

MANAGER'S REPORT

Keeping the Lights On: Navigating Grid Reliability in a Changing World

The most important part of my job at Calhoun County Electric Cooperative Association is to make sure each one of our employees returns home the way they came to work. The second most important part of my job is to ensure a reliable and affordable flow of electricity to your home, farm, or business.

Today, I am more concerned than ever about the future of our shared electric grid and our ability to provide the reliable and affordable service consumers expect. Our electric grid is amid extensive change. Changes in supply, demand, and extreme weather conditions are stressing the limits of energy reliability.

Demand for electricity is outpacing supply from our generation fleet. Residential and commercial energy use is expected to increase at an unprecedented pace as our nation becomes more electrified and large data centers are added. While a tremendous amount of renewable energy has been added in the Southwest Power Pool (SPP) region, renewable energy is not always available. Calhoun County Electric Cooperative works with Corn Belt Power, our power supplier,

and SPP, our regional transmission organization (RTO), to ensure your lights stay on.

However, the reality is that we need more dispatchable generation for those times when the wind isn't blowing, and the sun isn't shining. Many of our current generators are aging or nearing retirement, and we also need to expand transmission to connect new generators to the grid. This expansion is crucial not only for enhancing grid security but also for ensuring that lower-cost energy reaches consumers.

Grid alerts: Why do they happen?

In the past, there were only a few weeks during the hottest days of summer or coldest days of winter when SPP risked an energy shortfall. Now, SPP is issuing grid alerts throughout the summer and winter. Our risk of having inadequate supply to meet demand has greatly increased, and grid emergencies are likely to occur more frequently, last longer, and have a more significant impact on our lives and our communities.

Our region is increasingly reliant on variable resources. Variable resources are generation types, often renewable

energy, that vary in how much power they can provide due to reliance on as-available fuel.

While these resources provide some cost benefits when available, they also pose a challenge for grid operators when they are not. Solar power is dependent on time of day and year, and it is reduced by cloud cover or low sunlight. And, in Iowa, snow and ice cover in the winter months decrease solar generation.

Wind power depends on weather patterns, which can shift wildly, and even be at risk when wind speeds are too high to operate safely. Hydropower is reduced during times of drought or in extreme freezing conditions.

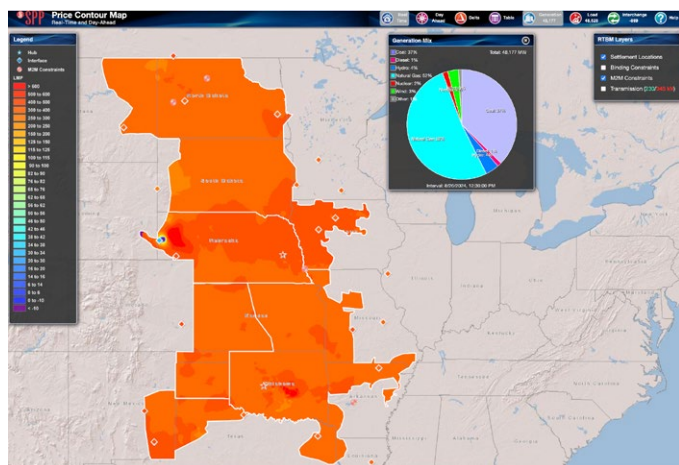
All this means is renewable energy output can vary widely. For instance, in just 4 hours, we have seen wind power go from providing over 16,000 megawatts (MW) of energy to less than 2,200 MW.

We have also experienced a period in June 2023 when only 110 MW of energy



Keaton Hildreth, CEO

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On August 26, the Southwest Power Pool (SPP) declared an Energy Emergency Alert-Level One (EEA1). This alert indicates that while SPP had sufficient generation capacity to meet demand and maintain its reserve obligations, the situation was precarious enough that reserves could be at risk if conditions worsened. The image illustrates two key points: first, the cost of wholesale power during the EEA1 was significantly elevated. More critically, it underscores the vital role of fossil fuel generation in maintaining grid reliability. During this event, wind energy contributed just 3% to the total power supply, while coal and natural gas accounted for 89%—a stark reminder that on the most extreme days of summer, renewable generation can fall short. This highlights the ongoing necessity of dispatchable, baseload generation sources like coal and natural gas, particularly during periods of peak demand when renewable sources may be less reliable.

Manager's Report *cont.*

was produced by the 32,000 MW of nameplate wind capacity existing at that time in the SPP region. To put it in perspective, during that period in June 2023, 0.3% of the entire wind capacity in SPP's footprint was able to generate electricity.

While a wind farm may have a nameplate capacity of 250 MW, we can only consistently rely on about 30% of that output over time. Solar generation in our region performs similarly, typically achieving around 20% of its nameplate capacity on average. This percentage tends to be higher during the summer months but can drop significantly during the winter.

A coal or natural gas-fired power generation unit can be relied on upwards of 90% of the time. I present these statistics not to diminish the value of wind and solar but to provide a realistic understanding of their current capabilities.

Unfortunately, we can't rely on wind and solar energy all the time. When we tap variable energy resources, like wind and solar, we must have baseload generation sources in place as a backup. We need to ensure the lights, heating and cooling systems, businesses and farms have power. Simply put, many times on the hottest and coldest days of the year, we can't rely on wind or solar.

During these times, SPP relies most heavily on dispatchable generation: power sources that have available fuel and can be quickly adjusted to meet the needs of the power grid. Dispatchable power plants - coal and natural gas - can be turned on or off, or their power output can be increased or decreased on demand allowing them to provide more electricity when demand is high or less when demand is low.

What are we doing to mitigate risk?

SPP, Corn Belt Power and Calhoun County Electric Cooperative must plan for times of extreme power use. We do that in the form of what we call reserve margins. Reserves are resources that are held back, standing by to provide additional energy when needed. Reserve margins are the amount of unused available generating capability of an electric power system (during peak demand for a utility system) as a percentage of total capability needed to meet peak demand. These margins are shrinking in SPP and across the country.

Tighter reserve margins mean there's less room for error when we experience unexpected events or emergencies, increasing the risk of forced outages.

We continue to work with policymakers and regulators on a state and federal level for a sensible all-of-the-above generation approach.

The ongoing energy transition must recognize the need for time and technology development while including all energy sources to maintain reliability and affordability. A resilient and reliable electric grid that affordably keeps the lights on is the cornerstone of our rural economy.

Electric cooperative families and businesses rightfully expect the lights to stay on at a price they can afford. To maintain the reliability of your power supply, we must adopt an all-of-the-above strategy that includes renewable energy and dependable resources we have come to rely on like coal, natural gas, nuclear, and hydropower. This diverse energy mix is essential to meeting those expectations day in and day out.

Our mission remains the same. We are here to provide you with safe, reliable, and affordable electricity that is also environmentally responsible. We will continue to advocate on your behalf and do everything we can to continue to live up to that mission.

LANDOWNERS: Know the facts before signing a solar project lease

If you're a landowner in rural Iowa, you may have received solicitations in the mail offering land lease options for proposed solar projects. Often, these letters offer attractive per-acre rental payments for various phases of a long-term proposed project, promising steady and predictable income. However, like with all contracts, the devil is in the details. Before signing an agreement, we encourage you to do some homework and seek legal counsel to protect your rights.

Most of these letters are coming from companies outside of Iowa looking to lease land for future solar projects. We have noticed that many of these letters refer erroneously to Iowa law; referencing legislation (Senate File 2356) that did not pass last session. In fact, Iowa's electric cooperatives and other groups registered in opposition to the legislation due to its likely negative impact on electric co-ops and our members.

Some solicitations falsely claim local support for their solar initiative or that the electric output would somehow benefit your neighbors or the local electric cooperative. We have also seen letters that deceptively include endorsements attributed to the Iowa Farm Bureau. IFB's legal team is working to remove these perceived endorsements.

Please consult your legal counsel before signing any agreement or contract. Your legal counsel can help explain the benefits and disadvantages of these agreements, answer any questions you have, and help negotiate fair and equitable terms. These are long-term agreements that can give the solar company exclusive options and control of your land for decades. Spending some extra time up front to better understand the terms and conditions of the proposed agreement can save you significant time, money and headaches in the future. For more information, we encourage landowners to reach out to contact us at 712-297-7112.



Richard Hall is the Manager of Member Services at Calhoun County Electric Cooperative Association.



STAY SAFE AND WARM: Your winter home readiness guide

Preparing your home for winter involves several key steps to ensure safety, efficiency and warmth. Here are top tips to help you prepare before the temperatures drop and a few ways to stay safe if a power outage leaves you snowbound.

Inspect your heating system

- Have your heating system professionally serviced.
- Replace air filters if needed.
- Ensure vents and radiators are unblocked for efficient heat distribution.

Prepare pipes and water supply

- Insulate exposed pipes to prevent freezing.
- Drain and shut off outdoor faucets and irrigation systems.
- Know the location of your water shut-off valve in case of emergencies.

Maintain smoke and carbon monoxide detectors

- Replace batteries in smoke and carbon monoxide detectors.
- Test detectors to ensure they are functioning properly.

Prepare your home's exterior

- Clear gutters and downspouts of leaves and debris to prevent ice dams.
- Trim trees and bushes away from the house to prevent damage from heavy snow.
- Ensure downspouts extend away from your home's foundation.
- Drain and store garden hoses to prevent freezing.
- Service and store outdoor equipment such as lawnmowers and trimmers.
- Gather winter tools such as snow shovels and ice melt.

Increase home energy efficiency

- Seal gaps and cracks around windows and doors with weatherstripping or caulk.
- Set ceiling fans to rotate clockwise to circulate warm air.
- Lower your thermostat a few degrees to save on heating costs.

Stock emergency supplies

At home, have enough nonperishable food and water for 72 hours in case of power outages

or severe weather. Experts suggest storing one gallon of water per person per day.

Include these essentials in your emergency kit:

- First-aid kit
- Flashlights and batteries
- Warm clothing and blankets
- Phone chargers and backup charger sources

Gather important documents, medical supplies/medicines and medical records. Don't forget your pets. Make sure you have enough supplies for them as well.

What to do if the power goes out

Winter weather is unpredictable, with high winds, whiteouts and ice storms. These conditions can cause hazardous roads and power outages.

If the electricity goes out due to a winter storm, you might be in for a prolonged power outage as crews work through the harsh weather to get the power back on.

If this happens, contact your electrical utility as soon as you can so they know you have lost power.

Other actions you can take to stay safe are:

- **Avoid travel.** Stay inside and dress warmly in layered clothing.
- **Place a draft block** at the bottom of doors to minimize cold drafts from entering the house.
- **When using an alternative heat source,** follow operating instructions and be sure to ventilate properly.
- **Keep grills, camp stoves and generators** out of the house, basement and garage.
- **Use a tarp and portable canopy** when using a portable generator if conditions are damp or wet.
- **Move fuel-powered generators** at least 20 feet away from the house.
- **Keep a close eye on the temperature in your home.** Infants and people over the age of 65 are often more susceptible to the cold. You may want to stay with friends or relatives or go to a shelter if you cannot keep your home warm.



feeling chilled?

HEAT YOUR SPACE SAFELY



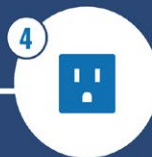
Place on a flat, level surface



Keep flammable items at least 3 feet away



Make sure the cord is not frayed or cracked



Plug it directly into an outlet



Do not use an extension cord or power strip, which can overheat



Follow all instructions and use models endorsed by a reputable testing lab



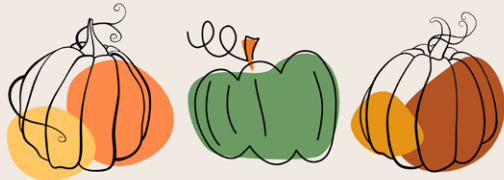
Do not use around small children or pets



Do not use one with a damaged plug or

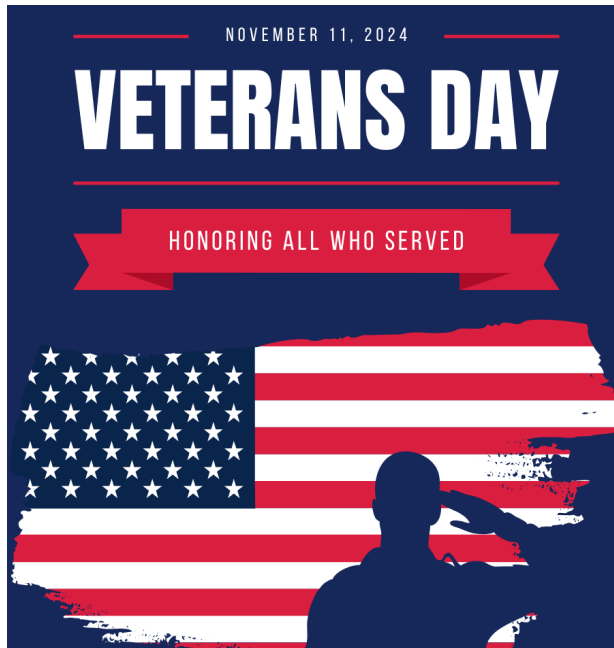
Safe
Electricity.org®

HAPPY THANKSGIVING



We are thankful for the opportunity to serve you!

Our office will be closed November 28th & 29th.



ENERGY EFFICIENCY TIP OF THE MONTH

If you recently made or plan to make energy efficiency upgrades to your home, you may be eligible for federal tax credits. The Inflation Reduction Act (IRA) of 2022 empowers homeowners to save up to \$3,000 annually to lower the cost of efficiency upgrades by up to 30%. A few upgrades covered through the IRA include new exterior doors, windows, insulation, heating/cooling equipment and other major appliances. If you have completed or are considering an efficiency upgrade, visit www.energystar.gov/federal-tax-credits to learn if you qualify for tax credits.

Source: energystar.gov

Reach Us

REGULAR OFFICE HOURS:

8:00 a.m. to 4:00 p.m.
(Monday-Friday)

SUMMER OFFICE HOURS:

7:30 a.m. to 4:30 p.m. M-Th
7:30 a.m. to 11:00 a.m. F
(Memorial Day-Labor Day)

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November Member Challenge

Find the answers within the stories, features, and content of this newsletter and you could win a prize. **Send your answer to memberchallenge@calhounrec.coop, clip and mail to: Calhoun County Electric Cooperative, PO Box 312, Rockwell City, IA 50579 or submit on our website: www.calhounrec.coop/member-challenge-submission.** You may mail your entry along with your electric bill payment, but remember there is a deadline!

Entries for this issue **must be received by Dec. 1st.** Three names will be drawn from all correct entries. Members will receive a **\$10 credit** on their account. Members who answer the questions correctly and participate at least 4 times throughout the year, will be eligible for a \$100 Calhoun County Electric Cooperative Pre-Paid Debit card, through a random drawing, at the end of the year.

Congratulations September winners:

Juanita Borland, No White Posts, LLC - Elaine Leitz, and Perry Parker

1. Calhoun County Electric Cooperative works with _____, our power supplier, and _____, our regional transmission organization, to ensure your lights stay on.
2. It is best to seal gaps and cracks around windows and _____ with weatherstripping or caulk to increase home energy efficiency.
3. Our office will be closed November 28th & 29th for _____.

Name _____