# August 2019 Share Package
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# Balance Room Temperatures for Increased Comfort

**Use the duct damper handle to control the amount of heated or cooled air to rooms. The summer and winter settings will be different.**

Photo by James Dulley

**A register booster fan has a winter/summer switch and an adjustable sensitivity knob to fine tune for your room.**

Photo courtesy of Field Controls

To ask a question, write to **James Dulley**, Energy Report, 6906 Royalgreen Dr., Cincinnati, OH. 45244, or go to **www.dulley.com**.



***Q.*** *We have a problem keeping several rooms comfortable. What are some simple, efficient methods to balance the temperatures in our home?*

**A.** There are many reasons various rooms in a home do not stay warm or cool enough, even though they have similar-sized ducts.

The number and orientation of windows affect room temperatures. South-facing windows can transmit a lot of heat into a room, causing a room to overheat in summer. North-facing windows—especially old leaky ones—can make a room chilly during winter. Both problems can be mitigated somewhat by installing new windows or insulating shades, but there will still be variations.

If your HVAC blower has an efficient variable-speed electronically commutated motor, switch the thermostat fan to continuous when problems arise. This keeps air circulating to reduce room temperature differences. If your system has a less-efficient standard blower motor, use this option sparingly. It can use a lot of electricity. During air-conditioning season, this extra electricity use ends up as heat that makes the compressor run longer for a double cost.

Another problem is the walls of the ducts—especially sheet metal ducts—lose or gain heat as the air makes its way from the heat pump or central air conditioner to the rooms. This problem is made worse because heating ducts often are located under windows. This positions them on outside walls and takes space from the wall insulation thickness.

Hold a thermometer in the register outlet air flow in each room. If there is a 5-degree temperature difference or more, wrap insulation around as much of the duct as you can.

Uneven room temperatures also happen when not enough heated or cooled air gets to problem rooms. Hold your hand over room outlet registers to compare air flow. If a room is far from the indoor blower, the duct creates more air-flow resistance. This problem is exacerbated because longer ducts also lose more heat through their walls. Longer ducts also have more joints, which can leak heated or cooled air before it reaches the intended room.

Check the baffles in the ducts near the heat pump or furnace to be sure those leading to problem rooms are not partially closed and blocking air flow. There usually is a small handle on the side of the duct. The duct damper is fully open when the handle is parallel to the duct.

Try partially closing the duct baffles leading to other rooms. You will have to close them at least 45 degrees to notice the effect. This forces more heated or cooled air to problem rooms. The settings of duct dampers to each room will have to be changed from summer to winter because the heat gain/loss varies by season.

Hang a thread from a stick and hold it near all the joints in the ducts to locate air leaks. Seal leaks with duct tape or duct joint sealing compound. Don't just use cheap gray duct tape. It often comes loose in a year or two. Use aluminum foil duct tape or black Gorilla duct tape. Gorilla tape is easier to apply and holds up for many years.

Make sure room register baffles are fully opened. Install a deflector over the register to direct heated or cooled air into the room. This is particularly effective when air conditioning because cool air tends to hang near the floor and not circulate throughout the room. Move furniture so it is does not block air flow.

Installing a duct booster fan can help get more air flow to the problem rooms. Duct booster fans are designed to fit into the ducts near the furnace blower. Some sense when the blower starts and come on automatically. Others have their own thermostat or can be connected to the main blower controls.

Register booster fans also can help. They mount over the outlet register in a room. They are easier to install than a duct booster fan and provide more control over room temperature. The register booster fan plugs into a standard wall electric outlet. It has its own thermostat so it comes on only when the main blower run. The small fan motor uses only about 30 watts. ■

# Metal Roofing Reduces Costs, Increases Comfort

**Each large metal roofing panel covers a large area of the roof for simpler installation**

Photos courtesy of McElroy Metal

**This simulated tile roof is made from painted steel. Many stock colors are available.**

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***Q.*** *It is replacement time for my old dark shingle roof. What type of roof do you recommend?*

**A.** A dark colored roof absorbs much of the sun's heat. This heat not only makes your house hotter and drives up air-conditioning costs, but it hastens the degradation of the shingle material itself.

A dark shingle can easily reach 150 F in the hot afternoon sun. If you have ever tried to lift a square of shingles, you know how heavy they are. When this thermal mass gets hot, it stores the heat and radiates it down into your house well into the evening.

Even if you have adequate attic insulation on the attic floor, the radiant heat from the hot roof easily passes through it to the room ceilings. Standard thermal insulation, such as batts and blown-in fiberglass, rock wool and cellulose, are most effective for blocking conductive heat transfer, but less so for radiant heat from a hot roof.

The two most common roofing materials for houses are asphalt/fiberglass shingles and metal. White shingles can be fairly energy efficient and effective for reflecting much of the sun's heat. Some white shingles even qualified for the former federal energy tax credit. It takes very little color tint, however, for shingles to get hot and absorb heat.

Metal roofing can cost as much as double that of low-end shingles, but many types have lifetime warranties. Kynar 500 or Hylar 5000 PVDF resin-based finishes are durable and reflect most of the sun's heat for savings on cooling costs.

Aluminum and steel are the two most common materials for residential use. Copper is attractive and durable, but expensive. The natural aged patina color is beautiful, but it does not reflect the sun's heat well. Be sure the roofing has passed UL580 uplift and UL2218 Class IV impact resistance tests.

I installed an aluminum roof on my house five years ago. It consists of 1-foot-by-2-foot interlocking panels with a heat-reflecting paint coating. The panels are made of recycled aluminum from soda cans and are formed to look like individual cedar shakes.

Aluminum is a particularly efficient roofing material because the underside surface of the roofing panels are bare and never rust. Bare aluminum has a low emissivity rating. It blocks heat from the hot metal top surface from radiating downward through the roofing lumber and attic insulation to the rooms below.

When selecting an aluminum roof, choose one with a contour that provides at least a 1-inch air gap over the sheathing or old roofing for its low-emissivity properties to be effective. After my simulated shake roof was installed, the second-floor bedrooms stayed much cooler on summer afternoons. A simulated clay tile aluminum roof is also effective with the many deep air gaps under it.

The only drawback to an aluminum roof is you must be careful not to step on the high shakes edges because you may dent it. In areas where you walk often, such as to clean a skylight, have molded foam inserts installed under those panels.

During winter, snow sometimes slides off in big sheets. In snowy climates, have small snow stops glued to the roof to hold the snow in place as it melts.

Painted steel roofs are available in many colors and simulated contours. The steel is treated with many layers of corrosion-resistant coatings, so rust is not a problem. Shingles with aluminum-alloy coating are particularly durable. Steel is very strong, so there are fewer issues when walking on it.

Most metal roofs can be installed over existing shingles, no matter what their condition. This saves the cost—often about $1,000—for removing old shingles.

Whether you choose white shingles or a metal roof with heat-reflecting paint, install an attic ridge vent. While doing a reroof job, adding a ridge vent is a minor additional expense. Also make sure the soffit vents are not blocked with attic insulation. Even with the metal roof, adequate attic ventilation is needed for both summer and winter energy efficiency. ■

# A Moment of Truth for the Northwest

*Northwest RiverPartners works to strike a balance between low-cost, efficient, reliable power production and protecting the essence of the Pacific Northwest*

**Kurt Miller** is executive director of Northwest RiverPartners in Vancouver, Washington.

I officially started at Northwest RiverPartners on March 11, 2019. Since then, I have been inspired every day by the opportunity to make a difference for people in the Northwest. It is an opportunity that lies before all of us. Together we can make a positive impact.

At Northwest RiverPartners, we advocate for our local hydropower system. That means we advocate for affordable energy, clean air, carbon-free generation, irrigation for agriculture, improved conditions for salmon, low-carbon transportation, renewability, safe drinking water and affordable energy for those who need it the most: low-income families, rural populations and small businesses.

Looking at that list, our job should be easy. It's hard to imagine anyone would oppose any of those values. Surprisingly, the work is quite challenging. A narrative out there says dams—especially the lower Snake River dams— harm salmon and orcas, and, consequently, indigenous communities. The messaging makes it clear that if you are for hydropower, you must be against the iconic essence of the Northwest.

These past few months, I have been blessed with the opportunity to talk to some of the people behind these messages. I can tell you their hearts are in the right place. They see the decline of salmon and orcas and want to do something about it. Some are convinced dams are the problem. Others aren't so sure, but they believe dams can be replaced by other forms of clean energy and are willing to try.

Their aspirations are as noble as our own. Ultimately, both sides want the healthy outcomes for salmon and orcas.

Our members believe hydropower is part of the solution, and we have lots of facts to support it. Recently, scientific studies show salmon returns to the Snake River are similar or better than both free-flowing and dammed rivers in Alaska, Canada, the Puget Sound and Southern Oregon. Through extensive tracking, we know juvenile salmon passage past each of the lower Snake and lower Columbia dams is around 96%.

Above all else, we've learned that changing ocean conditions—driven by climate change and pollution—are taking a toll on marine ecosystems worldwide.

Despite this data and research, these facts haven't carried the day in the court of public opinion. Because there are conflicting views, they've even struggled to hold weight in federal court.

Perhaps in an era of alternate facts and skepticism, this outcome isn't surprising.

However, this attitude presents a challenge. If we can't carry the day with facts, how do we get people to understand the importance of Northwest hydropower?

We have some very powerful stories to share. Across the region, real people in real communities depend on the hydropower system in a multitude of ways. We have great examples of efforts that have helped salmon, steelhead and other fish species. Sharing these stories is essential to showing what hydropower is all about.

The success of our efforts will depend on our ability to share these stories in a way that connects us all. Our goal at Northwest RiverPartners is to work with our members to identify compelling stories within their communities. We have more than 120 members, all of whom have earned a high degree of trust with their customers and member-owners through years of public service.

For the first time, Northwest RiverPartners will connect with Northwesterners through social media and other channels to reinforce what they are hearing from our member organizations.

A lot of decisions around hydropower are going to be made in the coming months and years. Those decisions will affect the reliability of the power grid, the affordability of electricity, the health of our environment, the sustainability of our salmon populations and the livability of our communities.

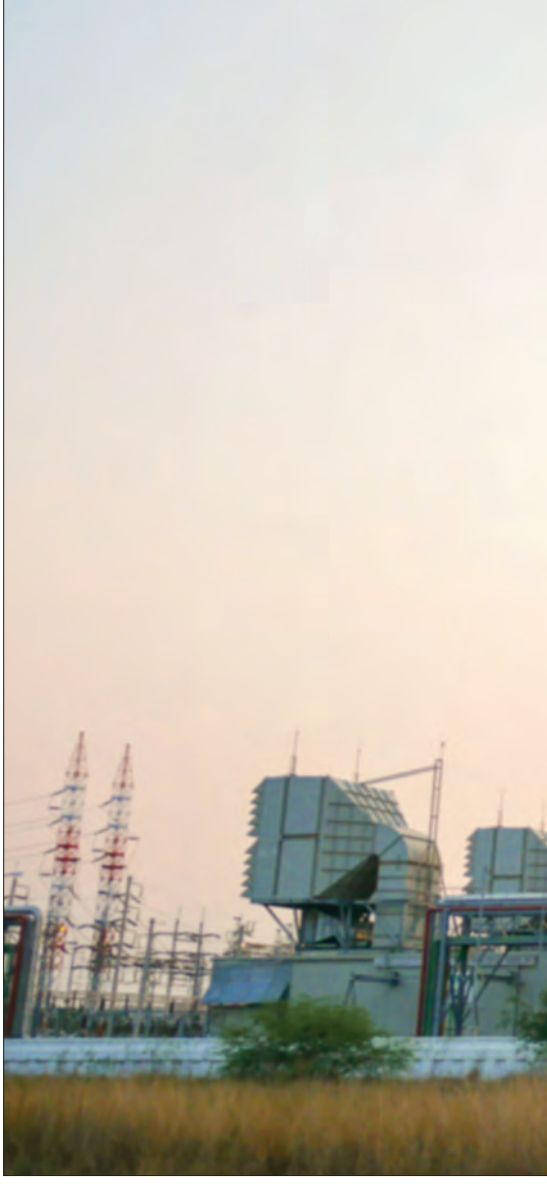
This is a moment of truth for the future of the Northwest.

If you want to make a difference, write to your representatives and senators and let them know hydropower is important to you. Also, please write to us if you have a story of how the hydropower system has helped you or your community. Address email to info@nwriverpartners.org, or send a letter to Northwest RiverPartners, 9817 NE 54th St. #103, Vancouver, WA 98662.

We appreciate your advocacy and support. ■

# Drone Tech Provides Valuable Solutions for Utility Industry

**By Ethan E. Rocke**



At West Oregon Electric Cooperative in Vernonia, Oregon, drones are making quick work of jobs that once took days to complete.

Like many rural electric utilities, a lot of West Oregon's lines run through rugged terrain with large trees and thick brush. Inspecting those lines has traditionally presented a major logistical challenge to crews. Enter unmanned aircraft systems (UAS), or drones.

"When we used to inspect rights-of-way the old-fashioned way, we'd have to send three or four guys to trample through the brush for 4 or 5 miles," says WOEC Operations Manager Don Rose. "That job could sometimes take up to six guys two days to complete. Now we send two guys to fly a drone, and the entire inspection takes about an hour and a half. The video quality we get is exceptional, so we get all the information we need from the drone."

West Oregon's drone program is a little more than a year old, and Don says its benefits have made the cooperative's investment in the technology, training and certification process well worth it.

Launching a drone program responsibly requires much more than the initial investment in one or more drones. As drone applications and business uses have exploded in recent years, the Federal Aviation Administration has tightened regulation of the industry.

FAA regulations require anyone using drones for business to be certified UAS pilots, and individuals and businesses must carry liability insurance for their drone operations.

"When we first started out, there was a lot less regulation," Don says.

West Oregon turned to General Pacific's Northwest Drone Academy to get five of their linemen certified as Part 107 pilots.

Part 107 refers to the section of the U.S. code of federal regulations that governs drone use. General Pacific offers a two-day Part 107 Certification Class that culminates with taking the Part 107 exam. The cost for non-local students is $1,200 and includes the cost of meals during class time, lodging and the $150 testing fee. Local students who don't require lodging pay $900.

Classroom training is not required to pass the exam. Many people opt to prepare on their own, using any of the myriad free or cheap resources available online. A pdf of the FAA's "Remote Pilot—Small Unmanned Aircraft Systems Study Guide" is easily accessible with a quick google search, and many videos on Part 107 preparation are available on YouTube.

Utilities that aren't ready to invest in an in-house drone program also have the option of contracting drone work out. For certain specialized needs, hiring professionals is often the better option.

Timberland Helicopters in Ashland, Oregon, has provided aerial solutions to electric and natural gas utilities for decades. Timberland General Manager Mark Gibson says the company began investing in drone technology and expanding its services into the UAS space about five years ago.

"Drone technology is absolutely here and is going to continue to grow," Mark says. "There are many valuable applications for the utility industry, and there are applications out there we don't even know yet. There's so much potential."

Timberland offers a full lineup of drone services, including simple inspections and more specialized services such as infrared or corona inspections, beyond-visual-line-of-sight operations and payload operations such as pulling line across a river, canyon or other difficult terrain.

"There is a lot of potential for UAS applications in the utility space," Mark says. "They can't do everything, but they can save a lot of time and improve safety. Drones can keep a guy from having to climb a tower in bad weather or trudging through snow for miles. It can make mapping systems more cost effective. There are so many useful applications for this technology in the utility space."

Timberland partnered with General Pacific to develop the Northwest Drone Academy. In addition to its FAA Part

Many electric and natural gas utilities are investing in drone technology and using the systems to make quick work of jobs that previously took far longer.

107 Certification Class, the academy also offers mission-specific and specialized training, including 3D point cloud mapping, asset monitoring, corona, external load, line pulls, LIDAR, multispectral imaging, photogrammetry, surveillance, asset protection, thermography and videography/photography.

Most UAS applications fall into two categories: reconnaissance and payload operations. Reconnaissance is often easier and less costly than payload operations because the latter requires drones that can carry lines or equipment effectively. Reconnaissance drones are often small and inexpensive. Some models are available for less than $1,000.

For any utility considering an in-house drone program, consultation with an aerial solution provider might be a good starting point. Discussing needs and objectives with a professional up front can simplify the drone selection and acquisition process and help utilities decide which services to train for in-house and which services might be better to hire out. ■

**This video frame from a West Oregon Electric Cooperative drone shows one of the co-op's lines and the rugged terrain that once made inspecting it a two-day job.**

Photo courtesy of WOEC

# 'Smart' Not Necessarily Efficient

*Technology puts control in hands of consumers*

**By Derrill Holly**

Home automation systems are placing control in the hands of consumers, but questions remain about the best ways to use systems to save money and energy.

"Most smart home technology is about comfort and convenience," says Brian Sloboda, director of consumer solutions for the National Rural Electric Cooperative Association. "Consumers interested in saving money on monthly energy purchases should look at internet-connected thermostats first."

Around half of all thermostats sold today are smart thermostats. These devices have the potential to reduce air conditioning energy consumption by 10%. During winter months, the thermostats could save 7% on energy used to heat the home.

Brian has watched home automation systems evolve. He is particularly interested in identifying ways to enhance efficiency and savings.

"Laundry, dishwashing and water heating can be set to occur outside of your co-op's (or your utility's) peak demand periods, which typically are during weekday business hours," Brian says.

NRECA is working with one of the Department of Energy's national laboratories on a demonstration project examining energy-saving options that could time-shift some activities. However, Brian says actual cost savings for the consumer is likely to be limited.

"Pool pumps, dishwashers, thermostats and car chargers can learn their owners' behavior and then communicate with the utility so the data can be used for demand response," Brian says. "The goal is to determine if a system like this can be implemented without inconveniencing the consumer, providing energy demand savings to the utility."

Security system notifications and thermostat controls that adapt to home automation are among the most popular options available.

"There are different kinds of smart when it comes to smart appliances and devices," says Peter May-Ostendorp, principal researcher at Xergy Consulting, which specializes in emerging technologies for energy savings in buildings. "For some, smart simply means 'We connected this thing to the network,' which adds minimal value to the consumer. In other products, smart means that there is some intelligence either built into the product or connected via the cloud that enables a taste of artificial intelligence."

Not every product using artificial intelligence is designed to save energy. In many instances, energy use is secondary to convenience or connectivity.

"Most smart devices have nothing to do with energy use, grid management or other resource conservation, like saving water," Peter says. "Generally, the benefits—dollar savings to the consumer—have not been proven, with the exception of smart thermostats, grid-connected water heaters and similar devices."

According to the Environmental Protection Agency, interest in connected or smart appliances is trending upward among consumers. Manufacturers are responding with a growing list of products.

"If you are thinking of purchasing a smart appliance or thermostat, look for one that is Energy Star-certified with connected functionality," EPA officials suggest. "Those that meet our criteria are designed to encourage interoperability and offer the following features: low energy use, energy use reporting and consumer ownership of all data."

Products available include room air conditioners, refrigerators and freezers, laundry equipment, lightbulbs and fixtures, and power strips.


While owning a smart product doesn't automatically save you energy, if you are smart about using them, they can make a significant difference in your home, according to EPA officials.

That means making the investment pay off could take lifestyle changes.

"I don't think many people want infinite control over dozens of appliances and systems in their homes," says Spencer Sator, president and CEO of Crimson Consulting, an energy-efficiency adviser. "What we really want is set-it-and-forget-it features that we don't have to actively manage. The best devices get installed, adjusted and the consumer can walk away and still potentially save some energy."

Spencer says consumers are looking for simplicity. That's feeding the popularity of virtual assistant technologies such as Amazon's Alexa and Echo, Google Assistant and Apple HomeKit. Other companies—including Samsung, Logitech and Wink—offer home-management hubs and platforms designed to help manage connected technology.

Convenience and programming simplicity are among the most important factors fueling consumer acceptance of what Spencer describes as "home ecosystem" products. Home security controls—including locks, alarm systems and lighting—are popular.

"We're seeing adoption of the technology not necessarily for energy-saving reasons, but for life-enhancing applications, including some that help elderly consumers maintain independence in their homes," Spencer says.

The challenge for consumers is deciding which features justify the investment, and how well products work together under a particular hub device or app.

"No one wants a hodge-podge of technologies that can't communicate with each other," Spencer says. "The technology isn't very smart if devices can't work together."

Thus far, expectations are not being met.

"The Jetsons-like experience—where your Fitbit recognizes you're awake, tells the coffee to brew, queues up your morning news on a smart speaker, ramps up the heating setpoint—isn't really happening," Peter says. "People have thought that Alexa or Google Home might be the answer, but do we all really want to talk to our home, Star Trek style, to accomplish basic tasks?"

From a technology perspective, Spencer says, "This is still the Wild West. When you consider available options and actual performance of the devices available, some gadgets perform well and can save consumers money and energy, while others don't measure up to the hype." ■

## Command, Control and Energy Savings

Artificial intelligence is changing the way we live, and that has the potential to bring major changes to the way we use energy.

Smart home automation allows folks from all income levels to become more energy efficient. Using a platform to further tie together appliances and loads, consumers can pick and choose their preferred efficiency routes depending on their lifestyle and budgets.

According to the Consumer Technology Association, about 5.5 million units of Wi-Fi enabled devices are added to the internet each year. By 2020, the total is expected to surpass 21 billion.

That prediction has designers and manufacturers of consumer products looking for new ways to add value to products with Wi-Fi enabled features.

As artificial intelligence devices create opportunities for home automation, consumers will play larger roles in deciding how and when systems in their home are controlled.

Smart thermostats have been around for a while. Some electric utilities offer discounted smart thermostats to not only encourage consumer savings, but to help manage peak energy demand.

As the energy sources we use to generate power evolve—and management of the electric grid becomes more agile and sophisticated—the true potential of energy load control provides opportunities for more savings through wholesale power supply.

That's challenging electric utilities to find ways to strengthen partnerships with consumers who are more interested than ever in actively managing their energy use. Two-way, real-time communications and artificial intelligence offer opportunities to learn consumer preferences and how best to reduce energy during peak demand periods.

"We could soon see serial commands allowing your appliances to interact with other devices," says Keith Dennis, senior director of strategic initiatives for the National Rural Electric Cooperative Association. "Your HVAC system could learn your schedule and regulate heating and cooling for your comfort based upon when you are home. Instead of maintaining a steady supply of hot water when no one is home to use it, water could be heated during periods when demand is lowest and electricity costs less, and then boosted to ideal temperatures to meet specific needs like bathing, laundry or washing dishes."

# Savings You Can Count On

*Trained energy advisers help target efficiency issues*

**By Derrill Holly**

Better energy efficiency at home starts with savings, not purchases. An energy audit conducted by a trained energy adviser can help you get there.

"Members are our community and we are the experts in the electric energy arena," says Manuela Heyn, an energy services representative for Gulf Coast Electric Cooperative, based in Southport, Florida. "We have the tools, knowledge and commitment to assist our people. Saving energy can also help shave peak loads."

Manuela conducted her first energy audits with basic tools: a flashlight, laser temperature gun and a candy thermometer—the last one to check the output temperature of the water heater. She now has access to more sophisticated equipment, including thermal imaging.

Members become frantic when they see a major increase in their power bill, and they want immediate answers as to why. With experience and access to meter data reports, identifying major power consumption problems has been simplified and, in many instances, resolved in the office.

During on-site audits, Manuela uses all of her senses and experience to find abnormalities such as hot water line leaks, running well pumps, damaged power cords and construction issues. In one case, she found spongy drywall, disconnected ducts and lack of insulation.

Manuela also checks household systems that many homeowners seldom see or consider unless they spend time with their HVAC technician.

## Dirty Dozen Energy-Efficiency Tips for the Home

The average U.S. household will spend about $2,100 on home energy this year, according to calculations by the Alliance to Save Energy, based on information from the Department of Energy. But you can spend less with these 12 simple tips:

- Seal air leaks and properly insulate. Plug energy leaks with weatherstripping and caulking. Be sure your house is properly insulated to save up to 20 percent on heating and cooling bills, while increasing home comfort.
- Install a programmable thermostat to save up to 10 percent on cooling and heating costs.
- Change to new and improved lightbulbs. Reduce energy use from about a third to as much as 80 percent with today's increasing number of energy-efficient halogen incandescents, CFLs and LEDs.
- Look for the Energy Star label—the government's symbol of energy efficiency—on a wide range of consumer products to save up to 30 percent on related electricity bills.
- Wash clothes in cold water. Heating the water in a washer uses 90 percent of the energy used to wash clothes. According to Energy Star, the average household can save $30 to $40 a year by switching to cold water.
- Turn off all lights, appliances and electronics when not in use. Use a power strip and turn off devices to cut standby power. This will save the average household $100 a year on their energy bill.
- Even if you don't own your home, you can keep your electric bill down by making energy-efficient choices in the areas of your home you control.
- Clean or change filters regularly. A dirty furnace or air conditioning filter slows air flow and makes the system work harder to keep you warm or cool.
- Hire a professional to service and maintain your heating and air-conditioning system.


- Reduce the water heater temperature to 120 F to save energy and money on heating water. Wrap the water storage tank in a specially-designed blanket to retain the heat. If your water heater is in need of replacement, consider installing an energy-efficient tankless water heater.
- Use low-flow faucets and showerheads to save on water bills.
- Use your window shades. Close blinds on the sunny side in summer to keep out the hot sun, and open them in winter to bring in warm rays.

# Energy Audits Point the Way to Savings

Conducting an energy audit of your home is a great way to identify opportunities for energy savings. Below are five areas an auditor will typically cover.

- **Leaks and Losses:** Damaged, missing or improperly installed insulation can increase energy use year-round. Knowing where and how to check can identify problems.
- **Comfort Costs:** A visual inspection of your thermostat, water heater, heating and air conditioning equipment, and ductwork can identify performance problems.
- **Assessing Appliances:** The age, condition, location and use patterns for washers, dryers, refrigerators, and other major appliances can impact efficiency levels.
- **Learning Lighting:** A quick discussion about lighting options with an energy auditor can take the guesswork out of choosing the best bulbs and fixtures.
- **Activity Adjustments:** Knowing how and when you use energy can help you save money. Shifting the time of day you use energy to do things such as laundry and cooking to cooler, less humid hours can ease the load on HVAC systems.

"One home I visited had an overflowing air handler water pan and extreme fungal growth," Manuela says. "Some members, particularly renters, don't realize their HVAC systems have an air filter. When they are dirty, they can freeze up the system and cause an increase in power consumption."

Many utilities provide energy audits and support professional development for energy advisers that includes exposure to building science concepts.

Professional development training focused on both new construction techniques designed to improve energy efficiency and retrofitting options for upgraded older housing are common, as is specialized training for multi-family units and manufactured housing.

"By providing a picture of how energy is used in the home, people can concentrate on what can save them the most energy," says Eileen Wysocki, an energy auditor with Holy Cross Energy, headquartered in Glenwood Springs, Colorado.

Eileen starts with a baseload estimate of energy use based on meter data. Talking with the consumer, she learns about household size and behavior patterns, then considers seasonal factors. In her area, that includes using heat tape to prevent water lines from freezing in the winter.

"We have many second homes in our service territory," Eileen says, noting that even when empty, energy use continues. "Fan coil blower motors, whole-house humidifiers, boiler pumps, ventilation systems, driveway snowmelt pumps, pool pumps, hot tubs, garage heaters, heated toilet seats and towel bars are using energy, regardless of occupancy."

The co-op—which serves popular ski areas around Aspen and Vail—is designing a new audit form that will stress benefits for members through efficiency upgrades, including comfort, says Mary Wiener, energy-efficiency program administrator for Holy Cross Energy.

Some utilities provide free audits, especially when requested in response to high-bill concerns. Others may charge a small fee, offering rebates to consumers who implement some of the recommendations.

Utilities that offer audits use the service to reinforce their role as a trusted energy adviser that helps consumers save energy and control electricity costs.

Time spent with an energy auditor can help a consumer avoid ineffective upgrades or buying improperly sized equipment that might not improve comfort or produce savings.

An energy adviser's home visit usually involves far more detailed information than the brief discussions about energy efficiency members may hear at a utility meeting, fair or other community event.

On average, a member can reduce their energy use by about 5 percent if they follow the low-cost or no-cost advice given during the audit. Additional savings of up to 20 percent can be achieved by addressing issues with big-ticket items, such as HVAC replacement, attic insulation or major duct repair.

Improved energy efficiency not only helps the utility control peak demand and wholesale power costs, it offers opportunities to discuss available programs and services, such as rebates, weatherization measures and payment assistance. ■

*To learn more about energy audits available to you, contact your electric utility.*

# Weather the Storm

*Prepare now to better cope with hazardous conditions*

**By Pam Blair**

Severe weather can happen any time in any part of the country, leaving behind damage and danger—including electrical safety hazards. Downed power lines are visible, but electrically charged water is not. Both carry the risk of electrocution.

September is National Preparedness Month. Understand, plan and practice for weather-related risks in your area.

Hazardous conditions include thunderstorms with damaging winds, tornadoes, hurricanes, hail, flooding and flash flooding, and winter storms with freezing rain, sleet, snow and strong winds.

The Emergency Alert System and National Oceanic and Atmospheric Administration Weather Radio provide emergency alerts. Some communities also have a warning system.

## Floods

Floods are the most common natural disaster in the United States. Floods result from rain, snow, hurricanes, tornadoes, storm surges, and overflows of dams and other water systems. They can develop slowly or quickly. Flash floods can come with no warning.

Failing to evacuate flooded areas, entering floodwaters or remaining after a flood can result in injury or death.

Know the flood risk in your area. Visit FEMA's Flood Map Service Center (https://msc.fema.gov) for information. If flash flooding is a risk in your area, monitor potential signs, such as heavy rain.

Gather supplies in case you have to leave immediately or if services are cut off. Keep in mind each person's specific needs, including medication, and pets.

Keep important documents in a waterproof container. Create password-protected digital copies. Move valuables to higher levels. Declutter drains and gutters. Install check valves. Consider a sump pump with a battery.

Learn and practice evacuation routes, shelter plans and flash flood response.

If you are under a flood warning, find safe shelter right away. Evacuate if told to do so. Do not walk, swim or drive through floodwaters. Never drive around barricades. Just 6 inches of moving water can knock you down, and 1 foot of moving water can sweep your vehicle away. Stay off bridges over fast-moving water. Fast-moving water can wash bridges away without warning.

Avoid driving, except in an emergency. If your vehicle is trapped in rapidly moving water, stay inside. If water is rising inside the vehicle, seek refuge on the roof.

If trapped in a building, go to its highest level. Do not climb into a closed attic. You may become trapped by rising floodwater. Go on the roof only if necessary. Once there, signal for help.

If evacuated, listen to authorities for information and instructions. Return home only when authorities say it is safe.

Avoid wading in floodwater, which can contain dangerous debris and be contaminated. Snakes and other animals may be in your house. Wear heavy gloves and boots during clean up.

Be aware of the risk of electrocution. Underground or downed power lines can electrically charge the water. Do not touch electrical equipment if it is wet or if you are standing in water.

If it is safe to do so, turn off the electricity to prevent electric shock.

## Thunderstorms and Lightning

Thunderstorms often include lightning and powerful winds, sometimes exceeding 50 mph, with the possibility of hail, flash flooding and tornadoes.

Lightning is a leading cause of injury and death from weather-related hazards. Although most victims survive, people struck by lightning often report a variety of long-term debilitating symptoms.

Know your area's risk. In most places, thunderstorms can occur year-round.

Cut or trim trees that may be in danger of falling on your home. Consider buying surge protectors, lightning rods or a lightning protection system to protect your home, appliances and electronic devices.

Pay attention to alerts and warnings. If under a thunderstorm warning or you hear the roar of thunder, go indoors. A sturdy building is the safest place to be. If boating or swimming, take shelter indoors or stay in a car with a metal top and sides. Do not touch anything metal.

Once indoors, avoid running water or using landline phones. Electricity can travel through plumbing and phone lines.

Unplug appliances and other electric devices. Secure outside furniture.

Avoid flooded roadways, and watch for fallen power lines and trees.

**Floods are the most common natural disaster, caused by a variety of weather conditions. In the Northwest, rising water typically is a result of heavy rainfall or melting snow. In the Southwest, flash floods are common. In the Southeast, hurricanes and tornadoes are accompanied by a rapid accumulation of rainfall.**

### Tornadoes and Hurricanes

Tornadoes are violently rotating columns of air that extend from a thunderstorm to the ground. They can destroy buildings, flip cars and create deadly flying debris with winds exceeding 200 mph.

The Southeast and Midwest have the greatest risk for tornadoes, although they can happen anytime and anywhere.

Know the signs of an impending tornado, including a funnel-shaped cloud, an approaching cloud of debris or a loud roar similar to a freight train.

If your community has sirens, become familiar with the warning tone. Pay attention to weather reports.

If you are under a tornado warning, take shelter right away in a sturdy building. Go to the basement or storm cellar. If in a building with no basement, get to a small interior room on the lowest level. Stay away from windows, doors and outside walls.

If outside, avoid overpasses or bridges. You are safer in a low, flat location. Do not try to outrun a tornado in a vehicle.

Watch for flying debris. Shield your head and neck with your arms and put materials such as furniture and blankets around you. Cover your mouth with a cloth or mask to avoid breathing dust.

After a storm, reserve phone calls for emergencies. Phone systems are often down or busy after a disaster. Use text messaging or social media to communicate with family and friends.

Be careful during cleanup. Wear thick-soled shoes, long pants and work gloves. Stay clear of fallen or broken utility lines.

Do not enter damaged buildings until you are told they are safe. As with floods, be aware of electrocution risks. ■

## Be Prepared for Outages

Severe weather often results in interruption to electrical service. To stay safe and more comfortable during a power outage:

- Before an outage, take inventory of the items you need that rely on electricity. If you plan to use a generator, make sure it is properly sized for what you plug into it and that it is not directly connected to household wiring unless a transfer switch has been installed by a licensed electrician. Use generators outdoors, away from windows.
- Put together an emergency kit. Include flashlights with extra batteries, a radio, nonperishable food, water and first-aid supplies.
- Talk to your medical provider about a plan for devices powered by electricity and critical medicines that require refrigeration.
- Keep mobile phones and other electric equipment charged, and gas tanks full ahead of a storm.
- Monitor weather reports.
- During an outage, disconnect appliances and electronics. Power may return with momentary surges or spikes that can cause damage.
- Keep freezers and refrigerators closed. The refrigerator will keep food cold for about four hours. A full freezer will keep the temperature for about 48 hours.
- Do not use a gas stove to heat your home. Go to a community location with power if necessary.
- Check on your neighbors. Older adults and young children are especially vulnerable to extreme temperatures.
- After an outage, throw away any food that has been exposed to temperatures 40 degrees or higher for two hours or more, or that has an unusual odor, color or texture. If power is out for more than a day, discard medication that should be refrigerated, unless advised otherwise by a medical professional.

# Thinking Big, Staying Local

*Bev Clarno adds secretary of state to her distinguished resumé of public service*

**By Courtney Cobb**

Deschutes County commissioner, Oregon state representative, speaker of the House, state senator, regional director of the U.S. Department of Health and Human Services and Central Electric Cooperative board director: Bev Clarno has held each of these positions with distinction and honor, fully committed to serving the communities she represents.

Politics was not Bev's first calling, but she can vividly remember the day she decided to pursue office.

"I was running my hog farm, and government regulators would inspect my barns," she says. "Sometimes they would fine me and say I was doing something wrong. I thought the government should help you do it right rather than be so negative in their approach to get things right."

At the time of those inspections in the early 1970s, Bev decided she would run for the state legislature once her kids were grown. The rest, as they say, is history.

While Bev holds fond memories from the rewarding positions that took her to Salem, Seattle, throughout the Pacific Northwest and to Washington, D.C., she most enjoys engaging and representing her local community.

"Local issues have always been closer to my heart than the issues in Seattle or Salem because these issues connected me to the people I know," Bev says. "That's where we live, that's our community, that's the place where we want everything to work right and have people work together to solve any issues we may have."

This philosophy extends to Bev's service beyond elected office. A dedicated community servant, Bev served on numerous boards, including those of the Oregon Historical Society, Maryhill Museum, Deschutes River Conservancy, Deschutes County Fair and Expo, Central Oregon Community College Foundation, Central Oregon Youth Investment Foundation and Redmond Chamber of Commerce.

**Bev Clarno is surrounded by her husband, Ray, children, grandchildren and great-grandchildren at her swearing-in ceremony.**

Photo provided by Bev Clarno

## A Cooperative Mindset

The Clarno family's commitment to Central Electric Cooperative runs deep.

Bev's husband, Ray, served on the board of directors throughout the 2000s. At the time, Bev was a regional director for the Department of Health and Human Services—a position based in Seattle.

She recalls one of the co-op members prompted Ray to get involved.

"At the time, I talked with Ray about having been lobbied by a lobbyist in Salem who represented the cooperatives," Bev says. "I thought it was a good idea."

The lobbyist, representing the Oregon Rural Electric Cooperative Association, left an indelible impression on Bev about co-ops and the instrumental role they play in serving rural communities.

It is a message that has stuck with Bev and Ray through the years.

After serving for a decade, Ray stepped aside and turned to Bev, asking, "Why don't you do it?"

Bev laughs as she recalls the conversation. At the time, she was heavily involved in the community, serving on the boards of Deschutes County Fair and Expo, Central Oregon Youth Investment Foundation and Redmond Chamber of Commerce.

It did not take much to convince her. Bev realized the importance of providing reliable electricity at an affordable price. It is a guiding principle she holds to this day.


**Bev Clarno shares a laugh with fellow board members Kelly McFarlane, left, Dan Steelhammer and Tom Strand at the 2019 Central Electric Co-op annual meeting.**
Photo by Brent ten Pas

"It's my goal to keep rates as low as possible because they are my rates, too," Bev explains.

Her experience as a hog farmer and irrigator has made her conscientious about what it takes for farmers to raise crops and do so in a manner to control costs and make a living.

Bev also takes the seventh cooperative principle, "Concern for Community," to heart. CEC gives back to the Central Oregon community it serves through a variety of sponsorships, donations, scholarships and employee volunteerism.

"We help in our local community in a variety of ways—from two scholarships to Central Oregon Youth Challenge to helping with our local 4-H livestock sales, a Central Oregon Community College Foundation Scholarship and a multitude of other nonprofit organizations," Bev says.

It should come as no surprise that Bev fully supports the National Rural Electric Association's Washington, D.C., Youth Tour.

CEC's board of directors selects two students each year to send to the nation's capital for one week to learn about the political process and our nation's history, meet with House and Senate members, and gain a greater appreciation for cooperatives.

Bev says she loves to see young students inspired by these trips and have their eyes opened to the possibilities of what they can do someday.

Bev also finds it rewarding to serve with a good group of dedicated and well-meaning men and women on CEC's board of directors. She enjoys visiting with fellow members at the cooperative's annual meeting or in the community, sharing the co-op's story and learning about issues impacting members.

Above all, Bev says she continues to serve because "I love our cooperative."

## Powerful Grassroots Voices

As Central Oregon continues to grow, Bev is concerned about the loss of its rural identity. She sees an ever-growing urban/rural divide.

With her identity steeped in ranching and agriculture, Bev stresses CEC members must engage with their local representatives. From her experience as a state legislator and now as secretary of state, Bev says it is imperative for legislators to hear from their constituents.

"You have a vote, and they will listen to you," Bev says. "A co-op member talking to you about a concern they have is a lot more urgent for me to listen to than a company's CEO."

Bev applauds CEC's involvement with ORECA-Action and its political grassroots efforts. ORECA-Action represents the legislative and regulatory interests of Oregon's 18 not-for-profit, consumer-owned electric cooperatives.

Bev stresses the importance for members to join the network so they can easily contact lawmakers and tell the cooperative's side of the story while protecting the co-op from electric rate hikes due to oppressive regulations.

"As a former legislator, I expected the managers and ORECA executive director to lobby me, but when the members lobbied me, that is a better voice," she says.

As lawmakers continue to discuss and push for more mandates on electric utilities, grassroots efforts to inform legislators could not be more important. CEC is at the forefront of many discussions surrounding solar power, vegetation management, electric vehicles and more.

"We will see more mandates that will impact our cooperative," Bev says. "All the more reason for members to sign up up for ORECA-Action. We have to let them know our concerns and how their mandates affect our lives in rural areas." ■

# Wildfire Evacuation Guide

## Level 1: READY

- Level 1 means **BE READY** for potential evacuation. There is a fire in your local area.
- Prepare for any family with special needs, mobile property, and pets or livestock.
- Monitor local social media, news and radio for information.
- Emergency Personnel may contact you via an emergency notification system.

## Level 2: SET

- Level 2 means **BE SET** to evacuate. You must be prepared to leave at a moment's notice.
- Level 2 stands for significant danger in your area. Load your **5Ps** (**People**, **Pets**, **Pills**, **Photos**, Important **Papers**) and **72-Hour Kit** into the car.
- Relocate to a specified shelter (if activated) or with family/friends outside the affected area.
- You MAY have time to gather necessary items, but you must be prepared to leave at a moments notice.
- If you have time, when leaving your home, write EVACUATED on a pillow case and hang it at the end of your driveway.
- **THIS MAY BE THE ONLY NOTICE.**

## Level 3: GO

- Level 3 means **GO**, evacuate NOW. Leave immediately.
- The danger in your area is current, and you should evacuate immediately.
- DO NOT delay leaving to gather any belongings or make efforts to protect your home.
- Obey orders of law enforcement and fire department officials.
- Drive calmly and with special attention to emergency vehicles.
- Do not block access to roadways for emergency vehicles or other evacuees.
- **THIS WILL BE THE LAST NOTICE YOU WILL RECEIVE.**


Source: Deschutes County Sheriff's Office

CENTRAL ELECTRIC COOPERATIVE, INC.

# Ready, Set, Go: Prepare for Wildfires

*Be proactive in protecting your life and property*

**By Courtney Cobb**

Communities never know when a wildfire will strike, but they can prepare their homes, families and businesses by taking basic steps.

## Your Home

Project Wildfire Program Director Jodie Barram says wildfire is a top threat for Central Oregonians. Being prepared helps protect not only lives and property, but the environment from damage.

"It assists those who respond to wildfires by improving their ability to fight the fire," Jodie says.

A basic tip for wildfire preparation is creating defensible space around your home: thinning or removing trees and brush, and picking up pine needles, grasses and finer fuels.

Sgt. Nathan Garibay, Deschutes County Sheriff's Office emergency manager, says homeowners should focus on three home ignition zones: immediate (the home itself and 0-5 feet), intermediate (5-30 feet), and extended (30-100 feet).

"Adequate defensible space can give a home up to an 85% chance of survival," says Alison Green, coordinator with the Central Oregon Cohesive Strategy Initiative.

Alison says maintenance is key to keeping a defensible space. Although full-scale tree or brush thinning or removal won't need to be done on an annual basis, pine needles, grasses and finer fuels should be addressed once or twice a year.

**Have an evacuation plan ready and be prepared to go.**
iStock photo

"Residents need to keep an eye on their landscape for vegetation that may be overgrown or grown back," Alison adds. "Defensible space activities are never done since the vegetation will inevitably grow back."

Nathan emphasizes limiting ignition sources, especially in hot and dry months.

"Be careful with an open flame such as barbecues, burning, fireworks, etc.," he says. "Limit chainsaw use, brush cutting and mowing of dry grass, especially after mid- to late-morning or when fire agencies indicate that fire danger is high or extreme."

## Plan Ahead

Preparing now can save you time in an emergency. Nathan recommends residents know different ways out of their neighborhood or community.

"Fire locations and behavior may influence which one is best," he says. "Drive all these routes and familiarize yourself with them."

Public safety and public works crews do their best to manage traffic on main roads and arterials.

Next, create a 72-hour kit, also known as a go-bag. Items should include food, water, medicine, emergency essentials, and copies of important documents such as credit and identification cards.

While making evacuation plans, think about special arrangements for animals large and small.

"Plans for the four-legged family members are absolutely critical since most evacuation shelters do not take pets due to allergy concerns," Alison says. "Have a plan of where your pets will stay during an evacuation situation. If that place is with you, ensure you have an adequate plan and supplies for your family and your pets."

Sign up for emergency alerts. Nathan says each county in Central Oregon has opt-in services to help notify residents.

"These messages will be sent to those affected or believed to be affected based on their address," he says.

## Evacuation: Ready, Set, Go

Oregon has a program called Ready, Set, Go. When the Ready (level 1) notice is issued, residents are encouraged to be prepared to go and have a plan to evacuate. It's a good idea to monitor local news and social media for information.

The Set (level 2) notice means there is significant

**Take steps to protect your family and home from the devestation of a wildfire.**

iStock photo

danger in the area. Residents should load their go-bag in the car and be ready to leave. If there is time before leaving, write EVACUATED on a pillowcase and hang it near the end of the driveway to let emergency personnel know the property is vacated.

When the Go (level 3) notice is issued, all citizens should evacuate immediately. There is no time to grab emergency kits or try to protect property.

"If you see fire and smoke and believe it to be a threat to you, you may want to consider evacuating even if you haven't received notice," Nathan says. "Fires that start in or near populated areas can move quickly, and authorities may not have had a chance to notify you."

You may have heard stories about people staying until the last-possible minute to protect their belongings or property. Officials urge you to evacuate early.

"As people are evacuating, emergency responders may also be trying to get into an area," Jodie says. "Leaving early can help them get through faster."

Alison says leaving promptly can help people in an already stressful situation.

"Your senses will be heightened during an evacuation," she says. "Leaving late can compound the already stressful situation with driving in dark, smoky, windy and congested conditions with a sense of overwhelming urgency. For evacuations, smooth is fast and fast is smooth. The more responsive the community is to evacuation notices the better off residents and emergency personnel will be."

Wildfires rarely happen on a Saturday when you are home relaxing, Alison says, but can be when you are out of town, at work or in the middle of the night.

A final evacuation tip: Whether or not residents stay in a shelter, they should still check in to let officials and volunteers know they are out of harm's way.

### The Cost of Wildfire

Wildfires can devastate businesses and communities. Jodie points to an economic impact study by Travel Oregon in 2017. That year, Deschutes County lost $16 million in travel and tourism due to wildfires.

She also cites staggering statistics from a 2012 Federal Emergency Management Agency Business Resiliency Study. Of businesses with no business continuity or emergency plan, 43% never reopened, 51% closed within two years, 80% that do not recover from a disaster within one month are likely to go out of business, and 75% without a business continuity plan fail within three years of a disaster.

Being ready now will create resiliency for when disaster strikes.

"The more folks take steps to prepare for the inevitable wildfire, the impacts will be minimized and the quicker our community will recover from those impacts," Alison says. "Practice makes perfect. Your family's evacuation plan is no exception." ■

## Wildfire Planning Resources

- **Emergency kits:** https://sheriff.deschutes.org/divisions/special-services/emergency-management/before-a-disaster-emergency-preparedness or www.projectwildfire.org/kit.
- **Pet/animal evacuations:** www.petevacuationteam.com/about.html
- **Wildfire information:** www.centraloregonfire.org
- **Business preparedness tips:** www.projectwildfire.org/businesstips


**This caricature of Willie Wiredhand was created by NRECA for a social media post in February 2017, proving that rural electrification's icon lives on.**

# A Spokes-Plug for All Time

Willie Wiredhand may not live on for millennia as the gods of mythology have. But at the dawn of the new millennium, Willie's place was secure in the hearts of many consumers.

"Although Willie and his many spokes-character friends may rise and fall in prominence over the years, I think we can be assured of their continued presence," said Margaret F. Callcott, who extensively researched and wrote about these gesturing little pluggers of the advertising world. "The landscape may change, but people do not lose their desire to feel a personal connection to products and services that permeate their lives. If anything, this need intensifies when distribution channels expand ... as they did at the turn of the last century with mass production and mass transportation, and as they have at the turn of this century with the introduction of the internet.

"Unlike human characters, such as Aunt Jemima and Betty Crocker, Willie does not require physical updating to maintain credibility," Callcott continued. "As a plug, he still personifies electric power. As a spokes-character, he has come to represent a 'brand' of reliable electric power (consumer-owned vs. investor-owned). Willie is truly a spokes-plug for all time." ■

*Thank you to Richard G. Biever, senior editor of Indiana's Electric Consumer, who chronicled the history of Willie Wiredhand in honor of Willie's 50th birthday in 2001. Richard remains one of Willie's most ardent fans.*
*Willie Wiredhand is a registered trademark of the National Rural Electric Cooperative Association and cannot be used without permission of NRECA.*

# Build Your Emergency Supply Kit

**Assemble everything you need for a robust emergency kit by buying or collecting a few items each week over the course of three months. Here is the second of three shopping lists to help you gather supplies. See last month's issue for the first list.**


**WEEK 5: First Aid**
- Aspirin or acetaminophen
- Hot and cold compresses
- Bandages, gauze and first-aid tape
- Hand and dish soap, hand sanitizer, etc.

**WEEK 5: Bonus**
- Check with your child's school about their emergency and disaster plans

**WEEK 6: Grocery Store**
- 1 gallon water per person
- 2 cans ready-to-eat soup
- 1 can fruit and 2 cans vegetables

**WEEK 6: Bonus**
- Have a home fire drill
- Take family pictures to put in emergency kit

**WEEEK 7: First Aid**
- Scissors, tweezers, sewing kit
- Thermometer
- Medical device batteries (e.g. hearing aids, etc.)
- Additional supply of medications (1 to 3 months)

**WEEK 7: Bonus**
- Put shoes and a flashlight under your bed so they are onhand during an emergency

**WEEK 8: Hardware and Supplies**
- Water purification (e.g., tablets, filters, bleach)
- Heavy-duty garbage bags
- Waterproof container for vital documents
- Portable radio with batteries

**WEEK 8: Bonus**
- As applicable, store a spare set of glasses or contact lenses and saline solution; make a copy of any prescriptions

# GVEA's Meter Replacement Project

Q&A

As part of ongoing system improvements, Golden Valley Electric has been installing new electric meters.

The meters include new technology that help GVEA operate more efficiently and improve outage restoration.

We want to answer your questions on the new meters. Here are answers to some of the most common questions.

## 1

*How long has the Advanced Metering Infrastructure (AMI) technology been around?*

The system selected by GVEA has been in service around the U.S. since 2007. AMI meters are in use throughout urban and rural Alaska and small and large cities around the Lower 48.

According to the Regulatory Commission of Alaska (RCA), as of 2017, there have been over 78.9 million AMI installations and about 80 percent of those were residential customer installations.

## 2

*Are the new AMI meters safe?*

There are millions of Aclara (formerly GE) AMI meters installed around the U.S. GVEA has completed 47,000 installations without a single safety issue.

The new AMI meters, like the meters they replaced, comply with UL (Underwriter Laboratory) and ANSI (American National Standards Institute) meter manufacturing and safety standards.

Old


New

# GVEA's Meter Replacement Project

Q&A

**3** *Are there any health issues associated with the Advanced Metering Infrastructure (AMI) technology?*

No, the American Cancer Society, the World Health Organization and Health Canada have studied AMI meter technology and could not identify a public health risk.

The new meters radiate less radio frequency (RF) energy than GVEA's old meters, which have been in use for almost 20 years. In fact the new meters emit significantly less RF energy than your cell phone, micowave or household WiFi.

**4** *Will the new meters protect my home from voltage surges?*

Sadly, no. Neither the old or new meters are designed to protect a house from voltage surges caused by something like a nearby lightning strike.

Using voltage surge protector devices inside your home is still the best way to protect your electronics.

**5** *Will the new Advanced Metering Infrastructure (AMI) meter increase my electric bill?*

Maybe, but not because of the power needed for the meter. That is paid by GVEA.

Old meters may have become less accurate in measuring usage. The new meters are independently tested to meet National standards and are accurate to within 0.2%.

If you feel your meter is not recording accurately, contact GVEA for the procedure to request a test.

# GVEA's Meter Replacement Project

## Q&A

**6** *Can I choose to keep my old meter?*

GVEA's goal is to keep member costs down. Therefore, only one metering system will be maintained. By having all meters the same, it reduces the costs and complexities that would arise from different meters throughout the system.

**7** *There are lots of stories in the news about electronic devices being able to invade my privacy. Is that possible with the new Advanced Metering Infrastructure (AMI) meter?*

Just like the old meters, the new meters only measure the total energy used at the location. It does not measure or record power used by individual appliances or activities.

GVEA has always respected our members' privacy and adamantly protects any personal information. We don't sell or share any energy usage data. You are the only one who has access to your usage data.

**8** *Are the new meters related to the upcoming 5G technology?*

No, they do not use 5G and are actually incompatible with this new technology.

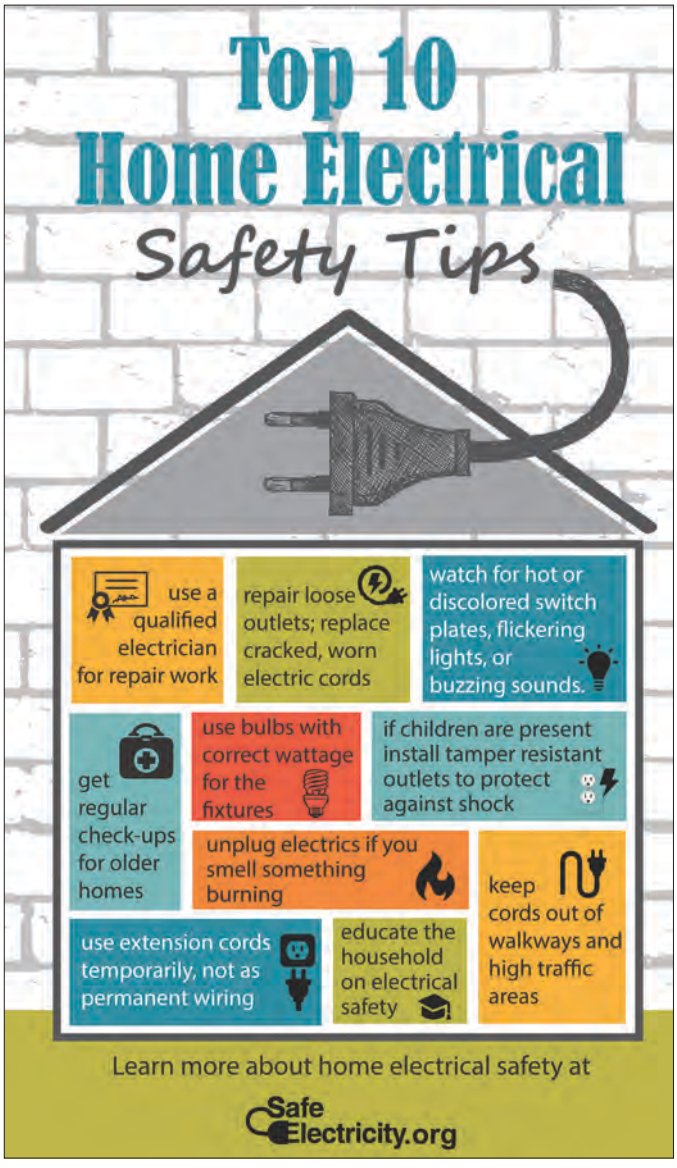
**Have more questions?**
Visit www.gvea.com/inside/gvea-projects
or email us at mrp@gvea.com
or give us a call at 458-5709

GVEA
Golden Valley Electric Association
Your Touchstone Energy® Cooperative

# Preventing Electrical Fires

Take steps to help prevent electrical fires by identifying possible safety problems before they occur. Safe Electricity offers the following checklist to help find possible issues with your electrical system or appliances before they become a fire hazard in your home:

- **Electrical outlets.** Check for loose-fitting plugs and loose wall receptacles. Replace missing or broken wall plates. If you have young children, install tamper-resistant outlets. Avoid overloading outlets with adapters and too many appliance plugs.
- **Electrical wiring.** If an outlet is not working, it may be an indicator of unsafe wiring. Have an electrician check it out. Also check for loose wires and loose lighting fixtures. Listen for popping or sizzling sounds behind walls. If light switches are hot to the touch or lights spark and flicker, immediately shut them off at the circuit breaker and contact a qualified electrician to make repairs.
- **Ground-fault circuit interrupters.** Make sure GFCIs are installed in your kitchen, bathrooms, laundry, workshop, basement, garage and outdoor outlets. GFCIs help protect against electrical shock. Use the test and reset button monthly to ensure they work properly.
- **Arc-fault circuit interrupters.** Consider having AFCIs installed in your home. An AFCI installed in a circuit breaker monitors the flow of electricity throughout your home. If the AFCI detects any abnormality, it will shut the system off, preventing a fire.
- **Plugs.** Do not remove the grounding pin—third prong—to make a plug fit a two-conductor outlet.
- **Cords.** Make sure cords are not frayed or cracked, placed under rugs, tightly wrapped around any object or located in high traffic areas. Do not nail or staple them to walls, floors or other objects.
- **Extension cords.** These are not intended as permanent household wiring, so only use them on a temporary basis. If you need more electrical outlets, talk to an electrician about installing more so you will not need to use extension cords.
- **Lightbulbs.** Verify your lightbulbs are the intended wattage for the lamp or fixture they are in, and make sure they are screwed in securely so they do not overheat.
- **Appliances/electronics.** If an appliance repeatedly blows a fuse, trips a circuit breaker or has given you an electrical shock, immediately unplug it, and have it repaired or replaced. Use surge protectors to protect expensive electronics. Make sure your appliances and electronics are placed in dry locations. If an appliance has been damaged by water, replace it.




- **Circuit breakers/fuses.** Check that circuit breakers are working properly. Fuses should be properly rated for the circuit they protect.
- **Service capacity.** If fuses blow or trip frequently, you may need to increase the capacity of your electrical service or add new branch circuits. Contact a qualified electrician. ■

*For more information on electrical safety in your home, visit SafeElectricity.org.*

# What's New With Electric Vehicles?

**By Maria Kanevsky**

Electric vehicles are on the rise in the United States, and are providing a new driving experience for many Americans. The benefits are clear from the expansion of the EV market, including less air pollution in congested areas, less carbon emissions, decreased maintenance costs and less oil consumption.

In 2011, about 17,000 EVs were sold, compared to 361,000 EVs sold in 2018. Cumulatively since 2011, nearly 1.2 million EVs have been sold, and that number continues to grow.

Tesla has dominated the EV market in the U.S., making up more than half of the total EV sales in 2018. The first luxury EV was manufactured by Tesla, setting the stage for style and performance.

Although Tesla dominates in sales, many other popular models are available, and the competitiveness among them is increasing.

In 2011, there were only two options: the Nissan Leaf EV and the Chevy Volt Plug-In EV. But in 2018, eight models that made up 80 percent of total plug-in EV sales. This includes many major manufacturers, such as General Motors, Ford, Toyota and BMW.

One reason the EV market has been doing so well is the total cost of ownership of newer EV models is becoming much closer to that of gas-powered vehicles. Since maintenance costs for EVs are lower than gas-powered vehicles and the price to charge an EV is cheaper than filling a tank with gas, people are spending less money on EVs over the course of the car's lifetime than they would on gas-powered vehicles.


**Above, DC fast chargers can fully charge an electric vehicle in 15 to 45 minutes, ensuring the EV has enough juice to last the entire journey. However, DC fast charging infrastructure is not growing as quickly as EV sales, which presents an issue for drivers who do not live near them.**

**Left, in 2018, Tesla dominated the EV market in the U.S., accounting for more than half of total EV sales.**

A lot of the growth of this market sector is concentrated in a few states, mainly in California, the West Coast (Washington and Oregon) and the Northeast (New York, New Jersey, Massachusetts, Maryland and Pennsylvania).

California leads the way in EV sales, charging infrastructure and state policies, which all contribute to the fact California makes up about half of the country's EV market.

With the growth of EV sales comes a growing need to charge those vehicles. There are three main types of charging levels: Level 1, Level 2 and DC fast charging. Level 1 and Level 2 are mainly for residential charging, while DC fast chargers are made for a "gas station" experience.

For charging outside of the home, DC fast chargers can fully charge an EV in 15 to 45 minutes. For longer drives and road trips, these chargers ensure your car has enough juice to last the entire journey. However, DC fast charging infrastructure is not growing as quickly as EV sales are, which presents an issue for drivers who do not live close to them.

There is a strong expectation for EV sales to continue to grow as they have been during the past eight years. Although the charging infrastructure is not evenly distributed throughout the country, there will be a strong need to continue developing it to reach a wider audience.

Many electric cooperatives are positioned to start developing charging infrastructure to address this need. The growth of the EV market and charging infrastructure across the U.S. will be the future of our nation's roadways. ■

## Let the Rebuilding Begin

# The Power to Serve

When summer break arrives each year, children often sleep in late, take a dive in the pool and spend time with their friends. For some youth, the search for a more meaningful summer weighs on their minds. That is where the Salkehatchie Summer Program steps in.

In 1978, founder John Culp began leading youth groups into dedicated service for surrounding communities. The small group has evolved into 46 camps and more than 2,000 campers every summer. The program is supported by the United Methodist Church Conference of South Carolina.

Salkehatchie services are for low-income families who own their homes and are unable to keep up the maintenance, typically due to the owner's age, disability or life crisis. Salkehatchie partners with local churches of all denominations, local businesses, groups and individuals to help ensure residents of the county have homes that are safe, dry and warm in winter. Salkehatchie-Pee Dee has come to Marlboro County for 24 years. This summer, 99 adult and youth volunteers lodged at Camp Pee Dee.

The rewards from these life-changing weeks are two-fold, as campers experience the satisfaction of serving others while improving the lives of those in need. During these eye-opening weeks, campers foster an array of social and work skills as they learn to work as a team on projects such as building ramps or remodeling rooms.

MEC's John Powers, James Emanuel, Tommy Hayes, Daniel Cook, Ed Salley, Nicky Jacobs, Bryan Singletary and Salkehatchie volunteers Bobby Hamilton and Leith Fowler.

Madison Parker, who lives in Marlboro County, participated in the neighboring Georgetown Camp.

"My experience at Salkehatchie 2019 was one I will always cherish," she says. "There was great fellowship and unity among campers, leaders and homeowners. I experienced true sacrifice as I dedicated a week of my summer to serve others who are less fortunate as I laid my own desires aside."

Madison says seeing the look of gratitude and tears on so many faces made the time and work worth the effort.

"It compels me to continue to participate in this program and to assist those who can use a helping hand," she says. "After all, being the hands and feet of Christ is what Salkehatchie is all about."

### Contributing to the Cause

Marlboro Electric Cooperative supports the program with monetary donations through MEC Trust. The co-op has long recognized the efforts of the Salkehatchie Summer Program and how it devotes countless hours of hard work to improve others' lives. This year, MEC went one step further by donating sinks, flooring and other building materials.

"I have seen firsthand the many desperately needed repairs in our communities," says MEC's John Powers. "We hope these donations will help cut down on costs and possibly allow more assistance to those in need of home repairs."

MEC prides itself on helping surrounding communities and being part of successful programs such as Salkehatchie because it carries a profound mission to serve others with love.

For more information to learn how you can help the Salkehatchie Summer Program, go to salkehatchie.org. ■

Power To Serve



**Clockwise from top, Daniel and Bryan unload flooring materials donated by MEC. Marlboro County teen Madison Parker partnered with Salkehatchie volunteers, who left behind a cross with their names. James, Daniel and Leith unload sinks donated by MEC.**

# Help Your Child Succeed

*Good reading skills are essential for success in school*

Parents want their children to grow up to become well-adjusted, happy and successful adults. Most parents know that for their children to be successful, they need a good education.

Studies show children do better in school if their parents are involved in their education. Although small children are inquisitive and eager to learn, they need encouragement and reinforcement to start them off and keep them going in the right direction.

Good reading skills are necessary for success in school. Here are some tips to help your child develop good study habits and a lifetime love of learning.

- Start early by instilling a love for learning. Read to preschool children every day. It arouses their natural curiosity about the world around them and encourages them to want to learn to read for themselves.
- Provide books and supplies. Give your children the tools they need to improve their reading and to do projects.
- Work out a schedule. Decide how much time should be set aside for homework and establish a routine.
- Help your children get organized. Using a calendar gives students a sense of accomplishment.
- Designate a quiet, comfortable place for studying. Encourage youngsters to study in the same place every day, away from distractions.
- Provide reinforcement. Praise your children for working hard and completing assignments.
- Talk with your children about what is going on in the world around them. Encourage new ideas and interests.
- Set an example for them. Parents are, after all, the most important teachers in a child's life. ■

**Provide a quiet, comfortable place for your child to do homework each day to help instill good study habits.**

## Watch for Kids as They Head Back to School

On average, 26 children in the United States are killed every year while getting on or off a school bus, or while waiting at the bus stop.

To avoid such tragedies, drivers are reminded to:

- Carefully back out of driveways. Watch for children walking to the bus stop.
- Slow down. Watch for children walking in the street and playing or congregating near bus stops—especially in the early morning hours, when it may still be dark.
- Be alert. Children arriving late for the bus may dart into the street without looking.
- Obey the law. Yellow flashing lights on a bus mean motorists should slow down and prepare to stop. Red flashing lights mean motorists must stop their cars and wait until the red lights stop flashing, the extended stop sign is withdrawn and the bus starts moving again. Unless there is a median, oncoming traffic also must stop.

Keep It Safe

# Know What to Do After Storms

Severe thunderstorms, tornadoes, hurricanes and flooding can leave more than damage in their wake. They can leave hidden dangers, too.

In some cases, more lives are lost after the storm than from the storm itself.

When dealing with storm cleanup or flood-damaged property, the prospect of an electrical accident is probably not at the top of your mind. But it is the first thing you should think about before you go outside, step foot into a flooded area or enter a storm-damaged building.

When outside, stay away from downed power lines and be alert to the possibility tree limbs or debris may hide electrical hazards. Treat all downed or hanging power lines as if they are energized.

Lines do not have to be arcing or sparking to be live. Warn others to stay away, and call 911 and Escambia River Electric Cooperative.

Do not touch downed power lines, or objects or puddles of water in contact with those lines. There is no way to know if they are energized. Encountering these objects can be as hazardous as coming into contact with a downed power line itself.

Safe Electricity—a nonprofit organization dedicated to educating the public about electrical safety and energy efficiency—offers these additional precautions following storms:

- If you are driving and come upon a downed power line, stay in your vehicle, warn others to stay away, and contact 911 and EREC. Never drive over a downed line. Not only could it be energized, but driving over the line could pull down poles and other items in its path.
- Be alert at intersections where traffic lights may be out. Stop at all railroad crossings, and treat road intersections with traffic signals as four-way stops before proceeding with caution.
- Before re-entering storm-damaged buildings or rooms, make sure all electric and gas services are turned off. Never attempt to turn off power at the breaker box if you must stand in water to do so. If you cannot reach your breaker box safely, call EREC to shut off power at the meter.
- Never step into a flooded basement or other area if water is covering electrical outlets, appliances or cords. Be alert to any electrical equipment that could be energized and in contact with water. Never touch electrical appliances, cords or wires while you are wet or standing in water.
- Keep electric tools and equipment at least 10 feet away from wet surfaces. Do not use electric yard tools if it is raining or the ground is wet.
- Electric motors in appliances that have been drenched or submerged should be thoroughly cleaned and reconditioned before they are put back into service. It may be necessary to replace them. Do not use any water-damaged appliance until a professional has checked it out.
- If power to your home is out for a prolonged period after a storm or disaster, know important safety rules, such as never using a charcoal or gas grill to cook inside.
- If you use a portable generator, make sure a transfer safety switch has been installed, or connect appliances directly to the generator. This prevents electricity from traveling back through the home to power lines—what is known as backfeed. Backfeed creates a danger for anyone near lines, particularly crews working to restore power. ■


**A generator can be helpful during extended power outages following a storm, but be sure to follow proper safety guidelines for use.**

Use Energy Wisely

# Insulation Makes a Difference

A well-sealed home—coupled with the right amount of insulation—can make a difference on your utility bills.

According to the U.S. Department of Energy, sealing air leaks and adding insulation can save up to 10% on your annual energy bill.

Insulation helps keep your home warm in the winter and cool in the summer. Air that leaks through the attic, outer walls, windows, doors and other openings wastes energy and increases utility costs.

Sealing leaks and adding insulation also helps reduce noise from outside; prevents pollen, dust and insects from entering your home; and provides better humidity control.

The amount of insulation in your home will vary with age and type of construction. Older houses—especially those built before World War II—typically are not insulated to today's standards.

But almost all houses can benefit from added insulation.

One of the most cost-effective and easiest places to add insulation is your attic, including the trap or access door.

There are several common types of insulation: fiberglass, both batt and blown forms; cellulose; rigid foam board; and spray foam.

Insulation performance is measured by R-value—its ability to resist heat flow. Higher R-values mean more insulating power. For maximum efficiency, foam or cellulose insulation is recommended.

Insulation works best when air is not moving around or through it, making it important to seal air leaks before installing insulation.

A quick way to see if you need more insulation is to look across your uncovered attic floor. If your insulation is level with or below the attic floor joists, you probably need to add more. The recommended level for most attics is R-38—about 12 to 15 inches, depending on the insulation type.

If your attic has no insulation, you may decide to insulate the underside of the roof with spray foam instead of covering the attic floor. It is best to hire an experienced contractor for this task.

If your attic has enough insulation, yet your home still feels drafty, too cold in winter or too warm in summer, you may need to add insulation to the exterior walls. This is more expensive and usually requires a contractor, but it may be worth the cost in lower utility bills.

If you replace the exterior siding on your home, consider adding insulation at the same time.

Don't overlook another area in your home where energy can be saved: ductwork for the heating and cooling system.

If ducts run through unconditioned spaces in your home—such as the attic or crawlspace—they should be insulated and sealed with mastic tape. ■

**Adding more insulation to the attic can improve the comfort of your home and save on your energy bill.**

**Check ducts. Seal any openings with mastic tape.**

## Tip-Offs to a Need for More Attic Insulation

Your home might be a good candidate for an attic insulation project if it has any of these problems:

- Drafty rooms.
- Hot or cold ceilings, walls or whole rooms, or uneven temperature between rooms.
- High heating or cooling bills.

### A Word About Water

# Saving Starts With Use

*Reduce your utility bill with some simple adjustments*

Hot water is a modern convenience most people could not live without. But did you know water heating is the second-largest energy expense in your home after heating and cooling? It typically accounts for 18 percent of your utility bill.

You can easily reduce the amount you spend on water heating by using less hot water and making these simple adjustments to your unit:

- Reduce your water heater's temperature to 120 F. Each 10-degree reduction in water temperature saves 3% to 5% on water heating costs. Lowering the thermostat not only saves energy, it increases the life of your water heater and reduces the risk of scalding. Before adjusting the thermostat, cut off its power at the breaker. Hire a professional if you are unsure of how to safely change your water heater's temperature.
- Wash clothes with cold water. Laundry detergent works just as well, and you save up to 40 cents a load.
- Shorten showers. A family of four showering five minutes a day uses 700 gallons of water a week—a three-year supply of drinking water for one person. By reducing shower time, you can save hundreds of gallons of hot water a month.
- Install aerating, low-flow faucets and showerheads. Consider replacing older showerheads and faucets.
- Insulate hot water pipes. Hot water flows to your faucet 2 to 4 degrees warmer, which means you will not have to wait as long for it to heat up, saving energy, water and money. A 6-foot, self-sealing sleeve easily slips over pipes. Depending on the location of your pipes, this could take effort. Exposed pipes in the basement are easy targets. Pipes in crawl spaces or walls might be more difficult.
- Check hot water pipes for leaks that can drain your energy dollars. Leaky faucets not only increase water bills, but electricity costs for heating wasted water.
- If you plan to be away for an extended time, turn off your water heater. Even when you are not at home, your water heater uses energy to keep stored water warm. ■

# It's Back-to-School Time!

*Electric co-ops are continually learning to improve service for members*

**By Anne Prince**

It's a new school year, and kids of all ages are getting ready for a fresh year of learning!

From kindergarten through college, students attend school to gain knowledge about a broad variety of subjects and learn new skills that will prepare them for the future.

In a similar vein, the people at Glades Electric Cooperative continually learn so they can use technology that improves electric service, reliability, safety and, in turn, enhance the quality of life for the members served in our local communities.

Glades Electric stays abreast of industry trends as the energy sector rapidly changes. Innovations in technology and energy types fuel demand for more options.

On the consumer front, people are looking for more ways to manage their energy use with smart technologies. Consumers also expect more convenient payment methods—whether through automatic bill pay, online or in person.

Glades Electric offers a variety of payment options, including electronically via recurring bank, debit or credit card payments; by phone; or through the SmartHub app. We also offer in-person payment options at our offices in Moore Haven, Lake Placid and Okeechobee, and at MoneyGram locations.

We are sifting through the options for our members in ways that benefit the greater community. At the same time, we never lose sight of the top priority: providing safe, reliable and affordable electricity.

Technology improves our operational efficiency. For example, automated meter reading automatically collects energy consumption data and transfers it from the electric meter to the co-op. Because this information can be collected remotely, it enhances system efficiency, helps control costs and improves work processes.

Advanced metering infrastructure—which is similar to AMR—is an integrated system of smart meters, communications networks and data management systems that enables two-way communication between utilities and consumers. In the event of an outage, AMI helps distinguish between events that impact a single home or multiple outages. This is important in determining the process to resolve the outage.

The two-way communication is integral to AMI because it provides a means to verify power has been restored after an outage.

One of the biggest benefits from improved technologies—especially for outages caused by extreme weather—is pinpointing the outage location. That helps reduce risk for crews out on the road during severe weather events.

Glades Electric analyzes AMI data for anomalies including faults, damaged meters or energy theft. Detecting these problems early helps our cooperative save money and improve reliability for the whole community.

Consumer interest in green energy and renewables is at an all-time high. Nationally, increased use of solar energy is paving the way for new methods of generating and using electricity. In our region, community solar programs allow co-op members to share in a remote solar array.

U.S. energy experts say we will not be able to meet national energy goals unless we increase our solar energy capacity. Our wholesale energy provider, Seminole Electric Cooperative, continues to research how best to adjust its energy portfolio, which includes solar, natural gas and coal.

Whether it is examining green energy options or exploring how emerging technologies can better serve our members, for Glades Electric Cooperative, our "school year" is never finished. We will continue to learn about our members' priorities, and will study the issues so we can better serve you, now and in the future. ■

# Electric Cooperatives 101

## *A Consumer-Owned Electric Utility Network*

### Florida's electric cooperatives

- Not-for-profit, private, independent electric utility businesses
- Established to provide at-cost electric service
- Revenues beyond the co-op's operating expenses go back to consumers over time
- Owned by the consumers they serve
- Governing board of directors are members elected by members
- Incorporated under the laws of the state of Florida

Distribution cooperatives are the foundation of the electric cooperative network. They are the direct point of contact with their member-consumers in the delivery of electricity and other services. Generation and Transmission cooperatives (G&Ts) provide wholesale power and transmission service to their distribution cooperative members through a combination of their own generation and purchasing power from other utilities and independent power products. In addition to providing high-quality electric service, electric cooperatives are deeply committed to their communities.

### Peace River Electric Cooperative

- Provides electric service to more than 45,000 member accounts
- Serves portions of 10 Florida counties: Brevard, DeSoto, Hardee, Highlands, Hillsborough, Indian River, Manatee, Osceola, Polk and Sarasota
- Averages 11.85 electric services per mile of line
- Seminole Electric Cooperative, PRECO's power provider, is headquartered in Tampa

### Florida Electric Cooperatives Association

- 15 Distribution and 2 G&T cooperatives
- Cooperatives serve an estimated 2.16 million people in 54 of 67 counties
- Co-ops serve an average of 12.9 consumers per mile of line, while investor-owned utilities (IOUs) average 62 consumers per mile of line, while publicly owned utilities, or municipals average 67 consumers per mile of line

Peace River Electric Cooperative, Inc.
A Touchstone Energy® Cooperative