Northwestern Rural Electric Cooperative Association, Inc.

A Touchstone Energy® Cooperative

One of 14 electric cooperatives serving Pennsylvania and New Jersey

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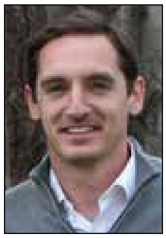

Five ways to exercise your civic duty

By Ryan Meller, *Interim President & CEO*

AMERICA'S electric cooperatives, including Northwestern Rural Electric Cooperative (REC), understand the value of building relationships with elected officials at all levels of government. There are many important policy issues that directly impact electric utilities and ultimately, you, the consumer-members we proudly serve. Strengthening our relationships with elected leaders positions us to advocate for our community.

While Northwestern REC is a locally owned cooperative, we're part of a larger network of electric co-ops. Through our nonpartisan grassroots program, Co-ops Vote, we're working to enhance the political strength of electric co-ops and boost voter turnout. There's power in numbers, and when we all show up at the polls, we can voice the issues that matter most to our community.

National Voter Registration Day is Sept. 20, and midterm elections are right around the corner. If you're looking to get involved or simply make sure you're ready to vote, here are five easy ways you can exercise your civic duty:

1. **Don't assume your voter registration status is up to date.** Visit vote.coop and click on "Election Resources" to verify your status.
2. **Get informed.** In addition to ensuring your registration is up to date, learning about local policy issues and candidates is one of the best ways you can prepare to vote.
3. **Get active on social media.** Follow @coopsvote on Facebook, Twitter, and Instagram and let others know you're a #coopvoter and #VoteReady. Encourage your friends and family to do the same.
4. **Help others prepare to vote.** Work at a National Voter Registration Day event (visit nationalvoterregistrationday.org/events), volunteer to be a poll worker during midterm elections or offer to drive others to their polling places.
5. **Vote!** It's the easiest — and most important — way you can exercise your civic duty.

Voting is a form of personal empowerment that gives you the opportunity to voice your opinion on the issues that matter most to you. Make a plan to vote and help others in our community get #VoteReady.

We encourage everyone, regardless of political beliefs, to vote, stand up for our local community and make a collective impact.

Cooperatively yours,

Ryan Meller

Ryan Meller
Interim President & CEO

The electric vehicle is almost 200 years old

By Amy Wellington, *Director of Communications*

THE TITLE of this article sounds like something you might see on an old "Ripley's Believe It or Not" episode. We know electric vehicles (EVs) have been around for a while, but how many of us knew that the first small-scale electric cars debuted around 1828? I certainly did not.

Of course, the first successful electric car in the United States didn't happen until around 1890, when William Morrison designed a six-passenger electrified wagon with a top speed of 14 miles per hour. His innovation helped spark the EV craze we still see today. In 1900, EVs accounted for about a third of all vehicles on the road.

Found mostly in big cities, EVs were popular because they were quiet, easy to drive and didn't have stinky exhaust like other vehicles of the time. It wasn't until 1908, when Henry Ford mass-produced the gasoline-powered Model T, that EVs started to lose their popularity. The cost of an EV in 1912 was nearly three times that of a gas-powered vehicle. By the 1920s, gas stations were popping up all over the country and rural communities were still unable to obtain electricity. As a result, EVs basically disappeared by 1935.

During the latter part of the 1960s and into the early 1970s, automakers resumed their exploration of EVs due to gas shortages and soaring prices. The electric lunar rover, which in 1971 was the first vehicle manually driven on the moon, also helped to rekindle the EV spark. However, EV technology was limited at this time, with top speeds of 45 miles per hour and a range of about 40 miles.

The very first hybrid electric vehicle — powered by gas and electricity — was produced around 1898 by Ferdinand Porsche, but it wasn't until 100 years later, in 1997, when Toyota launched the first mass-produced hybrid vehicle, the Prius. The rise in EV popularity during the 1990s was driven by new state and federal environmental regulations, but gas-powered vehicles were still cheaper to purchase and operate in the long run.

Once Tesla Motors joined the race in 2006, advances in EV technology really started to accelerate. Tesla EVs were then able to travel more than 200 miles on a single charge. Big automakers, like Chevrolet and Nissan, also started to release their own versions of electric vehicles. Better battery technology and more affordable EV choices have shifted the EV trend into high gear.

EV charging stations are popping up across the country, just as gas stations did in the 1920s. In the U.S. today, there are more than 46,000 public charging stations, 59 different models (all electric and hybrid), and more than 234,000 plug-in electric vehicles and 3.3 million hybrids on the road.

What this history of the electric vehicle shows us is that interest in EVs has waxed and waned over the decades due to technology flaws and breakthroughs and wildly fluctuating crude oil prices. Surprisingly, the electric vehicle has been around for nearly 200 years and, not so surprisingly, is only expected to grow in popularity as technology continues to improve and make them more affordable.

Northwestern REC has more than 20,000 meters in its service territory, which equates to a diverse membership. To us, it has nothing to do with politics. We must be educated in all things electric for the good of the entire membership.

If you are interested in learning more about electric vehicles, please check out our EV pages at NorthwesternREC.com.

Source: energy.gov

Grants available for local teachers

AT NORTHWESTERN Rural Electric Cooperative (REC), we recognize the children of today are the members of tomorrow. The Clearly Brighter Teacher Grant Program is designed to reach these kids by helping teachers afford innovative and effective educational curriculum that is not covered by traditional school financing.

Individual teachers can apply for grants up to $250, while teams of teachers (two or more) can apply for grants up to $500. Each year, Northwestern REC awards a total of $4,000 through this grant program.

Educators in public and private schools, pre-K through 12th grade, as well as home-schooled organizations in Northwestern REC's service territory are eligible to participate. It is not required that teachers or schools receive electric service from Northwestern REC. Grants are awarded for projects in any discipline and are intended to help teachers bring special, hands-on projects to the classroom. Projects for disabled adults will also be considered.

Grants are awarded annually in a competitive evaluation process. Applications are accepted online beginning May 1 and will be awarded in October. The deadline to submit grant applications is 5 p.m. Sept. 15, 2022.

For more information, call Amy Wellington, director of communications, at 800-352-0014 or email awellington@northwesternrec.com. Applications are accepted online only at NorthwesternREC.com.

Now recruiting youth ambassadors

AT LONG LAST, we are excited to launch our Youth Ambassador Program this month. In the March issue of *Penn Lines*, we gave a sneak peek into this new program. To refresh your memory, the goal of the program is to introduce today's youth to the cooperative way of business. Students will learn first-hand about cooperatives and energy issues, gain leadership skills, and participate in community service projects.

We hope to recruit eight to 10 high school juniors, who are also members of Northwestern Rural Electric Cooperative (REC). These students will participate in fun monthly meetings that will be organized around their schedules. This means meetings could take place in the evenings, on the weekends or even remotely. Students will be expected to participate in at least four or five of these meetings to be eligible for a Youth Tour scholarship. (Note: Youth Tour is an all-expense-paid, weeklong trip to Washington, D.C., sponsored by Northwestern REC, the Pennsylvania Rural Electric Association and the National Rural Electric Cooperative Association. More than 1,600 students from cooperatives across the United States take part in the Youth Tour experience. During the trip, which takes place in June, students visit their elected officials and watch history come alive as they explore museums, memorials, and monuments.)

Monthly meetings will range from exploring the fundamentals of electricity (including a hot-line safety demonstration), the importance of the seven co-op principles, various alternative energy sources, the wonderful world of energy efficiency and will even delve into the numerous types of electric vehicles. We are also planning a fun energy competition toward the end of the program to recap everything students learned.

Applications are now being accepted online at YouthTour.NorthwesternREC.com. The first meeting of our Youth Ambassador Program will be in October to celebrate National Co-op Month. For more information, contact Amy Wellington, director of communications, at 800-352-0014 or email awellington@northwesternrec.com.

How a dairy farmer can improve energy efficiency

ARE YOU looking for ways to cut your energy bill and stay competitive? If you're a dairy farmer, efficient energy use is critical to keeping your farm competitive in today's environment.

Keep in mind that not every energy efficiency measure is economically worthwhile on every farm — it is best to have your farm's energy use carefully assessed before making changes. However, this list of measures is applicable to many typical dairy farms in Pennsylvania and beyond.

The tips given here focus on measures that should reduce energy use without negatively affecting farm operations:

Use a variable speed drive for the milking vacuum pump

This is probably the most valuable single measure for a dairy farm. It can reduce vacuum pump energy use by as much as 60% and result in thousands of dollars of savings per year for a medium-sized farm. The variable speed drive (VFD) — sometimes called a variable frequency drive — is installed in the electrical line that leads to the pump and varies the frequency of the electrical current reaching the motor. This reduces the speed of the motor when appropriate, as well as its energy use. Once the VFD is installed, the pump will run at the lowest possible output needed to give adequate vacuum for the milking system. For the VFD to work well, you must have the right type of vacuum pump (lobe pumps are ideal), but once it is installed, the VFD results in significant savings with no discernable change in system performance.

Add a "pre-cooler" to milk

Pre-coolers use cold well water to take some of the heat out of the milk before it enters the refrigeration system. This reduces the amount of heat the refrigeration system must remove as it cools the milk to its safe storage temperature. As a result, the amount of electricity needed to cool the milk is reduced. If a nearby well is available, a pre-cooler can be a very effective way to cut energy costs.

Recover heat from the milk cooler compressors

The refrigeration system draws heat out of the milk and dumps that heat — usually to the outdoor air. It is possible to divert that heat to the water in a farm's hot water heater, which reduces the amount of energy needed to heat wash water for the farm. This is a valuable cost-saver, but requires a bit of specialized plumbing if your refrigeration system and hot water heater aren't already set up for heat recovery.

Give your vacuum system a "tune up"

Over time, vacuum systems can lose some of their effectiveness if the vacuum setpoint drifts away from optimum or if deposits or wear change its performance. Just like a car or tractor needs a regular tune-up to run efficiently, your vacuum system should be checked regularly to keep it running at peak performance.

Replace ventilation fans with high-efficiency models

Not all fans are created equal. In fact, some ventilation fans are much more efficient than others. Cheap fans may have an attractive price tag, but it pays to check their efficiency to see if they are costing you more in the long run. As a side note, resist the temptation to turn ventilation fans off during warm weather just to save energy. Your cows' comfort is extremely important and skimping on ventilation can result in lost income due to reduced milk production from heat-stressed cows.

Upgrade the lighting

You may think that old-fashioned lightbulbs aren't costing you much to run, but upgrading to higher-efficiency lights can save you a noticeable amount of energy while still providing lots of light.

Clean the fans

Most people don't realize that dust on your ventilation fans can increase energy use significantly — as much as 10% to 20%. Keeping the fan blades and guard screens clean is a very easy thing to do that will help reduce energy use and keep more hard-earned money in your pocket.

Replace motors with properly sized, energy efficient models

In general, equipment needs to be the right size and type to run effectively and efficiently. This is true in the case of electrical motors, which should be large enough to do the job, but no larger. Unfortunately, it's not easy to tell if a motor is properly sized. The motor's electrical kilowatt (kW) use needs to be measured when it is fully loaded. This usually requires the help of a trained electrician with appropriate equipment. Once you know the motor's kW use you can compare it to the rated kW full load of the motor. Oversized motors cost more to install and use more energy. "High-efficiency" motors are a good option instead of "standard-efficiency" motors, although it is often difficult to find high-efficiency motors that are rated for farm duty.

Use a variable speed drive for the milk pump

The milk pump sometimes runs more heavily than it needs. Installing a variable speed drive can solve this problem, although it is usually only economical for dairies that milk many hours in the day.

Switch to an energy efficient feed storage and delivery system

Horizontal bunker silos are economical to build and have proven to use less energy than vertical feed silos. Switching to horizontal storage can reduce your energy costs noticeably. However, this is a controversial measure because some farmers have experienced increased feed spoilage and waste from horizontal storage systems. Some farmers feel the loss of feed quality is too great to justify the energy savings from horizontal storage systems.

If you aren't already using many of these energy conservation measures on your farm, it may be worthwhile to sort out which ones would work and be economical for your operation. It is unlikely that every one of these measures will make sense for your farm, but chances are several could be used to reduce your energy consumption and save money on your monthly bill.

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