

Western's monthly energy efficiency and renewable energy newsletter dedicated to customer activities and sharing information on energy services.

Consumers call for energy efficiency, Loveland answers

Long accustomed to listening to what their consumers have to say, public power providers can still be taken by surprise now and then. For example, Loveland Water and Power recently discovered that, even in the middle of a recession, its customers were willing to pay a little more for energy-efficiency programs.

Not that the municipal utility, which prides itself on having the second lowest rates in Colorado, neglected energy efficiency. Loveland residents can buy compact fluorescent lights (CFLs) at a discount through power wholesaler Platte River Power Authority's (PRPA) award-winning Lighting with a Twist program. To reduce its growing summer peak, Loveland launched Partnering with Power three years ago. More than 3,000 home and business owners volunteered in 2009 to let the utility cycle their air conditioners on hot days, saving the city \$138,333 in demand charges.

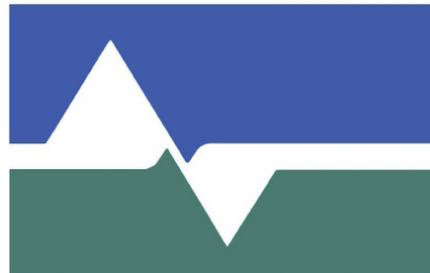
Perhaps empowered by their own success in helping their utility control costs, consumers have been sending the city letters requesting more energy-efficiency programs. "We don't do anything our customers don't ask for," said Loveland Technical Specialist Gretchen Stanford. "But if they ask for something, we do our best to give them what they want."

Collect data

The money for such programs would have to come from the ratepayers, so the utility board decided to measure the community's opinions of energy-efficiency programs on a larger scale. After looking at several options, including online, telephone, web, email, mail or a combination of methods, they chose a mail survey. "Mailing keeps costs down and allows respondents to answer at their leisure, without the influence of an interviewer," explained Stanford.

To keep the survey as simple as possible, the questions focused only on two topics: potential programs and how much customers were willing to pay to fund them. Customers were asked to rate the importance of a series of energy-efficiency programs Loveland might offer. The second question asked customers to choose from a range of slight increases in their bill they would accept to cover the cost of such programs.

After running the survey through two pilot tests and feedback from the



Loveland Water and Power

As a municipal utility, Loveland Water and Power is committed to design programs that satisfy its customers' needs. (Artwork by City of Loveland, Colo.)

city council, the utility was ready to send the final version to a sampling of 3,000 customers. A cover letter from Loveland Utilities Director Ralph Mullinix accompanied the survey to explain its purpose, how recipients were chosen and how the data would be used. As an incentive, customers who returned a completed survey were eligible to win \$25 off their utility bill or a multi-pack of CFLs valued at \$25. A postage-paid envelope and a thank-you gift of Forget-Me-Not flower seeds completed the survey package.

Strong response, support

The size of the sample receiving the survey is slightly more than 10 percent of Loveland's customer base of 28,120 residential electric customers. To achieve confidence in the results, most surveys require responses from about 10 percent of the sample, or

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Loveland answers

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379 customers in Loveland's case.

However, to ensure better representation of the community, the utility set a goal of 1,000 responses in a three-week period. Customers surpassed that goal, sending 1,159 responses—a participation rate impressive by any standard.

Their support for energy-efficiency programs was equally impressive. Of the 1,149 customers who answered the question about how much they would be willing to pay for additional programs, 68 percent said they would pay 3 percent or more.

All respondents gave their ratings for four individual program examples:

- Energy savings outreach
- Energy Star-qualified product rebates
- Funding for Home Energy Audits & Improvements
- Smart metering

Rebates for Energy Star-qualified products came in first, with 79 percent rating the program as extremely important or very important. Smart metering scored a combined “important” rating with 64 percent of respondents. Funding for home energy audits and improvement

followed closely at 61 percent, and 47 percent of respondents favored energy savings outreach.

New programs roll out

The customers had spoken, so utility staff formed a team to evaluate the costs and benefits of various residential energy-efficiency programs. “We wanted to make sure that what we offered made sense for Loveland,” said Stanford.

The evaluation process included several meetings with two other members of PRPA, the City of Fort Collins Utilities and Longmont Power and Communications. Both municipal utilities had extensive energy-efficiency program offerings, and Fort Collins had recently embarked on its first consumer behavior-driven program. “One lesson Fort Collins learned was to lay the groundwork with customer outreach before launching the program. Otherwise, you spend the first few months doing a lot of explaining,” Stanford noted.

Loveland took that lesson to heart and has been communicating with its customers about the eight new energy-efficiency programs that debuted in November:

- Larimer County Youth Conservation Corp low-income audits including installation of water- and energy-saving items in low-income homes
- Three-tier home energy audits diving deeper into energy use and offering guidance on energy-saving improvements
- Clothes washer rebate for Energy Star-qualified appliances
- Refrigerator and freezer recycling rebate to remove and recycle secondary refrigerators and freezers

- Home energy reports using enhanced billing to educate customers about how they use energy and how they can save more (similar to the Fort Collins program)
- Education and outreach in Loveland schools to teach the next generation of consumers about the importance of saving water and energy
- Northern Colorado Energy Star Homes supporting high-performance construction in the regional new home market

Goals provide roadmap

In selecting the right mix of customer programs, the evaluation team was able to reference the energy-efficiency goals the city set for its utility.

- Improve customer satisfaction by providing them with information, ideas, and solutions to reduce their energy consumption.
- Reduce energy consumption to delay the need for additional generation and additional distribution system capacity.
- Participate in regional efforts to increase utility collaboration and support PRPA goals.
- Continue to provide high levels of electric system reliability by operating the system as efficiently as possible.
- Reduce peak power demand by 3 percent a year.
- Provide customers the maximum energy-efficiency benefit at the lowest possible cost.

A list of goals, even general ones, can help utilities get the most out of their energy-efficiency programs. Just don't be surprised if motivated, energy-savvy customers like those in Loveland are ready to go farther than you imagined. ⚡

Energy Services Bulletin

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Visit www.wapa.gov/es/pubs/esb/2010/dec/dec101.htm

SRP finds marketing success with 'Fridge-a-thon'

The science of marketing energy-saving programs to consumers got a helping hand from art in Salt River Project's (SRP) "Fridge-a-thon" refrigerator recycling project.

Reason to recycle

In most homes, second refrigerators are older, less-efficient models kept around for extra storage after homeowners update their kitchens. The extra refrigerator or freezer usually isn't filled to capacity, making it even more inefficient. To make matters worse, in Phoenix, Ariz., where SRP is based, people often put the spare fridge outside. "If it's standing in the sun, a customer can end up spending \$40 to \$50 a month just to keep a six pack cold," observed SRP Media Relations Manager Scott Harelson.

Few energy-saving measures offer homeowners—and utilities—the bang for the buck they get from recycling those appliances. Consumers can save up to \$100 annually on their electric bills by retiring an old Energy Hog refrigerator. Paying customers \$30 to turn in their refrigerators, and paying a contractor \$90 per unit to recycle 95 percent of the material is a bargain to SRP compared to the cost of building new generation. The challenge is making consumers aware of the recycling program and its benefits.

You gotta have art

To get the word out about its refrigerator recycling program, SRP did a marketing and public relations blitz. Reaching out to customers through public events, paid advertising and social media, SRP asked 16 local artists and celebrities to help with the promotion by creating fridge art. The



Fox 10 Arizona interviewed SRP's Lori Rogers, co-creator of Fridge-a-thon, about the promotion, while one of the participating artists created. (Photo by Salt River Project)

artists teamed with media or sports celebrities to paint and embellish the refrigerators. News anchors frequently brought their video teams with them to do stories on the project, increasing exposure for the recycling program.

In the hands of the artists, one refrigerator door became a yellow and green portrait of Mexican artist Frida Kahlo with the red sun rays from Arizona's state flag in the background. Another sported a painting of a lucha libre wrestler with a recycling symbol on his mask. The "Phoenix Open" fridge was even autographed by the golf tournament's winner.

The works of art made their debut on June 4 at the After Hours Gallery in Phoenix, and remained on display throughout the month. In July, the refrigerators moved to malls, museums and other venues, and were

either auctioned off to raise money for charity or recycled.

But did it work?

The Fridge-a-thon out-performed SRP's goal of recycling 3,500 refrigerators in three months, bringing in 5,000 units in the same time period.

The fringe benefits were pretty good, too, as shown by an ad awareness tracking study SRP conducted after the Fridge-a-thon. The bilingual campaign targeting Phoenix's large Latino population hit the mark—Hispanic consumers had 15 to 17 percent higher unaided recall of seeing electric utility advertising than the national average. Even better, the communication made them feel more positive about their utility. Overall, consumers indicated more than 20

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GEO comes of age

By Ted J. Clutter

Editor's note: Ted J. Clutter is GEO Vice President of Marketing and Membership Services. He can be reached by e-mail, or by phone at 509-758-2289.

There's a kid with a fresh face on the block in Washington, D.C.—a non-profit trade association plying the halls of government seeking recognition for the renewable energy, efficiency and environmental benefits its members have to offer.

GEO—the Geothermal Exchange Organization—is the reincarnation of the former Geothermal Heat Pump Consortium, a government/industry partnership that was primarily aimed at utility support for demand-side energy conservation programs during the 1990s.

Proven technology

“With recent political upheavals in Washington, D.C.—and the growth of geothermal heat pump installations in the United States to about 100,000 units per year,” says ClimateMaster, Inc. President and GEO Chairman Dan Ellis, “major equipment manufacturers, distributors and utilities saw the need to refocus consortium activities toward industry advocacy.”

“The current economic and political environment will have significant impacts on the geothermal heat pump industry for the foreseeable future,” says WaterFurnace International President Tom Huntington. “We must aggressively educate our elected and professional officials about the benefits of geothermal heat pumps as they consider renewable energy legislation and regulatory policies.”

Geo-Enterprises President and CEO Phil Schoen agrees: “By working

together, we can secure new opportunities to help grow our industry.” Indeed, a major GEO accomplishment was a 30 percent Federal tax credit for residential geothermal heat pump installations, and a 10 percent break for commercial uses in the latest Federal energy bill. Both credits will continue to be available until 2016, and have helped the industry to survive, and even thrive, during the recession.

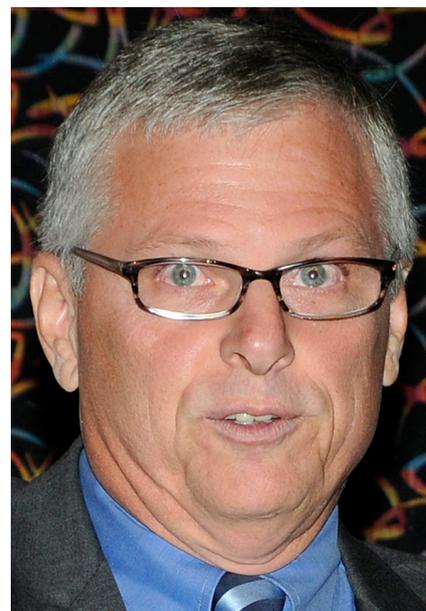
Outreach to lawmakers

“GEO’s government affairs and outreach strategies are more important than ever to knocking down barriers to growth of the geothermal heat pump industry,” says Enertech Manufacturing President Steve Smith. GEO works in four primary areas of outreach to elected officials, government agencies and the public:

Advocacy – GEO’s legislative and regulatory goals include:

- Qualification of geothermal heat pumps in pending renewable energy and climate legislation
- Development of model geothermal heat pump policy, legislation and regulations
- Support of government agencies and initiatives for geothermal heat pump research
- Accelerated installation of geothermal heat pump systems in government buildings
- Coordination of grassroots advocacy for the geothermal heat pump industry by GEO members

Partnerships – GEO actively seeks strategic alliances with allied organizations, institutions and agencies to pursue benefits for the industry, especially:



GEO Chairman and ClimateMaster Inc. President Dan Ellis addressed the 2010 International Ground Source Heat Pump Association Technical Conference and Expo in Denver, Colo., Oct. 26. (Photo by Ted Clutter)

- Development of joint positions regarding Federal and state legislation and regulations
- Collaboration with electric utilities to promote geothermal heat pump installation programs
- Work with the U.S. Department of Energy on design and installation standards, and methods for monitoring geothermal heat pump efficiency

Public outreach – GEO’s public education efforts include GeoExchange branding and a public awareness campaign, including:

- Education of regulatory officials and legislators about the unique renewable energy advantages of geothermal heating and cooling, and the need for continued installation tax credits
- Organization of—and participation in—legislative renewable energy education events at the Federal and state levels

See ‘GEO COMES OF AGE’ page 7

Power conditioning devices...and energy savings?

Some manufacturers make products they claim will save you 10 to 30 percent of your energy use by “conditioning” your power through a variety of processes. While each of these processes may have great value, it is generally best to apply them with separate devices. (And, really, no power conditioning process saves any appreciable amount of energy.)

Devices that you simply install in a building’s electrical distribution system that are claimed to provide some energy savings are generically referred to as “black boxes.” “Black box” is a term that describes a device with defined inputs and outputs, but an unclear combination of processes. The three most common are power factor correction devices, which are usually called “power conditioning” devices, harmonic filters and transient voltage surge suppressors. All three may serve very useful purposes essential to your building, *but none of these will save a significant amount of energy.*

Power factor correction

One of the most cited processes is power factor correction, so it is worth understanding more about this. For large commercial and industrial customers, there are often reasons to correct poor power factor. Consider correcting your power factor if:

- Your electrical system’s power factor is below 0.85 (85 percent) *and*

- Your utility rate schedule includes a power factor penalty, *or*
- You need to increase the load-carrying capacity on a circuit, your power factor is quite low, and you can get the capacity you need by correcting the power factor.

While power factor correction may save an industrial plant tens of thousands of dollars in utility power factor penalties, *it will save only a negligible amount of energy in small-scale applications.* Power factor correction can be achieved through fixed or variable capacitors, either at a central location near where the power enters the building or near a large piece of equipment causing the low power factor. It is best to consult your utility and other electricity professionals to identify the best solution for your needs.

Warning signs

Common characteristics in advertising power conditioning devices can be clues for you to steer clear, seek outside professional advice or at least ask further questions. In general, beware of:

- **Any device that purports to solve multiple problems simultaneously.** Most power conditioning devices claim to also act as a surge suppressor and to smooth out harmonics. It is best to address the needs for power factor correction, surge suppression and harmonic filtering separately. It is highly unlikely that a “one-size-fits-all”

product will provide all your needs for these three important and independent services.

- **Advertising that sounds good but is hard to clearly understand,** such as a suggestion that the device provides “recycling of excess electricity,” “line conditioning” or “clean power” without clearly describing what that means and how it applies to your facility.
- **Misleading demonstrations.** Some equipment distributors demonstrate their product in a circuit with a small unloaded motor and an ammeter to measure current. They show that by adding the device to the circuit, the current is reduced (typically by 20-35 percent). They are taking advantage of a common misunderstanding that a current reduction is proportional to energy savings. In reality, billable power (in kWh) is proportional to the product of power factor and current, so reducing current by improving power factor only saves a negligible amount of energy.
- **Claims that motors will run cooler by increasing power factor.** These claims are simply false, as current reductions only occur upstream of the power factor reduction capacitors.
- **“Proof”** that is heavy on testimonials and light on independent testing. Testimonials can be the result of cherry-picking

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Website of the month:

Stay Warm, save Money

ENERGYSAVERS.GOV

Stay Warm, Save Money

Even utilities with limited budgets for energy services can help their customers get serious about energy efficiency and conservation by placing a prominent link to Stay Warm, Save Money on their own websites.

This seasonally-updated website is part of EnergySavers.gov, a DOE program to give consumers practical tips for reducing energy use. Stay Warm, Save Money focuses on free and inexpensive strategies for saving energy and money through the cool fall and winter months, as well as energy-saving investments that can provide long-term savings.

The three navigation buttons in the middle of the home page clearly set those priorities. Visitors can select from low- and no-cost fall energy-saving tips, energy assessments or long-term investments. The home page also displays a list of “Things to do in the fall,” and a weekly Fall Energy Saving Tip.

Tighten up your building

No-cost and low-cost tips are the simple, common-sense measures consumers can take every day to make their homes more comfortable and energy efficient. Most of these tips will sound familiar to the energy-savvy consumer, but they are great for getting newcomers

started. For the more experienced consumer, a well-placed reminder to check our furnace filters or turn down our thermostats at night never hurts. The tips all have links to more information to help consumers implement the measures.

Energy assessments, the first step toward reducing energy use, is the second link in the navigation, although the site content repeatedly points out that consumers should start any energy-saving program by figuring out where they are losing it. Visitors will find calculators and resources to evaluate homes, apartments, multifamily units and small businesses.

The list of long-term energy-saving investments starts with basics, such as increasing insulation, and goes through more advanced measures, such as adding a renewable energy system. Each item includes links to more resources.

Consumers who want more than just the low-hanging fruit of energy savings may need financial assistance to reach their goals. State, local and Federal programs are available to home- and business owners, offering rebates, loans and tax credits.

Build your own program

Utilities and municipalities can

save money and another kind of energy by using Stay Warm, Save Money partnering materials to promote their own campaigns.

Brand your campaign with seasonal banners, slides and letterhead, available as free downloads. You can also get a widget—a piece of HTML code you can embed on your website or social media page—that automatically updates your webpage as Stay Warm, Save Money changes their tips.

Use the materials in the media kit to spread the word about energy savings to your customers and the press. Fact sheets with tips and links to online calculators make great bill stuffers. Send the Stay Warm campaign fact sheet to local newspapers, and offer your area radio stations pre-produced public service announcements featuring simple measures to help consumers take control of their winter energy bills.

The best part about Stay Warm, Save Energy is that, in spite of its name, it is a resource you can use year around. EnergySavers.gov updates the site with the changing of the seasons, so check back regularly for new materials come spring. ⚡

Want to know more?

Visit www.wapa.gov/es/pubs/esb/2010/dec/dec105.htm

'Fridge-a-thon'

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percent higher awareness of utility advertising and brand identification than the national average.

That awareness continues to work for the recycling program months after the Fridge-a-thon concluded, Harelson noted. Another tribute to the program's success is that Chicago utility ComEd did its own "Fine Art Fridges" promotion in August. "Imitation is the sincerest form of flattery," Harelson pointed out.

Get it together

In a presentation on the Fridge-a-thon Harelson gave at American Public Power Association's Customer Connections Conference, he attributed the program's success

in large part to teamwork by SRP's four communications divisions. The staff from Media Relations, Corporate Communications, Advertising and Marketing all brainstormed together to come up with the promotion.

Harelson admitted that it is not always easy to get all the communications teams on the same page, but SRP has been working on building a more integrated communications strategies. "The Fridge-a-thon showed that when we all work together, we can do a very successful project, and do it relatively cheaply," he said.

There is always room for improvement, of course, but most utilities would be pleased with SRP's track record. Last year, more than 140,000 customers participated in

one of the utility's many programs, including appliance rebates, weather stripping, time-of-day pricing, compact fluorescent light giveaways and more. The programs are all part of the utility's five-year plan to significantly reduce consumer energy use by 2020. "We have to try to meet the political mandate set by the Arizona Corporation Commission," he explained.

Striving to reach a lofty goal can only improve SRP's efficiency and its customer communications. No utility can save energy without customer buy-in, and the formula for getting that is simple, Harelson said. "If we communicate the program properly and customers know it will save them money, they will participate." ⚡

Want to know more?

Visit www.wapa.gov/es/pubs/esb/2010/dec/dec102.htm

GEO comes of age

from page 4

- Encouragement of news media coverage about geothermal heat pumps and industry issues by publications, radio and television
- Presentations about geothermal heat pumps at venues beyond the industry, including conferences, trade shows, workshops and business meetings
- GEO's toll-free information consumer hotline, website and its GeoExchange Directory

Quality standards – GEO actively works with the International Ground Source Heat Pump Association and other allied organizations to promote codes and standards for geothermal heat pump installation training, certification and accreditation.

More about GEO

GEO is focused on current issues like potential climate legislation and a nationwide renewable energy standard. "We want to make sure that geothermal heat pumps are

recognized for the peak power use they can save by renewable heat exchange with the earth," says Gulf Power (Southern Co.) Marketing Manager Keith Swilley. GEO is also seeking government and university partnerships for geothermal heat pump efficiency and standards research and development.

GEO membership is open to all companies, businesses, commercial and non-profit organizations entities involved in the geothermal heat pump industry. More information, call GEO at 888-255-4436. ⚡

Want to know more?

Visit www.wapa.gov/es/pubs/esb/2010/dec/dec103.htm

Technology Spotlight

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from a large number of past customers whose utility bills dropped after installing the product. They are rarely based upon scientifically controlled evaluation where all other before and after conditions are held constant. They rarely involve sub-metering of just the affected loads.

- Residential power factor correction and harmonic filtering for applications.

Some power conditioning device manufacturers target this sector, but energy savings gained in this residential application are never cost-effective.

- Anything that sounds too good to be true, because it probably is.

Recommendations

- Ask the vendor to explain exactly how their device will save energy. Make sure you truly understand it, or check with someone you trust who does.

- Ask for references from well-respected independent testing laboratories, or technical or trade journals.
- When in doubt, check with your local utility and other qualified professionals.
- For further information, call Western's Energy Experts hotline at 800-769-3756 or send an e-mail question. ⚡

Want to know more?

Visit www.wapa.gov/es/pubs/esb/2010/dec/dec104.htm

Wind Interconnection Workshop

January 19-21, 2011, Golden, Colo.

Sponsor:

Utility Wind
Integration Group

Co-sponsors:

American Public Power Association
Western Area Power Administration
Wind Powering America Program
National Rural Electric Cooperative Association
U.S. DOE Wind Technologies Program
American Wind Energy Association
Solar Electric Power Association

Location:

Western's Electric Power Training Center
1667 Cole Boulevard
Building 19, Suite 152
Golden, CO 80401

Are you ready to integrate the world's fastest growing form of generation into your power mix? This two-day workshop, with an optional tour of the National Wind Technology Center on Friday, Jan. 21, will answer your questions about interconnecting wind turbines and other distributed generation applications to electric distribution systems.

Get an overview of wind energy, followed by an introduction to the Utility Wind Integration Group's Internet-based tools for assessing a distributed wind or solar project's impact on the local distribution system. Training will cover the theory behind each tool and demonstrate their use with actual data.

Continuing education credit is available for this workshop.

Participation is limited to the first 30 registrants.

Register online at www.uwig.org/interconnectionworkshop2011.html

The registration fee is \$300. Make sure to check the box if you plan on taking the NWTC tour, as space is limited to 20 attendees. There is no extra charge.

For more information about the workshop agenda, please contact

Guy Nelson, 541-994-4670, gnelson181@aol.com or

Bob Temple, 720-962-7802, temple@wapa.gov

