

Energy Services **BULLETIN**

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

Tri-State's public process for IRP earns Western Administrator's Award

Western Public Affairs Specialist Jen Neville, guest editor

Tri-State Generation and Transmission Association earned high accolades at its Feb. 7 board meeting for holding a true public process when developing the member-based utilities integrated resource plan (IRP).

"We worked hard to get our members and others interested in the process involved in developing our [integrated resource] plan," said Tri-State's Executive Vice President and General Manager Ken Anderson. "It wasn't easy, but our team never got off mission; they stayed focused on what needed to be accomplished and made it happen."

Tri-State started its IRP project several years ago, according to Energy Services Representative Bob Langenberger, from Western's Rocky Mountain office. "The extent they have gone to and the efforts they put forward in their IRP process is really worth recognition," said Langenberger, who nominated Tri-State for the

award. "They really went all out to involve the public, their members and other interested groups."

Rocky Mountain Regional Manager Brad Warren shared the same sentiment. "Tri-State went the extra mile to involve stakeholders, and that was a tremendous effort to undertake," he said when presenting Tri-State with the Administrator's Award for Energy Efficiency and Renewable Energy.

The award is a form of peer-recognition presented to a firm power customer or a member of a firm power customer of Western based on commitment to and achievements in energy efficiency and the use of renewable energy to benefit their customers and communities.

Bringing in stakeholders

When developing its IRP, Tri-State outlined its future resources plan—including renewable resources—while balancing concerns like cost, reliability, environmental stewardship, national security and economic growth.

Tri-State provided ample opportunity for public input by hosting seven public meetings throughout the IRP development process. During these meetings Tri-State provided participants background information about the association, the member systems, its transmission system, generation portfolio, governmental and regulatory requirements and



Tri-State Generation and Transmission Association Executive Vice President and General Manager Ken Anderson (right) accepts the Administrator's Award for Energy Efficiency and Renewable Energy from Western's Rocky Mountain Regional Manager Brad Warren.

governance structure. "This helped establish the context for resource planning," said Fred Stoffel, Tri-State's senior manager of budget, financials and business analytics. "The process also provided the opportunity for Tri-State to hear directly from those interested in our IRP about their issues and concerns."

A full-day public participation meeting was devoted entirely to receiving public input regarding resource-planning issues in addition to time for participant feedback at each scheduled meeting.

Among other topics, Tri-State heard presentations regarding energy efficiency, demand response, transmission planning, CO2 and other emissions, water usage, carbon sequestration, renewable technologies

See ADMINISTRATOR'S AWARD, page 2

What's inside

- Finding retrofit contractors..... 3**
- Infrared camera workshop..... 5**
- Energy Experts..... 7**
- Website of the month 8**

Administrator's Award *from page 1*

and costs, accommodating intermittent resources, fossil fuel cost escalations and potential breakthrough technologies and costs.

"Tri-State considered the public input in modeling the 24 scenarios included in the final planning documents," said Stoffel. "Specifically, Tri-State modeled various levels of energy efficiency, carbon taxes, renewable portfolios and coal prices. Because of its then-current load and resource balance, Tri-State did not specify a final scenario."

Tri-State also kept interested parties up to date on the IRP through a resource planning website and had an email distribution list to accept input from and communicate with the public.

Renewables in the numbers

Even in the midst of developing its IRP, Tri-State began developing new renewable sources of energy. In the end, its final IRP included two power purchase agreements for 30 megawatts of solar power and 51 megawatts of wind power.

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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"During Tri-State's annual Resource Electric Plan update meeting in August 2011, it was evident how many Tri-State members were already including renewable energy in their individual programs on the distribution side," said Langenberger, who attended the meeting. "So Tri-State's amount of renewables to incorporate [in the future] are lower than its initial IRP called for."

The members' investment in local renewable energy projects showed their interest in taking advantage of Tri-State's policy to implement renewables in the IRP future resource planning development process. Now Tri-State doesn't need any significant resources for the next seven to eight years.

Inspiring efficiency

The second piece of the IRP pie is incorporating energy efficiency and conservation efforts. Tri-State incorporated the voices of stakeholders in this part of the plan as well.

"Several recommendations [from the August meeting] were directed at increasing the level of energy efficiency and renewable energy sources in Tri-State's portfolio," said Stoffel.

After conducting studies and presenting them to the public, Tri-State showed how incorporating energy-efficiency programs at various levels create savings on the demand side. So in the IRP, Tri-State included a larger budget for energy-efficiency programs.

Western's Energy Services Manager Ron Horstman said, "Tri-State engaged consumers and others interested in their future resources, listened to their input and incorporated some of their ideas.

"They doubled their budget for demand-side management programs to conserve and use energy efficiently

to support the public's need," Horstman continued. "It shows how committed they are to invest this type of money considering the economic climate today."

Example for others

With minimal public participation in the past, Tri-State wanted to give the public a louder voice this year. "Some interested stakeholders were asking Western for Tri-State's IRP from five years ago," said Langenberger. "Tri-state really took that to heart and included public involvement during this go-around."

With the renewed effort, there was significant attendance and involvement in the process. "They carefully reviewed and considered all comments received and the final IRP was improved as a result of the public process," said Langenberger. "Although the public participants may not have always agreed with Tri-State's conclusions, they recognized Tri-State for being professional and forthcoming during the process."

"The feedback at the August meeting was generally positive regarding the process," said Stoffel.

He added that for other utilities looking to improve their public process, "Take the time to provide sufficient background about the organization and how it works. Listen to the concerns and positions of the participants and provide straightforward answers to their questions.

"Describe the planning models that are used and how they work," Stoffel continued. "Demonstrate through the modeling exercise that the results are logical and consistent while emphasizing that business decisions involve a lot more than modeling." ⚡

For links to more resources,
visit <http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb1.aspx>

Finding, cultivating qualified retrofit contractors getting easier

Editor's note: This is the second story in a series on overcoming barriers to customers implementing energy-efficiency improvements.

The key to successful energy-efficiency upgrades—and, therefore, to happy customers—is proper equipment selection, installation and user orientation, if needed. All of which require a qualified contractor who is committed to saving customers energy. While finding enough such vendors to support an energy-efficiency program continues to be a challenge, utilities now have more resources to help them cultivate trade allies.

As with project financing, the strategy a utility uses to develop a contractor pool depends on specific factors—the size and population of the service territory, local regulations, the measures a utility chooses to promote. No one size fits all (yes, *that* phrase again), but the number of utility program models is growing, along with educational programs to train the next generation of contractors.

Utility examples

Many utility programs require customers to hire contractors from a list of preferred vendors, though the qualifications for being included on the list vary greatly. Contractors doing work for Midwest Energy's How\$mart program must simply sign an agreement to install the utility-prescribed measures according to local building code. Fort Collins Utilities' Home Efficiency Program requires contractors to attend orientation and specialized training, maintain Better Business Bureau accreditation and meet certain insurance requirements. Utilities generally contract with a third-party



Volunteers participating in the Community Energy Exchange mentoring event at Easter Seals Rocky Mountain Village in Empire, Colo., prepare to do a blower door test on a camp cabin. The event taught basic energy auditing and weatherization skills while improving the efficiency and safety of camp buildings. (Photo by Community Energy Exchange)

business or nonprofit organization to provide training.

Where there is a large and diverse labor pool, utilities may allow customers to hire their own contractors to install prescribed measures, but follow up with an inspection by a certified provider. That's how Platte River Power Authority on Colorado's Front Range operates its Building Tune-up program for commercial buildings. An approved retrocommissioning service provider identifies ways to improve a building's efficiency and oversees the projects implemented

by contractors the customer chooses.

Platte River takes this approach because retrocommissioning is a specific skill, but post-installation inspections also provide quality assurance—an important step in successful energy-efficiency projects. A knowledgeable utility employee or another third-party energy services professional may perform the inspection.

Growing the skills

Even in a metropolitan area,

See RETROFIT CONTRACTORS, page 4

Retrofit contractors

from page 3

however, energy services experts and contractors experienced in energy-efficiency measures don't grow on trees. That is slowly changing, thanks to programs emerging around the country to train and certify contractors in energy-efficient building practices.

Nonprofit organizations like Affordable Comfort Inc. (ACI) and Electric & Gas Industries Association (EGIA) offer a full menu of webinars and workshops highlighting best practices in the home performance industry. They work with the Building Performance Institute (BPI), the nation's standards setting and credentialing organization for energy efficiency retrofit work, to raise the bar in home performance contracting.

Regional, state and local groups often team up with these national organizations to put on training and networking events in their own territories. Partnering offers local businesses, utilities and educators a way to increase their reach and resources while addressing the issues specific to their own situation.

Community colleges, with their focus on job readiness, are finding a niche with "green building" programs. Given California's leadership in energy efficiency, it is not surprising that Los Angeles Community College boasts a cutting-edge sustainable building program. Red Rocks Community College in Lakewood, Colo., is building a green collar workforce with degree and certificate programs across a range of sustainability disciplines. Even in Utah, where energy prices are relatively low, Salt Lake City Community College's

Green Academy offers a lengthy list of certificates in renewable energy and energy-efficiency technologies.

On the private side, Everblue Training Institute, a nationwide continuing education institute, partners with BPI, Energy Star, the U.S. Green Building Council and several universities to advance green building skills. Colorado-based Lightly Treading targets both consumers and contractors, offering energy services to the former and training and exam proctoring for BPI certification to the latter. This two-pronged approach is one way to make sure that you have

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qualified contractors to meet your customers' needs.

Local nonprofit organizations are another avenue for developing the building performance workforce. Sustainable Ideas has partnered with many of the industry associations, schools and businesses noted above to design mentoring

and training programs, and do some good in the community in the process. Through its Community Energy Exchange, auditors and contractors have sharpened their skills on projects that improve safety and energy efficiency in low-income housing and nonprofit facilities.

But first, demand

Of course, contractors won't sign up for training unless they see a consumer demand for energy efficiency. That requires nothing short of market transformation, a seemingly glacial process. The American Recovery and Reinvestment Act moved the ball forward by funding state and local programs that raised consumer awareness about energy-efficiency measures, and created a demand for contractors to install them.

Energy Upgrade California is one of those stimulus-funded programs. Local governments, municipalities and utilities created an umbrella initiative to help homeowners make energy-saving improvements, and to give local contractors the opportunity to learn new skills. All contractors participating in Energy Upgrade must complete mandatory orientation session workshops and hold a Whole-House Home Energy Rating System Certification. Over the year that the program has been in operation, 507 contractors have fulfilled the requirements to become Energy Upgrade vendors.

The Home Energy Makeover Contest is a good tool for raising both consumer and contractor awareness by showing how energy retrofits create a positive cash flow. Winning homes are selected for their potential to show how efficiency upgrades can reduce energy consumption. Delta-Montrose

See RETROFIT CONTRACTORS, page 6

Utilities discover versatile, cost-saving tool at IR workshop

It is no secret that we here at Energy Services are big fans of the infrared (IR) camera—our Equipment Loan Program offers several models, the Energy Services Bulletin covers stories about its innovative uses and we urge customers who are not familiar with the technology to learn about it. You will have that opportunity April 5 at Infrared Thermography: Hands-On Training for Utility Systems and Customer Service Applications, in Billings, Mont.

Western is co-sponsoring the event with Montana State University at Billings (MSUB) College of Technology and Clean Energy Ambassadors (CEA). The agenda targets utility professionals who are interested in performing building audits, as well as those who are looking for a more efficient way to maintain their electrical systems. The cost to attend is only \$125 because “We wanted to make sure that the workshop is affordable,” explained CEA Program Manager Stevie Moe. “The IR camera is such a versatile tool, it can save money on utility operations and program development. That can really benefit smaller utilities in particular,” she added.

The registration fee includes class materials as well as meals and snacks for one day. “People will need their energy because they’ll be doing more than just sitting and listening to presentations,” said Equipment Loan Manager Gary Hoffmann.

What to expect

Hoffmann will be at the workshop to introduce participants to IR cameras available through the Equipment Loan Program. Our equipment library recently



Participants at the April 5 IR workshop in Billings, Mont., will learn about easy-to-use diagnostic tools like the FLIR T620 (left) and the pistol-grip E60, recently added to Western's Equipment Loan Program.

added two new cameras with more capabilities. The cameras' higher resolution enables users to spot smaller problems on transmission lines and substations from greater distances. Both models take digital and infrared pictures that can be easily downloaded to show to maintenance personnel and facility owners.

After participants get a look at the cameras, representatives from FLIR and Fluke will talk about how to use them. One case study will show how IR cameras were used to detect line and substation loss, and a second presentation will focus on the equipments' industrial applications.

Hands-on experience

But the real fun comes after lunch, when participants break off into groups for field training. Moe recalled that some utilities brought their own IR cameras to the workshop in North Dakota last year. “But those were older models,” she said. “I think everyone really enjoyed getting to ‘play’ with the

latest technology the manufacturers provided.”

The field training took participants around the University of North Dakota campus to inspect the electrical system, heating plant, dorm rooms and a substation. “It was a pretty fast-paced session,” said Hoffmann. “The groups were made up of only two or three people, so everybody got a chance to use the different cameras in different situations.”

The day will conclude with the groups downloading images, running reports and interpreting the pictures they shot in the field. Participants will come away with not only a working knowledge of camera operation and data interpretation, but also with ideas for integrating IR cameras into utility programs.

Why attend?

Those who went to the 2011 IR camera workshop found plenty of ways to apply what they learned,

See IR WORKSHOP, page 6

IR workshop *from page 5*

said Moe. “Participants told us about using the cameras on their power systems, and on utility buildings as well as on customers’ homes and businesses,” she noted. “Some utilities have found that IR images are great tools to educate consumers about weatherization.”

The workshop is also intended to educate the next generation of utility

professionals. MSUB is hosting the event in hopes that students from its industrial and energy programs will attend. “The students at MSUB are interested in science and technology, but they may not have thought about working in the utility industry,” said Moe. “This is a good opportunity to reach out to them by letting them work with the technology currently being used in the industry.”

And for those already working in the industry, the technology is becoming more accessible every year. “IR cameras keep getting less expensive, smaller, lighter and simpler to use,” Hoffmann said. “Utilities don’t have an excuse for not checking out the equipment and seeing what it can do for them.” ⚡

For links to more resources, visit <http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb3.aspx>

Retrofit contractors *from page 4*

Electric Association in Colorado pioneered the promotion, and BPI now sponsors contests with utilities around the country. The contests have helped to increase awareness of home performance assessment and retrofit services, which in turn contributes to more people earning BPI certification—currently at [link to Breaking News] about 22,000 individuals.

Before the contest takes place, BPI recommends that sponsors conduct contractor outreach and training. Contractor networking events like the Rocky Mountain Contractor Exchange might be held as a precursor to a

makeover contest, or presented as an annual regional event to build interest and momentum.

No standard certification

The last piece of the puzzle is developing nationally recognized professional certifications, so customers can make informed decisions when hiring contractors—a challenge that won’t disappear any time soon.

More than 100 organizations nationwide are working with the home performance industry to establish guidelines for quality work, effective training and professional certifications. Unfortunately, like building

codes, every jurisdiction has its own unique needs and its own ideas about what is important. Expect this challenge to be with the industry for some time to come.

That being said, utilities that have, or want to launch, a retrofit program should get to know what kind of skills exist in the local contractor pool and start building a network. The resources in this story only scratch the surface so there is no need to wait to reap the benefits energy-efficiency upgrades offer customers, power providers, the economy and the environment.



For links to more resources, visit <http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb2.aspx>



Question:

Is there literature or other evidence supporting the value of hiring a resource conservation manager (RCM) for a city with utility bills of about \$1 million per year? We have about 40 city buildings, with a total of 900,000 square feet.

Answer:

A very good place to start is the Resource Conservation Management website of the Washington State University Extension Energy Program.

The Oregon Department of Energy Resource Conservation Management website has general references to potential energy savings, including this statement: "Most RCM programs achieve 10- to 15-percent savings on utility bills after the first year—depending on the number of facilities involved and level of management commitment."

This correlates well with traditional expectations from the industrial sector. When launching a new energy management program, a rule of thumb used by many energy-efficiency experts in industry is to hire one energy-efficiency person full time for each \$1 million in utility bills. The expectation is that, with management support, they should be able to save 10 percent or more each of the first two years, easily paying the salaries of the hired employees. Once the "low-hanging fruit" is

picked, you can scale back the energy management staff to one person per \$3 to \$5 million.

There isn't much information available about municipal RCMs, but there are many examples of RCM programs in school districts. The Kent School District has been a poster child for resource conservation management in Western Washington. Their energy manager put a lot of data and program information in its District Energy Resource report.

The district hired its energy manager in 1996. The statistics show a drop in "Energy per Occupant" from 7880 kBtu in the 1995-96 school year to 4219 kBtu in the 2001-02 school year. The report shows that in the five years prior to hiring an RCM, this figure either stayed the same or grew.

The Parkway School District in Missouri began a comprehensive energy management program in 1992. Its 2000 State of the District report observed that "Obviously, successful energy conservation requires the steady monitoring of energy use and energy waste. Based on data maintained by the resource conservation manager, these efforts are saving money for the district and natural resources for the larger community."

Over the past two decades, the program has saved Parkway more than \$800,000 per year in utility costs, 1.2 million MMBtu and 130,000 equivalent metric tons of carbon dioxide. That is equivalent

to removing more than 24,000 passenger cars from the road for one year, or planting 3.5 million tree seedlings 10 years ago.

More resources

- **National Clearinghouse for Educational Facilities**
This organization has a resource library with many helpful references.
- **Saving Resources, the RCM Way: Resource Conservation Manager Program Succeeds for Seven Oregon School Districts**
Con.Web, 1996.
- **Searching for Savings: Maintenance guides the Portland School District through new-technology applications to control utility costs**
FacilitiesNet, January 2004.
This article discusses the importance of an RCM, with specifics on savings achieved. Among other things, the article states: "To date, the district has spent \$8 million on energy retrofits. Wolfe says the district has saved \$9 million over the past eight years in combined savings and avoided costs. We estimate that we currently save \$2 for every dollar that has been spent on the retrofit...We cut our overall utility cost by 20 percent." ⚡

For links to more resources,
visit <http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb4.aspx>

Website of the month:

Building Performance Institute www.bpi.org

Every power provider with an energy-efficiency upgrade program needs a friend in the building industry—someone who knows their way around clean building technology and who knows what skills a qualified contractor needs. Look no further than the Building Performance Institute (BPI), an independent nonprofit organization that develops national standards for residential energy-efficiency and weatherization retrofit work, and credentials the workforce that can meet those standards.

Strong track record

The American National Standards Institute has approved BPI as a developer of American National Standards. BPI's Standards Technical Committee works with dozens of industry professionals to address critical trends of building performance technology innovation, industry best practices and regulatory reform.

BPI is deeply involved in the ongoing development and deployment of Home Performance with Energy Star, the initiative by the U.S. Department of Energy (DOE) and Environmental Protection Agency (EPA) to encourage a comprehensive approach to improving energy efficiency and comfort at home. Agencies like New York State Energy Research and Development Authority (NYSERDA), Energy Trust of Oregon and Austin Energy



have worked with BPI to build and maintain their energy-efficiency incentive programs. Most recently, Energy Upgrade California, a partnership working with major utilities to create a uniform, whole-house retrofit rebate program, called for participating contractors to be certified by BPI.

Help for utility programs

Whether your utility needs to fine-tune an existing retrofit program or launch a new one, BPI resources can provide direction.

The Seven Steps for Program Deployment or Expansion are a good starting point, even if you aren't looking to create a contractor accreditation program. The steps offer a good outline for program development, especially if you are new to the process. The BPI standards can provide guidance on installation and testing whether or not you decide to incorporate them into your program.

If you require contractors working for your program to get BPI certification, you will need to locate a training and testing center in your area. These consultants can also help with setting up your

program infrastructure. Managers of established programs may just skip to the searchable database of BPI accredited contracting companies or to the database of companies that employ certified professionals on staff to create a referral list for customers.

Alternatively, utilities that don't have the resources to set up training programs can provide local contractors with information about BPI and suggest voluntary certification. Including BPI's quick reference standards in contractor packets is another way to promote best practices in your retrofit program.

Be part of the solution

In the near term, BPI's resources can help utilities create energy-efficiency rebate programs that deliver promised comfort and savings to customers. Ultimately, however, establishing standards for building performance and contractor accreditation will be BPI's greatest contribution to utility programs. Standardization of both building practices and contractor accreditation ensures that retrofit projects yield the expected results—the key to a successful energy-efficiency upgrade program.

Utility professionals who want a voice in shaping national standards can get involved in the standards-setting process. BPI welcomes all industry stakeholders to apply to a Standards Technical Committee working group. ⚡

For links to more resources,
visit <http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb5.aspx>