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Midland Power Cooperative
Your Touchstone Energy® Cooperative

# The Energy Insider

A BIMONTHLY PUBLICATION OF MIDLAND POWER COOPERATIVE

WWW.MIDLANDPOWER.COOP | JANUARY/FEBRUARY 2021

## Powering down to avoid "burn down" from ice

Freezing rain, forming ice and strong, howling winds are a combination known for causing damage and power outages. Yet, many people might be surprised to know that the welcomed calm after an ice storm carries a risk of severe power line damage and extended power outages.

As the sun rises on an ice-coated, glistening landscape and the temperatures rise above freezing, electric utilities are faced with a difficult decision –wait to find out how much damage is caused as the ice falls off the power lines or de-energize power lines while the ice falls to avoid the risk of multiple long-term outages?

If the infrastructure hasn't been damaged by a passing storm, sagging, ice-coated power lines can continue to deliver electricity. But once the temperatures rise above freezing, the ice will melt. As it melts, thick chunks of ice fall from the lines, and the lines may "gallop" up and down due to the release of weight. If the neutral line contacts an energized line, the lines could burn, break and fall to the ground, even on a calm, beautiful day. If this happens, it is a time-consuming process to splice and restring power lines, and this process must be completed before sections of power lines can be re-energized.

If the power provider makes the difficult decision to temporarily de-energize the power lines as the ice falls, galloping power lines may strike one another but remain intact and be ready to be re-energized as soon as most of the ice has fallen. This allows power to be restored to the entire neighborhood quickly. This type of process inconveniences many member-consumers for a short amount of time, but avoids longer-term outages that could occur due to infrastructure damage. This type of outage typically lasts one-to-two hours.

"While we certainly hope to avoid future ice storms, we want to raise awareness of this technique that can help avoid additional

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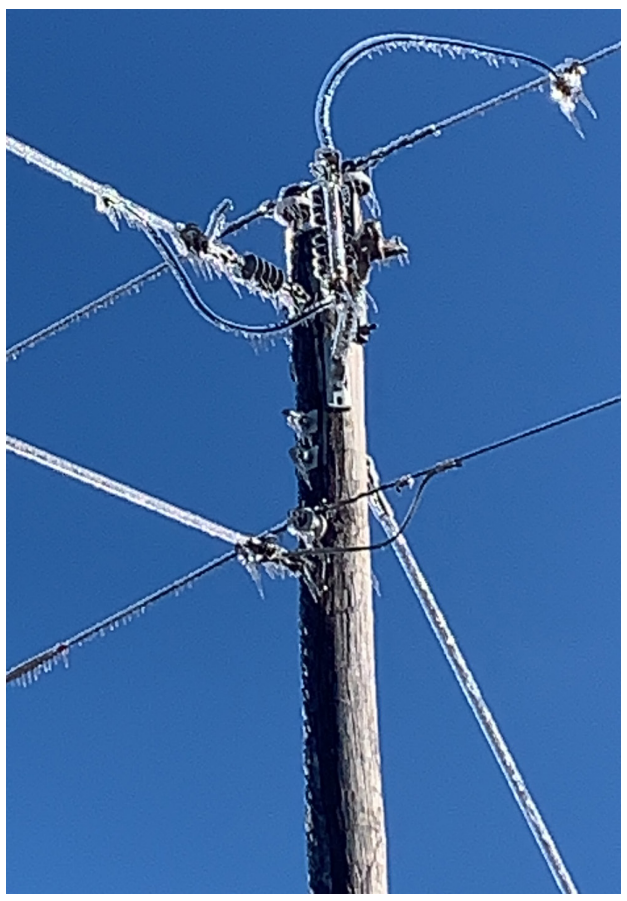


Ice on Midland Power lines in November 2020.

## 2021 Maintenance Plan: Trimming Service Interruptions

Vegetation – especially trees – are valued parts of landscape. They enhance the beauty of an area and provide important functions. But trees grow, which can cause problems with power lines if they are not properly planted or if volunteer trees grow in unintended areas.

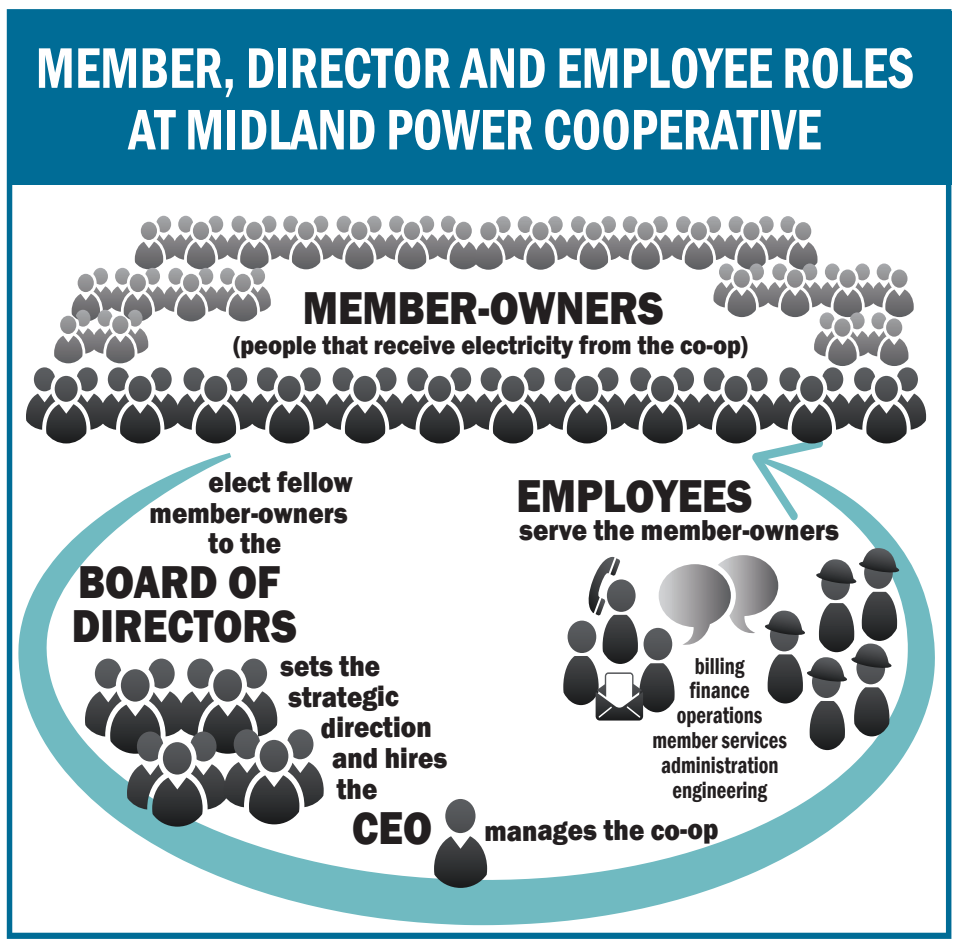
When branches and limbs break off, they often land in roadways or bring the power lines down with them – posing a safety risk to the public and cooperative employees. Midland Power's distribution system connects thousands of people across its service territory. One tree contacting a power line may impact neighbors, near and far. The Iowa Administrative Code Section 25.3 requires electric utilities, including cooperatives, to have a schedule and procedures for regular tree trimming and vegetation management, which is critical in minimizing these instances.

Vegetation management isn't just about reliability, as both federal and state policies

See MAINTENANCE, Page 4

## The co-op is led by member-consumers, like you

As a member of Midland Power Cooperative, you can nominate and vote on who represents you on the co-op's board of directors. It is the board of directors that determines the strategic direction of our local, not-for-profit business. In 2021, one director from each of the cooperative's four districts will be up for election. These directors are members of Midland Power, like you, who were elected by fellow members to serve on the board. See the notice on Page 2, if you, or another member that you know, is interested in becoming a director or nominating committee member.




### What is expected of a director?

Your directors must constantly consider policies affecting the co-op. For example, how much must we spend on maintenance? If we need a new substation, how will we build it? How will we finance it? How often do we update our technologies and facilities to stay efficient?

It's not an easy task. Responsibilities stack up, and time commitments are considerable. Besides attending board meetings every month, each director must continuously educate himself/herself about the complex business of electricity production and distribution, as well as the intricacies of strategic planning and financial decision-making. After all of that education, sorting through difficult choices remain.

The board is entrusted with the future of the cooperative. The board must balance the interests of the members as owners, members as consumers, employees and the public. This includes ensuring the financial integrity of the cooperative, providing quality and reliable service to all members, communicating with members and being a leader in the community.

In a democracy, member participation is crucial. That's why it is important for you to vote in co-op elections, attend various member events and meetings and let us know when issues arise that need our attention.

Co-ops are different from other forms of businesses because of you, our members, and because of the way decisions are made. We welcome and encourage your involvement. After all, it's YOUR co-op.

## Iowa's Largest Solar Project to Energize in 2021

### Project Benefits Midland Power Members

Two years ago, a Midland Power Cooperative wholesale power affiliate announced it would purchase 100 percent of the power from Wapello Solar, currently the largest solar project in Iowa.

The Wapello Solar project is on schedule to produce low-cost energy to Midland Power Cooperative and other member-owners of Central Iowa Power Cooperative (CIPCO), in early 2021.

Located on approximately 650 acres in Louisa County, Wapello Solar incorporates cutting-edge solar panel technology with efficient solar inverters and a single-axis tracking system to maximize energy generation. Midland Power's affiliate will purchase 100% of the energy and capacity output for 25 years from the 100-megawatt solar facility, benefiting Midland Power and its member-consumers.

"Solar technology today is powering cost savings and incredible environmental benefits for the communities we serve," said Midland Power CEO Bill McKim. "When our power suppliers invest in projects like these, it demonstrates a commitment to sustainability, energy cost and reliability for Midland Power Cooperative and its member-consumers."

### Even in Winter, the Sun Still Shines on Solar

Summer months in Iowa have about three times the available sunlight compared

See WAPELLO SOLAR, Page 4

**Scholarship deadline is Jan. 25**
Log on to www.MidlandPower.Coop to learn more and apply.

**It's time to nominate candidates**
See Page 2, to learn about running for the board or nominating committee.

**Can you help level the load?**
A message from CEO Bill McKim
Page 3

**Get to know two board directors**
Learn about President Jack Runge and Director Bill Harleen, Page 3

# Get to know Board President Jack Runge

For Midland Power Cooperative Board President Jack Runge, 2020 marked 25 years of serving on the cooperative's board. It's not something he had planned. "It doesn't seem possible that 25 years serving at Midland has passed," said Runge. "Time just flies!"

Back in 1995, during Midland Power's first Board election, which came three years after the consolidation of Hardin County REC and Greene County REC, Runge was approached by a nominating committee member to see if he'd be willing to run for the board. Prior to that, Runge had attended a few annual meetings of the members for his rural electric cooperative. At the time, he had no idea how involved he would become with the co-op over the following two and a half decades.

Runge grew up near Buckeye and Radcliffe, Iowa. His family was involved in grain and livestock farming. He attended Ellsworth Community College and later taught in their Farm Management Department. He became a fifth-generation family farmer, and his son Charlie is the six generation to work the family farm.

The firefighting industry was another area where Runge had no idea the level of commitment and years of service he would contribute when he was nominated to serve as a local firefighter. He spent 37 years as a firefighter for the Buckeye Fire Department, including becoming Assistant Chief. He became part of the Field Staff for the Fire Service Training Bureau, training and teaching other firefighters. He's served on numerous Boards, including the Iowa Firefighters Association, where he was President from 2011-2012. In 2012, he enjoyed the opportunity to narrate a portion of Iowa Public Television's production of Iowa's Firefighting Family. The production introduces viewers to firefighters from across Iowa, including the Butler family of Harlan, Iowa, which has seven family members that are firefighters. For more than a decade, Runge has read the names of Iowa's fallen firefighters at the Annual Memorial Service, each June, at the Iowa Firefighters Memorial, in Coralville, Iowa, and supported the Hall of Flame exhibit area at the Iowa State Fair.

Today, many know of Runge's involvement in farming, firefighting, the electric cooperative industry and other community organizations, but something that he thought might surprise people was that he attended a photojournalism class at the University of Iowa during one of the summers of high school at Radcliffe High School. "That was back in the day of reel-to-reel video recorders," Runge laughed. He was thankful for the opportunity and thought it was a great, educational experience.

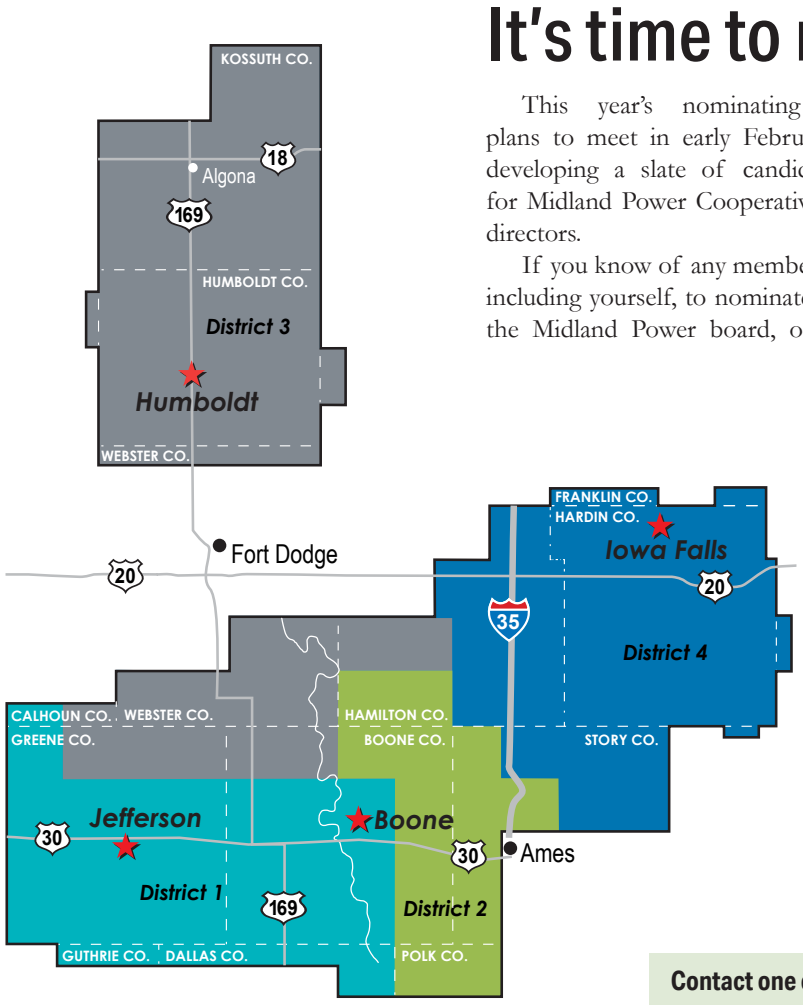
As for Midland Power Cooperative, Runge stated he is happy to be a part of a co-op that is always looking at better ways to serve members in the most cost-effective ways. "I believe we're constantly working to well position the co-op for the future, in the best interest of membership," said Runge.

# It's time to nominate candidates

This year's nominating committee plans to meet in early February to begin developing a slate of candidates to run for Midland Power Cooperative's board of directors.

If you know of any member-candidates, including yourself, to nominate to serve on the Midland Power board, or next year's nominating committee, please contact one of the nominating committee members in your district listed on the right.

The selected members will appear on candidate ballots for the Midland Power election in 2020. See the article below to learn more about the responsibilities of directors.




**2021 Nominating Committee Members**

**District 1**
Rich Larson, Ogden, 515-275-3139
Tanner Lawton, Jefferson, 515-777-5814
Richard Schneider, Madrid, 515-681-3986

**District 2**
Christopher Paulson, Boone, 913-484-4076
Donald Uthe, Ames, 515-290-0886
Jamie Weydert, Ames, 319-325-5940

**District 3**
Brody Bertram, Humboldt, 319-239-8860
Charles Bormann, Lu Verne, 605-695-1430
Allen Mains, Wesley, 515-341-1332

**District 4**
Royle Duncan, Alden, 515-373-6903
Larry Engelson, Hubbard, 515-460-1677
Duane Kruckenberg, Iowa Falls, 641-751-1450

**Contact one of these members in your district to make a nomination!**


**The set-up crew at the Hall of Flame exhibit area at the Iowa State Fair.**

**Runge (left) reads the names of fallen firefighters at the Annual Memorial Service in Coralville.**

# Get to know Director Bill Harleen

Midland Power Director Bill Harleen was elected to the board in 2019, making him one of the co-op's newest directors. He grew up in rural Madrid, Iowa. As a young person, he joined 4-H, learned about farming, worked on a neighbor's farm and started raising hogs.

The same neighbor also had an old trencher. Later, Harleen bought the trencher from his neighbor. Today, he and his wife run a trenching and excavating business, and he farms 160 acres.

The Harleens raised three children. Their two daughters, and their families, reside in Iowa and their son is a charter jet pilot in Texas. The Harleens enjoy spending time with their grandchildren as well as active outdoor activities – riding motorcycle, snow mobiles, snow skiing, water skiing and boating.

Harleen has been active in his neighborhood. He has been a trustee for church for about 20 years, and a township trustee for more than a decade. When his neighbor and former Midland Power Director Earl Check asked him if he would be interested in running for the co-op's board, he agreed.

Harleen acknowledged being a Midland Power Cooperative director is a little more involved than he expected. He said, "I was a little surprised by the extent of the responsibilities and the decision making of the board. As I'm going through the learning process, I'm very glad to be a part of a board that has experienced directors on the team."


**The Harleens enjoy outdoor adventures and spending time with their grandchildren.**

# Can you help level the load?

By Bill McKim
CEO,
Midland Power
Cooperative

Today, in addition to a fixed charge known as the Access Charge, most Midland Power members are simply billed for the energy they use each month, or energy "consumption." But did you know that the way you and your neighbors use electricity is just as important as how much electricity you use each month? The higher the "demand" for energy placed on Midland Power and its power providers during peak times of the month, the higher the expenses are for your cooperative.

### Energy Consumption vs. Demand

Consumption is measured in kilowatt-hours (kWh). Demand is measured in kilowatts (kW).

If a home were to plug in a single 1,000-watt appliance that ran non-stop for 10 hours, it would consume 10 kWh of energy. The highest demand that took place was 1 kW, since no additional appliances were plugged in or running. In comparison, a home that uses multiple appliances, say ten 1,000-watt appliances that all run for the same one-hour time frame, consumes the same amount of energy (10 kWh), but creates ten times the demand -- 10 kW. This requires the generation and transmission plant to produce power in less time to meet the second property's demand.

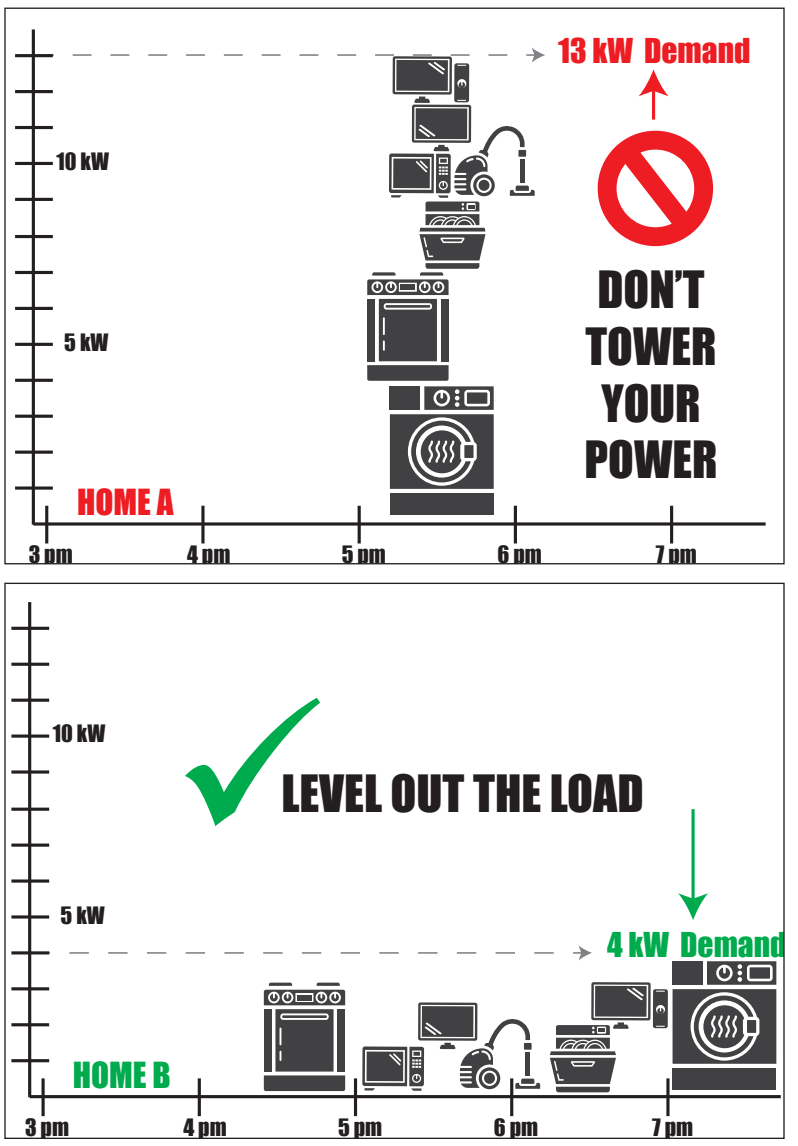
Midland Power purchases power from our generation and transmission cooperatives based on the peak demand of our members. Peak demand refers to the time of day when the demand for electricity is highest. This is typically during the evening, from 3:00 p.m. – 9:00 p.m., when families return home from work or school, cook dinner and use appliances the most. Peak demand can also take place in the early morning hours, when families are preparing for the day.

### Spread Electric Use to Level the Load

Because Midland Power is member owned, when the cooperative saves money, the members save too. Avoiding peak demand times from our generation and transmission provider means our members are using energy wisely, and total costs to the cooperative remain low.

Curious to know what your property's peak demand is each month? For residential consumers, and those that have not been charged for peak demand in the past, soon, a line item called "Peak Demand" will be listed on your monthly bill. This line item is being added in 2021 for informational purposes, and no charges will be associated with the new line item. It will reflect your peak demand each month. Want to know sooner? Most members will be able to view Demand when logged into SmartHub account access. Under the "My Usage" tab, "Usage Explorer" screen, change the "Usage Type" from "kWh" to "Demand (kW)." The graph reflects each time a meter hits a new peak demand during the month.

In the past, you have been able to save money by turning off the light or taking advantage of our energy efficiency programs. In the future, you may be able to lower your bill by coordinating the number of appliances you operate at once. Staggering the use of major appliances throughout the day reduces the demand at your location and helps cooperative system to level the load.




**The energy consumption in kilowatt-hours (kWh) in each of these graphics is the same. However, the scenario where the appliances are used simultaneously creates a much higher demand. If the co-op charged $1/kW for demand, Home A would be charged $13.00 and Home B would only be charged $4.00.**

# POWERING DOWN Continued from page 1

infrastructure damage, line worker fatigue, and extended outage times for members," said CEO Bill McKim.

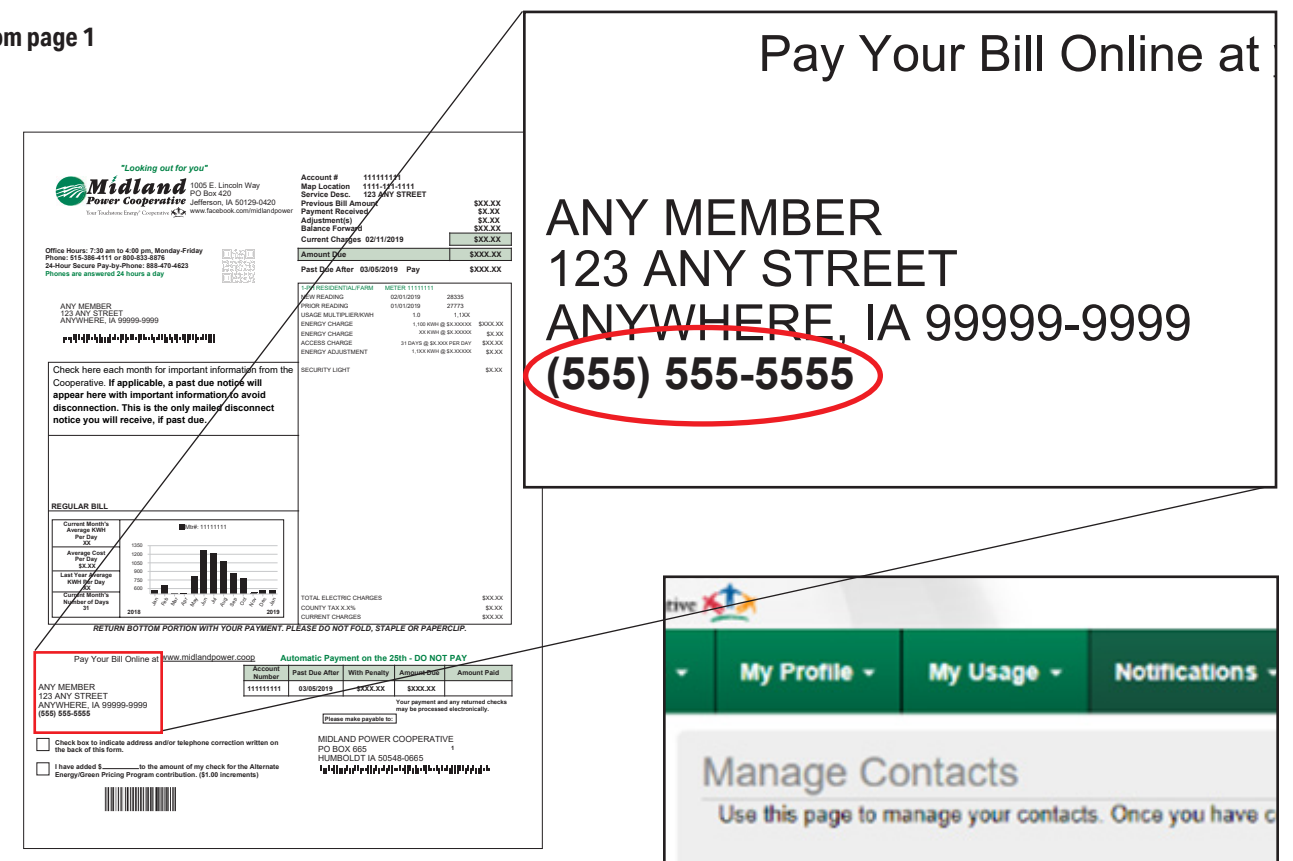
Other electric cooperatives have used this technique in the past, and those co-ops credited this technique for reducing power restoration recovery times following the ice melt. In November 2020, Midland Power utilized this technique with success to avoid further infrastructure damage and new, long-term outages following an ice storm in Kossuth and Humboldt counties.

Reliability is a priority at the co-op, which maintains a reliability percentage of keeping the power on 99.97% of the time. For the other 0.03% of the time, technologies such as an uninterruptible power supply (UPS) may be useful to power small electronics during a short-term power outage and/or a portable or whole-house generator may be useful to power essential items during longer outages caused by severe storms, such as derechos or ice storms.

"There's never a convenient time to have a power outage, especially when more member-consumers are working from home than ever before," said McKim. "Our team members are reviewing the co-op's external communications technologies to be better prepared to inform members of this type of situation in the future, but it's important for members to have the knowledge that power outages may occur during or following ice storms and be prepared for such situations."

### Ways for members to confirm they have accurate contact information on file:

To confirm that you have an accurate phone number on file, please locate the phone number listed below the address block on the lower left portion of your electric bill. This is the main phone number on file at Midland Power. It is the only phone number that would be used by the co-op's automated calling system. Updates or corrections to this phone number can be written on the back of the bill stub that is enclosed with the payment. Also, consider if you've ever opted out of automated phone calls from the co-op, either during your membership application in recent years, while receiving an automated phone call for a bill payment reminder or while logged into SmartHub. If you have opted out of automated phone calls in any of these ways, the co-op's automated system will not be able to call the number listed on your electric bill. The cooperative does not use the automated calling system for marketing or promotional purposes. It is currently used for payment reminders on past-due bills and outage phone calls.




If you'd like to confirm that your current e-mail address information is on file, please create or log into your SmartHub online account access or mobile app. To add or edit e-mail addresses in SmartHub online, go to Manage Contacts, under the Notifications tab. Then, to adjust how you receive messages, based on event type, go to Manage Notifications, under the Notifications tab. If you are editing your preferences in the SmartHub mobile app, you will want to go to Settings from the menu, then Contact Methods to add or edit e-mail addresses, and Manage Notifications to update the addresses that receive notifications by event. Soon, this will also be the area to add phone numbers that you want to enroll in receiving text notifications.

If you would like to confirm all of your phone numbers that the co-op may call to reach you, in SmartHub online (not available in the app) go to My Information, under My Profile, and then Update My Billing Address & Contact Information. The listed "Home Phone" number will be the one used by the automated calling system. If someone from the co-op needs to reach out to the member, they will use the number in the home phone field or any of the other listed phone numbers to manually call the member.

# WAPELLO SOLAR Continued from page 1

to the winter months, which directly impacts the energy generation capabilities of a solar project in any given season.

The Wapello Solar facility can use those frigid temps to its advantage: solar panels are more efficient at converting sunlight into electricity when they can remain cool.

Because roughly one-third of the year is spent with limited daylight hours, the solar panels at Wapello Solar are bifacial, meaning they have a back layer of transparent glass to give them the ability to utilize the sunlight reflected onto the rear side of the panel as well as the traditional front panels. Utilizing bifacial panels is projected to result in roughly seven percent additional annual energy generation and make the panels sturdier.

Because bifacial modules have glass both front and back, they have enhanced durability. These panels are designed to operate in temperatures as low as -40 degrees Fahrenheit and withstand wind speeds up to 105 miles per hour, according to Clēnera, the company developing Wapello Solar.

And because Wapello Solar is located in Iowa, blizzards and ice storms come with the territory. While the front face of the panels will warm enough to melt away most of the snow or ice, the snow that collects on the ground can also contribute to the energy generation output at Wapello Solar.

Snow substantially increases the ground reflectivity, meaning an even higher percentage of sunlight will be reflected onto the backside of the solar panels. In this way, the bifacial panel allows for some electricity generation from the solar array even when the panels may be completely covered in snow.

As for maintenance throughout the winter, crews will monitor snow accumulation and clear excess snow from the panels. Clēnera is able to monitor the site performance remotely and can detect any issues that may not be immediately visible to the maintenance crew. Additionally, the facility has sensors that send an alert when the accumulation of snow on the modules reaches 10 pounds per square foot or more.

**Workers from Renewable Energy Systems (RES), the installation contractors for Wapello Solar, install the bifacial panels on the single-axis tracking system. Single axis solar trackers track the sun east to west, rotating on a single point, moving either in unison, by panel row or by section.**

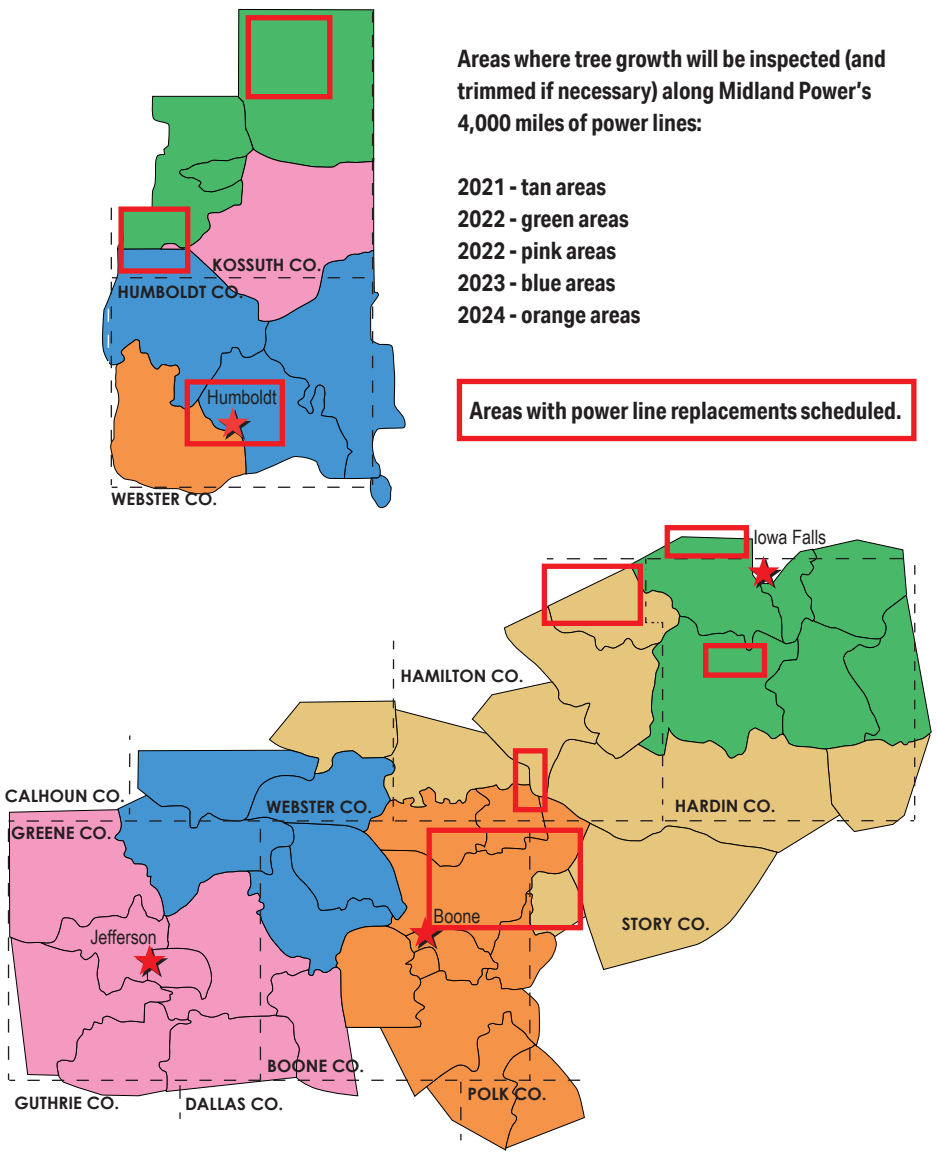
# MAINTENANCE Continued from page 1

require that vegetation be cleared from power lines as a safety measure. Trees growing near power lines pose a safety threat for member-consumers (as well as their children and/or grandchildren) and co-op employees.

The budget for Midland Power's vegetation management program (the 5-year cycle of inspection and trimming of tree and vegetation overgrowth near power lines) has been increased by more than $200,000 in 2021. The tree trimming contractors will focus on the areas managed and scheduled by Midland Power to be trimmed in 2021 and address additional areas where overgrowth is encroaching power lines. To maximize safety and maintain reliability, it is a best practice to trim away all vegetation within 30 feet of power lines.

When it comes to reliability, maintenance and replacement of power line infrastructure is necessary. In 2021, more than 66 miles of Midland Power's power lines are scheduled to be replaced and five of the co-op's substations will be rebuilt or replaced – a $7.4 million investment in system reliability for the co-op.

A methodical, proactive approach is important to ensure the safe, reliable, affordable and environmentally responsible delivery of service.



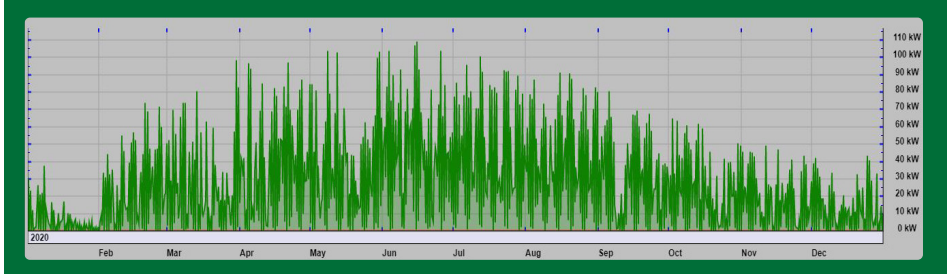

**Areas where tree growth will be inspected (and trimmed if necessary) along Midland Power's 4,000 miles of power lines:**

**2021 - tan areas**
**2022 - green areas**
**2022 - pink areas**
**2023 - blue areas**
**2024 - orange areas**

**Areas with power line replacements scheduled.**

## Did you know?

**Midland Power's Community Solar Array produced more than 229 thousand kilo-watt hours of electricity in 2020. Learn more at midlandpower.coop/communitysolar**




# SAVE MONEY

Electricity is becoming cleaner every day and can save consumers money on their energy costs over time.

Did you know...

**Replacing your HVAC system** with an electric heat pump can **save you nearly $1,000 per year** on your heating and cooling bills.[1]

Did you know...

The average cost of **charging an electric car** is equivalent to **$1.20 per gallon of gasoline**.[2]

Did you know...

**Owning an electric vehicle** can **save you over $800** in annual maintenance.[3]

1. https://www.forbes.com/sites/jeffmcmahon/2018/08/19/if-youre-heating-with-propane-or-oil-study-says-go-electric/#208f82b77a71
2. https://www.energy.gov/maps/egallon
3. https://www.bloomberg.com/news/articles/2017-11-29/electric-vehicles-drivers-save-a-lot-on-gas-money

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