# March 2018 Share Package
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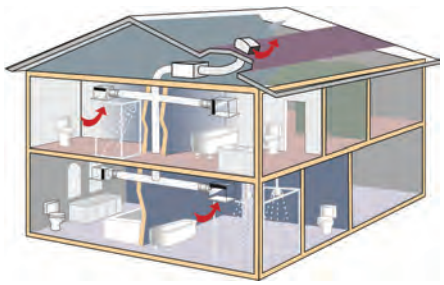
# Efficiently Control Indoor Humidity



**Top, a whole-house exhaust ventilation fan can draw humid air from many rooms at once.**

**Above, heavy condensation on the inside of a sliding glass patio door is a good indication the indoor humidity level is too high for the outdoor temperature.**

Photos by James Dulley

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



***Q:** I have lived in hot and cold areas, and had indoor humidity problems in both. What is an efficient, comfortable humidity level, and how can I maintain it?*

**A:** Humidity-related problems are generally worse during winter in the north and summer in the south, but there can be year-round problems everywhere. Indoor humidity levels can be controlled by opening windows or running the furnace or air conditioner more, but these options increase your utility bills and waste energy.

It is important to understand the term "relative humidity," or RH. Warmer air can hold more water vapor than colder air. If the air at 75 F has an RH of 50 percent, it means the air is holding 50 percent of the maximum amount of water vapor it can hold at that temperature. If that air drops to 50 F, that same amount of water vapor may now be 70 percent RH.

When the air next to window glass during winter or the refrigerator door seal during summer gets cool enough, it reaches a point where the air can no longer hold that much water vapor. This is called the dew point, which is when your windows or refrigerator door sweat.

You can buy an inexpensive hygrometer at most hardware stores to measure indoor relative humidity. If you have humidity-related problems, your best gauge of the proper relative humidity is when the problems are alleviated or at least tolerable.

For example, if you have old single-pane windows in the north, you would have to get the relative humidity level to an uncomfortably low level to avoid all window condensation on cold winter nights.

When referring to personal comfort, a target of 40 to 45 percent relative humidity is good. With relative humidity in the proper range, your furnace or central air conditioner thermostat can be adjusted to save energy.

When the relative humidity level is too high, there can be serious health problems related to allergies, dust mites, mold, mildew and other harmful microbes. If relative humidity is too low, a person's mucous membranes may dry out, which increases the susceptibility to cold and respiratory illness.

Maintaining a comfortable and efficient indoor humidity level requires controlling the sources of moisture and ventilating them efficiently.

The average person gives off one-quarter cup of moisture an hour just breathing. Cooking for a family of four produces five cups of moisture a day. A shower contributes one-half pint, and a bath contributes one-eighth pint.

Exterior moisture sources are leaky roofs, plumbing, windows and doors. Once you take care of these problem areas, check the slope of the ground around your home. It should slope slightly downward away from the home. Even with the best new windows, soggy soil around your home allows excess moisture to migrate indoors year-round.

Installing efficient replacement windows or exterior storm windows is the best method to control window condensation. This also saves energy during the summer cooling season.

With more efficient glass, you should be able to close insulating window shades at night to save energy.

### Additional Humidity Tips

- Install new bathroom vent fans with humidity sensors. These work automatically until the humidity level drops.
- Check the seal around the clothes dryer duct leading the outdoor vent.
- Install a new furnace/heat pump with a variable-speed blower and compatible thermostat to allow it to run in an efficient dehumidification mode during summer. Make sure the damper handle on the central humidifier is set for the proper season.
- Use electric countertop cookers and vegetable steamers in the garage instead of the kitchen during summer. ■

# Give Your Old Water Heater an Efficiency Boost

**Top, wrap your old electric water heater with fiberglass insulation, then with construction foil, to block heat loss.**

**Above, drain about a gallon of water from the bottom of the water heater tank every several months to reduce sediment buildup.**

Photos by James Dulley

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



***Q:*** *My electric water heater is 18 years old, but still works. What can I do to make it more efficient and reduce heating costs?*

**A:** For a typical family of four, it is not unusual for water heating to consume 20 to 25 percent of the total annual energy use. New water heaters are more energy efficient than old ones, but many homeowners cannot afford to replace an older, less efficient one.

Electric water heaters are simple devices. There are two electric resistance heating elements in the water tank: one at the top and one at the bottom. They are not on at the same time because that would draw too much electric current. The bottom element keeps the tank water hot. When hot water runs low, the top element comes on to supply hot water faster.

Electric water heaters, even old ones, have nearly 100-percent heating efficiency. All the electricity used ends up heating water because the heating elements are submerged. The difference in the overall efficiency and your water heating costs are determined by how much heat is lost from the water tank.

In old water heater tanks, the lower heating element must come on fairly often just to make up the heat lost through the insulation to the surrounding air. The most energy-efficient electric water heaters have several inches of high R-value insulating foam between the water tank and the outer skin. Older tanks may have just a couple of inches of fiberglass insulation.

Increase efficiency by adding tank insulation. Test your water heater tank to see if it needs more insulation. Place your hand on other metal objects in your basement or utility room to get a sense for their temperature. Next, put your hand on the water heater tank near the top. I bet your old water heater will feel much warmer because it is losing heat.

Water heater insulating jackets are available at most home center stores. These wrap around the tank and cover the top. R-13 fiberglass batt wall insulation also works well. Face the vapor barrier to the outside and cover this with construction foil to create a low-emissivity barrier.

When insulating a gas water heater, do not block the combustion air inlet at the bottom and the draft diverter at the top.

Older water heaters may not have heat trap fittings in the inlet and outlet pipes as new water heaters do. Because hot water is less dense than cold water, it naturally circulates up into the section of the pipes above the water heater. This hot water loses heat and drops back down. This continuous convection current wastes energy.

Put tubular foam insulation over the pipes immediately above the tank to minimize heat loss. You can also have heat trap fittings installed in your old tank to stop this.

Drain a gallon of water from the valve at the bottom of the tank every several months. If you have not done it before, you may see a lot of sediment come out.

Check the temperature of the hot water at the kitchen faucet with a thermometer. A temperature of 110 to 120 F is adequate.

You will find two covers on the side of the water heater over the heating elements and thermostats. Switch off the circuit breaker and adjust the thermostats. Switch the power back on and let the temperature stabilize.

Install a water heater timer to switch it off during the daytime when away working. The water will stay reasonably hot. Set the timer to come back on late at night. This helps your electric utility control peak demand. Ask your utility if it offers an incentive program for them to install a water heater they can control during peak times.

If you decide to buy a new electric water heater, select a model with a 12-year warranty. These have higher R-value foam insulation in the tank walls than cheaper 6-year models. Most 12-year models have accurate electronic digital controls and a vacation-mode to help save electricity when you are away. ■

# Shedding Some Light on Solar

*How does locally generated solar energy fit into our future?*

Shortly after moving to Hood River County, Oregon, in 2016, my wife and I invested in a 20-panel rooftop solar sys-tem. We were motivated by the positive role of renewable energies in environmental sustainability, while also wanting to reduce our electric bill.

The panels were built by Oregon-based SolarWorld and installed by Portland-based Elemental Energy. Rated at 6.2 kilowatts, the system cost $17,677. After a federal energy-saving credit of $5,303 and a state credit of $6,000, the net cost was $6,374. Accounting for house-specific conditions such as location, orientation and shade, the projected annual output was 7,570 kilowatt-hours.

Unusually heavy snow and an extreme fire season contributed to below-projection output of 6,540 kWh in 2017. Assuming this output, a lifetime of 25 years and 0.7 percent annual loss of panel efficiency, our solar energy will cost 4.24 cents per kWh. Our power company, Hood River Electric Cooperative, charges residential members 7.05 cents per kWh.

At HREC rates, the 2017 production was worth $461. If HREC rates increase 3 percent annually, we will need 11.7 years to break even. In 25 years, we will save $10,436—after deducting investment. Equating savings to compound interest, we will earn 3.95 percent a year tax free.

**Takeaway No. 1:** Our investment in solar was financially sound. Return on investment will be safe from market volatility, with upside potential for less snow and fewer fires, and for higher HREC rate increases.

Is our system environmentally meaningful? The 6,540 kWh we generated equates to offsetting 23 percent of the average American's annual carbon footprint, or to the carbon sequestration benefits of 5.7 acres of U.S. forests over a year.

For perspective, the power-generating capacity of the Pacific Northwest is 302 billion kWh. Most comes from hydropower—47.1 percent—but natural gas, coal, nuclear and solar are in the mix. It would take 7.6 million installations like ours to match the region's coal production and cut the associated emissions. In 2016, 1 million U.S. households had solar systems that generated less than 3 billion kWh in aggregate.

**Takeaway No. 2:** Investing in solar is environmentally sound, but transformative benefits require critical mass.

How the government, industry, power companies and consumers behave will drive future affordability—a key to homeowners' decisions on solar.

Subsidies have allowed technology to mature, but the Oregon credit just ended and the federal residential credit will phase out, sunsetting in 2021. With federal credit only, our system would require a $6,000 higher investment, and would have less return—1.24 percent—and higher cost—8.22 cents per kWh. Fully unsubsidized, the investment would have a negative return, and the cost would jump to 11.75 cents per kWh.

**António M. Baptista** is a professor at Oregon Health & Science University

Solar prices are dropping, although dropping faster for solar farms—installations with 1,000-plus kW capacity—and for commercial and industrial rooftops than for residential rooftops. Non-technology elements slow down price reductions, as might newly announced tariffs on panel imports. At 6 percent a year price reduction, by 2022 our system would, unsubsidized, cost 7.62 cents per kWh—not as attractive as our 2016 investment, but competitive against unsubsidized coal at 6 to 14.3 cents per kWh and nuclear at 11.2 to 18.3 cents per kWh.

Some utilities incentivize residential solar by offering installation credits and buying excess production at or near retail value. HREC does not offer installation incentives and buys annualized excess production at only 50 to 60 percent of retail value—making affordability dependent on sunsetting federal credits and market-driven price reductions. The HREC service territory currently has 25 solar installations, one of which is designed for excess production. But the Hood River County Energy Plan, under discussion, calls for 50 percent of energy needs to be met through distributed local sources. If approved, the plan would offer HREC clear motivation to invest in solar and other renewable energies.

As HREC and other public power utilities consider the future, an effective approach might be to partner with communities and industry to build shared solar farms. This would require investment and creativity, but the unsubsidized cost of energy from large solar farms is about 5 cents per kWh and dropping, versus the Oregon-average utility rates of 10.8 cents per kWh and rising.

The environmental benefits could be powerful. Whether as consumers, investors or both, communities would gain from understanding opportunities, challenges and tradeoffs ahead.

**Takeaway No. 3:** It is timely for utility boards, managers and consumers to engage in an extended dialogue to see how locally generated solar energy fits into their future. ■


Photo by Mike Mareen

# A Powerful Behind-the-Scenes Force

*Federal Energy Regulatory Commission works to ensure reliability, cost and safety*

**By Jennifer Brown**

Most people don't spend much time thinking about the hows and whys of electricity. They just want their power to be on when they need it. But the process of receiving power is multitiered, with often-unseen layers.

One of those layers is the Federal Energy Regulatory Commission, an independent agency within the Department of Energy that regulates interstate transmission of natural gas, oil and electricity. FERC was created in 1977. Its predecessor, the Federal Power Commission, began in 1920.

The Energy Policy Act of 2005 gave FERC authority to set and enforce reliability standards for the bulk electric system and to establish penalties for noncompliance.

FERC is composed of up to five commissioners appointed by the president of the United States, with the advice and consent of the Senate. Commissioners serve five-year terms, and have an equal vote on regulatory matters. No more than three commissioners may belong to the same political party.

## What FERC Means to Consumers

In addition to its role ensuring the rates, terms and conditions of interstate transmission service and wholesale power are just and reasonable—which are part of the foundation on which retail rates are based—FERC has other important responsibilities that affect retail consumers.

"One is the approval and enforcement of mandatory reliability standards—with potential fines for violations of up to $1 million a day for each violation—to ensure the reliable and efficient operation of the bulk power grid," says FERC spokesman Craig Cano.

This includes standards for things such as critical infrastructure security, both physical and cyber; system operations, such as normal conditions, times of system stress, and recovery and restoration following an outage; and routine maintenance, such as vegetation management.

FERC also enforces rules and regulations in the wholesale markets—again with the power to fine up to $1 million a day for each violation—to protect both consumers and market participants against fraud and market manipulation, anticompetitive actions, and conduct that threatens the transparency of regulated markets.

"Consumers benefit from the commission ensuring that wholesale electric and transmission rates are just and reasonable; markets are free from fraud, manipulation or anticompetitive conduct; and the bulk power grid operates in a reliable and efficient manner," says Cano.

Public safety is another important responsibility of FERC, particularly regarding natural gas pipeline construction and hydropower facilities.

## FERC in the News

In recent years, consumers may have seen FERC in action without realizing the agency's role.

In October 2015, Southern California Gas Co.'s Aliso Canyon natural gas storage facility in Southern California experienced a large natural gas leak. The facility, which served many gas-fired power plants in the Los Angeles basin and San Diego, was rendered unavailable and later of limited operability.

The commission approved a number of temporary measures to help the California Independent System Operator act to avoid both reliability and economic issues. The result benefited customers with continued reliability, and price impact mitigation.

In February 2017, FERC was quick to respond to a potential catastrophe at Oroville Dam, east of the city of Oroville in Northern California. On February 7, as water was released from the flood control spillway ramp in anticipation of inflows expected from rainfall, the California Department of Water Resources noticed something unusual. After stopping the spillway flows, engineers found a large area of concrete erosion. If left uncontrolled, spillway erosion could have led to life-threatening floods.

FERC had staff on the ground at the dam in the hours after the failure. The agency directed DWR to immediately design emergency repairs; to convene an independent board to, among other things, propose remedial options; and to perform a forensic analysis to determine the cause of the failure.

### Consumers' Role

With the exception of nonpublic investigations, FERC processes are open, Cano explains.

"Any interested parties can participate in proceedings before the commission in a number of ways, including filing comments, intervening in cases, bringing concerns about market participant behavior and other matters through the enforcement hotline, or just calling the public inquiries division to discuss matters," he says.

On its website, www.ferc.gov, the agency offers three videos geared toward the general public: "What is FERC," "Learn to eFile and eComment" and "FERC Open Meetings." ■

## Other Power Players

**Department of Energy**

The Department of Energy is the federal cabinet-level department that implements national energy policy. As part of DOE, the Office of Electricity Delivery and Energy Reliability works with private and public partners to help ensure the nation's power grid is reliable, resilient and secure against natural and manmade hazards.

**North American Electric Reliability Corp.**

In 2006, the Federal Energy Regulatory Commission designated NERC—part of DOE—as the electric reliability organization that, through consultation with its eight regional reliability organizations, writes standards that are sent to FERC for approval. NERC oversees the regional organizations, which coordinate planning and operations among utilities.

**Regional Reliability Organizations**

The Western Electricity Coordinating Council is the regional entity responsible for coordinating and promoting bulk electric system reliability in the Western Interconnection, which covers all or portions of 14 Western states.


# Why We Buy Energy (and Progress) in Bulk

What do companies like Costco, REI and CPI have in common? They all demonstrate the power of people working together to get a better deal.

Need to stock up on bulk food and supplies at fair prices? Costco's collective buying power drives down prices.

What about finding the right outdoor gear for your life adventures at membership-only prices? REI offers outdoor equipment with its members' activities in mind.

Want energy to not only keep the lights on but also build your future? CPI's cooperative business model and commitment to community keeps your electricity affordable, reliable and safe.

CPI's energy comes from the Bonneville Power Administration, right here in the Pacific Northwest. Before CPI was created, folks in the central Willamette Valley were charged more for energy—if it was even available—than people who lived in cities such as Portland or Salem.

Neighbors pooled their resources. Working together, they built power lines, bought energy in bulk to energize the community, and forged a better and brighter future for our local community. This collective buying partnership remains powerful today because we—the consumers—are in control. We proved we are more powerful together.

You can take advantage of cooperative savings and get the most value from your public power membership with these perks:

**Use less energy.** Call CPI for a free walk-through energy audit. You can also find tools for cutting energy use at home or work at www.cpi.coop.

**Connect with experts.** Thinking about an electric car? So is CPI. The co-op has the latest research on fresh energy technologies—solar, battery storage, electric cars, smart appliances and more—to help you make solid choices. Call or visit our Philomath office to connect with your local energy expert.

**Give (and get) grants.** Local voices and priorities matter to CPI. Together, we help make grants to strengthen our local community by sponsoring local non-profit organizations and providing energy education to schools and businesses. Connect to community grants at www.cpi.coop/about-cpi/operation-round-up. Want to round up your bill to help your community? Join Operation Round Up at the above website or via SmartHub.

**Speak up.** To build a better future for Oregon, we need CPI members to make their voices heard. Participate in ORECA-Action, where we can update you on local, state and federal issues that affect you as a CPI member. More information and signup can be found at www.oreca-action.org.

Public power matters because people like us power our community. We are each part of the programs CPI provides for our neighbors.

We are more powerful together. ■

United Electric
# Ruralite
MARCH 2018

UNITED ELECTRIC
CO-OP INC.
Your Touchstone Energy® Cooperative

# Annual Meeting of the Members

**TUESDAY, MARCH 13**
MINICO HIGH SCHOOL, RUPERT, IDAHO

JOIN THE BOARD, STAFF AND MEMBERS OF UNITED ELECTRIC CO-OP TO HEAR ABOUT THE STATE OF YOUR COOPERATIVE AND HELP ELECT BOARD MEMBERS

For more information, call (208) 679-2222 or visit www.unitedelectric.coop

**2017 ICUA Youth Rally Review** PAGE 4 ▪ **Annual Meeting Information** PAGE 8

# Electricity Theft: Not Worth the Risk

Every year, electric cooperatives across the country cope with thieves—folks who deliberately tamper with their electric meter to steal power. Not only is this practice extremely dangerous, it is a serious crime that can result in hefty fines and jail time.

"We've seen people do some dangerous things—using jumper cables and any number of other objects to get around paying for the power they use," explains CVEA COO, Travis Million. "However, not only are these persons stealing from the Co-op, they are stealing from their fellow co-op members and risking their own lives and those of our linemen."

According to the Cooperative Research Network, a division of the National Rural Electric Cooperative Association, power surging through a compromised meter can cause an electrical catastrophe. A short circuit could produce an arc flash bright enough to cause blindness and powerful enough to launch fragments of shrapnel-like, red-hot debris. Serious injury or death from electrocution, explosion, or fire often results from meter tampering. Only trained CVEA personnel wearing protective clothing should work on meters.

"Any time you get into a meter base, you run a risk," comments Million. "With an arc flash, someone could be killed or seriously injured."

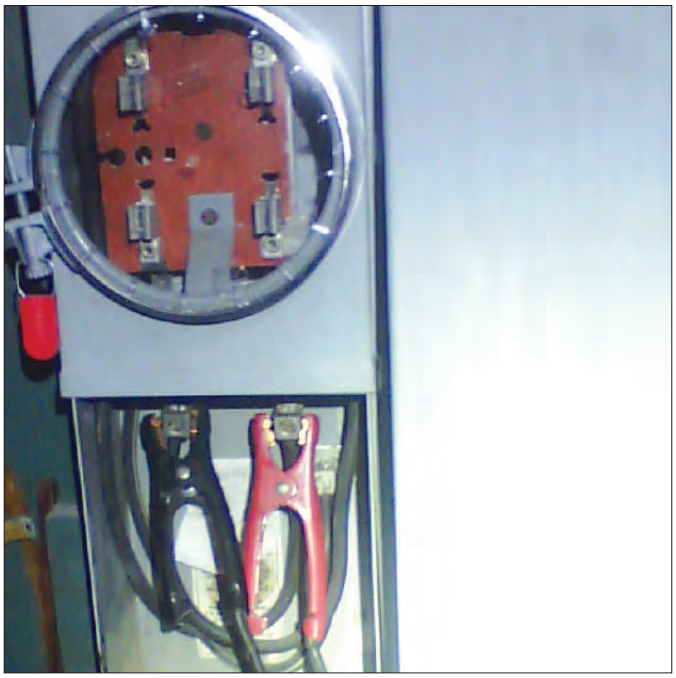
Electricity theft is not a victimless crime either. Your not-for-profit cooperative loses revenue and expends resources to investigate tampering. These costs are then passed on to the entire membership.

National estimates vary, but *The Washington Post* cited revenue protection officials who claim between $1 billion and $10 billion worth of electricity is stolen from utilities nationwide annually. "We don't know exactly how much is being stolen annually in Copper Valley Electric's service territory, but it does happen, how far and widespread is unknown," according to Million.

It is important CVEA members know the rules that govern this issue for the Cooperative. Below is Section 6.13 of CVEA's Tariff.

**6.13 Tampering with Association Property**

*Tampering with meters and other facilities of the Association violates these consumer service policies and Rules and Regulations. The tampering may also result in civil liability under Alaska law (AS 42.20.030).*



*The Association may collect from the party up to three times its damages sustained and three times the value of the service taken as a result of such tampering. Further, the party may be convicted of several criminal offenses, with penalties ranging up to 10 years imprisonment and a fine of $100,000, depending upon the magnitude of the offense (AS 11.46.480, 12.55.125[d], and 12.55.035[c] [1]).*

*In addition to statutory penalties, a fee as set forth in the applicable Schedule of Fees will be charged for consumers' facilities where a seal has been broken or removed, or the Association's facilities are otherwise tampered with.*

*In flagrant cases, electric utility service will be discontinued (Section 10.9). Authorization to break a meter seal will be given in appropriate cases upon application and payment of a fee as set forth in the applicable Schedule of Fees.*

*Damage or vandalism includes, but is not limited to, broken glass, broken seals, and altered mechanisms.*

*In order to protect its equipment and service, the Association may seal the service switch and/or other devices or enclosures on the consumer's premises to prevent access by any unauthorized persons.*

*The consumer shall not in any way interfere with or alter the meters, seals, or other property used in connection with rendering electric service, or permit same to be done by other than the authorized agents or employees of the Association. Damage to or loss of Association property shall be paid for by the consumer.*

*Damage to or removal of the Association's meters, seals, or other property shall be considered sufficient reason for discontinuance of service to a consumer until the Association has received satisfactory assurance that its equipment will be free from future interference and until all damages, fines, and bills for metered or unmetered electricity have been paid.*

Remember, meter tampering can result in electric shock or severe injury to the homeowner or CVEA personnel, it is illegal, and it increases electricity rates for other co-op members. "Stealing power is just as serious a crime as any other type of theft," Million says. "As a co-op, we take a hard line on it because this is not a theft from a big corporation; it is a loss to all 3,000 members."

Since everyone pays for lost power, please let CVEA know if you suspect meter tampering. Call the Cooperative at (907) 822-3211 or (907) 835-4301 to report possible theft of service. All information can be given anonymously.

If you have questions about this or any other CVEA issue, please contact Sharon Crisp, Director of Communications at (907) 822-5506, (907) 835-7005, or email crisp@cvea.org. ■

*Source: The Washington Post, Cooperative Research Network, Christine Smith/National Rural Electric Cooperative Association*

Copper Valley ELECTRIC
A Touchstone Energy® Cooperative

# Heating and Cooling Tips for Manufactured Homes

If you own a manufactured home, take measures to ensure you have an efficient heating and cooling system. You can also make simple improvements that save energy and make your home more comfortable.

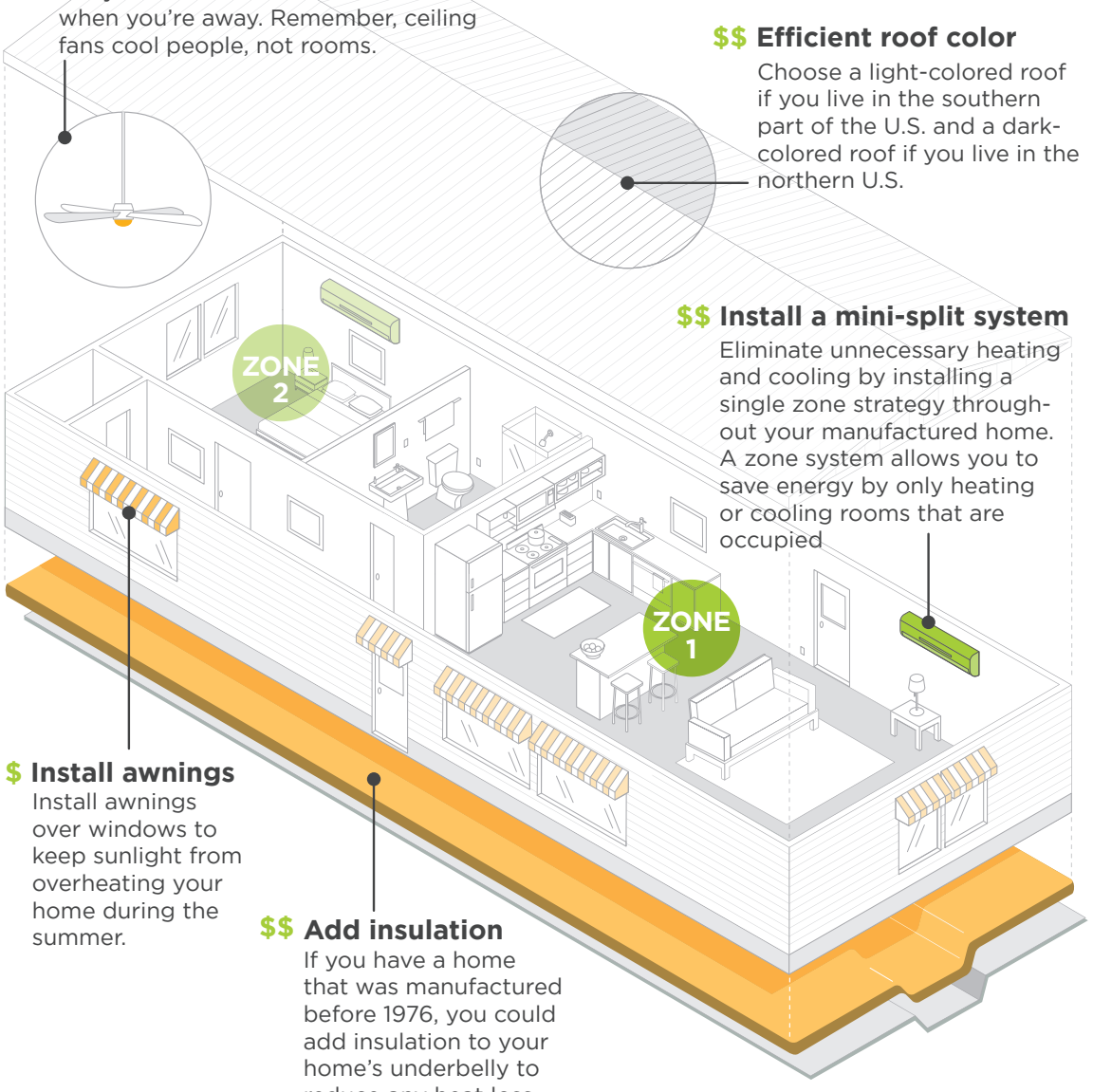
$ Option for smaller budgets
$$ Option for flexible budgets

### $ Install ceiling fans

Install ceiling fans throughout your manufactured home. Ceiling fans are energy efficient and can be used to keep warm or cool air moving throughout your home. Be sure to turn them off when you're away. Remember, ceiling fans cool people, not rooms.

### $$ Efficient roof color

Choose a light-colored roof if you live in the southern part of the U.S. and a dark-colored roof if you live in the northern U.S.




### $$ Install a mini-split system

Eliminate unnecessary heating and cooling by installing a single zone strategy throughout your manufactured home. A zone system allows you to save energy by only heating or cooling rooms that are occupied

### $ Install awnings

Install awnings over windows to keep sunlight from overheating your home during the summer.

### $$ Add insulation

If you have a home that was manufactured before 1976, you could add insulation to your home's underbelly to reduce any heat loss.

*Source: U.S. Dept. of Energy*

# Co-op Internship Program Thriving

## *VEA banking on the future with students*

**By Vern Hee**

**Pahrump Valley High School student Alyssa Seifert has excelled in the Mapping Department.**

Photos by Jeff Scheid

Valley Electric Association believes in the youth in our community and invests in their future. One of the ways VEA shows support for the youth is through VEA's Student Internship Program.

"The internship program is one of the best programs that Valley Electric has," says Ryan Muccio VEA Community Relations Representative, who assists with the program. "It's one of my favorite things I do every day."

VEA hires new interns every three months. "They have proven that our world is in good hands," says Ryan. "These youths are on it. Every single day they come in and they are happy and ready to work. They are up for the challenge."

Cassandra Selbach, VEA Chief Evangelist, is in charge of the internship program. She revamped the program shortly after joining VEA in 2014 with the goal of providing a well-rounded experience that would support these youngsters in their professional and personal development.

"We have three months to leave a mark," Cassandra says. "As VEA has evolved, our approach to the next generation has evolved also. It's not about the three months they are here. It's about the rest of their lives beyond their internship."

Cassandra says the new approach changed everything. VEA employees have become mentors, not task-givers.

"We see this as an opportunity to plant seeds of greatness into each young person that walks through these hallways and to help guide them as they move on to 'the rest of their lives,' " Cassandra says.

As interns consider their path of the future, they are exposed to multiple disciplines at the Cooperative – from customer service, to engineering, to marketing and communications, and everything in between. They are given opportunities to participate in team building and critical thinking.

An intern's responsibilities are determined by their immediate supervisors in the departments in which they are stationed, Ryan says. "For instance, the interns placed in customer service work on tasks that the customer service supervisors assign to them. The same for mapping/engineering."

The interns garner additional experience as they are pulled from those stations to participate in other activities throughout the company.

"One of the neat opportunities we have is that we have been where they are," says Cassandra. "We are familiar with the world that interns are just starting to explore. That gives us the unique ability to see things in them that they have not yet discovered about themselves: strengths,

**Shaylen Morales credits the intern program with improving her communications skills and giving her confidence.**

weaknesses, and incredible potential."

VEA also recognizes that student internships can be an important part of the organization's recruitment strategy and help achieve organizational business objectives, while also providing an opportunity for students to receive valuable mentoring that will have a lifelong impact.

"Since 2015, we have hired three full-time employees straight out of the internship program," Ryan says.

"It just proves there is opportunity in Pahrump if you work for it."

The program is designed to offer students real-world experience in the workplace and to help prepare them for their future.

VEA Supervisor of Lands Joshua Drellack said he wants Alyssa Seifert to think about a career in mapping.

"Alyssa has a young brilliant mind with unlimited potential," he said. "In fact, due to her amazing potential and professionalism, I have recommended to the VEA Manager of Engineering to establish a Geographic Information Systems Apprenticeship Program that will Develop Alyssa's interest in a GIS career.

Alyssa she learned a lot about mapping during her internship.

"I learned about the GIS software in a few weeks and have managed to learn to use it through on the job training," she said. "I feel I have learned how to use GIS in an effective way and It will help me with my future by giving me experience in this area."


**Interns help out at the Annual Ambassador Banquet at the Nugget.**

Shaylen Morales says that during the internship she learned to work closely with others.

"We worked constantly with new individuals," Shaylen said. "This allowed me to improve my public speaking and confidence. We also learned a lot of new office skills."

Noemi Diaz, a current VEA intern, says she thinks she has worked in every department.

"I think I have seen all of them," Noemi says. "We even did some paper work with the fleet department (the department that repairs the trucks). You name it and we have been there."

As far as work for the interns, Ryan says these interns are not just getting busy work.

"They are excited and up for a challenge," Ryan explained. "You almost forget they are interns. It has happened to me a couple of times where I had to catch myself and say they are only 17 and 18 years old. It is hard at times because they carry themselves with such professionalism and excellence."

DeAnna Greene, VEA Customer Service Supervisor says she really enjoys working with the interns. "They are a joy to work with and they are more than willing to help out," DeAnna says. "They are some of the fastest workers … friendly, professional and always in a good mood."

For more information on the internship program call the main number at 775-727-5312. ■

# Thank a Lineman Today


**By Mike Bristol**

April 18 is National Lineman Appreciation Day, which was established in 2013 (Senate) and again in 2015 (House) to recognize the efforts of linemen in keeping the power on and protecting public safety.

This day is set aside for all Americans to express appreciation to the great men and women who work hard for us every day. Were it not for the daily efforts of the approximately 227,000 linemen across America, we would not be able to enjoy the conveniences of modern life we have come to expect through the years.

We count on electrical power being at our command with a flip of a switch. Because linemen do their jobs so well, we now take it for granted that our houses will be heated and cooled, the lights will come on when we need them, and our entertainment devices such as TVs, computers and cellphones will always be powered and ready for us. Even when we are away from our homes, we may not realize how much we depend on linemen: traffic


lights, gas pumps and store refrigerators all require electricity. When the power goes out, life becomes much more difficult.

As linemen work each day to maintain the power grid, they are usually working 30 to 40 feet in the air while handling wires energized with more than 12,000 volts—1,000 times more voltage than your car battery. One false move can instantly kill. In addition, linemen are required to work through the notorious Arizona summers, when temperatures exceed 120 F, in full arc-flash protection gear. This is not a job that entails comfortable working conditions.

If that weren't difficult enough, linemen often are called on to repair storm damage in the middle of the night while the storm is still rolling through. These professionals work tirelessly to get systems back in working order and quickly return service to their customers.

Line crews often work through the night and log more than 18 hours in a single shift while repairing storm damage. This requires them to do their jobs under some of the most dangerous conditions while dealing with darkness, severe weather and lack of sleep, but they can't just wait out the storm or wait until dawn. This all happens while the rest of us sleep comfortably in our beds, oblivious to their travails.

We all know how dangerous the job of a first responder is. Police officers and firefighters put their lives on the line daily.

Linemen rank just behind police officers in a USA Today story citing 2016 statisics from Bureau of Labor Statistics' Census of Fatal Occupational Injuries. Despite extensive training and safety measures, 21 linemen died in the line of duty in 2016 while keeping the grid energized.

**ED2 Crew**

System upgrades with new technologies and better equipment are being installed every day by ED2 line crews to modernize our local power system. The line crews at ED2 are well-known for their hard work and rapid responses to downed lines and power outages. ED2 line crews have restored power much faster, statistically, than many other utilities across the region.

When disaster strikes, they are the first responders who are out there in all kinds of conditions, day or night, to restore power and minimize the impact to our customers.

It is our honor to celebrate the hard work, innovation and dedication of our electrical lineworkers. Join us in honoring them and their families across the country, by using the hashtag #thankalineman on social media. More importantly, when you see a lineworker, thank them for their service and let them know how much we all appreciate their hard work and willingness to put themselves in danger to keep the power on. ■

### Use Energy Wisely

# Maximize Your Energy Spending

*Easy steps add up to big savings on your bill*

All Escambia River Electric Cooperative members want to keep their energy bill as low as possible while remaining comfortable. Here are some steps you can take to help achieve those goals.

- **Start with the thermostat.** The power is in your hands, so adjust the thermostat to use less and save more. That means keeping it at 78 degrees in the summer and 68 degrees in the winter. Keep the thermostat on "auto" so the fan only runs when the unit runs. Setting the fan to "on" will result in the fan running continuously, and higher bills. For more control over your system, consider buying a programmable thermostat that will simplify the job of creating optimal settings.
- **Change air filters routinely.** Follow the recommended replacement schedule for your filter. A clean filter allows your heating and cooling unit to work more efficiently and reduces the amount of dust in your home. Buy filters in multiple packs, so you always have them available.
- **Use drapes and blinds.** In the summer, keep your drapes and blinds closed to keep the interior of your home cooler and more comfortable. In the winter, open your blinds and drapes during the day to warm your home, and close them at night to create an extra barrier against drafts.
- **Caulk cracks around windows and doorjambs.** Since heating and cooling is between 40 and 50 percent of your energy costs, prevent gaps that allow your interior air to escape.
- **Wash only full loads of dishes and clothes.** On average, appliance costs comprise 9 percent of

### A Word About Water

# Maintain Water Heater to Control Costs

Water heating is the second-largest energy expense in most homes. To save on your electric bill, make sure your water heater is set properly, operates efficiently and is in good condition. Maintenance will also save you money by extending its longevity.

Here are a few tips to help keep your water heater functioning properly for years to come.

- **Safety first!** Some people are comfortable performing their own maintenance, and others are not. If you fall into the latter category, schedule an appointment with a qualified service technician.
- **Before you begin.** If you choose to perform your own maintenance, do so with safety in mind. Locate your breaker box and turn off power to your water heater. You should also wear gloves to protect your hands from hot water.
- **Keep it clean.** A simple way to maintain your water heater is to keep the area around it clean, with 2 feet of clearance around it. Never store combustible materials near your water heater.
- **Set your thermostat.** Keep your water heater's thermostat set at 120 degrees. Not only will this help you save on energy costs, it will reduce the risk of burning or scalding.
- **Inspect top to bottom.** Start at the top and check the entire unit carefully for signs of leaks or corrosion. Look closely because leaks can be tiny. If you detect heavy rust or leaks, it may be time to consider a new, energy-efficient water heater.
- **Insulate the first few feet of pipe.** By insulating the pipe to your water heater, water will arrive at your faucet 2 to 4 degrees warmer, and you won't have to wait as long for the water to heat up.
- **Insulate your tank.** If you own an older tank, consider wrapping it in an insulating blanket that can reduce heat loss and save 4 to 9 percent on the average water heating bill. This especially holds true if your tank is in an unheated space. On an electric water heater, make sure the blanket does not block the thermostat.
- **Drain your tank.** Sediment and debris can accumulate in the tank of your water heater. To keep your tank clean, drain it a few times every year. Draining the tank is easy. First, turn off the power to your water heater at the main breaker box. Then turn off the cold-water supply coming into the unit

# Power

monthly electrical use. To maximize dollars spent, be smart and run full loads.

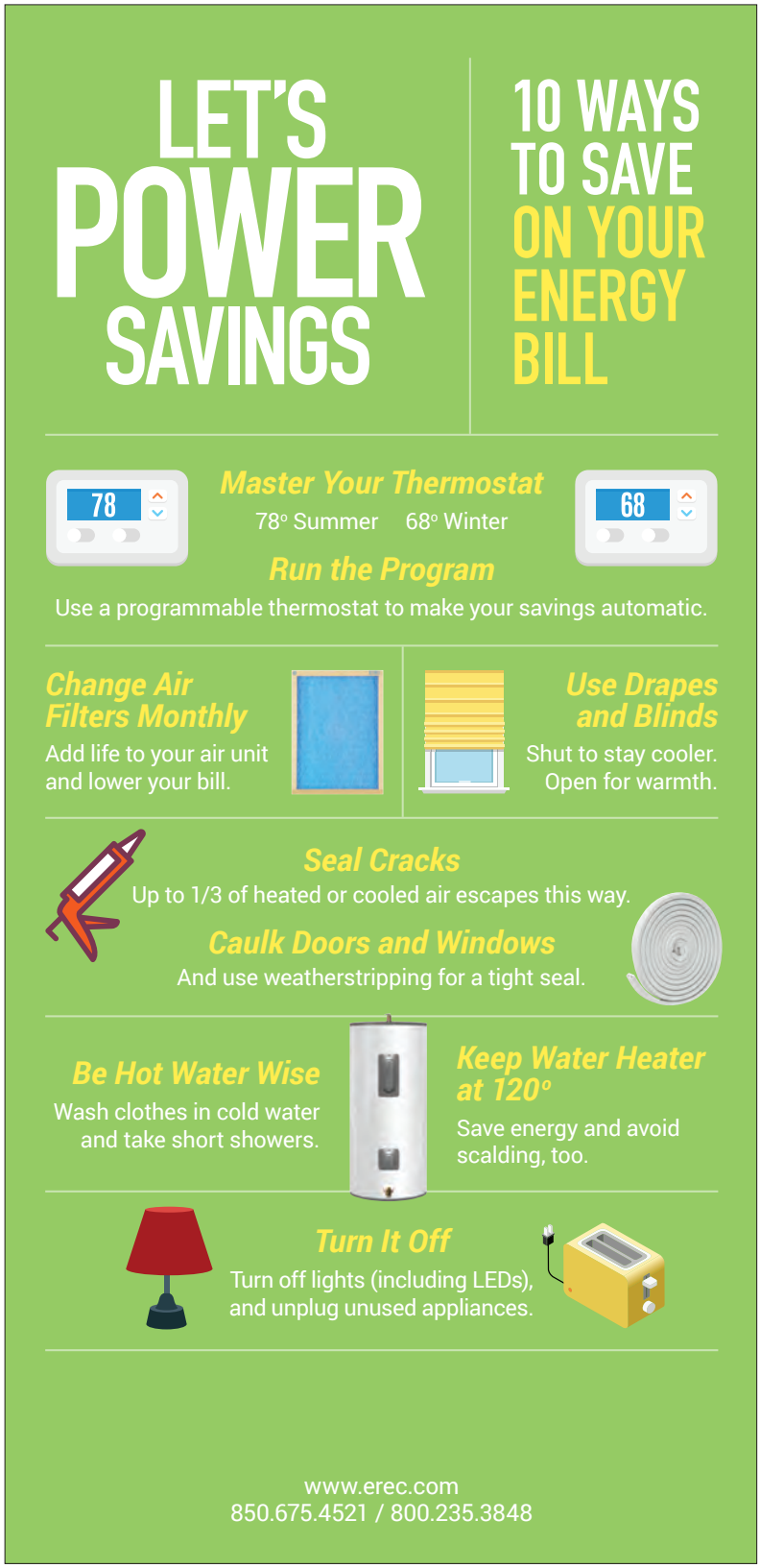
- **More laundry tips.** Wash clothes in cold water. When drying clothes, try to run loads consecutively to take advantage of heat already in the dryer. Make sure the lint filter is clean, and the vent hose is not kinked or clogged.
- **Plug home electronics into power strips.** Turn off the power strips when the equipment is not in use or you are going to be out of town for an extended period.
- **Keep your garage door down.** A closed garage door results in a warmer space in the winter and a cooler space in the summer, and saves energy.

EREC works with members to maximize their dollars. We value your membership. We value you. ■

**Regular maintenance on your water heater will help keep your unit working properly, and make bath time more enjoyable.**

and attach an ordinary garden hose to the drain valve. Let the water drain into a bucket until the water is clear. If the water does not run clear, you can open the water supply valve to stir the tank, then drain again. Be sure the tank is full before you turn the power back on. Failing to do so could short out the heating elements.

For more information, contact the energy experts at Escambia River Electric Cooperative. We value your membership. We value you. ■



Keep It Safe

# Assess Your Ability to Tackle DIY Projects

*Be careful when working on home improvement tasks*

Doing remodeling projects yourself can be rewarding, but they also can be dangerous. Unless you have a good understanding of electrical wiring basics, leave those types of projects to a licensed electrician.

Do-it-yourself projects are a great way to save money. They also can be rewarding. There's a sense of pride that comes from accomplishing a job yourself.

Many electrical projects fall into the DIY category. Projects such as installing ceiling fans, lighting fixtures or appliances are fairly easy and do not require a large investment in tools.

Before you begin your project, here are a few DIY tips to keep you safe.

- **Know your limitations.** The first rule of DIY safety is don't do it yourself if you are not qualified for the job. Unless you are familiar with the basics of electrical wiring, hire a licensed electrician. It is better to be safe than sorry—and keeping you safe is our primary goal.
- **Turn off the power.** Even 120 volts can be deadly. Always turn off the power to the circuit you will be working on. To do this, locate your main service panel and turn off the circuit breaker. It is also a good idea to label all the breakers so you can identify them quickly.
- **Remember, there are wires behind those walls.** Even if you are not working on an electrical project, you need to keep electrical safety in mind. Before you cut or drill into a wall or ceiling, be conscious of how deep you are cutting or drilling to avoid hitting wires. Even if you have the circuit turned off, cutting into wires can create a fire hazard when you turn the power back on.
- **Use ground-fault circuit interrupters if you are going to use extension cords.** GFCIs are devices designed to protect you from electrical shock. When using extension cords, use a GFCI outlet or GFCI whip, a short extension cord with a built-in GFCI. These are not expensive, and can save your life.

In addition to turning off circuits and using GFCIs, here are a few more precautions you can take to prevent injury.

- Wear gloves and safety glasses.
- Use tools with insulated grips when working on electrical projects.
- Even if you are just changing lightbulbs in a lamp or appliance, make sure it is unplugged.
- Avoid working where water is present. Do not work on electrical systems in wet locations. Never work on electrical systems in the rain.
- Because aluminum ladders conduct electricity, you should never use them for electrical projects. Instead, buy a quality fiberglass ladder.
- Use rubber-soled shoes or rubber mats, particularly on concrete floors.

At Escambia River Electric Cooperative, safety is a priority. Be sure to follow these tips and guidelines to make sure your next project ends with a satisfied smile.

Let's power safety! We value your membership. We value you. ■

Photo by Ethan E. Rocke

# Change Your Clocks; Change Your Batteries

The second Sunday in March triggers daylight saving time, when we set our clocks one hour later. It is also the best day to change the batteries in smoke alarms and carbon monoxide detectors—even if the batteries are not dead.

If you do not have smoke alarms and carbon monoxide detectors, your family is at risk. The alarms loudly warn you if smoke or gas is present in your home so you can get out.

Carbon monoxide is a clear, odorless gas that is deadly but hard to detect. If you don't have an alarm, it is unlikely you will know if your home has a carbon monoxide leak.

Carbon monoxide does not come just from cars. Your gas furnace or stove is a potential source.

The U.S. Environmental Protection Agency offers these tips for poison prevention:

- Properly adjust gas appliances.
- Use electric space heaters, not gas space heaters.
- Install an exhaust fan, vented to the outdoors, above a gas stove.
- Open flues when wood-burning fireplaces are in use.
- Choose properly sized wood stoves with tight-fitting doors certified to meet EPA emission standards.
- Every year, have a trained professional inspect, clean and tune up your central heating system, including furnaces, flues and chimneys. Repair leaks promptly.
- Do not idle your car inside the garage. ■


**When it's time to spring forward or fall back, it's also time to change your smoke detector's batteries.**