

May 2019 Share Package

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Ruralite/Currents magazine 2019

Schedule of Important Dates

August 2019 Issue

pages 1, 4-5 dueJune 25
special projects due.....July 3
mailing labels due.....July 9
pages 8, 25, 28-29 dueJuly 9
page 32 due.....July 17
camera-ready pages dueJuly 18

September 2019 Issue

pages 1, 4-5 dueJuly 25
special projects due.....Aug. 5
mailing labels due.....Aug. 9
pages 8, 25, 28-29 dueAug. 9
page 32 due.....Aug. 16
camera-ready pages dueAug. 19

October 2019 Issue

pages 1, 4-5 dueAug.26
special projects due.....Sept. 5
mailing labels due.....Sept. 9
pages 8, 25, 28-29 dueSept. 9
page 32 due.....Sept. 18
camera-ready pages dueSept. 19

November 2019 Issue

pages 1, 4-5 dueSept. 25
special projects dueOct. 4
mailing labels dueOct. 9
pages 8, 25, 28-29 due.....Oct. 9
page 32 dueOct. 17
camera-ready pages dueOct. 18

December 2019 Issue

pages 1, 4-5 dueOct. 25
special projects dueNov. 5
mailing labels dueNov. 8
pages 8, 25, 28-29 due.....Nov. 8
page 32 dueNov. 18
camera-ready pages dueNov. 19

January 2020 **Issue**

pages 1, 4-5 dueNov. 25
special projects dueDec. 5
mailing labels dueDec. 9
pages 8, 25, 28-29 due.....Dec. 9
page 32 dueDec. 17
camera-ready pages dueDec. 18

Bay, Bow Windows Are a Lower-Cost Sunroom Alternative



This five-section bow window with a vinyl frame has casement windows on either end for maximum natural ventilation.

Photo by Champion Window



Bow and bay windows are available with no-maintenance vinyl or aluminum exterior cladding, and a natural or painted wood interior.

Photo by James Dulley



To ask a question, write to **James Dulley**, Energy Report, 6906 Royalgreen Dr., Cincinnati, OH, 45244, or go to **www.dulley.com**.
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Q. I want to replace an old picture window with a bay or bow window. My budget is tight. Which type is best and most efficient?

A. Old, large, single-pane picture windows—which were common in houses built many years ago—are extremely inefficient. Not only is there a huge heat loss in winter, and heat gain in summer, through the glass, there likely is no insulation around the frame inside the walls. If it faces west, count on drapes, furniture and carpeting being badly faded.

A bow or bay window is sometimes called the poor man's sunroom. It can provide some of the benefits of a sunroom at a lower cost. These include making your room appear larger, providing a seat under glass at the window and a good location for plants. Although it costs less than a small sunroom, an efficient bow or bay window is not inexpensive.

The basic difference between a bow and a bay window is the number of panels. A bow window is made of four or more narrow window panels, often of the same width. Five windows is the most common configuration. Using more window panels creates a more circular appearance that many people find attractive. To minimize the cost, have only the windows on each end operable. This configuration provides adequate natural ventilation when the ends are open.

Bay windows are made from three window panels. The two angled side panels usually open. They usually are angled at 30 or 45 degrees. The fixed center window is similar to a smaller picture window with an unobstructed view of the outdoors. To better simulate a sunroom, a 45-degree bay window extends out further than a 30-degree window from the house wall. This provides more space for plants or a bench seat.

When replacing a large picture window 10 feet wide or larger with a bay window, a 30-degree design is your best choice. It provides plenty of openness and an area for plants, but does not extend too far. A large triple-pane center window is quite

heavy to be cantilevered out far from the wall.

There is not a significant difference in the energy efficiency or durability of a bow or bay window. A bay window, particularly a 30-degree design, may be slightly more efficient because there are fewer joints and seams to be sealed between the window panels. Also, wherever there is framing material and supporting lumber in the wall, there is less room for insulation.

As with any replacement window style, glass is the heart of the window. Select the most energy-efficient glass your budget allows, even if it forces you to cut back on the styling or trim options. Triple-pane glass is best, but at least select double-pane glass with a low-emissivity coating and inert gas. Select the proper glass for your area because the location of the low-emissivity coating varies depending on your climate. All new glass types reduce fading.

Since a bow or bay window protrudes from the wall, it is ideal for natural ventilation during summer to reduce your air-conditioning costs. Select casement window style for the side or end windows. Double-hung windows, which generally do not provide good natural ventilation, are also acceptable on a 45-degree bay window because they protrude enough from the wall to catch gentle breezes.

In addition to high-quality glass, look for a bow or bay window that has thick insulation in the seatboard and the top. When building your own bow or bay window, use a minimum of 1-inch polyurethane rigid foam. This saves energy and improves your comfort near the window. Your plants will also appreciate it during the winter.

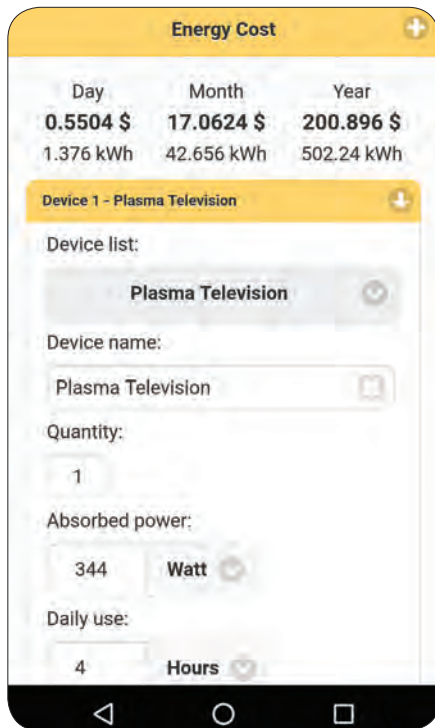
Unless you are handy with tools, it is generally better to buy an entire unit designed as a bow or bay window. This costs more than assembling one from scratch, but it will likely be stronger and more airtight. When designing and building your own, consider installing cable supports from above for one that extends out far from the wall. ■

Energy-Saving Apps and Devices



Advanced smart thermostats such as the Ecobee4 can work with sensors that detect when someone is in a room and adjust the temperature accordingly.

Photo courtesy of Ecobee



Q: I want to learn about simple ways I can use technology to save energy. Where should I start looking?

A: Every new piece of technology seems to come with a lot of promise, doesn't it? Then we have to find out for ourselves if it lives up to the hype. Here are a few products we recommend.

Smartphone Apps

There are several energy apps available today, but two stand out. They are free, easy to use, effective and available for both Android and iOS devices.

- **JouleBug** is a fun app that helps you save energy. You collect points for each energy-efficient move you make inside the home, on your commute and in daily life. The app helps you make changes and build ongoing energy-saving habits. It's designed as a competition among friends, and it can help you and your family create an energy efficient household together. The app includes fun, educational videos and links to helpful articles.

- There are several energy cost calculator apps that help you identify where you use the most energy in your home. You can enter how many hours a day you use each appliance or electronic device and the rate you pay for power, which you can find on your energy bill. The app creates a total operating cost for that device.

- How much does that hallway chandelier cost you each month? How much would you save by turning it off for an additional hour each day? How about that second freezer or the big-screen TV? The answers aren't exact, but the apps will give you a better idea of your overall energy use and help you focus your efforts on opportunities that save the most energy.

Smart Thermostats

A smart thermostat connects to the internet and your computer and/or smartphone through your home's Wi-Fi. It could shave \$50 off your energy bill every year. Most fall within the \$100 to

\$250 range. If the price for a feature-rich model is more than you're comfortable spending, ask yourself if it's worth buying a lower-cost model, or if your current thermostat does the job.

Here are some features to keep in mind if you're considering a smart thermostat:

- **Learning.** A learning thermostat will figure out your habits and adapt, which is probably the best way to make the most of a smart thermostat's energy-saving potential.

- **Geofencing.** This detects when you leave home and return, and adjusts the temperature so energy is not wasted.

Additional features include remote room sensors and voice control.

Learn what you can about the functionality of the smart thermostat's app. Take a look at how easy it is to program the thermostat unit directly. Finally, consider the installation. Some models are more difficult to install and may require rewiring.

Smart Power Plugs and Switches

Smart outlets and light switches are still considered a relatively new technology, and we think improvements will be made over time. That said, if this is a technology you're interested in, there are a couple of options consumers seem to like.

Hub-based systems such as the Curren Dual Smart Outlet and Philips Hue smart lighting systems are highly rated and cost about \$200 or more for eight to 10 smart outlets or light switches. That's a pretty big investment, so we recommend using an energy cost calculator app first to decide if it's worth the additional cost.

We hope these reviews will be helpful as you consider smart technology that promotes energy efficiency. Don't forget to check with your local electric utility about additional programs and services designed to help you save on your energy bills. ■

This column was co-written by Pat Keegan and Brad Thiessen of Collaborative Efficiency. For more information on energy efficiency, visit www.collaborativeefficiency.com/energytips.



To ask a question, send an email to **Patrick Keegan** at energytips@collaborativeefficiency.com.

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May Is Electrical Safety Month

Be aware of your surroundings and don't get complacent near power lines



Lynn Culp retired in April after 30 years at Surprise Valley Electric in Alturas, California.

Each year, nearly 400 people die from electrical accidents in the U.S. There are more than 51,000 home structure fires caused by electrical faults that claim another 500 lives.

Electricity is important in our daily lives. Our homes and workplaces are filled with electrical devices, appliances and equipment that help us complete tasks and provide comfort and enjoyment.

Used properly, electricity is a safe energy source. However, carelessness around electricity can result in electrical shock and even death.

As the member service manager for a small rural electric utility, I have been tasked to develop and implement our electrical safety awareness campaign. During the past couple of decades, we have made a concentrated effort to share the electrical safety message with every child in our service territory at least once during their elementary school years.

On our school visits, we use a demonstration board that features a live power line. A number of potential electrical accidents are set up and talked through, such as a child flying a kite, a farm worker lifting a pipe and a car with a downed power line on it. The live demonstration board provides a dazzling visual image and audio sensation that leaves a lasting impression on children and adults.

Our message: Electricity always seeks the shortest pathway to the ground. Don't let it be through you.

I am sure everyone has felt some level of electric shock—from the tingling of a battery on the tongue or the snap of static charge when grabbing a door handle to the nearly heart-stopping jolt from an electric livestock fence.

At some point, we have become a pathway for electricity to get to the ground.

Electricity moves through conductors such as wire, metal pipes, poles, ladders, and objects in or containing water, such as wood. The water in our bodies makes us great conductors of electricity.

Insulators are objects made of materials electricity does not move through, such as plastic, rubber

and glass, including fiberglass. Devices and tools made from these materials are used in the industry to safely work with high-voltage electricity.

Electricity uses many pathways to get to the ground. Never fly kites by power lines. If a kite or anything else is tangled in the power lines, call your power company. Do not try to get it out yourself.

Always look up before lifting anything long or tall. Make sure you are not under the power line. Metal irrigation pipes, rain gutters, flag poles and antennas are all long or tall and could easily come in contact with distribution power lines. These power lines sag to within 25 feet of the ground and are not insulated. This type of contact with the power line may result in serious injury or death.

Do not trim trees that are in or near the power line. A tree trimmer once told me he received a serious electrical shock when pulling on a limb he had cut off. He did not realize the limb was caught in the power line. This easily could have resulted in a serious or fatal accident. Contact your power company and get their help or recommendation for working on trees.

Treat all downed power lines as live wires. A few years ago, we were called out on a forest fire that had burned through our line. The power line was on the ground. Many firefighters were busily going about their tasks, just stepping over the wire. When our serviceman arrived, he determined the wire was still energized and quickly disconnected the line. Fortunately, none of the firefighters was seriously injured by stepping on the live wire.

Immediately call your power company if you encounter a downed wire. Never try to move a downed power line, even if you don't think it is energized. If you are in a vehicle with a downed power line on it, stay in the vehicle. You are safe inside the vehicle. If you step out and touch the vehicle and the ground at the same time, you will be a pathway for electricity to get to the ground.

Remember, electricity is always trying to take the shortest path to the ground. Don't let it be through you. ■



Wells Rural Electric Co. Foreman Jacob Manning, right, tailgates with Apprentice Lineman Joey Payne, left, and Journeyman Lineman Chris Duffy prior to changing out an insulator on an energized line, opposite page. The Nevada co-op has pledged to maintain a culture of safety through the National Rural Electric Cooperative's Commitment to Zero Contacts initiative.

Photos by Layla Welsh



An Initiative to Work Safely

By Pam Blair

Nearly two decades ago, Northfork Electric Cooperative's Heath Martin survived a 7,200-volt shock on the job. He admits the accident was his fault.

Heath and his co-worker, Chad Crompton, had worked all night, then were called to a routine outage.

Heath says he was thinking about an upcoming fishing trip with his buddies.

"I was in a hurry, but it was no reason to take a shortcut," he says.

Heath suffered severe burns to his hands and face, resulting in skin grafts, multiple surgeries and physical therapy.

"Grounding that line down would have taken me maybe five minutes at the most," says Heath, who now is safety director at the Oklahoma co-op. "I just made a bad decision that day."

Although the overall injury rate has fallen dramatically, serious injuries and fatalities among electric cooperative line-workers are happening with alarming regularity, says Bud Branham, director of safety for the National Rural Electric Cooperative Association.

"Research shows you can have the best injury rates in the world, but you can still fall victim to a catastrophic incident," Bud says. "We must all remain focused."

A nationwide survey of 51,000 co-op employees conducted annually between 2006 and 2015 found an average of more than 23 serious injuries and fatalities, which is defined as any claim greater than \$100,000—"a life-altering event for an employee," Bud says.

"The No. 1 cause of claims—40 percent—are electrical contacts that result from failure to use appropriate personal

A Positive Spin on Safety

Commitment to Zero Contacts suggests co-ops avoid a "bad cop" mentality and instead focus on a systemwide approach that helps them:

- ▶ Clarify and define life-saving rules.
- ▶ Verify use of life-saving rules.
- ▶ Create effective job planning on all jobs, including the routine.
- ▶ Form a structured safety management process.
- ▶ Seek employee involvement.

protective equipment or insulated covers, or to test and ground facilities—the life-saving rules everyone has been taught," Bud says. "It's like blocking and tackling in football. There are always pressures to take shortcuts. As we become more skilled, we

Serious Injuries and Fatalities for Co-op Lineworkers



In the past decade, the overall injury rate has fallen among co-op lineworkers, but high rates of serious injuries and fatalities persist.

Source: Federated Rural Electric Insurance Exchange and statewide associations



become less risk-aware. The simpler the task, the less our brain focuses on it. With fast-brain thinking, we skip steps.”

Especially during outage restoration work, the tendency is to “hurry up and get it done,” Bud says, noting the thought pattern can be, “I’ll just do it this one time. It won’t hurt me.”

Sometimes it doesn’t. Other times it does. Either way, it’s a trend safety leaders across the country want to stop.

In April 2018, NRECA, Federated Rural Electric Insurance Exchange and electric co-op statewide safety leaders introduced the voluntary Commitment to Zero Contacts initiative.

It is designed to provide CEOs, senior leaders and field personnel with resources to help eliminate serious injuries and fatalities due to electrical contact and enhance co-op safety programs.

The campaign provides a toolkit of resources, including field guides, videos, logos and written commitment forms.

One aspect of the campaign is a downloadable job-planning app—Stop and Focus Everyday—for use on mobile devices. It requires step-by-step acknowledgement of the life-saving rules of the job, with a goal of building and reinforcing safe work habits.

Use of the app encourages crew leaders to stop, focus and review crucial risk factors that could lead to employee contacts. The app also provides efficient job-planning processes for energized work, outage restoration and daily tasks.

Job-briefing data is automatically submitted to Federated’s website with a time and date stamp. It is accessible in real-time and searchable by date, time, submitting employee, job type or job number so it can be used for training.

“We must do job planning on all jobs,” Bud says. “The worst accidents tend to happen during routine jobs where risk awareness declines and complacency is more likely. They know they need to do certain things, but do they?”

“If we can get crews to increase job briefings to 100 percent of the time, we will decrease accidents. If you follow these rules every single time, you will go home with your arms, legs and life.”

Creating a strong culture of safety helps mitigate the risk at all levels.

Wells Rural Electric Co. in north-eastern Nevada has signed onto the Commitment to Zero Contacts initiative and uses the S.A.F.E. app.

“We’ve been very dedicated at WREC to making sure our job briefings are

religiously filled out,” says Foreman Jacob Manning. “The one thing that is etched into our heads from day one is that electricity will kill you. Being safe can be a matter of life and death.”

Jacob says it is important to him to make sure all of his guys are safe, that they understand the job at hand and the hazards associated with every job.

“Regardless of how high or low on the totem pole a guy might be, every person always has a say in what we are doing and the ability to ask any questions about the job or any hazards they might not understand,” Jacob says. “It’s important every single person involved understands exactly what we’re doing.”

At the end of the day, the priority must be safety and doing everything possible to make sure their linemen go home to their families, says WREC CEO Clay Fitch.

“Our guys do a great job in terms of the quality of their work, attention to their training and observing safety on the job,” Clay says. “We owe it to them and to their families waiting at home to give them the tools they need to build a culture of safety. That’s really the benefit of Commitment to Zero Contacts and the S.A.F.E. app. It’s about creating a constant awareness of safety.” ■

Fighting to Keep the Lights On

Electric utilities are winning reliability battles against squirrels, storms and hackers

By Paul Wesslund

Did you know squirrels, lightning and trees have something in common? All three can knock out your electricity.

Electric cooperatives and publicly owned utilities work hard to keep your lights on all the time, but “you’re going to have power outages, and that’s just the way it is,” says Tony Thomas, senior principal engineer with the National Rural Electric Cooperative Association.

An electric utility’s basic job of keeping the power flowing 24/7 calls for maintaining a complex network of power plants, poles and wires. But it also means battling the unpredictable.

Thomas cites the top three troublemakers to electric reliability:

- Trees falling on power lines and other interferences from vegetation.
- Lightning strikes.
- Animals going about their daily routines, especially squirrels chewing on electrical equipment.

“Utilities do an awfully good job, but Mother Nature gets in the way sometimes,” says Thomas.

Humans also contribute to power outages. Vandals deliberately damage electrical equipment and drivers accidentally

crash into utility poles.

Despite the challenges, statistics show the lights are almost always on.

According to numbers collected from electric utilities, power in the United States is incredibly reliable. The percentage of time the average American has electricity at the flip of a switch is 99.97.

Equally impressive, Thomas says, is those numbers don’t change much.

“I don’t see big swings from year to year,” he explains. “If things are fairly consistent, that means the utility is operating about as efficiently as it can.”

Nonetheless, utilities still try to improve on that reliability.

Techniques being used to foil critter catastrophes include snake barriers around substations, buzzard shields on transmission towers and mesh coverings on wood poles to protect them from woodpeckers.

Utilities operate extensive right-of-way programs to keep vegetation away from power lines—from clearing underbrush to public awareness campaigns asking people not to plant trees where they can fall on power lines.

Those efforts can be aided by digital software that forecasts the growth of trees and other plants so utilities can prune branches before they cause a problem.

Other software tries to manage lightning by analyzing the age and wear on utility equipment, minimizing damage from lightning strikes so equipment can be replaced before it fails.

Fighting storms and squirrels are two ways to keep the power on. By far the biggest task comes from building, maintaining and updating the massive machinery of the nation’s electric grid.

More than 8,500 power plants generate electricity that is shipped through 200,000 miles of high-voltage transmission lines. Banks of substations and transformers step-down that voltage to send it to homes and businesses through 5.5 million miles of distribution lines.



When it comes to electric reliability, the biggest challenge is maintaining and updating the massive machinery that makes up the nation’s electric grid.



Keeping the power flowing 24/7 requires not only maintaining a complex network of equipment, but preparing as much as possible for the unpredictable.

Keeping that network up and running requires planning among utilities to anticipate how electricity will be used in the future. Part of that reliability planning focuses on protecting the electricity system from computer-based digital attacks.

Bridgette Bourge is among those overseeing how digital technology affects reliability for electric cooperatives and their consumer-members. As director of government affairs for NRECA, she sees both positives and the negatives to the latest internet-based, or cyber, technology.

“Cyber helps a lot on reliability because it gives us the ability to monitor and know everything right away,” she says. “But whenever you increase reliability through a technology, you do potentially open up vulnerabilities as well from the security angle.”

For any organization—including electric utilities—the benefits of the internet come infested with mischief makers.

Bourge says it is routine for a company to receive tens of thousands of attempts each day to break into its computer network. Those “knocks” at the cyber door can come from individuals, countries and organizations, or from an army of automated “bots” roaming the internet worldwide, testing for weaknesses where a hacker could enter.

A troublemaker inside the computer network could affect electric service. That is why NRECA has organized a variety of cyber reliability programs.

Bourge says those programs aim to help protect against a range of threats—from broad attempts to shut down parts of the electric grid to more focused efforts to corrupt pieces of software.

NRECA’s cyber protection efforts include working closely with the nation’s electric cooperatives to share techniques for protecting utility systems from internet invaders. NRECA also works closely

with federal government cybersecurity groups in the Department of Energy and the Department of Homeland Security.

NRECA is part of a national program to create a cyber mutual assistance agreement. Much like how groups of lineworkers from an electric co-op travel to help restore power after a hurricane, these cyber agreements would mobilize teams of information technology experts in the case of a cyber incident.

“You can’t solve cybersecurity,” Bourge says. “No matter what you do today, the bad guys are going to figure out a way around it tomorrow. You have to keep thinking about the next step.”

Bourge says community-based, member-led electric co-ops have a unique interest in protecting the reliability of the local community’s energy supply.

“Electric cooperatives take cybersecurity very seriously,” Bourge says. “It’s built into their DNA.” ■

Look Up! Be Safe Around Electricity

Never take for granted the location of power lines—and always stay clear of people or objects who are in contact with electricity

By Pam Blair

When electricity comes into contact with a person or something he or she is touching, the results can be deadly.

On March 10, 2019, baseball coach Corey Crum and his wife, Shana, were killed and their 14-year-old son, Chase, was injured when they were electrocuted while installing concrete pilings for a new scoreboard at a Florida high school.

Like many places in the Florida Panhandle, the Liberty County High School baseball field in Bristol was heavily damaged when Hurricane Michael—a Category 4 storm—struck in October.

Along with members of the baseball team, parents and community volunteers, the Crums had gathered for a work day. Corey, who was in the construction business, donated the pilings and the labor to install them, in anticipation of the new scoreboard being placed later that week.

“Coach Crum was operating a boom lift and unloading a piece of equipment from a trailer when the boom of the lift made contact with overhead power lines,” the Liberty County Sheriff’s Office posted on its Facebook site. “This electrified the boom lift, electrocuting Coach Crum. The coach’s wife then attempted to aid him, and was also electrocuted. Their son also attempted to help the two, and he was electrocuted and injured.”

The couple died at the scene. Chase was hospitalized and later released.

Your Own Safety Must Come First

When seeing a loved one in distress, the instinct is to rush in to help. But when the distress is a result of contact with electricity, that is the wrong move.

Touching a person who is still in contact with an electrical source may pass the current through you—and you cannot help if you become another victim.

First responders to an accident involving downed power lines on the ground,

Work Safely Near Lines

- ▶ Locate all overhead power lines.
- ▶ Keep yourself and equipment 10 feet away from overhead lines.
- ▶ Do not touch anything that is in contact with the power line—including other people.
- ▶ Beware of fencing near power lines.
- ▶ Carry ladders and other long, metal equipment horizontally.
- ▶ Lower tall equipment apparatuses before driving.
- ▶ Never spray water near power lines.
- ▶ Do not trim or climb trees near power lines.
- ▶ Stay at least 35 feet away from fallen power lines.

draped across a car or touching a piece of equipment also face the possibility of a deadly electric shock.

Electricity can be an invisible killer.

You do not have to touch a live wire to suffer serious electrical injury or death. In fact, you can be electrocuted by just walking within 35 feet of a downed power line because of “step potential.”

That term refers to the difference in voltage in energized ground. Electricity spreads through the ground in invisible rippling rings, like a stone dropped in water. The voltage is highest in the ring closest to the power source. It dissipates to progressively lower voltages the further out it goes.

If someone steps from one voltage ring to another, electricity can surge through them—up one leg, through their body and down through their other leg.

A person whose body connects two different voltage points completes the circuit and becomes the path for the current.

A human hand touching someone who is in contact with a live wire and





An Illinois asphalt truck operator raised the bed so he could clean the tailgate area, contacting the overhead power lines. Miraculously, the operator was shocked three times and survived. The truck, above and opposite page, was destroyed.

Photos courtesy of Steve Hancock, Corn Belt Energy Corp.

the ground completes the circuit. The same is true of a television antenna, a metal ladder, an irrigation pipe, a damp wooden pole or a tall piece of machinery.

Failure to notice high-voltage power lines can be a deadly oversight.

An asphalt truck operator in Illinois made what could have been three deadly mistakes when he came in contact with 7,200 volts of electricity a few years ago.

The operator did not notice the overhead power lines when he raised the truck bed and stepped to the back of the truck to clean the tailgate area. As electricity coursed through his body, he was blown away from the truck into a ditch. He got up to go back to the truck to retrieve something, and was shocked a second time. He made another attempt, and again was blown away from the truck.

“Believe it or not he survived,” says Steve Hancock, vice president of electric distribution for Corn Belt Energy Corp. and presenter of the live line electrical safety demonstration for the Bloomington, Indiana, cooperative.

If Possible, Stay In the Car

In accidents that bring down power lines, instinct tells us to flee danger. However, unless the vehicle is in imminent risk of catching on fire, it is best to stay in your vehicle, call 911 and wait for help.

“Knowing what actions to take to stay safe can make the difference between life and death,” says Molly Hall, executive director of the Energy Education Council and its Safe Electricity program. “After any car wreck, it is natural for people to want to get out of the car. However, when the wreck involves a power pole, that is the exact wrong thing to do.”

If you are involved or come upon an accident involving toppled power poles and lines, don’t leave your vehicle.

Although the inclination is to step in and help the injured, if the line is energized and you step out of the car, your body becomes the path for the electricity, and you can be electrocuted.

Similarly, you can be shocked while standing outside the vehicle and tending to an accident victim. That is because the

voltage in the ground may be lower than the voltage in the vehicle.

Wait for trained assistance to arrive or you could become an additional victim.

While downed lines can sometimes show they are live with electricity by arcing and sparking, this is not always the case. Live power lines do not always show signs such as arcing or sparking. Treat all downed lines as energized.

If the vehicle is on fire—or you smell gas, and have reason to believe the car is going to ignite—jump from the vehicle, with both feet hitting the ground at the same time. Do not run or merely step out, and do not touch the vehicle and the ground at the same time. Hop or shuffle to safety, keeping both feet together as you leave the area so one foot won’t be in a higher voltage zone than another.

Stepping from one voltage level to another allows the body to become a path for the electricity. A large difference in voltage between both feet could kill you.

Knowing this can mean the difference between life and death. ■



Be alert to the presence of overhead power lines.

Photo by Mike Teegarden

Safety Starts With You

Tips for spotting potential electrical hazards in your home

By Derrill Holly

Electricity plays many roles in our lives—from powering baby monitors, cell-phones and lighting to running HVAC systems and appliances. No wonder we get so comfortable with its instant availability that when we flip a switch, we expect most systems or devices to do the job.

May is National Electrical Safety Month. Here at CPI, we think it's a great time to look around your home and check for potential safety hazards.

Remember, every electrical device has a purpose and a service lifespan. While we can extend their operations with maintenance and care, none of them are designed to last or work forever. When electricity is involved, failures can present electrical hazards that might be avoided with periodic inspections.

Ground-Fault Circuit Interrupters

Outdoor outlets—or those in potentially damp locations in a kitchen, bathroom or laundry room—often include GFCI features. They are designed to sense abnormal current flows, breaking the circuit to prevent potential electric shocks from devices plugged into the outlets.

The average GFCI outlet is designed to last about 10 years. In areas prone to electrical storms or power surges, they can wear out in five years or less.

Check them frequently by pressing the red test button. Make sure you hit the black reset button when you are done. Contact a licensed electrician to replace any failing GFCI outlets.

Loose or Damaged Outlets or Switches

Unstable electrical outlets or wall switches with signs of heat damage or



discoloration can offer early warnings of potential shock or electrical fire hazards. Loose connections can allow electrical currents to arc. If you see these warning signs, it may be time to contact an electrician.

Surge Protectors

Power strips with surge protectors can help safeguard expensive equipment such as televisions, home entertainment systems and computer components from power spikes.

Voltage spikes are measured in joules. Surge protectors are rated for the number of joules they can effectively absorb. That means if your surge protector is rated at 1,000 joules, it should be replaced when it hits or passes that limit. When the limit is reached, protection stops, and you are left with a basic power strip.

Some surge protectors include indicator lights that flicker to warn you when they have stopped working as designed,

but many do not. If your electrical system takes a major hit, or if you don't remember when you bought your surge protector, consider replacement.

Extension Cords

If you use extension cords regularly to connect devices and equipment to your wall outlets, you may live in an under-wired home. With a growing number of electrical devices connecting your family to the electricity you get from CPI, having enough outlets in just the right spots can be challenging.

Remember, extension cords are designed for temporary, occasional or periodic use.

If an extension cord gets noticeably warm when in use, it could be undersized for the intended use. If it shows signs of frayed, cracked or heat-damaged insulation, it should be replaced. If the grounding prong is missing, crimped or loose, a grounded cord will not provide the protection designed into its performance. Always make sure extension cords used in outdoor or potentially damp locations are rated for exterior use.

According to the Consumer Product Safety Commission, approximately 51,000 electrical fires are reported each year in the United States, causing more than \$1.3 billion in annual property damage.

Electricity is essential for modern living. CPI is committed to providing safe, reliable and affordable power to all of our members.

At CPI, we have taken safety to heart. For nearly five years we have not had any lost-time accidents. This success has taken proactive diligence and talking about potential safety concerns.

Let's all work together to be safe. ■

Your Cooperative AT A GLANCE

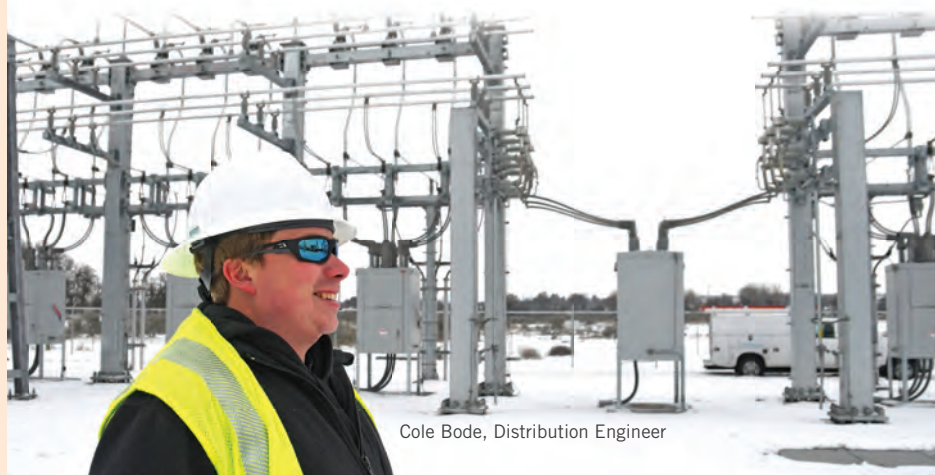
OPERATIONS & ENGINEERING

- Staff completed 428 work order packages in 2018, compared to 390 the previous year, to accommodate residential and other growth in UEC territory. Work included line extensions, site installations, and pump station and service upgrades. On a larger scale, UEC completed multiple transmission and distribution rebuilds for reliability and system efficiency.
- Three new substations, named Cottonwood, Quarry and Heritage Trail, supported industrial expansion in the Hermiston, Umatilla and Boardman areas.
- UEC installed two new 230-kilovolt switchyards and substations to provide bulk electricity to the membership from the cooperative's 230-kilovolt transmission line, which runs from McNary to the Westland area. The facilities put UEC into a higher league of reporting and compliance with the North American Electric Reliability Corporation and the Western Electricity Coordinating Council.
- UEC worked with NextEra in initial planning for a 22-mile, 230-kilovolt transmission line to deliver Wheatridge Renewable Energy Facility power to the Northwest power grid. The transmission line will be part of a "green energy corridor" planned by local, state and federal stakeholders that will connect multiple energy projects to Bonneville Power Administration's Morrow Flat Substation.
- UEC maintained 99.951 percent reliability for the year, compared to 99.934 percent the previous year. UEC's reliability is based on strong preventative maintenance programs for substations and power lines, and an aggressive tree trimming schedule. In 2018, UEC trimmed or removed 8,192 trees away from power lines.
- Construction began on the Oregon Trail Substation southeast of Boardman in November to support growing demand from irrigators.

For the full report, visit www.umatillaelectric.com.

MILESTONES in 2018

- Phil Hamm was elected to succeed Bob MacPherson as the District 4 representative on the UEC Board in April. Bryan Wolfe, a Board member since 1997, was re-elected to a three-year term in District 3.
- Bob MacPherson was honored for his 18 years on the Board of Directors with a resolution of appreciation. He had served on the Board since 1999, the 47th individual to do so since the creation of UEC in 1937. He represented District 4, the Stanfield and Columbia areas. He was similarly honored by the ORECA.
- Bryan Wolfe, UEC District 3 Director, was awarded the NWPPA Paul J. Raver Community Service Award in Boise in May. The award, NWPPA's top honor for community service among its 150 member utilities, cited Bryan for more than 40 years of community service on the local, state and national levels.
- Judy Mattox, bookkeeper, retired after 24 years. Kathy Moore, energy efficiency coordinator, retired after 18 years.
- Hoot Royer of Hermiston joined UEC as IT Manager, and Alec Shebiel of Portland as Government Relations Manager.



Cole Bode, Distribution Engineer



HUMAN RESOURCES

- Human Resources facilitated the hiring of nine employees, with a total of 82 staff members at year's end. A total of 91 employees are forecast by the end of 2019.
- Employees worked 155,799 consecutive hours without a lost-time injury during 2018. In recognition of a similar result from 2017, UEC was awarded first place in the 125,001-200,000 hours worked category at the NWPPA Safety Awards in Tacoma in April.

INFORMATION TECHNOLOGY

- Installation of cellular boosters at several substations increased the efficiency and reliability of data transfer from remote field locations to UEC headquarters.
- Preparatory work on an upcoming new Supervisory Control and Data Acquisition (SCADA) system will support activities in engineering and operations to better monitor, gather and process real-time data on the UEC power grid.

ENERGY EFFICIENCY

- Through a partnership with IRZ, UEC's Scientific Irrigation Scheduling program treated 39,446 acres, allowing irrigators to reduce water usage by 11,576 acre-feet and produced 10,861,317 kilowatt-hours per year of energy savings.
- UEC began offering Energy Saver Loans for heat pumps, windows, insulation, duct sealing and other residential energy efficiency upgrades. A main feature of the loan is called "on-bill financing," in which members repay the loan as a line item on their monthly energy bills.

FINANCE & ACCOUNTING

- A total of \$6.9 million in Capital Credits checks were mailed to UEC members in April and December.
- UEC's Revolving Loan Fund stood at \$1.38 million at the end of 2018 to assist local job creation. The loan committee consists of representatives from UEC, local government, and banking and business leaders.

"Within 20 minutes after we reported our problem there was a UEC representative at our home. It was hot out, but this man went to work to find our problem.

Along with two others they quickly had a hole dug. They continued to work until the problem was fixed. Thank you so much for your professionalism. You are greatly appreciated."

– John and Barb DuBois



Mikel Britt,
Journeyman Lineman



Central Electric Cooperative Line Foreman Andy Burford hands a door prize to a lucky CEC member. Photo by Courtney Cobb

CEC Annual Meeting

CEC focuses on growth, change and safety

By Courtney Cobb

It's no secret, Central Oregon is a great place to live, work and play. The region is one of the fastest growing in the country and continually hits top 10 lists for retirees, entrepreneurs and more.

"I recently read a Portland State University study stating 20 new people relocate to Central Oregon every day," President and CEO Dave Markham told members and guests at Central Electric Cooperative's 78th annual meeting. "But

with this growth also comes change."

Dave pointed out change forces everyone to become more flexible and adaptable.

"We are in a transitional period in the industry with more change taking place now than at any time in my 35 years in this business," he said. "At CEC, we have had to adapt and become more flexible because members' expectations about electricity service and the co-op have changed over the years."

In his speech, Dave covered a wide range of topics.

Cybersecurity

As consumers become more mobile and

online savvy, cybersecurity has become a concern. Every month, consumers hear another report of cybercriminals infiltrating large companies such as Facebook and Google and stealing millions of consumers' confidential information.

CEC is no stranger to these attacks. The co-op works diligently to protect members' information.

"In 2018, CEC experienced more than 332,000 attempted breaches of our network," Dave said. "This is more than one attempt every two minutes over an entire year."

CEC uses some of the strongest cybersecurity protection tools available and has yet to experience a breach.



Above, CEC Washington, D.C., Youth Tour delegate Micah Capson from Ridgeview High School shares his trip experiences with members while the board and fellow delegate AJ Robinson look on.

Left, CEC Board Members Kelly McFarlane, Dan Steelhammer, Beverly Clarno and Tom Strand share a laugh at the 78th annual meeting.

Photos by Brent ten Pas

capacity to ensure long-term safety and reliability of service to meet the region's growing power needs.

- **Energy efficiency.** From 2016 to 2018, CEC participated in a program that installed 24,000 free LED light bulbs and 600 high-efficiency showerheads. These installations will save members \$1.2 million in energy costs over the life of the measures.

- **Capital credits.** CEC has issued \$2.1 million in capital credits, paid out to members in 34 of the past 37 years.

"The cooperative continues to embrace changes across the board, and as the saying goes, 'We cannot rest on our laurels,'" Dave said.

To learn more about challenges for 2019 and beyond, read this month's President's Message on page 32.

Director Elections

With three CEC board of directors positions up for re-election this year and facing no opposition, the membership unanimously reelected directors Kelly McFarlane of Powell Butte, Beverly Clarno of Redmond and Shirley McCullough of Prineville. ■

Vegetation Management

After four years of federal advocacy and testifying before multiple congressional committees, cooperatives will see changes occur that help maintain their power lines on federal lands.

Historically, a request to federal land management agencies to perform routine maintenance or upgrades for safety/service reliability would—due to red tape—face extensive delays. Months, or in some cases years, could pass before permits were issued to perform work that could be done in hours.

A new law simplifies the approval process, minimizes the need to receive approvals when utilities' activities are consistent with previously submitted plans, and requires the use of schedules and timelines for approval when needed.

Dave said cooperatives should see cost reductions and efficiency improvements.

"This kind of reasonableness is something we don't see much of these days coming out of Washington, D.C., so it was a refreshing victory," he said.

Safety

CEC takes safety seriously, and it was a key message at this year's meeting. Safety demonstrations, educational articles in Ruralite, and distribution of protection gear to employees are just some of the many ways CEC reinforces safety in the workplace and the community.

"Safety has always been the highest priority at the co-op," Dave said. "As of April 12, employees have worked 531 days without a time-off work due to an accident."

This includes the record snow event in February, when line crews worked with little sleep to restore power to members as quickly and safely as possible. Dave referred to the restoration efforts as Herculean as crews battled the elements, fallen trees and lines, and waist-deep snow.

Other Highlights included

- **Rate redesign.** In its second phase, the redesign ensures fairness and equity for all co-op members. By 2025, monthly electric bills will reflect the separation of the fixed costs of operating the co-op from the variable cost of energy.

- **Electric vehicles.** CEC ranks as the sixth highest out of 39 Oregon electric utilities for the number of electric vehicles in its service area. CEC has responded to this growth by providing information about EVs, savings and more on its website, www.cec.coop.

- **Infrastructure improvements.** CEC continues its initiative to replace aging infrastructure such as underground cable and old power poles to ensure ongoing reliability.

- **Added capacity.** Substations are being strategically expanded to add

Irrigators: Save Money and Energy With Upgrades

By Courtney Cobb

As irrigation season gets into full swing, consider saving money and energy with efficiency incentives from Central Electric Cooperative.

Central Electric has three programs that offer cash rebates for efficiency upgrades to irrigation systems. They include sprinkler equipment, irrigation pump testing and the variable frequency drive programs.

“We really want to help our members to save energy and money with these cost-saving measures,” says Ryan Davies, CEC customer and energy services supervisor.

Sprinkler Equipment Program

The sprinkler equipment program provides members a cash rebate for eligible systems that upgrade the efficiency of equipment on wheel lines, hand lines or pivots.

“These measures not only help to reduce power consumption, but they also provide water-saving technology,” Ryan says. “This is very important to our rural irrigators on the high desert. They can improve efficiency and their crop yields. It’s a win-win for everyone.”

Cash rebate amounts vary, but include new impact or rotating type sprinklers,



Irrigators can receive cash rebates for upgrading their systems to energy-efficient equipment.

nozzles, gaskets, hubs, goose-neck elbows, pipe repair and other options. The sprinkler equipment rebate program is easy to navigate with the application at www.cec.coop. Members can include a copy of their receipt with the application once equipment is installed. A full list of eligible measures can be found as part of the application on CEC’s website.

Irrigation Pump Testing

To help lower the cost of professional pump efficiency testing, CEC provides a cash rebate through the irrigation pump testing program.

The test must be performed by an individual with pump-testing knowledge and experience. The rebate varies. The application provides a complete list of rebates available and instructions to take advantage of the program. Eligible systems must be electrically powered, 20 horsepower or greater, not have been tested through Bonneville Power Administration-sponsored pump testing services within five years and have been in operation the previous two years.

“It’s best to call CEC when looking at

possibly doing a pump test,” Ryan says. “We can walk irrigators through the process, talk about the options and get an idea of what the member is trying to accomplish so we can guide them in the right direction.”

Variable Frequency Drive

The variable frequency drive program provides a cash rebate to members who install a VFD to improve the efficiency of electrically powered irrigation pumps. Rebate levels vary based on the type of installation and existing pump type.

Eligible systems must either have at least a 20% variation in flow rates or a 10% variation or more on discharge pressure requirements. The account also must have at least three full years of typical energy use history prior to installation for evaluation purposes. CEC must approve the application before you order any equipment or work begins. ■

All of the program offerings here can improve the energy efficiency and the performance of your irrigation system. For more information, visit our energy-efficiency programs page, or call and ask to speak to one of our energy specialists.

CCEC Gives Back To Youth:



Kaylee Cover

What is the Washington Youth Tour?

Every June, about 1,800 high school students from across the country spend a week in the nation's capital as part of the Washington Youth Tour.

Participating in Youth Tour is an awesome way to learn about this great nation, develop leadership skills, gain a better understanding of electric cooperatives and make friendships that will last beyond the week.

The annual tour is coordinated by NRECA and sponsored jointly by NRECA, electric cooperatives such as Coos-Curry Electric and statewide electric cooperative associations such as the Oregon Rural Electric Cooperative Association.

To qualify, applicants must be a high school junior, live within our service territory and their parent/guardian must have an active membership in their name. Applicants are asked to submit a completed application and a short essay on how electric utilities offer a multitude of career opportunities with rewarding pay and benefits. Over the next several years, much of the workforce in co-ops will reach retirement age, allowing for even more opportunities in rural communities nationwide. Explore the different job opportunities available among more than 900 electric cooperatives across the United States and describe how your future educational goals and career interests may make you an ideal candidate for a career at your local electric cooperative.

We are excited to introduce our 2019 Youth Tour delegate, Kaylee Cover, from Brookings-Harbor High School. She will represent CCEC at Youth Tour June 13-20. Follow @CoosCurryElectric on Facebook, Twitter or Instagram to see more about her activities in Washington, D.C., and the Youth Tour in action. ■



2019 Scholarships Awarded

Your board of directors awarded six \$1,000 scholarships to local students. One scholarship was awarded to a student from each of the six schools throughout our service territory: Brookings, Gold Beach, Port Orford, Bandon, Coquille and Myrtle Point.

Students completed an application and 500- to 1,000-word essay describing how a cooperative can build a culture to best serve its members. They also had to demonstrate academic achievement and club and community service or leadership participation. Only students whose parents or legal guardians receive electric service from CCEC are eligible.

By giving back and investing in students who will attend school full time at an accredited vocational, technical, college or university this fall, we hope to encourage them to bring their skills back to their community. ■



Nathaniel Barnard



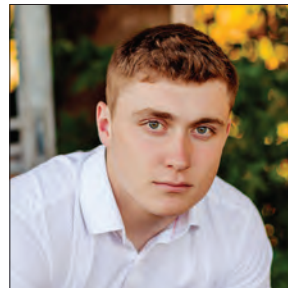
Mallory Burkart



Olivia McMahon



Morgan Miller



Brodie Parrish



Olivia Schmidt

| Recipient | School | College | Aspirations |
|-------------------|------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Nathaniel Barnard | Brookings Harbor High School | California Polytechnic State University or Carnegie Mellon University | Earn mechanical engineering degree and work in the field of prosthetics as it is rapidly expanding due to new technologies and methods of manufacturing. |
| Mallory Burkart | Quail Mountain Home School | Northwestern Christian University or Corban University | Major in forensic science and transfer to Colorado Mesa University for an advanced degree in forensic science; return to Oregon and work in investigations. |
| Olivia McMahon | Bandon High School | University of Oregon | Earn a bachelor's degree of science; become a registered nurse, with a certification in trauma. Nursing creates the opportunity for a stable economic future capable of supporting a family and an overall comfortable lifestyle. |
| Morgan Miller | Coquille High School | Lane Community College | Become a dental hygienist because I love working with and meeting new people every day. I think this would be a great environment to work in and keep me active, as well as learning new things daily. |
| Brodie Parrish | Myrtle Point High School | Oregon State University | Leaning toward mechanical engineering degree. I've always had a fascination with knowing how things work, and like the idea of having a good balance of desk and hands-on work. |
| Olivia Schmidt | Pacific High School | Linn-Benton Community College, then OSU, UO or Pacifiy University | Work toward a health-related bachelor's degree, then attend the National University of Natural Medicine to earn a master's in nutrition and perhaps a doctorate in Chinese medicine. |

Electrical Safety Lessons For Kids

By Meghaan Evans

We all know electricity plays a major role in our every-day lives, and it is a powerful resource that should be respected. Unfortunately, our children often do not understand the dangers of electricity.

At Coos-Curry Electric Cooperative Inc., we encourage you to share electrical safety tips and lessons with your little ones as often as possible. We also understand their attention spans are short, so here are a few creative ways to get them involved.

Consider designating an “electronics deputy.” The deputy should be responsible for pointing out electronics in your home that are not in use and keeping appliances safe from liquids. Reward your deputy for pointing out overloaded outlets or other potentially dangerous situations.

Emphasize the importance of fire prevention with your children and create a family fire drill plan as an extra precaution. Incentivize your children by rewarding those who follow the plan and make it safely out of the home.

While it is fun and engaging to turn safety into a game, it is important to ensure your children understand the risks they are facing if they do not practice electrical safety.

One of the most important safety tips you can give your kids is to avoid any downed power lines. In fact, it is best to avoid power lines,



Scenes from last year's Safety Camp, where first and second graders learned about bike and electric safety and how to call 911.

transformers and substations in general. A downed power line can still be energized, and it can energize other objects, including fences and trees. Make sure your kids understand the potential dangers of coming in contact with a downed power line or low-hanging wire.

If they encounter a downed power line, ask them to tell you or another adult to call CCEC at 541-332-3931.

Here are a few other safety tips you can share with your kids:

- Never put metal objects in outlets or appliances.
- Do not overcrowd electrical outlets.
- Never mix water and electricity.

No matter how you choose to get your kids interested in staying safe around electricity, CCEC is here to help. We offer programs at our local schools

and community events. We are proud to offer, for the second year, a free safety camp for children entering first or second grade in the 2019-2020 school year.

This year, the camp is June 1 at our Port Orford office. The program teaches kids how and when to call 911 during an emergency, fire safety, traffic/bike safety and electrical safety. Registration is open. Applications are due May 16. For more information, visit www.ccec.coop, or call 541-332-3931. ■

COOS-CURRY ELECTRIC COOPERATIVE

SAFETY CAMP

JUNE 1, 2019

43050 Hwy 101, Port Orford

FREE for kids entering 1st & 2nd grade
Space is limited - Register Today!

FREE SAFETY CAMP

Pre-Registration is required, download an application at ccec.coop or pick one up at any CCEC office. Space is limited.

Co-sponsored by:
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For info call:

541-332-6182

or visit

www.ccec.coop

Free Program for Kids to learn how and when to call 911 during an emergency, fire safety, traffic safety and electrical safety



The Birth of an Icon

Willie's Wiredhand's birthdate is traced to October 30, 1950. He was the creation of Andrew McLay, a freelance artist for the National Rural Electric Cooperative Association.

"We were toying with ideas for a rural electrification symbol," recalled William S. Roberts, editor of Rural Electrification magazine, NRECA's trade publication, in the 1950s. "I had tossed out the idea that the symbol ought somehow to portray rural electric service as the farmer's hired hand, which in those days was almost the entire PR story we had to get across. Drew picked up both the idea and a sketch pad one night at our home after a couple of beers."

On Roberts' living room floor, McLay gave birth to "Willie the Wired Hand." NRECA's membership selected Willie as their animated ambassador at the national meeting in February 1951. Soon, his name was shortened to "Willie Wiredhand."

McLay died of cancer in 1974 at the age of 52.

In the grand order of the spokes-character cosmos, Willie falls under "product personification."

"These characters were usually cast as 'loyal servants' of the consumer, deriving credibility from a message of dependability and devoted service," said Margaret F. Callcott, who extensively researched and wrote about these gesturing little pluggers of the advertising world.

Willie came along in the heyday of animated advertising characters. Hundreds—promoting everything from bleaches to stomach antacids—were in the marketplace. Callcott tracked their rise to the late 1890s when a French tire company created a guy made of what looked to be stacked tires: the Michelin Man. His tread hasn't worn out yet. A live-action smiling Michelin Man is in TV commercials driving in the rain and looking for his pet, a puppy with similar puffy rounded features, or lovingly inspecting each Michelin tire before it heads out the door.

"These characters exhibited personality ... a friendly face and jolly demeanor with which consumers could develop a positive relationship," Callcott wrote in her 217-page doctorate dissertation in 1993. She explained that with the rise of mass production and mass transportation at the beginning of the 20th century, companies needed a way to distinguish their products and, at the same time, build trust among consumers. They filled both needs in the fabricated characters who spoke through the emerging mass media.

For whatever reason, people connect and respond to these characters. They touch on a human need to personify things.

"By the time we reach adulthood, personification is ingrained in our psyche," Callcott said. "We name our vehicles, our plants, our guns and even our body parts, always seeking to relate to



them on some human level, never quite believing that somehow they don't have a soul of their own."

The personification of animals and inanimate objects goes much deeper into human history, though.

"This need to place ideas and objects on a human level dates back to ancient times, when gods were created to personify abstract concepts such as strength and love, as well as little understood natural forces like sunshine and thunder," Callcott said.

In modern times, personification allows consumers to get to know new products and little-understood services. Instead of the gods of war and harvest and love, into the modern pantheon came humanized symbols for snack foods, household cleansers, stomach antacids, canned vegetables and glue-all, which people could know on a first-name basis. Instead of Thor, Apollo, Demeter and Aphrodite came Mr. Peanut, Mr. Clean, Speedy Alka-Seltzer, the Jolly Green Giant and Elsie the Cow.

"Gas and electric companies in particular have had the challenge of personifying a very intangible product," Callcott said. "Reddy Kilowatt, Willie Wiredhand, Katie Kord, Handy Heat and Miss Flame were among the many characters created to answer this challenge." ■

Story courtesy of Richard G. Biever, senior editor of Indiana's Electric Consumer. This was written in 2001, in honor of Willie's 50th birthday. Willie Wiredhand is a registered trademark of the National Rural Electric Cooperative Association and cannot be used without permission of NRECA.

Next month:

Willie Wiredhand goes to court as Reddy Kilowatt owners allege trademark infringement

would be without power *and* stranded at home.

Thankfully, we have a woodstove for heat, but we were still less comfortable than usual. We also had extra blankets and sleeping bags we used at night. We have a generator and plenty of water on hand. We cooked and boiled water with our propane camp stove outside. For extra light, we had candles and battery-operated flashlights and lanterns.

Even though we had the generator for our refrigerator, freezer, well pump, some lights and satellite internet, I knew we didn't have enough gas to run it 24/7 for several days. We stored food outside in coolers because the temperature outside was cold enough.

Fortunately, the roads cleared enough after the first two days to make a trip to town to get supplies, but everyone else was doing the same. Many stores and gas stations were closed because of the snow and no power. The line of cars for one of the open gas stations in town circled the entire parking lot and trailed into the main road. A tanker trying to get to the station got stuck in the snow. It was like a scene from a zombie apocalypse movie!

Luckily, we were able to get some of the last propane out of an exchange cage. Even still, we had to resupply gas a few more times before power was restored.

After the roads opened and my home was stabilized, I was able to make it back to work to help support Lane Electric's power restoration efforts, which meant working long hours and returning home briefly to rest and check on my family.

I know now that I was not as prepared as I should have been. I have learned I need to be prepared for up to a month. This begins with improving my family's disaster plan, including preparing a reconnection plan if we are in different locations when disaster strikes. I will also talk about emergencies more with my neighbors so we know how we can rely on each other when we need to. And I most definitely will keep more safely stored fuel on hand.

One thing I'm thankful for is that my family stayed safe, with no major injuries or health conditions.

Prepare Little by Little

Putting together disaster preparedness supplies can be daunting and costly if you try to do it all at once. My recommendation is to think of it like paying for insurance or putting money into a savings account. Little contributions over time end up providing huge



relief when it's really needed.

My first suggestion is to make a plan. The Red Cross offers plan templates at www.redcross.org. Another helpful resource is www.ready.gov.

As your budget allows, start investing in what you need to be prepared, and you will be ahead by the time the next lengthy power outage strikes. In next month's Ruralite, we will include a three-month shopping calendar to help guide you.

The February snowstorm was a wake-up call for me and for the dozen other Lane Electric employees who were also without power. We are doing what we can to be more prepared for future outages and encourage our members to do the same.

As if a big snowstorm wasn't enough, not long after the snow melted the Willamette Valley experienced unprecedented late-season rain that caused flooding and evacuation orders throughout the area. I took the photo above of a home near Row River Road.

Between the snowstorm and this event, I increased my fuel supply from 5 to 15 gallons. Thankfully, the flooding did not cause any damage to my home or disrupt my power, but it certainly was sooner than I expected to face another major weather event.

All in all, my main lesson learned is: the time to prepare is *now*. ■

Just five weeks after the snowstorm, historic April showers drenched the Willamette Valley, causing severe flooding throughout the area.

Snowstorm 2019: The Facts & FAQs

Following is the second in a series of articles related to the devastating snowstorm in late February that caused significant outages throughout the Lane Electric Cooperative service territory. It answers common member questions and provides information for future preparedness.

By Lindsey McCarthy

Why don't you underground the lines so this doesn't happen again?

While undergrounding the entire system would, in theory, reduce tree-caused outages, there are many reasons why we cannot do that. The first is cost.

When we ran the numbers after the 2016 ice storm, undergrounding all 675 miles of overhead wire would increase each members' monthly bill by \$73.75 for approximately 30 years. We are crunching the numbers again, but it's likely that number is higher, three years later, with increased costs of labor and materials.

There are other reasons, including regulatory rules and restrictions, prohibitive geography, environmental concerns and differing member opinions. Not everyone agrees with undergrounding the lines.

Lastly, undergrounding isn't a cure-all solution for reducing outages. If we were to experience a flood or an earthquake, lines underground lines may not be saved from destruction.

That said, we continuously analyze areas of our system that would benefit from undergrounding lines. When it is cost effective and feasible, we budget for that investment in our infrastructure.

As part of the restoration efforts after this snowstorm, we completed an undergrounding project along Highway 58 instead of repairing the damaged lines above the highway in the trees. This was a capital project we budgeted to do this calendar year anyway, so our engineering team activated the plan with contractors to get it done sooner



Kevin Bradley, who worked mainly in Oakridge during the snowstorm outage restoration, was recently awarded a serviceman position and is assigned to work in the Oakridge District. Congratulations, Kevin! He's pictured here on Highway 58 when it was closed to only emergency and utility vehicles. He was scoping the site where undergrounding occurred. The poles and wire were moved from behind him up in the trees to the other side of the highway, where they are now more accessible.

than planned.

We will continue to analyze areas of our system in a similar fashion and, when it makes sense, underground portions of line.

How much does all this restoration work cost, and who is paying for it?

At press time, we were still calculating the total cost of LEC's historic restoration work, but our estimate is nearly \$6 million. Following the snowstorm, the governor's State of Emergency for Lane County opened the door for Federal Emergency Management Agency funding. We can't imagine why that wouldn't be approved. FEMA funds were approved for damage done during the 2016 ice storm—which cost LEC \$2 million—but the federal government has up to a year to decide.

Our accounting department has

submitted our estimate to the state, which will make the request of the White House for FEMA assistance.

For any amount not covered by FEMA, the co-op would borrow from our lender and members would re-pay that amount through their rates over a period of up to 30 years. We will attempt to get as much federal funding as possible to limit the impact on our members. ■

NEXT ISSUE: More disaster preparedness information.

Generator Safety Tips

During any outage, we want to make sure members with generators are using them properly—and safely. Turn to page 25 for more information.

Electric Co-ops are Engines of Economic Development

By Dan Riedinger

Blachly-Lane Electric Cooperative is deeply committed to providing affordable and reliable electricity to our consumer-members and empowering the communities we serve. This means being more than just an electricity provider; it means being a partner in economic development and other activities that improve the lives of our members.

But have you ever stopped to wonder what kind of impact the nation's roughly 900 electric co-ops have across the United States?

A new report on this topic shows electric co-ops supported nearly 612,000 American jobs and contributed \$440 billion in U.S. gross domestic product from 2013 to 2017, or \$88 billion annually. Those are some big numbers.

The study, "The Economic Impact of America's Electric Cooperatives," was conducted by FTI Consulting for the National Rural Electric Cooperative Association and the National Rural Utilities Cooperative Finance Corp.

The report quantifies what many rural American families and businesses know well: Electric cooperatives are powerful engines of economic development in their local communities.

Affordable and reliable electricity is a key ingredient for a successful economy. Because electric co-ops were built by, belong to and are rooted in the communities they serve, they play a vibrant role as economic cornerstones for millions of American families, businesses and workers.



Access to electricity was a vital component of economic development and diversification in the mid-20th century, and that remains true today. Roughly one in eight residents nationwide is served by an electric co-op, meaning direct co-op employment and investments can ripple throughout the economy and create additional economic value for local communities, regions and the country.

From 2013 to 2017, electric co-ops contributed \$881 billion in U.S. sales output, \$200 billion in labor income and \$112 billion in federal, state and local tax revenues.

Nationally, electric co-ops spent \$359 billion on goods and services across the economy, including \$274 billion on operational expenditures, \$60 billion on capital investments, \$20 billion on maintenance and \$5 billion on credits retired and paid in cash to members under the membership structure of cooperatives.

In conducting its analysis, FTI Consulting used data from 815 distribution cooperatives and 57 generation and transmission cooperatives as inputs into a national model to simulate the economic effects from the direct expenditures by co-ops. The model also calculates the indirect effects throughout the industrial supply chain and the induced effects from consumer spending by the employees of co-ops and their suppliers.

The result of all this effort is a first-of-its-kind study that reveals electric cooperatives to be economic anchors all across rural America. It demonstrates on a macroeconomic scale one of the seven guiding cooperative principles: Concern for Community. ■

POWERFUL CONNECTIONS

The Economic Impact of America's Electric Cooperatives

In 2017, electric cooperatives...

Supported

611,600

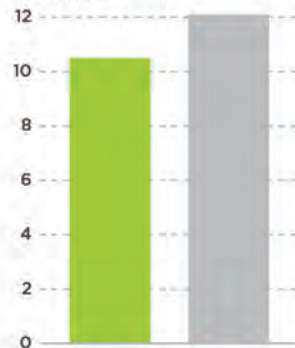
American jobs.

- **165,800** direct jobs
- **170,900** indirect jobs
- **274,900** induced jobs*



*Jobs that are created as a direct or indirect result of the work electric cooperatives do.

Taxes in billions of dollars



Generated

\$22.5 billion

in federal, state and local taxes.

- **\$10.5 billion** in federal tax
- **\$12.0 billion** in state/local tax

Contributed

\$88.4 billion

to U.S. GDP, including

\$40.4 billion

in labor income to American workers.





Automated Meters Successfully Deployed at CVEA

| | | |
|--------------------------------------------------------|--|--|
| Account Number: 000001347409 | | |
| Address: FAIRBANKS & HAZLETT | | |
| Location: | | |
| Old Meter: 92122527 | | |
| Out Read: 1739 | | |
| Demand: 0.132 | | |
| New Meter: KZD79820877 | | |
| Seal Number: 52535 | | |
| Module Number: 56206488 | | |
| Route: 014 | | |
| Latitude: 61.13030332 | | |
| Longitude: -146.35975155 | | |
| Date Changed: August, 10 2018 15:18:49 | | |
| Trouble Code: | | |
| Failed Attempt: | | |
| Failed Date: | | |
| Tech ID: CVEA01 | | |
| Comments: <input type="text" value="Comments"/> | | |

Photo courtesy Anixter Power Solutions

Copper Valley Electric Association has installed new, automated meters to increase the efficiency and reliability of the electric system in CVEA's service territory. Improving the efficiency of both operations and electricity delivery within the existing electric distribution system can help keep down costs for members.

The biggest change? The automated meters will enable the Cooperative to perform several functions remotely, such as reading meters and reconnecting power. Remote meter reading will save time, labor and money. In fact, the metering system is expected to pay for itself within eight years.

In addition to reducing operational costs, the new meters, which can receive and send information to computers at the dispatch center at Solomon Gulch and to the Co-op headquarters, will help improve the reliability of the system.

The technology allows CVEA to detect problems more quickly and to locate outages more precisely. In some cases, problems may be fixed before members even know their power has been out. The meters will also report when power has been restored. CVEA will know if there are single member outages without relying solely on a phone call from that member.

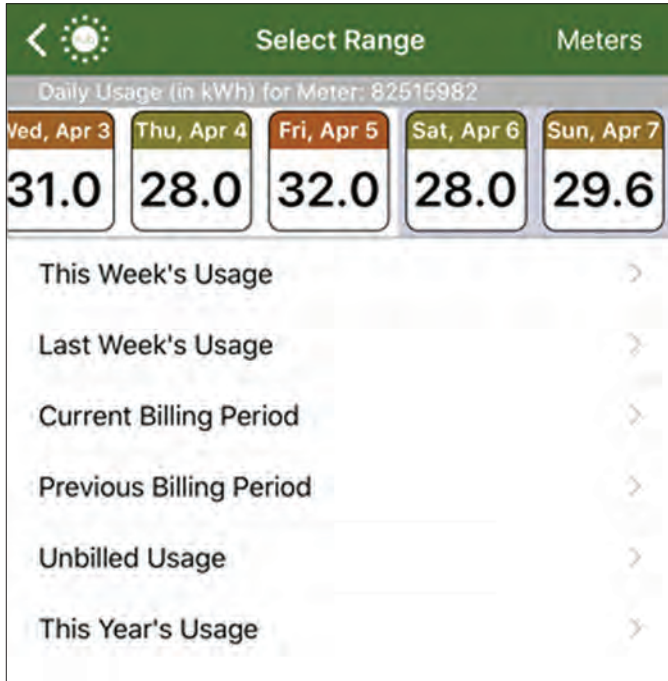
The new technology allows the team to monitor the electrical system in almost real-time. This information can be used to make the process of delivering power much more efficient. Members can also expect to experience fewer blinks, surges and spikes as a result of the upgrade.

The meters, which provide daily information about power use will help consumer-members understand how and when they are using electricity. Armed with this information, CVEA's customer service representatives will be better able to help members address unusual circumstances and billing inquiries.

According to Travis Million, CVEA COO, "The AMI project is very exciting for CVEA and the membership. Not only will this project save the co-op time, money, and improve the safety of our team, but the ability to identify and respond to outages in a much quicker and more tactical way will be very beneficial. I know the entire team is thankful to have the new tools in place, allowing them to provide better service to the members."

CVEA began deploying the AMI meters in July 2018 in the Valdez District. The process of replacing a meter consisted of taking a final read and picture of the original meter, removing the original meter, installing the new meter (which in most cases was so quick that the homeowners microwave and oven clocks didn't need to be reset), scan the new meters bar code, capture a GPS waypoint of the meter location, and take a picture of the new installation. This information is kept in a database, should the information be needed in the future.

The Valdez meter deployment was lead by CVEA's Valdez linecrew foreman, Todd Stahley, and assisted by CVEA meter reading contractor, Tom Johnson. A majority of utilities sub contract the meter deployment to keep a dedicated crew on the



project and typically speeding up the deployment process.

After talking to other utilities who have taken this approach, it appears that CVEA met or exceeded the contractor deployment rate of nearly 110 meters per day.

One of the big advantages of utilizing in-house resources is that it provided the opportunity to inspect every meter base on the system. CVEA was able to identify a number of meter bases that had given to age and extreme weather, and could have become serious safety hazards. Thankfully, those meter bases were corrected by working with the property owners.

The Copper Basin deployment began in January 2019, due to delivery timing of the meters. The team was lead by Glennallen linecrew foreman, Mark Kirkpatrick, working with Tom Johnson. Two big challenges the Copper Basin team faced were weather and long distances between service locations. Even with these difficulties, they averaged nearly 90 meters per day, and had completed deployment by the end of February, three months ahead of the May 2019 schedule. In total the teams deployed 3,773 meters between the two districts.

There are multiple benefits that the new meters provide, some we've already experienced since deployment. CVEA successfully read the meters remotely for the March and April billing cycles, system wide, eliminating the need for a meter reader, and reducing the potential risk for vehicle accidents or injury to the meter reader. Additionally, the meters provide daily reads, rather than once per month, so higher than normal usage has been detected much more quickly, allowing the Co-op to contact members prior to the end of the cycle and before racking up a costly power bill.

There will be additional benefits as we move forward. The Co-op will implement an outage notification module which will notify the dispatch operators at Solomon Gulch when a meter

or group of meters lose power. This will also enable dispatch to identify the closest outage causing device so they can provide more accurate information to the line crews looking for the cause. All of these benefits are expected to lead to reduced outage response and duration times.

Pre-paid billing is another module that will be deployed in the future. Pre-paid billing is a program that allows the member to put a pre-determined amount of money onto their account. That money will pay for usage, and members will be notified when the amount of energy they have used has caused the balance to fall below a set threshold, \$20 for example. The member will then add more money to their account at their leisure, prior to using all available credit on the account, rather than once a month. This allows the member to pay for what they wish to use, when they wish to use it; sort of a 'pay as you go' program.

CVEA received a few concerns as the new meters were being deployed. The first had to do with radio frequency (RF) radiation. A common AMI meter type uses RF signals to communicate to the substations. However, the meters CVEA selected communicate utilizing a technology called 'power line carrier', in which a small voltage signal is sent back to the utility using the existing power lines between the meter and the substation. The type of meters CVEA selected do not produce RF radiation.

Another concern was of privacy issues and CVEA's ability to control appliances in the member's home. It is true that there are AMI meters that have the ability, with approval from the member, to control various appliances such as air conditioners, refrigerators, and electric hot water heaters. This application is utilized in areas where the utility purchases power from the open market. There are points when the cost to purchase electricity above a certain peak (amount of power needed) can be very costly. By turning off appliances at times when the system peak load is high, they can save their consumers money.

Because CVEA generates our own power, keeping peak loading low is not a significant concern. When purchasing the AMI meters CVEA elected to forego this option. The information CVEA receives from the new meter, on a daily basis, is the amount of energy used (kWhs) and peak demand (kW). Members can view their daily energy use through the SmartHub mobile app or online at cvea.smarthub.coop.

CVEA is very proud of this project and the team that worked diligently to ensure the project's success. This project is another way the Cooperative is improving reliability and reducing expenses for members.

For additional questions, review the information on cvea.org or contact Sharon Scheidt at 907-822-5506, 907-835-7005, or email scheidt@cvea.org. ■

Opposite, Anixter software showing meter details and location information used by the team for deployment
Above, daily usage as shown on the Smarthub app and website

Electric Rates to Change May 1

An increase of 5 percent will be reflected in the Tillamook PUD rate schedule

Beginning with billing statements generated on or after May 1, 2019, customers will see a 5 percent rate adjustment. For residential customers, this will result in, on average, a \$6 impact to your monthly bill.

Tillamook PUD has been able to keep customer rates fixed since 2015. During this time, operating costs continued to increase, as did the rates passed on by our primary power supplier, the Bonneville Power Administration.

Each year in late summer/early fall, Tillamook PUD begins developing the district's budget for the coming year. During this process, staff evaluates several factors as it reviews the district's current financial position and the projected fiscal outlook for the coming year and future.

When considering a rate change, staff also looks at the use charge and the basic charge (defined on the opposite page). The lower the basic charge, the higher the use charge has to be so revenues can cover the utility's operating costs. Conversely, the higher the basic charge, the lower the use charge.

Why is this?

When the basic or "fixed" charge is set at the appropriate level, resulting revenues will pay for the day-to-day costs of operating the PUD without having to rely on energy sales, which tend to be higher when it's cold and lower when it's warmer. Remember, the PUD has operating costs to pay whether or not it sells a single kilowatt-hour.

Identifying and analyzing essential infrastructure improvement projects, as well as factoring in utility operating costs



The Tillamook PUD basic charge covers the cost of making power available to every customer including putting up the poles and wires that carry the power to your homes and businesses. Apprentice Lineman Brandon Oldenkamp, top, and Journeyman Lineman Simon Hagerty string conductor.

and future inflation, are a fundamental portion of our rate assessment. We finance long-term improvement projects and borrow funds so each generation of customers share the cost and the benefit of these projects.

The basic charge across all rate classes is shared by all Tillamook PUD customers. The kWh rate helps Tillamook PUD collect only the revenue it needs to meet operational goals. The cost to deliver that energy to you across many miles is more

appropriately collected in the basic charge that stays the same each month regardless of how much energy you use.

Many factors were considered during the 2019 budgeting process, including inflationary impacts and BPA rate increases over time. Staff recommended an 8 percent increase to take place in fall 2019. This was initially approved by the board of directors in the 2019 budget. However, at the start of the new year, the board of directors discussed rate adjustment options further and decided to approve a rate increase of 5 percent for all rate classes effective with meter reads beginning May 1, 2019, rather than increasing rates by 8 percent in the fall. The ability to implement an increase earlier in the fiscal year made it feasible for the rate increase to be lower than projected.

Meeting operational needs with affordable rate structures continues to be a focus of the board of directors. The board, and all Tillamook PUD employees, are committed to operating efficiently to provide you with safe, reliable, and affordable electric service. We also offer energy-efficiency programs to help you reduce your energy use, which can help decrease your monthly electric bill, and increase the comfort and convenience in your residence or business.

If you are interested in more information about our energy conservation programs or need assistance with your bill, contact us at 503-842-2535. Detailed rate schedules and sample billings are available at www.tpud.org. ■

Examples of Monthly Effect on Residential Electric Bills (Including Basic Charge)

| Average Residential kWh Use Monthly | Basic Charge 2018 | Basic Charge as of May 1, 2019 | kWh Charge 2018 | kWh Charge as of May 1, 2019 | 2018 Rates | May 1, 2019 Rates | Dollar Difference |
|-------------------------------------|-------------------|--------------------------------|-----------------|------------------------------|------------|-------------------|-------------------|
| 1,300 | \$22 | \$23.10 | 0.073 | 0.077 | \$116.90 | \$123.20 | \$6.30 |

What Is a Basic Charge?

Whether you use 1 kilowatt-hour, 100 kWh or 1,000 kWh of electricity, certain expenses remain the same to bring power to your home or business. These are called fixed costs. Fixed costs do not vary based on the amount of electricity consumed. They include poles, wires, equipment, trucks, labor and operating systems, all of which must be in place to make sure customers receive safe and reliable electric service.

To make sure the recovery of these fixed costs is not solely dependent on kWh sold, customers' bills include a basic charge to augment the energy or kWh charge.

A 5 percent rate increase will occur beginning with May 1, 2019, meter reads.

How Rate Decisions Are Made

The responsibility for changes in Tillamook PUD's rates begins with a cost-of-service analysis. Then a recommendation from staff is provided to the board of directors for approval and adoption. Residents of each district throughout our service territory elect directors to represent the best interests of customers. In accordance with the district's policy and procedural guidelines, making and setting policies such as rates is one of the Tillamook PUD board of directors main responsibilities.

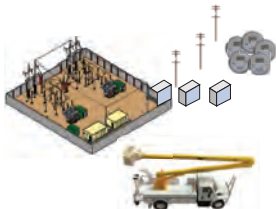
At the direction of the board, staff develop several alternative rate schedules and provide the impacts each rate schedule would have on a customer's bill at varying levels of electricity use. The board evaluates the alternatives for affordability and fairness to all concerned, and considers whether the proposed rate adjustment will support the PUD's cost of operations adequately.



A Simple Look at Fixed Costs and Use Costs and How They Impact Us

Fixed Cost Analogy ...

Substations, trucks, poles, wires, transformers, meters, etc. (the PUD's property) and personnel are referred to as "plant." The PUD finances its plant over 15 to 25 years and must make monthly payments whether or not a single kWh is sold. These are "fixed costs."



Whether a complex electric distribution system or a passenger car used for transportation, there are fixed costs for having both in place and available for use at any time.

Generally, vehicles (*your property, or "plant"*) are financed over extended periods of time like the PUD's plant. Monthly payments must be made to the lending institution whether or not the car is driven a single mile. Your monthly car payment is a "fixed cost," just like the PUD's fixed costs.



Then There's The Use Costs ...

The basic charge pays for the PUD's infrastructure (fixed costs) so you can have electricity at your home 24/7 whether you use any or not. Your appliances then use energy (*kilowatt-hours*) that are delivered to your home over the electric system. You are charged for the kWhs your appliances use and will see this charge on your electric bill.



TVs, ovens, microwaves, electric heat, lights, refrigeration, air conditioning ... they all add up!

Similarly, your car payment provides you with a vehicle (infrastructure) so you can come and go 24/7, if you choose. When you elect to use your car, the other costs begin to mount, adding to your total car expenses for the month. Simply put, the more you drive, the higher your monthly car expense—just like your electric bill. It's the same principle.



Maintenance, fuel, oil, repair bills, tires, insurance ... they all add up!

The Tree Service, based in Burns, is OTEC's tree-trimming contractor in the four counties the co-op serves.

Photo courtesy of Brandon Baron



OTEC's Tree-Trimming Program Aims to Prevent Power Outages

By Susan Parrish

Trees that grow too close to power lines can cause outages or create other hazardous conditions. Oregon Trail Electric Cooperative's tree-trimming program is a key part of the co-op's strategic mission to safely and reliably deliver power.

Crews provide proactive power line maintenance, which includes trimming branches and removing trees that pose a threat to safety and uninterrupted electric service.

Mike Mitchell, general foreman at OTEC, is responsible for overseeing the cooperative's

tree-trimming program to ensure power lines aren't compromised. The program follows a two-year rotation managing trees along power line rights-of-way on both public and private land in Baker, Grant, Harney and Union counties.

"OTEC has over 3,000 miles of distribution lines," Mike says. "We've planned a tree-trimming rotation so that trees along every right-of-way are examined every two years. All the tree trimming we do is mandated at the state and federal levels, but regardless, we believe it's the right thing to do for

OTEC members. We've worked really hard to open up our rights-of-way the past six to eight years to avoid snowfall compromising trees on power lines."

System reliability studies conducted by OTEC's engineering staff show the tree-trimming program's rotation has resulted in fewer incidences of trees falling into lines and causing outages.

OTEC's tree-trimming contractor is The Tree Service, based in Burns.

To maintain tree health, trees are trimmed using American National Standards Institute best arborist practices. Owner Brandon Baron employs an ANSI arborist to oversee trimming practices to ensure the best outcome possible for trees and to keep OTEC's electric system safe.

Brandon's crews use bucket trucks that extend to 75 feet. Climbers are used when bucket trucks are not a good option.

Mandated Standards

OTEC's vegetation management program to maintain electric safety and service reliability is required by state and federal regulations.

The Oregon Public Utility Commission defines utility tree-trimming standards as provided by the National Electrical Safety Code: "This policy is to set forth the specifications and guidelines relating to tree trimming, tree removal and line clearance to provide for reasonable service continuity, safety to the public and to guard against forest fire damage caused by supply conductors."

OPUC requires OTEC to maintain utility line minimum clearances of 10-feet for transmission lines, 5-feet for distribution lines and 1 foot for service conductors of 600 or fewer volts.

Line-clearance minimums must be maintained for the duration of the two-year trim cycle. That means trimming trees to a 13-foot clearance around transmissions lines, for example, to allow for new growth and still maintain the 10-foot clearance minimum until the next trimming cycle.

"We want to make sure we maintain our OPUC clearances throughout the system so that there are not safety problems for the public," Brandon says. "Sometimes these clearances are more than what people like to see, but those standards are set by the Public Utilities Commission."

Responding to Emergencies

During an emergency, such as a wildfire or windstorm, OTEC consolidates resources. A

OTEC's Tree-Trimming Program

Oregon Trail Electric Cooperative maintains 3,049 miles of distribution and transmission power lines and 43,667 power poles.

OTEC's tree-trimming program follows a two-year rotation managing trees along power line rights-of-way on both public and private land.

Oregon Public Utilities Commission requires OTEC to maintain these utility line clearances:

- ▶ Transmission lines: minimum 10-foot clearance.
- ▶ Distribution lines: minimum 5-foot clearance.
- ▶ Service conductors: minimum 1-foot clearance.

Members who have trees encroaching into OTEC's right-of-way or damaged trees that could fall into power lines should call their local OTEC office:

- ▶ Baker County: 541-523-3616
- ▶ Grant County: 541-575-0161
- ▶ Harney County: 541-573-2666
- ▶ Union County: 541-963-3155

May 25, 2018, windstorm in Burns brought gusts up to 57 miles per hour, causing power outages and uprooting trees. The storm caused extensive damage.

"There were houses smashed, cars smashed, trees everywhere," Brandon says. "We pulled all our resources to Burns for about a week cleaning up that disaster."

After a wildfire, tree-trimming crews remove trees that have fallen into the line. Following the Canyon Creek Fire in the John Day area, Brandon says the area has seen a rise in tree mortality due to fire stress and beetle kill after beetles moved into the fire-affected area.

"We have to look at those lines every six months to remove dead trees that could compromise OTEC's electric facilities," he says. "That's something we'll continue to do this spring after the ground firms up."

Mike says OTEC members with tree-related issues regarding power lines should call their local OTEC office.

"We assist our members with tree removal under certain conditions when a tree may be threatening our power lines," he says. "But a tree has to qualify for our guidelines."

Once OTEC receives a call from a member about a potential issue with a tree, the cooperative always goes on site to see if it is a threat to OTEC power lines. ■



May is National Electrical Safety Month. It's a great time to look around your home and check for safety hazards.

Photo courtesy of Getty Images

Safety Starts With You

Stay alert and look around for electrical hazards in your home

Electricity plays many roles in our lives, from powering baby monitors, cellphones and lighting to running HVAC systems and appliances. It's no wonder we get so comfortable with electricity's instant availability that when we flip a switch, we expect most systems or devices to do the job.

May is National Electrical Safety Month. At Oregon Trail Electric Cooperative, we think it's a great reminder to look around your home and check for safety hazards.

According to the Consumer Product Safety Commission, approximately 51,000 electrical fires are reported each year in the U.S., causing more than \$1.3 billion in annual property damage.

Every electrical device has a purpose

and a service lifespan. While we can extend their operations with maintenance and care, none of them are designed to last or work forever. When electricity is involved, failures can present electrical hazards that might be avoided with periodic inspections.

Surge Protectors

Power strips with surge protectors can help safeguard expensive equipment such as televisions, home entertainment systems and computer components from power spikes.

Voltage spikes are measured in joules. Surge protectors are rated for the number of joules they can effectively absorb. If your surge protector is rated at 1,000 joules, it should be replaced when it hits

or passes that limit. Protection stops when the limit is reached.

Some surge protectors include indicator lights that flicker to warn you when they have stopped working as designed, but many do not.

If your electrical system takes a major hit—or if you don't remember when you bought your surge protector—replacement may be the best option.

Outlets and Switches

Unstable electrical outlets or wall switches with signs of heat damage or discoloration offer early warnings of potential shock or electrical fire hazards. Loose connections can allow electrical current arcing. If you see these warning signs, contact an electrician.



Ground-fault circuit interrupters instantly break an electric circuit when a short develops.

Photo by R. Roth/Adobe istock

Ground-Fault Circuit Interrupters

Outdoor outlets or those in potentially damp locations in a kitchen, bathroom or laundry room often include ground-fault circuit interrupters. GFCIs are designed to sense abnormal current flow, breaking the circuit to prevent potential electric shocks from devices plugged into the outlets.

The average GFCI outlet is designed to last about 10 years, but in areas prone to electrical storms or power surges, they can wear out in five years or fewer.

Check them frequently by pressing the red test button. Hit the reset button when you are done. Contact a licensed electrician to replace any failing outlets.

Extension Cords

If you use extension cords regularly to connect devices and equipment to your wall outlets, you may live in an underwired home. With a growing number of electrical devices connecting your family to the electricity you get from OTEC, having enough outlets in just the right spots can be challenging.

Extension cords are designed for temporary, occasional or periodic use.

If an extension cord gets noticeably warm when in use, it could be undersized for the intended use. If it shows

Spring Into Safety With National Electrical Safety Month

Every day, we rely on electricity to power our homes and offices. However, it is important to always be safe around electric appliances, equipment and power lines. May is National Electrical Safety Month, and it's a great time to raise awareness on how to avoid electrical hazards.

By following simple safety tips, everyone can avoid electrically related fires, fatalities, injuries and property loss.



Indoors

- ▶ Check electric cords for fraying or cracking. Replace cords that may be damaged. Don't overload electric outlets.
- ▶ Extension cords are intended to be temporary. They are not intended as permanent household wiring.
- ▶ Do not run cords under carpets or rugs. Do not tack or nail cords to walls or floors.
- ▶ Keep electric appliances and tools away from water. Never reach for or unplug an appliance that has fallen into water until you have turned off the power at the breaker.
- ▶ Never put anything other than an electrical plug in an outlet. Use outlet covers or caps to protect children.
- ▶ Keep your home's electrical system in good repair. Contact a licensed electrical contractor if you have flickering lights, sparks, non-functioning outlets, or need wiring repairs or upgrades.

Outdoors

- ▶ Never touch downed power lines.
- ▶ Always call your local utility or 911 if you see lines down.
- ▶ Watch for overhead lines every time you use a ladder, work on roofs or trees, or carry long tools or loads. Keep kites, model airplanes and metallic balloons away from power lines.
- ▶ Know what's below before you dig. At least three days before starting any digging or excavating project, call 811 to have underground utility lines, pipes and cables marked for free.
- ▶ Avoid planting trees underneath power lines or near utility equipment.

signs of frayed, cracked or heat-damaged insulation, replace it. If the grounding prong is missing, crimped or loose, a grounded cord will not provide the protection designed into its performance.

Always make sure extension cords used in outdoor or potentially damp locations are rated for exterior use.

Electricity is an essential necessity for modern living. OTEC is committed to providing safe, reliable and affordable power to all of our members. We hope you keep these electrical safety tips in mind so you can note any potential hazards before damage occurs—and keep yourself and your family safe. ■



Beware of Thin Ice

You have heard the warning: Do not tread on thin ice. But it is not that easy to tell when and where the ice is safe.

Why is it tricky to know?

- Ice is not uniformly thick. Ice on a single body of water might be 6 inches thick in one spot, but only 1 inch thick in another part.
- Not all bodies of water are the same. Even if it has been cold for several days in a row, some bodies of water take longer than others to freeze. It all depends on their size and depth.
- Ice cannot be measured from a distance.

Satellites can tell us about ice cover, but not about thickness. No obvious visual cues show if ice is 4 inches or 12 inches thick. The only way to know is to go out on the ice and use a tape measure.

How thick does ice need to be to be safe?

Ice should be 4 inches for walkers, 5 inches for ATVs or snowmobiles, 8 to 12 inches for cars and small trucks, and 12 to 15 inches for larger trucks.

To check thickness, measure the ice every foot or two as you walk—or check on conditions with a local shop or search and rescue. If ice near the shore is cracked or mushy, do not go out on the ice. ■

Plug Into Electrical Safety

Check your home to make sure you aren't exposing your family to unnecessary risks

By Pam Blair

Electricity helps keep your home comfortable, light the walkway to your door, clean your clothes and prepare your meals.

Used safely, it helps make everyday life easier and more comfortable. But used improperly, it can be deadly.

All it takes to begin the flow of electricity is plugging something into an energized outlet. Whether that's a cord in good condition or a child's finger, the result is powerful.

The Electrical Safety Foundation International offers these do's and don'ts to help you determine whether you are living with any electrical safety risks:

- **Outlets.** Avoid overloading outlets. Check for outlets with loose-fitting plugs, which can overheat and lead to fire. Replace missing or broken wall plates, and make sure safety covers are on unused outlets accessible to children.

- **Plugs.** While they should fit securely, plugs should never be forced into an outlet. If using three-prong plugs in two-conductor outlets, don't cut off the ground pin on the bottom. Instead, use a grounded two-prong adapter.

- **Cords.** Make sure cords do not overheat, and examine them for signs of wear and tear or damage to insulation. Make sure they are not cracked or frayed. Place them out of traffic areas, and keep them out of the reach of children and pets. Never nail or staple them to the wall, baseboard or other objects. Don't run them under rugs or furniture.

- **Extension cords.** Make sure the cord is rated for at least the number of watts needed by the product plugged into it. Never use an extension cord with more than one appliance. Use them only temporarily. They are not safe as permanent wiring.

- **Appliances.** Keep electrical appliances away from damp and hot surfaces, and make sure they have appropriate air circulation. If an appliance repeatedly blows a fuse or trips a circuit breaker—or if it has emitted sparks or caused an electric shock—unplug it and have it repaired, or replace it.

- **Electrical equipment.** Make sure your entertainment and computer equipment is in good condition and working properly. Look for cracks or damage in wiring, plugs and connectors. Use a high-quality surge protector.

- **Space heaters.** Place heaters at least three feet away from flammable materials, and away from areas where they can be knocked over. Use only heaters with three-prong grounded plugs, and in three-hole wall outlets. Avoid using with extension cords.



Don't overuse extension cords. They are intended for temporary use.

Photo by Mike Teegarden

- **Blankets/heating pads.** To prevent overheating, make sure nothing is covering your electric blanket, including pets. To avoid bending or damaging the coils—which could cause a fire risk—don't tuck in the sides or ends of the blanket. Never sleep on a heating pad.

- **Lightbulbs.** Check the wattage of all bulbs in lighting fixtures to make sure they aren't too high for the fixture. Make sure bulbs are screwed in securely; loose bulbs may overheat. Never leave lamp sockets empty. They pose a shock hazard.

- **Fuses and circuit breakers.** Use the correct current rating for the circuit, and always replace a fuse with the correct-size fuse. If you don't know the correct size, have an electrician identify and label the sizes to be used.

- **Ground fault circuit interrupters.** In any area where water and electricity could come into contact, install ground fault circuit interrupters (GFCIs). They monitor electricity flowing in the circuit to detect a change of current. If electricity flowing into the circuit differs from the electricity returning, the GFCI will quickly shut off the current. Test GFCIs regularly.

- **Water.** Water and electricity don't mix. Don't place any electrical appliance near water. Appliances used near water should be unplugged when not in use. If a plugged-in appliance falls into the water, don't reach in to pull it out. Unplug it first. After retrieving it, don't use it until it has been checked by a qualified repairman. ■

Power District Moves to Smart Meters

By David Luttrell

The amount of electric energy used by your home or business is determined each month by an electric meter. These devices have been around nearly as long as electricity itself. The first generation of electric meters in the late 1800s involved mercury. Fortunately, those meters were phased out quickly and replaced with the electromechanical meter using an induction disk whose rotational speed was proportional to the current flow in the circuit.

Electromechanical meters usually had five small clock dials on the face, and they were the workhorse of the industry for more than 100 years. Those meters were engineering marvels,

as evidenced by their long history. But beginning in the 1980s they began to be replaced by a solid-state digital meter.

By the end of 2010, the last two major electric meter manufacturers stopped production of the electromechanical meter. Driving the change to solid state metering was the need for more advanced functionality that could not be obtained from an electromechanical meter, like determining what time of day energy was being used the most.

Once the digital meter began to become the norm in the industry, utilities soon realized that if they could communicate remotely with the digital meter they could provide additional services to their customers and reduce



This Landis & Gyr Smart Meter is similar to those we will use.

their operating costs. This desire moved the utility industry to where it stands today with the advent of what is called automated metering infrastructure or AMI.

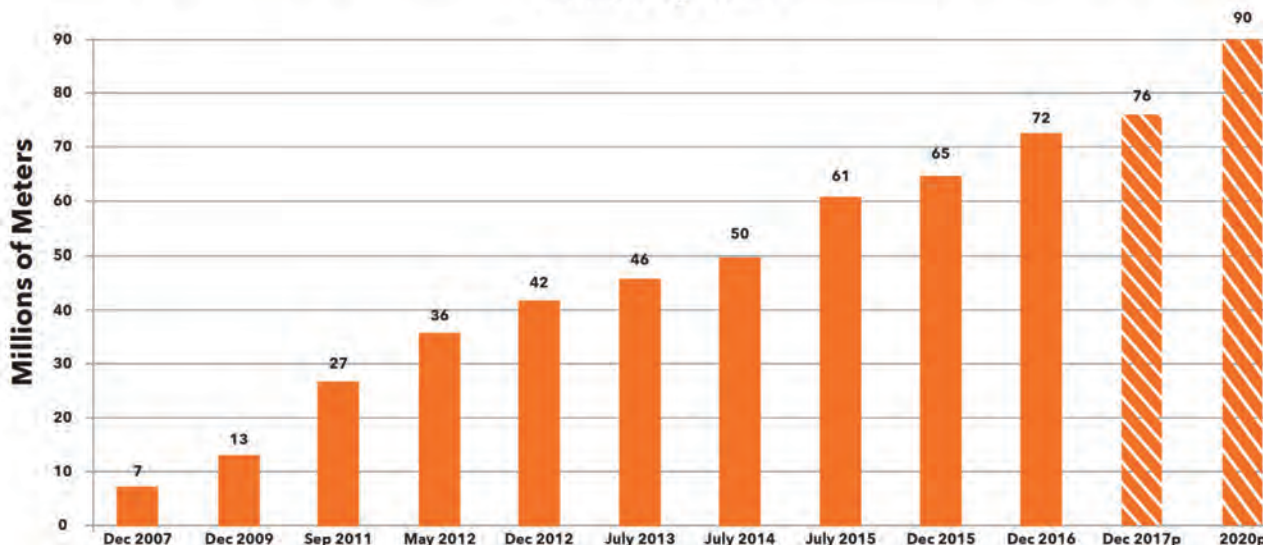
AMI is a system where digital meters measure and then automatically communicate the energy use of a customer on a programmed interval to the utility. That interval is

typically every 15 minutes but could be as frequent as every five minutes or up to every 24 hours. AMI systems have been approved by regulatory agencies in all 50 states.

According to the U.S. Energy Information System, as of the end of 2017, nearly 50% of all electricity customers in the United States were metered through an AMI system. In Nevada, 96% of electricity customers are metered through an AMI system.

An AMI system has numerous advantages. The most obvious is the ability to not have to send out meter readers every month. In the case of the Power District, labor is our second highest cost, behind only the cost of the power we purchase for use in Lincoln

Figure 1: U.S. Smart Meter Installations Approach 76 Million; Projected to Reach 90 Million by 2020



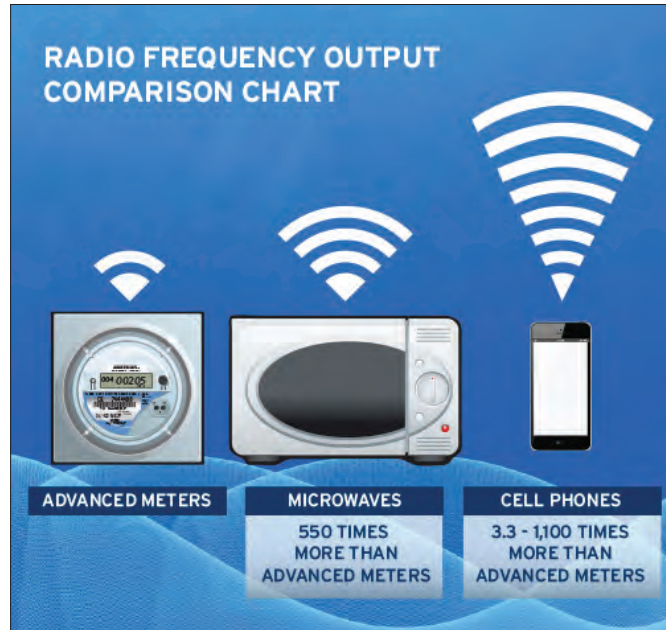
Source: Institute of Electric Innovation

County. Anything we can do to reduce labor costs has a direct benefit to our ratepayers.

An AMI system can provide numerous other benefits for the Power District's customers, including time-of-use billing to better support residential solar installations or the installation of home electric vehicle chargers. The system also eliminates the need to send a lineman to a person's home each time a connection or disconnection is requested, and it allows voltages to be monitored to ensure power quality meets all required standards. The AMI system will notify the Power District any time a customer is without power, allowing us to respond faster and manage power outages within our system more efficiently. It will also allow us to offer customers pre-paid billing plans, and customers can monitor their own energy use on a near real-time basis through their smartphone or tablet.

There is some controversy around AMI systems, but it stems from inaccurate claims about the digital meters not being as accurate as the old electromechanical meters and that the radio frequency the new digital meters use to communicate with the utility may have health effects.

Digital meters are designed and tested to a higher accuracy than the old electromechanical meters. The American National Standards



Source: DTE Energy

Institute sets the standard for many items including electric meters. The ANSI standards for the old electromechanical meters allowed for a maximum error limit of 2%, while the newer digital meters have a maximum error limit of 1%.

The concern over health effects from AMI systems has probably received the greatest attention. Most digital meters use a low-frequency radio system to communicate with the utility. Other communication technologies are sometimes used, but the predominate method is a low-frequency radio.

The International Agency for Research on Cancer, which is an arm of the World Health Organization, has listed radio frequency as "possibly carcinogenic to humans." While this sounds

bad, the IARC defines the items listed in this category as those where "the evidence of carcinogenicity in humans does not permit a conclusion to be drawn." In other words, the IARC doesn't know.

The American Cancer Society has also weighed in on this topic and has concluded "... it would be nearly impossible to conduct a study to prove or disprove a link between living in a house with smart meters and cancer because people have so many sources of exposure to RF and the level of exposure from this source is so small. Because the amount of RF radiation you could be exposed to from a smart meter is much less than what you could be exposed to from a cellphone, it is very unlikely that living in a house

with a smart meter increases risk of cancer."

Similar conclusions have been drawn by the Federal Communication Commission and the Food and Drug Administration. A digital meter communicating with a low-frequency radio operates at a frequency of 928 megahertz or less while a cellphone on a 5G network operates at a frequency of 14,000 MHz or more. A person's exposure to radio frequencies is dramatically higher from a cellphone.

After carefully considering the concerns over an AMI system, the cost savings and other benefits, the Power District decided last November to implement an AMI system in Lincoln County. Full deployment of the system will take nearly three years.

The AMI system the Power District is deploying is provided by Landis & Gyr, which has provided similar systems for over 3,500 utilities, including Wells Rural Electric in northern Nevada. Meters are tested to UL standards for safety and security.

Our AMI system will be an important component of the Power District's strategy to minimize operating costs and develop programs and services to meet the needs of our customers. If you would like additional information on the Power District's plans to implement an AMI system, contact us during normal working hours. ■



When drying clothes, try to run loads consecutively to take advantage of the already warm dryer.

Use Energy Wisely

Be Strategic to Save Money

The goal of every Escambia River Electric Cooperative member is to keep their energy bill as low as possible while remaining comfortable. Here are steps you can take to help achieve those goals.

- **Start with the thermostat.** The power is in your hands. Adjust it to use less and save more. That means keeping it at 78 degrees in the summer and 68 degrees in the winter. Keep the thermostat on auto so the fan only runs when the unit runs. Setting the fan to on will result in the fan running continuously and higher bills. For more control over your system, consider buying a programmable thermostat that will simplify the job of creating optimal settings.
- **Change air filters routinely.** Follow the recommended replacement schedule.

A clean filter allows your heating and cooling unit to work more efficiently and reduce the amount of dust in your home. Buy filters in multiple packs so you always have them available.

- **Use drapes and blinds.** In the summer, close them to keep the interior of your home cooler and more comfortable. In the winter, open them during the day to warm your home and close them at night to create an extra barrier against drafts.
- **Caulk cracks around windows and doorjamb.** Since heating and cooling is 40 to 50 percent of your energy costs, prevent gaps that allow interior air to escape.
- **Keep water heater temperature at 120 degrees.** That keeps more money in your wallet and, more importantly, reduces the risk of scalding accidents.

A Word About Water

Is Your Water Heater Wasteful or Wise? Look for

It can wake you up, prepare you to face the day, relax you and wash your cares away, clean a load of dishes after a big meal—even preserve your home from the potential damage of muddy children.

Hot water is essential and a luxury at the same time, but it can come at a high price if not used wisely. Escambia River Electric Cooperative knows how important a reliable supply of hot water is to your family, as are your energy dollars.

Water heating is the second-largest user of electricity in the average home. It consumes 15 to 25 percent of household energy depending on tank capacity, climate and lifestyle. The average household uses 3,500 kilowatt-hours of electricity to heat water annually.

Though some components of the cost of electricity are beyond our control, you control one big factor: use. Your electric



Hot water is essential and a luxury at the same time, but can come at a high price if not used wisely.

bill is based on how much power you use each month, so lowering your bill is easy. It is all about conservation.

You can implement simple, free or low-cost conservation methods and reduce your monthly household electric use. Take action and lower your

water-heating costs by following these easy tips:

- **Lower your water heater thermostat setting to 120 F.** For each 10-degree reduction in water temperature, you save 3 to 5 percent in energy costs. Reducing the temperature also slows mineral buildup and corrosion in your water heater and pipes, promoting longer use and more efficient operation.
- **Wash clothes in cold water.** Use warm water only when necessary. Cold water detergents are available, so you don't have to sacrifice cleanliness to save money.
- **Install low-flow fixtures.**
- **Promptly repair leaky faucets and pipes.**
- **Once a year, drain a bucket of water from the bottom of your water heater.** This removes sediment buildup

On Your Bill

- **Wash only full loads of dishes and clothes.** Appliance costs on average comprise 9 percent of monthly electrical use. Run full loads of dishes and clothes to maximize your dollars spent. Wash clothes in cold water. When drying clothes, try to run loads consecutively to take advantage of heat already in the dryer. Check to make sure the lint filter is clean, and the drying vent hose is not kinked or clogged.
- **Plug home electronics into power strips.** Turn power strips off when the equipment is not in use and when you will be out of town for an extended time.
- **Keep your garage door down.** A closed door will result in a warmer garage in the winter and cooler in the summer, and will save energy. ■

Ways to Conserve

that can waste energy by impeding the water element from heating the water properly.

- **Insulate water pipes.** Insulation reduces heat loss and can raise water temperature 2 to 4 degrees compared with non-insulated pipes. Insulate all accessible hot water pipes, especially within 3 feet of the water heater. It also is a good idea to insulate the cold water inlet pipes for the first 3 feet.
- **Install a timer.** It can save 5 to 12 percent of water heater energy. Program it to turn off your water heater at night when you do not use hot water.
- **Use energy-saving settings.** This applies to dishwashers, washing machines and dryers.
- **Do not leave water running if you wash dishes by hand.** Rinse dishes in groups rather than one at a time. ■

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Up to **30 Mbps** download speed

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**The offices of
Escambia River
Electric Cooperative
will be closed
Monday, May 27,
for Memorial Day.**

Keep Water Safety Tips In Mind

Don't take the power of electricity for granted when enjoying the outdoors

Electricity and water are a dangerous—potentially fatal—combination.

Swimmers and boat owners need to take precautions to make sure their time in and on the water is safe. While this might seem like common sense, boats and docks are often powered by electricity. One mistake could lead to tragedy.

Please consider the following points:

- **There is no visible warning to electrified water.** Electric current in water causes a paralysis of muscles, which results in drowning. As a little as 10 milliamps—1/50th of the amount used by a 60-watt lightbulb—can cause paralysis and drowning.
- **If you have contact with water and feel a tingling, the water might be electrified.** Immediately get out of the water. Avoid using metal objects such as a ladder. Alert others who are in the water to try to stay upright, tuck legs to be smaller and swim away from anything that could be energized.
- **If you believe an electrical drowning is occurring, turn off all power, throw a life ring to the person and call 911.** Do not enter the water. It could still be electrified.
- **If you own a dock or pier, install ground-fault circuit interrupters and test them monthly.** Use portable UL-Marine List GFCIs when using electricity near water.
- **If you own a boat that uses electricity, have equipment leakage circuit interrupters installed to protect**

WARNING: ELECTRIC SHOCK DROWNING HAZARD FOR BOAT OPERATORS

Unknowingly, many swimmers and boat operators place themselves in the face of danger by swimming near electric-powered boats and docks. This innocent act of fun can turn tragic as electric shock drowning occurs each year. Help prevent electric shock drowning or other electrical injuries with these tips from ESFI.

ESFi.org

For more information on boat and marina electrical safety visit: www.esfi.org

swimmers from electric shock in the water around the boat.

The Energy Education Council recommends all electrical installations be performed by a professional electrical contractor familiar with marine codes and standards.

The organization also recommends individuals not swim around docks with electrical equipment or boats plugged into shore power. Many electrical shock drowning deaths have occurred around private docks and boats plugged into shore power while docked. ■

A Driving Force in the Community

Electric cooperatives are engines of economic development

By Dan Riedinger

Glades Electric Cooperative is deeply committed to providing affordable and reliable electricity to member-consumers and empowering the communities that we serve.

This means being more than just an electricity provider. It means being a partner in economic development and other activities that improve the lives of our members.

But have you ever stopped to wonder what kind of an impact the nation's roughly 900 electric co-ops have across the United States?

A new report on this topic shows electric cooperatives supported nearly 612,000 American jobs and contributed \$440 billion in U.S. gross domestic product from 2013 to 2017, or \$88 billion annually.

Those are some big numbers.

The study, "The Economic Impact of America's Electric Cooperatives," was conducted by FTI Consulting for the National Rural Electric Cooperative Association and the National Rural Utilities Cooperative Finance Corp. The report quantifies what many rural American families and businesses know well: Electric co-ops are powerful engines of economic development in their local communities.

Affordable and reliable electricity is a key ingredient for a successful economy. Because electric cooperatives were built by, belong to and are rooted in the communities they serve, they play a vibrant role as economic cornerstones for millions of American families, businesses and workers.

Access to electricity was a vital component of economic development and diversification in the mid-20th century, and that remains true today. Roughly one in eight residents nationwide are served by an electric cooperative, meaning direct co-op employment and investments can ripple throughout the economy and create additional economic value for local communities, regions and the country.

From 2013 to 2017, electric cooperatives contributed \$881 billion in U.S. sales output, \$200 billion in labor income and \$112 billion



in federal, state and local tax revenues.

Nationally, electric cooperatives spent \$359 billion on goods and services across the economy, including \$274 billion on operational expenditures, \$60 billion on capital investments, \$20 billion on maintenance and \$5 billion on credits retired and paid in cash to members under the membership structure of cooperatives.

In conducting its analysis, FTI Consulting used data from 815 distribution cooperatives and 57 generation and transmission cooperatives as inputs into a national model to simulate the economic effects from the direct expenditures by cooperatives. The model also calculates the indirect effects of cooperatives throughout the industrial supply chain and the induced effects from consumer spending by the cooperative employees and their suppliers.

The result of this effort is a first-of-its-kind study that reveals electric cooperatives to be economic anchors across rural America.

It also demonstrates on a macroeconomic scale one of the seven guiding cooperative principles: Concern for Community. ■

POWERFUL CONNECTIONS

The Economic Impact of America's Electric Cooperatives

In 2017, electric cooperatives...

Supported

611,600

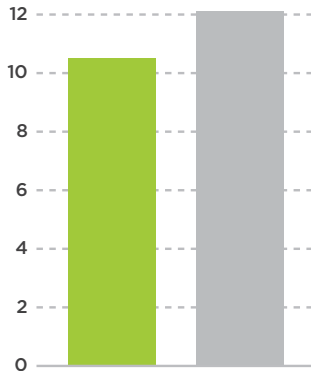
American jobs.

- **165,800** direct jobs
- **170,900** indirect jobs
- **274,900** induced jobs*



*Jobs that are created as a direct or indirect result of the work electric cooperatives do.

Taxes in billions of dollars



Generated

\$22.5 billion

in federal, state and local taxes.

- **\$10.5 billion** in federal tax
- **\$12.0 billion** in state/local tax

Contributed

\$88.4 billion

to U.S. GDP, including

\$40.4 billion

in labor income to American workers.



Get Ready for 2019 Hurricane Season

Hurricane Preparedness Week is May 5-11

As Hurricane Michael proved, it only takes one storm to change your life and your community. We are still rebuilding.

Tropical cyclones are among nature's most powerful, destructive phenomena. It is critical to be prepared. Even areas well away from the coastline can be threatened by dangerous flooding, destructive winds and tornadoes from these storms.

The National Hurricane Center and the Central Pacific Hurricane Center issue watches, warnings, forecasts and analyses of hazardous tropical weather.

Although we don't want to think about the possibility of another storm, Hurricane Preparedness Week is the time to prepare for a potential land-falling tropical storm or hurricane. Use these daily tips and share them with friends and family.

Sunday, May 5 **Determine Your Risk**

Hurricanes bring many hazards, including storm surge along coastlines, and inland flooding due to heavy rainfall, tornadoes, strong winds, rip currents and large waves. Find out what types of wind and water hazards could happen where you live, and start preparing for how to handle them.

Good online resources include <http://weather.gov/wrn/hurricane-preparedness> and <http://hurricanes.gov/prepare>.

Monday, May 6 **Develop an Evacuation Plan**

Make sure you have a hurricane evacuation plan. Find out if you live in a storm-surge hurricane evacuation zone or if you are in a home that would be unsafe during a hurricane. If you are, figure out

where you would go and how you would get there if told to evacuate.

Be prepared to leave immediately if told to evacuate. You do not need to travel hundreds of miles. Identify someone—perhaps a friend or relative who does not live in an evacuation zone or unsafe home—and coordinate with them to be your evacuation destination.

Account for your pets. Most local shelters do not allow them.

Put the plan in writing for you and those you care about.

Good online resources include <http://flash.org/hurricane-season/evacuation-zones/find-your-evacuation-zones.pdf> and <http://hurricanes.gov/prepare>.

Tuesday, May 7 **Assemble Disaster Supplies**

If a hurricane strikes, you will need supplies not just to get through the storm, but for a potentially lengthy recovery period that could follow. We learned that following Hurricane Michael.

Get your supplies before hurricane season begins. Have enough nonperishable food, water and medicine to last each person in your family a minimum of one week. Electricity and water could be out for even longer than that.

You will need extra cash, a battery-powered radio, flashlights, and a portable crank or solar-powered USB charger to charge your cellphone.

Gas up your vehicle and have cash on hand if a storm warning is issued.

Good online resources include www.ready.gov/kit and <http://hurricanes.gov/prepare>.



Wednesday, May 8 **Get an Insurance Checkup**

Call your insurance company or agent and ask for an insurance checkup now to make sure you have enough homeowners insurance to repair or replace your home. Don't forget coverage for your car or boat.

Standard homeowner's insurance does not cover flooding. Whether you own or rent your home, you need a separate policy. If not available through your agent, use the agent locator at www.floodsmart.gov. Act now because flood insurance requires a 30-day waiting period.

Know where your insurance documents are, and take them with you if you evacuate.

A good online resource is www.fema.gov/what-mitigation.



2019 Hurricane Season Expected to be Active

Due to continued warm ocean water and the 70-year hurricane landfall cycle, the upcoming 2019 season will likely be just as destructive and costly as the 2017 and 2018 hurricane seasons, according to Professor David Dilley of Florida-based prediction organization Global Weather Oscillations Inc.

GWO predicts a near-average season, with 13 named storms and six hurricanes: two of them major-impact hurricanes to strike the United States and a third potential major hurricane threatening portions of the Caribbean.

AccuWeather offers a similar forecast, with 12 to 14 storms: five to seven hurricanes, and two to four of those likely to be major hurricanes.

If El Niño continues or strengthens, the number will be near or below normal. If El Niño weakens, the number could be higher than normal, AccuWeather's Dan Kottlowski said.

The official Atlantic hurricane season runs from June through November.

Saturday, May 11 Complete a Written Plan

The time to prepare for a hurricane is before the season begins, when you have the time and are not under pressure.

If you wait until a hurricane is on your doorstep, odds are you will be under duress and will make the wrong decisions. Take the time now to write down your hurricane plan. Know where you will ride out the storm.

Get your supplies now. You don't want to be standing in long lines when a hurricane watch is issued. The supplies you need may be sold out by the time you reach the front of the line.

Being prepared before a hurricane threatens makes you somewhat more resilient to the impacts of wind and water. It could mean the difference between being a hurricane victim and a survivor.

Good online resources include www.ready.gov/make-a-plan and <http://hurricanes.gov/prepare>. ■

An aerial view of the swath of damage to the Bayou George area following Hurricane Michael.

Photo courtesy of PowerSouth Energy Cooperative

Thursday, May 9 Strengthen Your Home

If you plan to ride out a hurricane in your home, make sure your house is up to hurricane building code specifications.

Have the proper plywood, steel or aluminum panels to board up windows and doors. The garage door is the most vulnerable part of the home, so it must be able to withstand high winds.

Trim trees on your property and collect loose outdoor items.

Find a safe location for your vehicle.

Good online resources include www.fema.gov/what-mitigation and <http://hurricanes.gov/prepare>.

Friday, May 10 Help Your Neighbor

Neighbors rely on each other after a disaster, but there are many ways you can prepare together before a hurricane approaches. Help neighbors collect supplies they will need before the storm.

Assist them with evacuation if they are ordered to do so, or check on them after it is safe for you to head outside.

Learn about the actions you and your neighbors can take to prepare and recover from hurricane hazards.

A good online resource is <https://community.fema.gov/action/plan-with-neighbors>.

Your Home Electrical System: What's Yours, What's Ours

In the wake of Hurricane Irma in September 2017, many of our members were surprised to learn that certain electrical components are their responsibility to have repaired. Our linemen are unable to restore power to your home if the home can't safely accept it.

If your weatherhead, service riser, meter socket, and any related components are damaged, a qualified electrician must make repairs before your home can be reconnected.

PRECO has selected HomeServe® to offer *optional* exterior electrical component coverage for our members for a low monthly cost.

With a plan from HomeServe, if your home's exterior electrical components need repair, simply call HomeServe's repair hotline. A HomeServe specialist will collect information from the homeowner and have a local contractor contact the homeowner to arrange an appointment.

For more information about HomeServe or to sign up, go to HomeServeUSA.com or call **833-334-1874**.



Peace River Electric Cooperative, Inc.

A Touchstone Energy® Cooperative 

HomeServe USA Repair Management (Florida) Corp. ("HomeServe"), Florida License #W220985, with corporate offices located at 601 Merritt 7, 6th Floor, Norwalk, CT 06851, is an independent company separate from Peace River Electric Cooperative, Inc. and offers this optional service plan as an authorized representative of the service contract provider, ServicePlan of Florida, Inc., Florida License #70033, 175 West Jackson Blvd., Chicago, IL 60604. Your choice of whether to participate in this service plan will not affect the price, availability or terms of service from Peace River Electric Cooperative, Inc.