, and keep a record of their activities that students then combine into presentations and submit online each April. Participants attend a national ceremony in Washington, D.C., in June.

#### MISSING LINKS

Overall, the NEED Project is a rich resource for utilities and schools looking for ways to increase awareness about the importance of energy to our communities and lives. Unfortunately, the website has some significant oversights, including failing to provide a link to the science fair planning guide. The games and activities page is also incomplete, offering only certificates for participating in the games but no instructions or materials for the games.

Visitors can contact the NEED Project to request these materials or report other missing resources. Some states also have active NEED programs that teachers can contact for more information. ⚡

# ACEEE: COMBINED HEAT AND POWER SHOULD BE PART OF EPA CLEAN POWER PLAN

The Environmental Protection Agency (EPA) released its plan in June for cutting carbon pollution from power plants by 2030, using four building blocks to achieve targeted reductions.

Each building block represents a category of measures that states can use to meet the first-ever federal regulation for reducing carbon dioxide (CO<sub>2</sub>) from existing power plants. The agency included energy efficiency, creating a path for states to reduce both greenhouse gases and consumer energy bills, but overlooked combined heat and power (CHP). The American Council for an Energy-Efficient Economy noted that the readily available energy resource could provide states with substantial energy savings.

## BLOCK-WORTHY STRATEGY

For the EPA to include a policy measure as a building block in its proposal, the energy savings it provides should be cost-effective, adequately

demonstrated and there should be lots of it. CHP meets these criteria by providing both energy and environmental advantages over separate heat and power systems. An ACEEE study found CHP represents around 18 Gigawatts of avoided capacity, and that installing the technology could save more than 68 million Megawatt-hours of energy by 2030. Those energy savings could cut CO<sub>2</sub> emissions and offset the need for about 36 power plants.

In addition to offering energy and environmental benefits, CHP is a well-established resource, widely in use in industrial facilities, hospitals and universities to reduce operating costs and ensure reliability. According to the Department of Energy, it currently represents 8 percent of installed U.S. electric generating capacity and more than 12 percent of total electricity generation, and has the potential to achieve much more. A study from Oak Ridge National Laboratory found CHP

could reach up to 20 percent of U.S. generating capacity by 2030. Including CHP as a strategy for meeting CO<sub>2</sub> reduction goals will encourage greater investment in the efficient technologies that deliver environmental and economic benefits.

## STATES MAKE THEIR MOVE

Another advantage of treating CHP as an energy efficiency measure is that it can provide emissions reductions at a lower cost than other sources. A handful of states, including New York, California, Massachusetts, Connecticut, and others, are developing innovative approaches to increase deployment of CHP to gain its energy savings and emissions benefits. ACEEE is urging EPA to encourage states to use CHP and provide guidance to help states include energy savings from CHP in their compliance plans.

*Source: American Council for and Energy Efficient Economy, 9/4/2014.* ⚡

## THERMOSTATS ARE EMPHASIS FOR NEWEST PLMA INTEREST GROUP

The Peak Load Management Alliance (PLMA) has announced that Brian Doyle and Lee Hamilton of Xcel Energy are co-leading PLMA's new Thermostat Interest Group.

The PLMA Thermostat Interest Group will examine the costs and benefits of all types of utility-sponsored programs that leverage thermostat technology to deliver demand response, energy efficiency or other system benefits. A group goal is to identify the resources and

partners that best communicate the value of smart thermostats to utility programs, rather than to focus on a specific technology or solution.

The group intends to collect documentation from published and not-so-public sources such as utility thermostat pilot and program evaluations. These and other third-party resources covering technology evaluations, program design concepts, market assessments, savings potential and more will be selectively shared with members.

The group has already conducted an initial meeting with founding PLMA organization representatives. Based on a strong interest level, the group will host a half-day workshop on Nov. 3 prior to the 15th PLMA Fall Conference in Philadelphia.

PLMA Interest Group membership is restricted to representatives from PLMA member organizations, but any organization is welcome to join PLMA.

*Source: Peak Load Management Alliance, 9/15/14.* ⚡

## TENSION EXISTS BETWEEN GOOD CUSTOMER SERVICE, MAINTAINING CUSTOMER LOYALTY

The latest EcoPinion Consumer Survey from consulting firm DEFG points to a conflicted consumer landscape in terms of customer expectations. The Conflicted Consumer Landscape in the Utility Sector surveyed more 1,000 consumers to examine perceptions of customer service and the need for more options, including budget management tools, payment and pricing choices and new communications channels.

The findings indicate that the majority of customers feel that their

utility is providing enough choices and the right amount of information. However, a subset of consumers strongly feel that they would choose a different energy provider if they could. There may be a disconnect between customer service and the overall customer experience or perception of the utility resulting in low or weak customer loyalty.

DEFG believes that utilities must address the majority of consumers as part of an overall customer strategy that results in deeper engagement, and specifically address the needs

and concerns of the consumer subset to increase overall customer satisfaction. Read more.

You must register to download the report. Once you join DEFG's mailing list, you will receive email updates on the company's EcoPinion surveys, white papers and annual consumer choice scorecards.

DEFG, a management consulting firm specializing in energy, works with clients to increase residential and commercial customer engagement in a commodity marketplace.



## LEARN WHAT CONTROLLED ELECTRIC WATER HEATERS CAN DO FOR YOUR UTILITY

Balancing energy use from systems as simple as water heaters against energy generation opens all kinds of new possibilities for an affordable, clean energy future.

Explore innovative approaches to demand response, demand-side management and renewable energy storage during Clean Energy Ambassadors free October Lunchtime webinar on electric water heaters. The Surprising Benefits of Controlled Electric Water Heaters could change the way you see the future of the electric utility industry.

### LEADER SPEAKS

Gary Connett, director of member services for Great River Energy (GRE), is the featured speaker. The Minnesota generation and transmission utility has been a leader in utility demand response for decades. Today, more than 200,000 households and businesses served by GRE distribution utilities participate in demand response programs.

The utility controls 15 percent of its peak load, which is equivalent to 370 megawatts of capacity.

Controlled electric water heaters are a proven component of the demand-response portfolio, along with controlled air conditioners, controlled irrigation systems and other strategies. More important, GRE has learned that electric water heaters can serve as energy storage devices—like batteries—so that customers are unaffected when the utility uses new grid-interactive control technologies to fine-tune water heater load control over shorter and shorter time horizons. Anticipating load control needs a day ahead is valuable, but anticipating those needs only an hour ahead—or less!—is even better. Today's grid-interactive controlled water heaters may even provide frequency regulation, an ancillary service that balances the minute-to-minute variations in generation resources, including wind and solar.

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## Controlled electric water heaters

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### BALANCING TOOL

The heat energy a water heater stores becomes, in effect, the storage medium in a battery. When the wind is blowing or the sun is shining, it is possible to “charge” this thermal storage battery. And when the electricity is needed for other purposes, the water heating elements shut off. Connett says GRE has more than a gigawatt-hour in thermal storage capacity today.

The possibilities on the horizon promise even greater integration of renewables and demand response. Some measures are suited for homes, and others for larger businesses. Connett explains, “We start to see the utility’s purpose as working with both demand-side and supply-side resources, rather

than simply increasing generation to meet whatever electricity needs customers create.”

In coming years, utilities will continue to give customers the energy services they want, achieving that goal by tapping both demand-side and supply-side energy resources.

### OVERCOMING BARRIERS

Hurdles to success in grid-interactive water heating remain, however, the first being public perception. Until recently, well-intentioned energy-efficiency advocates dismissed electric water heating as an inappropriate use of generation resources—“like cutting butter with a chainsaw,” as Amory Lovins once put it. Pending

energy-efficiency regulations on water heaters could hold the strategy back. But many clean energy advocates, including researchers affiliated with Lovins, say they are willing to take another look at electric water heating today, if it means a more reliable grid, more reliant on wind, sun and other clean, renewable resources.

The Lunchtime Webinar series highlights measures, programs and technologies public power providers serving small towns and rural areas might use to provide better service to their customers. To learn more, register for the webinar or contact Clean Energy Ambassadors. ⚡

## RETHINKING KENTUCKY BLUEGRASS IN THE WEST

**W**ater utilities in the drought-stricken West may see Kentucky bluegrass lawns as water hogs, but a fact sheet by Northern Water suggests otherwise.

Drought Tolerant Kentucky Bluegrass in Northeastern Colorado identifies seven varieties of Kentucky bluegrass that adapt well to the region’s semi-arid climate. Since 2005, the water distribution agency has been studying the drought tolerance and other water-use characteristics of 40 different strains of the popular landscaping grass. Surprisingly,

Kentucky bluegrass stacks up well against the indigenous tall fescue for drought resistance, due to its shallow root structure and the ability to go dormant quickly.

The fact sheet also explains the appropriate steps for soil preparation to ensure that any type of grass thrives and uses water efficiently. Although the study was done for northeastern Colorado, much of the information will apply in many parts of Western’s territory. Municipalities and water utilities may want to share the report with new home-

owners, real estate developers, landscape companies or grounds crews—anyone who might be getting ready to plant or reseed a lawn.

Northern Water works with the U. S. Bureau of Reclamation to deliver water from Colorado’s Western Slope to eight counties along the state’s Front Range. The agency collects, distributes and monitors weather and water quality data, tracks stream flows and reservoir levels, and provides water resource planning and water conservation information. ⚡