

WESTERN AREA POWER ADMINISTRATION



GCEA program introduces members to clean transportation

GCEA added the Chevy Spark-e to its fleet of company cars in 2016. According to a study by the National Renewable Energy Laboratory, one reason people don't buy electric vehicles is that they have never had the chance to drive or ride in one. (Photo by Gunnison County Electric Association)

Electric vehicle (EV) technology has come such a long way in a short time that Gunnison County Electric Association (GCEA) has included member education in its marketing plan to promote this promising new load.

GCEA offers members a rebate on EV chargers and a time-of-use (TOU) rate to encourage EV owners to shift their charging to off-peak times. The program has been in place for almost two years and now supports an estimated 40 vehicles—about a dozen all-electric—in the cooperative's service territory. That is an impressive uptake rate for the new technology, especially in a largely rural area with harsh winters. It points to the importance of laying the groundwork with customers to help them embrace innovation.

Fueling up

Expanding the supporting infrastructure for EVs was the first step GCEA took to launch an EV program.

A January 2016 report from the National Renewable Energy Laboratory (NREL) exploring barriers to EV adoption found that awareness of charging stations was the biggest factor in public acceptance. "We were already gearing up the program when the NREL report came to our attention," recalled GCEA CEO Mike McBride. "It mostly just confirmed what we already suspected."

Working with the nearby ski resort town of Crested Butte, Colorado, GCEA energized the first public EV charging station in Gunnison County in late 2015. A grant from the Colorado Energy Office assisted with the purchase and installation. Crested Butte dedicated two parking spots in the middle of

continued on Page 2

inside

3 ED3 lowers 2018 rates

4 Water efficiency tips

6 2017 state efficiency ratings

7 Federal programs save energy

8 2017 State of Utilities survey

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town to the charger, a generous gesture considering the shortage of parking in the ski town. "We were understandably nervous about letting a parking space go unused," McBride observed. "Fortunately, a member who likes to ski there bought a Chevy Volt in December 2015, which certainly helped with utilization early on."

Another grant from the Charge Ahead Colorado program supported the installation of another public electric vehicle charging station in Lake City in October of 2016. The station is the same model as the Crested Butte charger, so EV owners enjoy ease of use and familiarity with the equipment.

Meet the EVs

The NREL study also asked if respondents had been in an EV, and most answered that they had not. That hands-on experience is central to convincing people that an EV is a viable choice for personal transportation, noted McBride. "Few people have actually driven, or even ridden in a plug-in electric vehicle," he added.

By the spring of 2016, two GCEA staff members had their own plug-in EVs and GCEA acquired a plug-in hybrid for its CEO's use: GCEA got a Ford Fusion Energi plug-in hybrid, a lineman bought a Nissan Leaf and McBride got a Fiat 500 E. Co-op employees had the chance to drive the vehicles at a company meeting, and "People were surprised by the performance," said McBride.

GCEA board members decided that it would be great for members to have the same opportunity to test drive an EV at the open house for the Crested Butte charging station. McBride began to look for a rental car but couldn't find a company that carried EVs. "It seems they had trouble renting them out, so they just phased EVs out of their fleets," he said.

Not to be deterred, board members authorized the purchase of an EV for the GCEA fleet. Saving gas costs, using the company product to fuel the car and showing members that their co-op walked the walk seemed like a win all the way around, so GCEA bought a Chevy Spark EV.



GCEA's Chevy Spark-e refuels at the charging station the co-op installed in Lake City, Colorado. The model has a range of up to 80 miles from a full charge. (Photo by Gunnison County Electric Association)

The company EV has made appearances at open houses, member meetings and even a car show in Gunnison, along with a couple of the employee-owned EVs. One particularly savvy market strategy has been to loan the car for a week to members who are community or thought leaders or who show some interest in the technology.

Making inroads

These efforts have resulted in a slow but steady change in GCEA members' perception of electric vehicles. "People would say, 'It's great but it won't work for me—I live 20 miles out of town. But that is well within range of a charged vehicle,'" McBride said. "They worry about not being able to drive an EV in the winter, but now they are seeing EV owners driving their cars year-round."

Challenges remain, including those specific to a Colorado mountain town. While familiarity tends to ease drivers' "range anxiety" over time, "When the temperature drops below 32 degrees, the range does go down," McBride acknowledged.

The relative lack of charging stations between GCEA's stations and neighboring communities still presents a barrier, too. "If it is cold and snowing and the nearest charger is 65 miles away, that is a real problem for an EV owner," said McBride. He added, however, "In many two-car households, there would be no inconvenience if one of the cars

was electric with the other capable of longer trips."

Raising awareness, gathering data

As EV ownership becomes more common among GCEA members, the marketing—and education—messages are shifting to focus on time of use.

Most consumers are only vaguely aware of concepts like on-peak rates and demand charges. "But we don't want them to fuel their vehicles with the least-efficient resource or wind up paying more than necessary for cleaner transportation," McBride explained.

By requiring members who apply for the charger rebate to sign up for TOU rates, GCEA is encouraging consumers to be more thoughtful about when and how they use energy. The charger rebate has also created a ready-made sample for a case study on TOU rates. "EVs are a great subject because they are a discrete load," said McBride. "Members know when their vehicles are charging and can clearly understand how that affects their usage pattern."

Therein lies the difference between a good customer program and a great one. A good program helps customers save money and energy and helps the utility control its load. A great program teaches customers about energy use and creates a dialogue between consumers and their power provider. By that measure, GCEA's EV program is on track to achieve greatness. ■

ED3 announces 2018 electric rate decrease of 2 percent

The price of necessities only goes in one direction—up—but don't tell Electrical District No. 3 (ED3). The Maricopa, Arizona, public utility is lowering its 2018 electric rates an average of 2 percent for residential, commercial, small industrial, large industrial and agriculture customers.

At a time when other utilities and businesses across the nation are raising their rates, the ED3 board of directors approved a rate decrease for the third year in a row. CEO and General Manager William Stacy attributes this exciting accomplishment to sound management and a diligent planning process.

Partnership cuts costs

Specifically, Stacy noted the benefits of being part of the Southwest Public Power Agency (SPPA). In 2014, ED3 formed the joint action agency with 17 other Arizona public power and tribal utilities. Members enjoy economies of scale in terms of managing existing resources and developing new ones, Stacy explained. "We see a lot of benefits for our customers, particularly those in Arizona's rural or tribal areas," he added.

A new power pooling agreement with SPPA for electricity from the Hoover Dam has allowed ED3 to reduce costs for balancing services. This year ED3 was able to move its controlling area into the Arizona Electric Power Cooperative's controlling area for additional savings on operating costs.



Planning for growth

To keep rates down, you also have to keep an eye on the future, especially in a community that is growing as fast as ED3's service territory. "We are constantly reanalyzing our 10-year load growth plan," said Stacy.

ED3 is the largest electrical district in the state, currently serving about 25,000 residential, commercial and irrigation meter connections. The district operates 12 distribution-level substations, and is building a new one to accommodate the average of 65 new homes springing up in the area each month. "In terms of rates, being large helps because we are able to spread fixed costs over a wide customer base," Stacy acknowledged.

Wise use still important

Even with standard residential rates that are 10 percent lower than investor-owned Arizona Public Service, ED3 does not take customer satisfaction for granted. Programs to help customers manage their own energy use are very much a part of the district's business model.

ED3 offers customers a Home Performance with Energy Star® Home Energy Audit for the heavily discounted price of \$49. Homeowners

can choose from a list participating contractors posted online. Customers can also attend free quarterly conservation workshops ED3 presents, and find energy conservation tips in the district's bimonthly newsletter.

Rate, payment flexibility

In addition to having the lowest rates in the area, ED3 residential customers also have the choice of two time-of-use (TOU) rate schedules. The peak time for TOU-A is 9 a.m.-9 p.m. and 12-7 p.m. for TOU-B. The applications provide energy-saving tips so that customers can maximize the benefits of the schedule. "They can choose whichever one works best for them," said Stacy.

ED3 also implemented a pre-paid metering program last year. Customers pre-pay for their electricity and receive daily text or email notifications of the amount they use and the amount remaining on their account. Studies have shown that customers who use a pre-pay option tend to use less electricity. Whether it is the energy savings or the feeling of control it gives customers, the program has proved surprisingly popular, Stacy observed. "We have 1,470 customers participating in it," he said.

Which brings up another truism: People are always looking for ways to pay less for necessities. Luckily for ED3 customers, their utility is always looking for ways to help them. ■

Tips to help customers step up their water efficiency programs

Water utilities can't seem to catch a break: The need to improve aging infrastructure has pushed water rates up in many parts of the country, while increasingly unpredictable weather patterns make conserving water more important than ever. Agencies that own their own treatment plants also have to be conscious of the wear and tear on aging equipment, as well as the cost of power for processing operations.

Strong customer relationships can be instrumental in working through such challenging times. Unfortunately, frustrated customers—especially large key accounts—who haven't seen their water bills go down after installing low-flow fixtures may be feeling less than cooperative. The October issue of *FacilitiesNet* magazine suggests 10 measures that can help customers take water efficiency to the next level. Use these recommendations to open dialogue with your biggest water users, educate them on the challenges you face and build the bridges that will help you find solutions.

1. Equipment upgrades – New equipment is almost always more efficient than older models, especially when equipment is nearing the end of its useful life. Businesses with commercial kitchens or laundries can see significant water and energy savings by investing in new dish and clothes washers. Replacing water-cooled chillers with air-cooled units and adding water recirculating systems where the hot water source is more than 100 feet from the fixture are other measures worth considering.

2. Leak detection – According to New York City's Department of Environmental Protection, even a small toilet leak can waste 30 gallons daily at

a cost of forty cents every day, and the statistics only get more alarming from there. A one-gallon-per-minute leak equals 1,140 gallons per day, which can run up a huge water bill even where local water rates are low. Given that many small leaks can be fixed quickly and inexpensively, leak detection is worth the constant vigilance it requires. It also pays to educate building occupants to be aware of leaking fixtures and mysterious dripping and running sounds, which leads to the next tip.

3. Staff/occupant training – The maintenance crew cannot be everywhere, especially in large buildings and campuses. Facility managers need to recruit housekeeping and other staff to alert building operators to plumbing leaks so problems can be addressed quickly. Make sure all staff knows who to call when they see a leak. A simple sign in restrooms and break rooms, for example, can tell building occupants who to contact when they notice a dripping faucet or running toilet. One school district trained its janitorial staff and vice principals to report all water leaks by calling a specific number, and saved \$700,000 in utility bills in the first year of the program.

4. Metering and sub-metering –

As the old saying goes, you can't control what you don't measure. Water metering and sub-metering can help in tracking water consumption and leak detection in both new and existing buildings. Ideally, water sub-metering could provide valuable input on cooling tower, irrigation and hot water use.

The article suggests that water metering is most effective when incorporated into the building management system so that the data is reported with other facility data. Keep in mind that many irrigation systems use proprietary protocols so you may need a communications interface, which will add to the total metering cost.

At least one water metering company markets a smart meter using a wireless mesh open radio protocol and battery-operated water sub-meters that report their data to plugged-in transceivers. These low cost installations are practical for existing buildings as well as for new construction.

5. Water audits – Water audits will help facility managers determine what next steps to take and in what order. Keep in mind, however, that water audits are a new practice and don't have a standard protocol like energy audits. For a good starting point, check out South Florida Water Management District's *Water Efficiency and Self-Conducted Water Audits at Commercial and Institutional Facilities: A Guide for Facility Managers*.

6. Benchmarking sustainability goals – Use the water audit to help establish where water is being used in a facility and benchmark sustainability goals. Software platforms are available

continued on Page 5



that automatically import utility bills and then measure and benchmark the facility's performance against your goals.

7. Cooling tower maintenance – Cooling towers are generally part of the HVAC system in large buildings of more than 10,000 square feet. HVAC water use can account for more than a quarter of the total water use in institutional buildings, according to San Jose Environmental Services Department data. Facility managers should prioritize keeping cooling towers clean and minimizing scale buildup.

8. Irrigation systems – A range of options is available for improving both new and existing irrigation systems. For

new installations, drip irrigation uses significantly less water than traditional sprinkler systems. And don't forget to use native and low-moisture plants when landscaping. Incorporating smart controls that respond to weather events and soil moisture sensors can make existing systems more efficient. The City of Eden Prairie, Minnesota, decided to convert several athletic fields in 2008 to an irrigation controller with soil moisture sensors. By 2010, water use was reduced by 8 million gallons, saving the city \$29,000.

9. Rainwater capture – If you are willing to do the research with local water, environmental or development bureaus, harvesting rainwater for irrigation is an excellent alternative to using municipal water. Rainwater could also

be used in new construction for some indoor uses like flushing toilets. In all cases, be sure to check your municipal codes regarding the reuse of rainwater.

10. Graywater/reclaimed water use – The California Uniform Plumbing Code defines graywater as “untreated waste water which has not come into contact with toilet waste.” It can be used for irrigation or non-potable building uses such as flushing toilets and urinals, but graywater's acceptance is regulated by state and local governments. Each has its own definition of what constitutes graywater and what, if anything, it can be used for. Where water recycling is permitted by local authorities, reclaimed water is being put to good use for landscape irrigation, toilets and urinals. ■

ACEEE releases 2017 state energy-efficiency scorecard

WAPA salutes six states in our territory that ranked in the Top 20 most energy-efficient states, according to the annual ranking by the American Council for an Energy Efficient Economy.

The 2017 *State Energy Efficiency Scorecard* rated California as the second most efficient state in the nation behind Massachusetts. Minnesota came in at ninth place, Colorado scored a 15, Utah and Arizona tied for 17th place and Iowa rounded out the group as the 19th most efficient state.

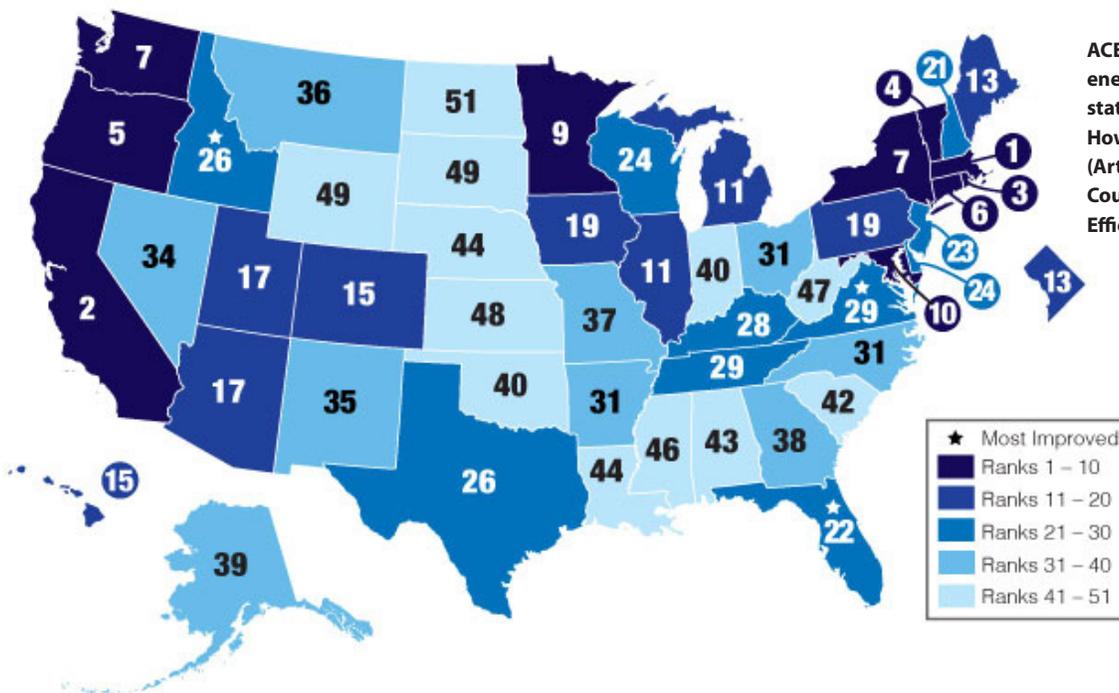
The state of Nevada showed improvement, rising three positions from 2016 to rank 34th, partly as a result of state efforts like the Home Energy Retrofit Opportunities for Seniors (HEROS) program overseen by the Governor’s Office of Energy. Michael Jones of Carson City used the program to properly seal his home, saving money and—just as important for a person with disabilities—improving his comfort. On average, participants like Jones reduce annual electricity

use by 5,143 kilowatt-hours and natural gas consumption by 266 therms, saving \$927 on their energy bills annually.

For the first time this year, the state-specific score sheets included stories of individuals and communities. The ACEEE found schools that improved lighting and taught students about sustainability, state facilities that secured more reliable electricity and senior citizens who improved the comfort of their homes. The stories demonstrate the effect smart energy-efficiency policies and programs have on our wallets, local economies, productivity and quality of life.

Now in its 11th edition, the *ACEEE State Energy Efficiency Scorecard* benchmarks state progress on efficiency policies and programs that save energy while benefiting the environment and promoting growth. The scorecard ranks states in six categories—utility programs, transportation, building energy codes, combined heat and power, state initiatives and appliance standards—using data vetted by state energy officials.

You can download the report for free (registration required) and check out your state’s scorecard, compare it with others and learn about programs that are driving efficiency gains. ■



ACEEE annually ranks the energy efficiency of each state in six categories. How did your state do? (Artwork by American Council for an Energy Efficient Economy)



Federal energy efficiency programs save energy, create jobs

A recent op-ed in the New York Times serves as a reminder that energy efficiency is not only one of the most powerful resources we have for meeting energy and environmental goals, it is also a rare source of bipartisan agreement.



Agreed: Energy efficiency works

Citing a poll by the Conservative Energy Network shortly after the November 2016 election, the writer noted that the majority of voters saw policies supporting energy efficiency as important. This is true despite the fact that energy efficiency itself is largely invisible, with economic impacts diffused throughout the economy. Imagine how enthusiastic Americans would be if they realized that more than 2.2 million people spend some or all of their work hours on energy-efficient technologies and services. That is more than the 1.9 million who work to produce electricity (solar, wind, nuclear), coal, oil and gas.

In addition to providing jobs, energy efficiency protects them by helping industries stay economically viable. Federal agencies develop efficiency standards for household appliances and work with American manufacturers to improve productivity. They provide testing and expertise to develop local and state building-efficiency codes for homes and commercial buildings.

Innovative, federally run efficiency programs boast a decades-long record of economic and environmental success across the nation, dating back at least 30 years. Energy Star is a shining example of a public-private partnership that saves American consumers and businesses billions of dollars per year. About three-quarters of U.S. households recognize the Energy Star label as way to control their energy costs while reducing power plant pollution.

The big picture tells an even more important story. The economy has grown by almost 150 percent since 1980 with a corresponding increase in energy consumption of about

20 quadrillion British thermal units. Over that same period, energy efficiency delivered more than 50 quads worth of energy services, far outpacing all other energy sources combined.

Waste still hurting economy

In spite of such impressive gains, however, energy waste still costs American businesses and households billions of dollars every year. In commercial buildings alone, where annual electricity costs are roughly \$190 billion, about a third of this energy goes to waste, according to the Department of Energy. The American Council for an Energy Efficient Economy ranks the United States eighth among the top 23 energy-consuming nations in efficiency.

Emerging technologies and population growth are putting demands on our electricity grids that utilities of a generation ago never imagined. Knowing what is at stake, power providers are investing \$7.5 billion annually in cost-effective electricity and natural gas efficiency programs.

The electricity industry can continue to build on the success that began when President Ronald Reagan signed the first legislation authorizing federal efficiency standards. Incorporate tools and strategies from federal energy-efficiency programs into your load management programs. Let your customers know about federal resources that might help them use less electricity. When we harness the power of the cheapest kilowatt—the one that is never used—everyone wins. ■

Take stock of 2017 with Utility Dive industry survey

It has been quite a year for the electric utility industry, with seemingly conflicting signals and demands coming from so many different directions, and 2018 looks to be equally unsettled and unsettling. *Utility Dive* is asking utilities how they coped with 2017 through its fifth annual State of the Electric Utility Survey.

The research report captures the trends, technologies and troubles shaping the sector. Take just 10 minutes to weigh in on your experience with regulations, wholesale power markets, distributed resources, environmental mandates and customer engagement, to name just a few topics the survey covers. The more utilities that respond, the more complete the picture of the pressing challenges and exciting opportunities power providers are facing.

Not only do you get the chance to reflect on the past year, you also get access to a year's worth of powerful insights from your colleagues. All respondents receive a free copy of the survey results delivered directly to them by email.

The results of the survey and an analysis will be released in early 2018. You can download last year's report for free. ■



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