Southeast Electric Cooperative, Inc. (SECO) is giving its hometown of Ekalaka, Mont., the gift of energy efficiency this Christmas season.

**TIME FOR A CHANGE**

For almost 30 years, SECO linemen have been hanging 15 sturdy little Christmas trees on the lamp posts of Main Street. As well made as the decorations are, the harsh Montana winds have taken their toll. By 2012, many light sockets had shorted out; the shiny, tinsel garland had been stripped from the metal frames and the holly berries had become holey or fallen off altogether. Marlene Waterland, SECO member services representative, felt it was time to give Ekalaka's Christmas decorations a facelift and improve their efficiency in the process.

The inspiration struck last winter as Waterland was on her way to an elementary school where she had placed one of Western's Equipment Loan Program lighting displays. Program Manager Gary Hoffmann had sent some new light bulbs for the display, including an LED C-9 .49-watt decorative light to compare to an old-fashioned 7-watt Christmas tree light. Waterland stopped at the town clerk's office to discuss an unrelated issue, and talk soon turned to the different types of light bulbs. From there, it was a short hop to the old holiday decorations and how they might be upgraded.

Waterland and Town Clerk Lisa Jourdan approached the Chamber of Commerce with a plan to select new decorations and raise money to pay for the project. “We began working in January, because it was going to take 11 months to get the job done,” said Waterland.

**REUSE, DON’T REPLACE**

Selecting the new decorations was the first order of business, but that quickly turned into a “recycling” project, Waterland recalled. “Not only were the new trees really expensive, they were flimsy compared to the old one,” she explained. “Our little trees are well-made and part of Ekalaka’s tradition, so we went shopping for replacement parts instead.”

Waterland and Jourdan found what they were looking for at Northern Lights Display in Eden Prairie, Minn. For a cost of about $3,750, or $250 per tree, the trees could go from 18 lights to 25 lights, with shiny new garland.
supplementing the wire-bound green and gold garland. The wind-battered red garland that wrapped the tree trunks is being replaced with brown donor plaques.

COMMUNITY PITCHES IN
Raising money for the decoration retrofit in a small community where many residents are on a fixed income was not as hard as it might sound. Putting an article in the local newspaper and knocking on a few doors did the trick, Waterland insisted. Bill stuffers were not an option, since SECO members read their own meters, fill out coupons and send in their payments. “We have the best members in the world,” she declared.

There is no denying that Ekalaka residents and businesses wholeheartedly supported the project. Individuals or groups contributing $200 to the project could get a Christmas greeting or memorial message of their choice printed on the trunk plaque. Each of the 15 trees bears a message. Donations continued to come in after the cost of the replacement decorations was covered, so SECO teamed up with Sagebrush Service Club to order new lights for the town’s big tree, as well. This holiday season, the tree in Perso Park on Main Street will be decked with 10 strings of 50 sparkling LED lights.

SECO’S ELVES
Ordering parts and assembling the trees proved to be a bit more challenging than expected. “We got gold garland by mistake, and it was cut to the wrong size,” Waterland admitted. “It was a shock when we opened the box, but once we put the garland on a tree, we were pleased with how good it looked, so that worked out after all.”

With the help of their husbands, Waterland and Jourdan have been busily redecorating the old tree frames with new lights and garland. In the woodworking shop on Waterland’s ranch, the two families are diligently battening down the new decorations with tape, zip ties, hog rings and wire to make sure they withstand the wind. “We keep going back and adding more fasteners,” said Waterland. “Just to be sure.”

The women are pleased with their handiwork and are looking forward to the Friday after Thanksgiving when the new decorations go up. “We won’t really know how the trees look until then,” Waterland said. “That’s when our members will let us know what they think, and that’s what really counts.”

NOT JUST PRETTY LIGHTS
The verdict is likely to be positive, based on the reaction of students and seniors who have seen the decorative LED lights on the lighting displays. “They are always amazed at how much light the bulbs give off using less electricity,” observed Waterland, adding that she has reminded SECO members about the retrofit’s energy-saving aspect throughout the project.

With strings of 25 .49-watt lights replacing 18 7-watt lights, each new tree will use 90 percent less electricity to give off more festive light. The big Christmas tree on Main Street will be using about a quarter of the electricity as it has in previous seasons, too. That’s good news for a winter-peaking utility like SECO.

Another advantage Waterland pointed out is that the efficient lighting won’t be as likely to trip circuit breakers. “We’ve had problems with blowing fuses in the past,” she said. “You just don’t want to be changing fuses in the middle of a blizzard.”

Of course, when it comes to Christmas, practical considerations tend to take a back seat to holiday spirit. But Waterland is confident that the new improved trees will meet that requirement. “Now that we are done with rebuilding our decorations, we can hardly wait to see how lovely our Main Street will look this year,” she said.

Western wishes Southeast Electric Power Cooperative, Inc., and all our customers shiny, happy and energy-efficient holidays!
Mary Wiener’s first year in her first utility job has taught her many lessons about the industry, about life in the Roaring Fork Valley and about the unique challenges of reducing energy consumption in a resort and recreation community. One thing the Energy Efficiency Program manager for Holy Cross Energy didn’t have to learn is the value of collaboration.

As she sheds her “novice” status, Wiener is focusing on building partnerships to increase awareness and participation for Holy Cross’s energy-efficiency rebate programs. If Holy Cross is to reduce its energy consumption by 33,000 megawatt-hours (MWh) over the next five years—the stated goal of its energy-efficiency plan—no customer class can be left behind. From year-round residents and shop owners to large vacation home owners and energy-intensive ski resorts, the utility is expanding its outreach.

BIG THINKING

One strategy for achieving deep energy savings is to go after the biggest energy consumers. Holy Cross’s new Think BIG grant, a competitive energy-efficiency incentive, invites the territory’s top 20 users to ask themselves, “How much energy could I save with this much money?”

Large commercial customers can apply for a grant of up to $400,000 or 50 percent of eligible project costs, for projects that save a minimum of 500,000 kilowatt-hours annually. The program will award up to $1 million for projects to be completed by Dec. 31, 2014. “This is an opportunity for individual organizations or groups to get funding for visionary projects that might otherwise be capped under our other rebate programs,” said Wiener. “We are encouraging facilities and homeowner associations to team up to submit grants.”

The Think BIG grant was inspired by the success of Holy Cross partnering with Vail Resorts to install an energy-efficient compressor on the resort’s snowmaking cannon. The costly project received rebates and in return, saved more than 2,800 MWh, contributing significantly to Holy Cross’s annual goal of 6,600 MWh.

A LITTLE HELP FROM FRIENDS

Holy Cross’s new on-bill financing program will help bring the goal closer still by removing a critical barrier to both large and small energy-saving projects. The utility teamed up with the Bank of Colorado to offer low-interest loans to homes and businesses for energy-efficiency upgrades. Homeowners will be able to finance such projects as air sealing and insulation and efficient windows, while businesses can get financing to replace inefficient motors, refrigeration or lighting.

For the first time, several nonprofit energy agencies in the Roaring Fork Valley will be helping Wiener to promote on-bill financing and other rebates. Clean Energy Economy for the Region, Community Office for Resource Efficiency, Eagle Valley Alliance for Sustainability and EnergySmart are collaborating to reach out to small business owners and higher-use residential customers, one on one.

“That personal connection is so important to getting customers to follow through on energy-efficiency projects,” Wiener observed. “But like

See HOLY CROSS, page 8
now in its third year, the popular Tribal Renewable Energy Webinar Series is returning to keep tribes and tribal energy organizations abreast of the latest opportunities, resources and best practices related to building clean energy projects.

The free webinars take place on the last Wednesday of the month, starting at 11 a.m. MST and lasting about 90 minutes. Western is once again teaming up with the Department of Energy (DOE) Office of Indian Energy Policy and Programs and the Office of Energy Efficiency and Renewable Energy Tribal Energy Program to sponsor the series.

BUILDING ON PAST
Tribal leaders, executives and staff interested in building projects that foster energy sufficiency and strengthen tribal energy infrastructure should attend. Presentations will also cover topics applying to utility-scale projects, so utility and industry staff and other stakeholders will gain perspective from the series.

The 2014 webinar series focuses on the issues and challenges facing the development of renewable energy projects in tribal facilities and communities. The schedule represents the sponsors’ coordinated efforts to expand on the 2012 and 2013 webinar series. “In past years, we laid a foundation of knowledge about how the industry works and received feedback from the tribes about their experiences with development,” said Randy Manion, Western Renewable Energy Program manager. “This series focuses on implementation—on what it takes to get projects into the ground and operate them.”

The topics also draw on online training materials from the National Training and Education Resource Center (NTER). DOE’s Office of Economic Impact and Diversity funded a collaboration of the American Indian Higher Education Consortium, the American Indian Science and Engineering Society and the national labs to develop these online courses. “This project provides a tremendous resource for tribes who want to learn more about technology, policy and finance related to developing renewables in Indian Country,” Manion said.

A LOT TO LEARN
Those who missed Information Available for Tribal Energy Project Development, the series premiere on Nov. 27, can find the presentations and audio recording on Western’s Renewable Energy Program website. Recordings of each webinar will be available on the site after the event.

Upcoming webinars in 2014 include:

- **Jan. 29 – Renewable Energy Market Update**
  Catch up on the latest developments in biomass, geothermal, low-head hydro, solar and wind; explore each technology’s unique characteristics and find out how they are competing in the marketplace.

- **Feb. 26 – Strategic Energy Planning**
  Learn how to develop a strategic energy plan, identify key aspects of successful energy planning and use information resources, including archived webinars from DOE’s Office of Indian Energy Education Initiative.

  Learn the five key steps of the Energy Project Framework that lead to success:
  - Understanding project savings and production potential
  - Project options
  - Project refinement
  - Project implementation
  - Project operations and maintenance

- **April 30 – Identifying Project Potential and Options**
  An in-depth look at the first two steps of the Energy Project Framework explores market considerations, siting, rate of return estimates, production potential, tribal options, financing, partnerships and participation.

- **May 28 – Renewable Energy Project Refinement**
  Explore the third step of the Energy Project Framework with experts on project financing strategies, off-taker agreements, vendor selection and obstacles to renewable project deployment on tribal lands.

- **June 25 – Net Metering**
  Speakers will present case histories on how facilities with their own renewable electricity
After years of product evolution, LED lights are now powerful enough to be used in high-bay mounts—industrial lighting fixtures located high above the floor or workstation.

Costs for LED systems are dropping while the quality and variety of LED products has continued to improve. As a result, LEDs are rapidly becoming the preferred technology for new and retrofitted lighting applications, especially in facilities like warehouses that must comply with energy code requirements specifying more controls and lower power allowances (e.g., ASHRAE 90.1-2010).

HIGH BAR FOR EFFICIENCY

In many high-bay spaces, high-performance fluorescent systems are the standard of efficient lighting. They provide high-quality, white light, maintain high lumen output over years of use, have increasingly long lamp life and can be controlled through occupancy or daylight sensors.

Older warehouse lighting often consists of 250- to 1,000-watt high-intensity discharge (HID) lighting that operates for long hours, regardless of actual occupancy, because HID lighting does not respond well or quickly to frequent switching.

READY TO COMPETE

LED systems save money by providing high-quality light even though less measurable light is produced – and less energy is used – than with fluorescent lighting systems.

- Highly directional LEDs produce less stray light and tighter distribution patterns, so all of the light goes where it is needed.
- The bluish white light improves visual acuity.

CHALLENGES OF REPLACEMENT

Unlike compact fluorescent lights (CFLs), there is no per-wattage basis for replacing HIDs with LEDs. Installing more or higher-wattage LED lamps does not necessarily result in more useful light. The light output and energy use are determined by the type and combination of LEDs and their drivers—the self-contained power supply with outputs matched to the electrical characteristics of the light.

Newer LED products are generally more efficient and less expensive than older models. Manufacturers often include “equivalent to X watt HID” notes to help buyers choose which LEDs to replace their traditional lamps. Three LED products marketed to replace a 1,000-watt metal halide warehouse lamp (78,000 lumens) have these values:

- 259 watt – 26,663 lumens
- 315 watt – 26,000 lumens
- 344 watt – 34,000 lumens

Costs for these products range from $1,000 to $2,000 per luminaire, and some include integral controls. Also, you need to consider color temperature and distribution patterns when selecting an LED product to replace traditional lighting.

STELLAR ENERGY SAVINGS

A review of LED technology by the Bonneville Power Administration (BPA) Energy Efficiency Emerging Technologies (E3T) program found average energy savings of 50 to 90 percent over existing technologies, depending on what equipment is replaced and what controls are installed.

For example, when a 180-watt LED fixture replaces a 400-watt high-pressure sodium (HPS) fixture, controls can be applied to the LED fixture to boost energy savings higher than 90 percent. For more information, see the LED High-Bay with Wireless Control fact sheet.

OTHER BENEFITS

High-performance fluorescents are hard to beat for energy efficiency and economics, but in some applications, the unique qualities of LEDs make them desirable for reasons beyond energy efficiency. LEDs:

- Contain no mercury, making them safer and easier to dispose.
- Are very durable and resistant to vibration.
- Improve light output in cold temperatures, where fluorescent performance declines.
- Can be designed to operate in fairly high ambient temperatures.
- Can be switched over very short periods – seconds, rather than the 15 minutes fluorescents need to preserve lamp life and warranties. This means LEDs work better with energy-saving occupancy sensors.
Consumers looking for more options to save money at the pump while reducing their carbon footprint will find many tools to help them at the Alternative Fuels Data Center (AFDC), a website created by the Energy Department’s Office of Energy Efficiency and Renewable Energy.

Launched in 1991 as a repository for alternative fuel performance data, the AFDC has evolved to offer a broad array of unbiased information, data and tools related to alternative fuels and advanced vehicles. The resources here will be valuable to fleet owners who must comply with the Energy Policy Act, businesses, policymakers, government agencies, as well as the general public.

Government and private sector vehicle fleets, including utilities, are the primary users of alternative fuels and vehicles, but there is a growing interest in them among consumers, too. Both residential customers and large accounts might appreciate learning about the AFDC from their power provider or finding a link to the AFDC on their utility’s website.

**KNOW YOUR FUELS**

There are more than a dozen types of alternative fuels in production or under development, but visitors will be looking for information about the most widely used products. “Fuels and vehicles” focuses on biodiesel, electricity, ethanol, hydrogen, natural gas and propane. Each fuel page provides links to more details on basics, benefits and considerations, stations, vehicles and laws, and incentives.

In this section you can research fluctuating fuel prices and new fuel technologies, too. At the bottom of the page is a link to “Tools,” the page visitors are most likely to bookmark. The top navigation includes a link to the tool collection and to some of the tools, but the tools page is a more user-friendly way to access them.

**DECISION MAKERS**

The tools are grouped under the headings of calculators, interactive maps and data searches, and include a short description of the function next to an icon. Some of the tools, such as the PEV Readiness Scorecard, are located on the AFDC site; while others, like the Biofuels Atlas are on the websites of the national laboratories that developed them.

Visitors can use the calculators to determine things like the overall cost of operating their particular make and model of vehicle, or the carbon footprint of their vehicle fleet. Interactive maps show where alternative fuel stations are located or where to find truck stops with charging stations among other things. The databases allow visitors to compare the properties of different fuels or to search for laws and incentives related to alternative fuels and vehicles by jurisdiction, user or technology.

In addition to the searchable database, the AFDC also provides information about federal and state policies and legislation related to alternative fuels, fuel economy and air quality. A summary table lets visitors see all laws and incentives sorted by different criteria.

**ALTERNATE ROUTES**

Not every organization is ready to upgrade its fleet to alternative fuel vehicles. Help your large accounts or your own board of directors recognize the benefits of the technology with case studies from the AFDC.

For those who aren’t ready to upgrade to a new generation of vehicle, the good news is that switching fuels is only one way to reduce your carbon footprint. Whether you manage a fleet, or just want to squeeze more miles per gallon from personal transportation, AFDC offers tips to conserve fuel. Driving behavior, vehicle maintenance, the size of the fleet and choice of parts and equipment just a few factors that can be managed to reduce fuel consumption.

Of course, drivers on the road just need to know where they can “fill up,” and don’t have a computer handy to get that information. AFDC addressed that need Nov. 8 with the release of its free Alternative Fuel Station Locator app. After all, choice is important to advanced-vehicle owners, whether they are choosing more environmentally friendly transportation or looking for a place to refuel that vehicle. The Alternative Fuels Data Center is working to ensure that consumers are aware of all of their options.

For links to more resources, visit [http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb5.aspx](http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb5.aspx)
systems can feed excess generation back into the grid, and look at differences in state net metering laws and utility net metering programs.

- July 30 – Project Implementation and O&M
  Discussions will cover project management, reporting, monitoring and commissioning, developing a long-term Operations and Maintenance plan, evaluating warranty agreements and extensions, and more.
- Aug. 27 – Introduction to Facility and Community Scale Project Financing
  Get to know the forms of financing for small community-scale projects that serve an individual facility or community, and their advantages and disadvantages to tribal communities.
- Sept. 24 – Successful Project Financing Mechanisms - ESPCs and UESCs
  Learn about energy savings performance contracts (ESPCs) and utility energy service contracts (UESCs), mechanisms developed for federal agencies to finance renewable energy and energy efficiency projects.
- Oct. 29 – Putting it All Together
  Review the previous webinars and learn about the tremendous development opportunities awaiting tribes. Stakeholders will weigh in on topics for the 2015 Tribal Webinar Series during the final Q-and-A session.

REGISTER TODAY
There is no charge to participate in the webinars, but registration is required. Visit the Tribal Energy Program webinar Web page, and select the workshops you want to attend. After registering, you will receive a dedicated email that includes the internet address, phone number and passcodes to participate.

Participants will need internet access and an open phone line. The NTER website will host the presentations. The audio portion of the webinar will be available through a toll-free line. Attendees will be able to ask questions of the speakers in real time.

Sponsors strongly encourage attendees to review past webinars and the NTER training materials before participating in this year’s series. For links to more resources, visit http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb3.aspx

BECOME A TRIBAL ENERGY EXPERT

BEFORE YOU BUY
Before investing in LEDs:
- Consider adding controls if you currently have a high-performance but uncontrolled fluorescent system with intermittent occupancy.
- Make sure your contractor is qualified to install LEDs and use control systems.
- Install two or three of the LEDs you are most interested in and see how they perform in your application before placing a large purchase order.

BEFORE YOU BUY

Contribute much less heat into a space, reducing cooling loads.
- Substantially reduce maintenance costs due to their long life.
- Do not fail suddenly. Over time, LEDs slowly fade so replacement can be anticipated and scheduled.
- Work well with digital controls and wireless systems for fast and easy installation.
- Often come with sensors and controls that can be programmed from a computer so they can easily be reconfigured. The software also provides energy use data needed for incentive programs or resource management.
- Can be dimmed without degrading efficiency or lamp life, to work with daylight harvesting.
- Review up-to-date information before committing to a large-scale purchase because LED technology is rapidly evolving.
- Consult with your utility about incentives or contact Western’s Energy Experts hotline for additional assistance at 800-769-3756.
- See the following resources for more information about performance-tested LED products:
  - Department of Energy Solid State Lighting Program
  - Design Lights Consortium Qualified Products List
  - LED Lighting Facts: Success with Solid-state Lighting

For links to more resources, visit http://ww2.wapa.gov/sites/western/es/pubs/esb/Pages/esb4.aspx
many cooperatives, Holy Cross just doesn’t have a big member services department. Those extra ‘boots on the ground’ will free us up to focus more on large custom projects.”

**BRING IN A RINGER**

Even with the partnership’s help in educating customers about rebates and incentives, Holy Cross couldn’t ignore a more fundamental obstacle facing its energy-efficiency program. “There are just too many people who can’t even tell you who their utility is,” Wiener pointed out.

Recognizing that Holy Cross didn’t have the expertise or in-house staff to conduct a public relations campaign, the co-op’s board of directors issued a request for proposals last spring. The board’s communications committee selected Impact Marketing Aspen from the eight marketing agencies that responded. Wiener had worked with Impact Marketing at EnergySmart, and is excited about the prospect of doing so again. “We want to go beyond simple name recognition—we want our customers to understand what it means to get their electricity from a cooperative,” she explained. “It helps to have a specialist to communicate that message.”

The marketing blitz has so far included newspaper ads, Holy Cross’s first radio ads and a revamp of the co-op’s quarterly newsletter. The strategy Impact Marketing presented to the board in November highlights energy efficiency and Holy Cross’s status as a nonprofit power provider. “We are starting from a relatively strong position, since co-ops generally enjoy a higher level of trust from their members,” Wiener said. “Also, having a board that appreciates the importance of marketing our services is a big advantage.”

**A FEW SMALL ADJUSTMENTS**

With so many new programs rolled out in the last year, it might seem like Mary Wiener has completely overhauled the Holy Cross energy-efficiency program. But the rebates themselves have changed very little, she asserted. “The new programs are mainly just tools to deliver the incentives that have been successful in the past,” Wiener said. “You have to keep the program consistent or customers get confused.”

The program still has to respond to new information, technology and consumer habits, however. Wiener said that Holy Cross will be analyzing the results of window upgrades receiving rebates to see if the performance is worth the investment.

An uptick in the use of air conditioning is another issue that calls for a closer look, she noted. Both commercial and residential customers have been installing air conditioners in buildings that previously had no mechanical cooling systems. “Because of the region’s mild summers, few older buildings have central air conditioning,” Wiener explained. “But people are coming here from parts of the country where homes and businesses are always cooled, and that is what feels ‘normal’ to them.”

Those customers may not even be aware of evaporative coolers (ECs), since the technology is not as effective in more humid climates. “Offering a rebate for ECs might get them to consider a more efficient system that works just as well as air conditioning in the Rocky Mountains,” Wiener said.

Wiener believes in getting people to think outside the box, something she learned to do at EnergySmart that carried over to the utility industry. Her experience working with contractors and other energy services vendors has also served her well as a utility program manager. But the most important skill, she added, may be salesmanship. “You have to have an answer for every reason the customer gives for not doing an upgrade,” said Wiener. “Ultimately, the energy program manager’s job is to convince customers that energy efficiency is a good investment, even in a down economy.”

And with that philosophy, Energy efficiency Program Manager Mary Wiener is off to a flying start at Holy Cross Energy.