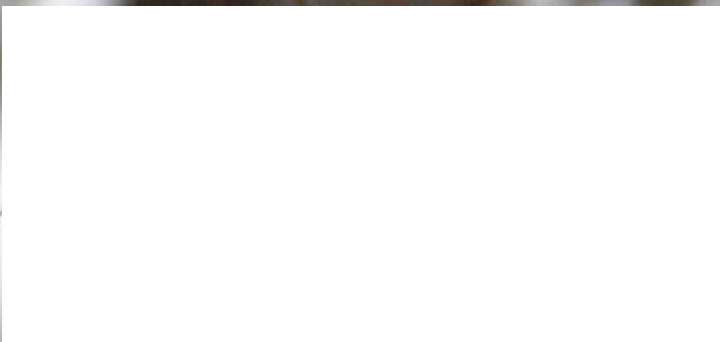


Since 1940

WISCONSIN ENERGY *Cooperative* NEWS

March 2020

Eagles **THRILL** **IN FERRYVILLE**



TAYLOR ELECTRIC
Cooperative

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Kenneth Ceagske,
President/CEO

CHANGING TIMES IN POWER GENERATION

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The power generation world has been fairly stable, with little change over the last few decades. Starting in the late 1950s and early '60s, co-ops and other utilities started seeing growth and options to join together through generation and transmission (G&T) cooperatives like ours, Dairyland Power Cooperative (DPC), to build large power plants that would serve power at a steady level (baseload). In the '70s, natural gas was expensive and in short supply, so the push was to go with coal in large-size plants for affordability and reliability. In fact, there was a time when the laws would not allow new natural gas generation due to shortage concerns and because that fuel would be needed for heating homes, etc. Nuclear came and went and is still going strong in some locations, but permitting is becoming challenging. In the last decade, renewables have been supported through tax credits, and through development they're becoming lower in cost and more widely available.

Renewables, like wind and solar, are commonly called “intermittent generation resources,” meaning they are not steady like baseload plants, and the output varies given the local conditions that are beyond control of the power company that needs to provide the needed energy at the moment. Renewable generation has as much predictability as the breezes that blow through your window or the sunshine that lights your house in the daytime.

Natural gas turbines, or their more efficient relative called a combined cycle plant, are basically stationary jet engines tied to generators. They offer the flexibility of being able to change output relatively quickly with throttle adjustments. These plants are faster and more flexible to build than coal-fired plants, and with the cost of natural gas dropping, the plentiful amount of gas available for the foreseeable future, and the relative scale of a gas-fired turbine, they are becoming the go-to plant to back up the intermittent nature of the renewables, since they can be controlled and adjusted up and down rapidly, like the engines of an airplane.

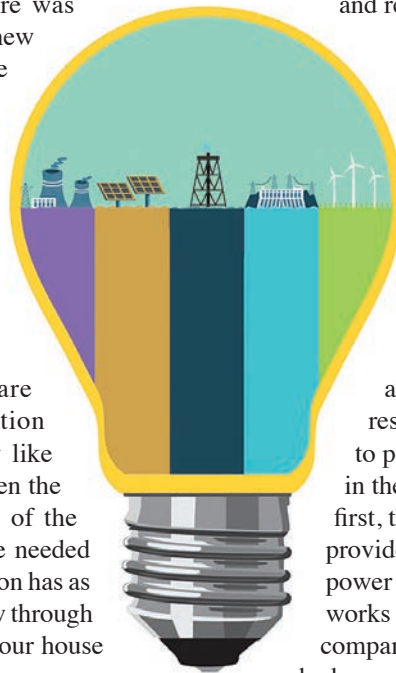
Coal-fired steam generation power plants are still some of the cheapest plants to operate, since the output is so very large, and they run best when set to a level and run

steadily. With the up and down nature of renewables, coal plants have a difficult time “following” the load needs. They have long startup times, sometimes upward of 10-12 hours from first fire to full load, and much like a fireplace, they take some time to stoke up. However, once they are running strong, coal-fired generators maintain heat well and can carry a steady load efficiently for a long time. The insides of a steam generator are lined with many tubes that carry water through the fire box to generate steam. If they are run steadily, it's a reliable system, but with the potential of excessive heat-up/cool-down cycles, the metal tubes and other mechanical parts get fatigued. Repair costs go up, and reliability goes down.

Another source of energy is becoming favorable—the open market, or Independent Power Producer (IPP). It is now possible to order power purchased by G&Ts or other providers based on market prices and long-term contracts. It's not quite as simple as going on Amazon and a box of energy shows up the next day, but similar in concept. IPPs have built up many types of resources with the intent of selling to the highest bidder, with some private investors able to make use of tax incentives. These resources are offered with long-term contracts to power providers in place of them having “steel in the ground” as a power plant of their own. At first, the market was there to fill in the gaps as power providers were growing and didn't have enough power plants to cover the load, but had plans in the works to build something. Many of the sellers were companies that had built a plant to grow into so they had excess capacity they could make available. As the markets got organized, they became a more viable option for power providers as plant replacements, instead of just support.

By now you have seen the press releases that discuss the closure of DPC's Genoa 3, or G3, plant. It is a combination of all the above factors that make large baseload plants obsolete, or less economical to run. This situation is not unique to DPC; it is a scenario that is playing out across the country, only the best of the baseload coal-fired plants are staying on line, and as the lesser performing plants fall out of favor, they are being removed from service.

The greatest challenge with this is to balance the financial benefits of the newer, cheaper resources with the cost of retiring the plants. There are the obvious costs



(Continued on page 18)



THREE WAYS TO **ELECTRIFY** YOUR LAWN CARE

Spring is just around the corner, and you can practically smell the freshly cut grass. If you're in the market to upgrade your lawn-care equipment, you may want to consider electric (or battery-powered) options.

Gas-powered lawn mowers and trimmers may be your go-to, but times they are a changin'. Electric lawn-care equipment options are becoming more popular than ever, offering consumers faster charging times, longer battery life, and quieter, greener products compared to their gas-powered counterparts. Here are three ways you can electrify your lawn care this spring.

Electric Lawn Mowers

Electric lawn mowers have come a long way over the last few years. Early models required corded connections, which were tricky to manage—but the cord has been cut. Newer cordless electric mowers are certainly more expensive than gas-powered mowers, but much of the upfront cost can be recovered since electricity is a less expensive fuel than gas, and electric engines generally require less maintenance than gas engines. Cordless electric mowers typically range from \$200 to \$500.

Electric mowers are suitable for most lawn-care needs, with batteries that typically require about one to two hours to fully charge, and most batteries can run for a full hour. That said, if you have a large yard (half an acre or larger), a gas-powered option may be best to suit your needs.

Electric Trimmers

Cordless electric string trimmers are a great option for most lawns. Traditionally, like lawn mowers, string trimmers have

typically been powered by gas. But new versions of electric trimmers are improving and are now considered worthy competitors of gas-powered models.

Cordless electric trimmers are much quieter and easier to use, but most batteries last about 30 to 45 minutes. So, if you have a lot of space to trim, you may want to consider a back-up battery or plan to work in short bursts. If you're interested in purchasing an electric trimmer, the main factors to consider are the battery's life, charge time, and power. Costs can vary depending on your needs, but you can find a quality version for about \$100.

Electric Leaf Blowers

After cutting and trimming your lawn, you'll need to clear off those walkways and patios for the finishing touch. If you don't want to deal with the maintenance of a gas-powered blower or the restraints of a corded blower, a cordless electric version is a great option.

Cordless electric leaf blowers are lightweight and easy to maneuver, but they don't offer quite as much power as gas-powered and corded blowers. If your leaf blowing and clearing needs are minimal, a cordless electric leaf blower can get the job done. Costs for a cordless electric blower vary depending on power and battery quality, but you can purchase a dependable model for about \$150 and up.

If you're looking to electrify your lawn-care equipment, be sure to do your homework. Search online for the latest reviews, and check trusted websites like ConsumerReports.org. With a little research, you'll be well on your way to Lawn of the Month—with less maintenance, hassle, and noise (and your neighbors will thank you!).

Ten Tips for Springtime Energy Use



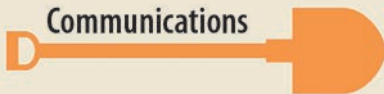
- 1. CLEAR THE AIR:** Open windows to allow fresh (free!) air to circulate.
- 2. COOK OUTSIDE:** Enjoy a few hours of sunshine by using your grill or smoker to add festive flavors to meals.
- 3. SEARCH AND SEAL:** Cracks and spaces let conditioned air outside. Caulk and weather strip to seal leaks to prepare for the hotter temperatures ahead.
- 4. NATURAL LIGHT:** Open blinds and curtains, and turn off the lights to save energy.
- 5. BE FAN FRIENDLY:** Use ceiling fans to circulate airflow. If your ceiling fans are still in winter mode, switch them so the blades turn counter-clockwise, pushing the cool air down toward you.
- 6. ATMOSPHERIC ADJUSTMENT:** Remember to adjust your thermostat settings for the milder months ahead. Use a programmable thermostat if you tend to forget to adjust it yourself.
- 7. TUNE UP:** Schedule an appointment with your HVAC technician to identify any potential problems with your system.
- 8. PEAK SAVINGS:** Think about supply and demand. Plan household chores that require electricity during off-peak hours (when energy demand is low).
- 9. TAKE CHARGE:** Consider disconnecting electrical devices you don't use regularly until you need them. Plugged-in devices use energy even when not in use.
- 10. MOVE OUTDOORS:** Time spent outdoors offers opportunities to turn off lights, televisions, computers, and home appliances. You'll be more active, have more fun, and save more money.



Call 811 before you dig to mark underground utilities



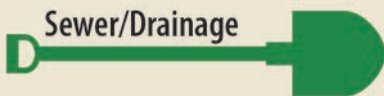
Electric



Communications



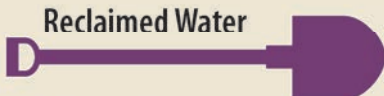
Potable Water



Sewer/Drainage



Gas, Oil or Petroleum



Reclaimed Water



Proposed Excavation



**Know what's below.
Call before you dig.**

Source: Call Before You Dig

Changing Times (Continued from page 15)

of plant demolition and site restoration. There are some less visible costs, like satisfying the loans that may exist against them for construction, or major upgrade costs that were tied to the estimated lifespan of the plants. As with many people's homes that carry mortgages, bankers would not be happy if the owners just walked away from the property and stopped paying just because it didn't fit their needs anymore. Another unseen cost relates to the fact that many of the plants are major employers in the areas where they are located. There is a social, and sometimes legal, requirement to assist employees and communities through the transition, including retraining, relocation, and sometimes direct financial assistance.



**Taylor Electric Cooperative
ANNUAL MEETING**
Saturday, April 4
Stetsonville Centennial Center,
Stetsonville
Registration – 8:30 a.m.
Business meeting – 9:30 a.m.



**Daylight Saving Time
Begins March 8**
Don't forget to turn your clocks
ahead one hour

Kenneth Ceaglske, President/CEO

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Lainie Kellnhofer, Editor



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