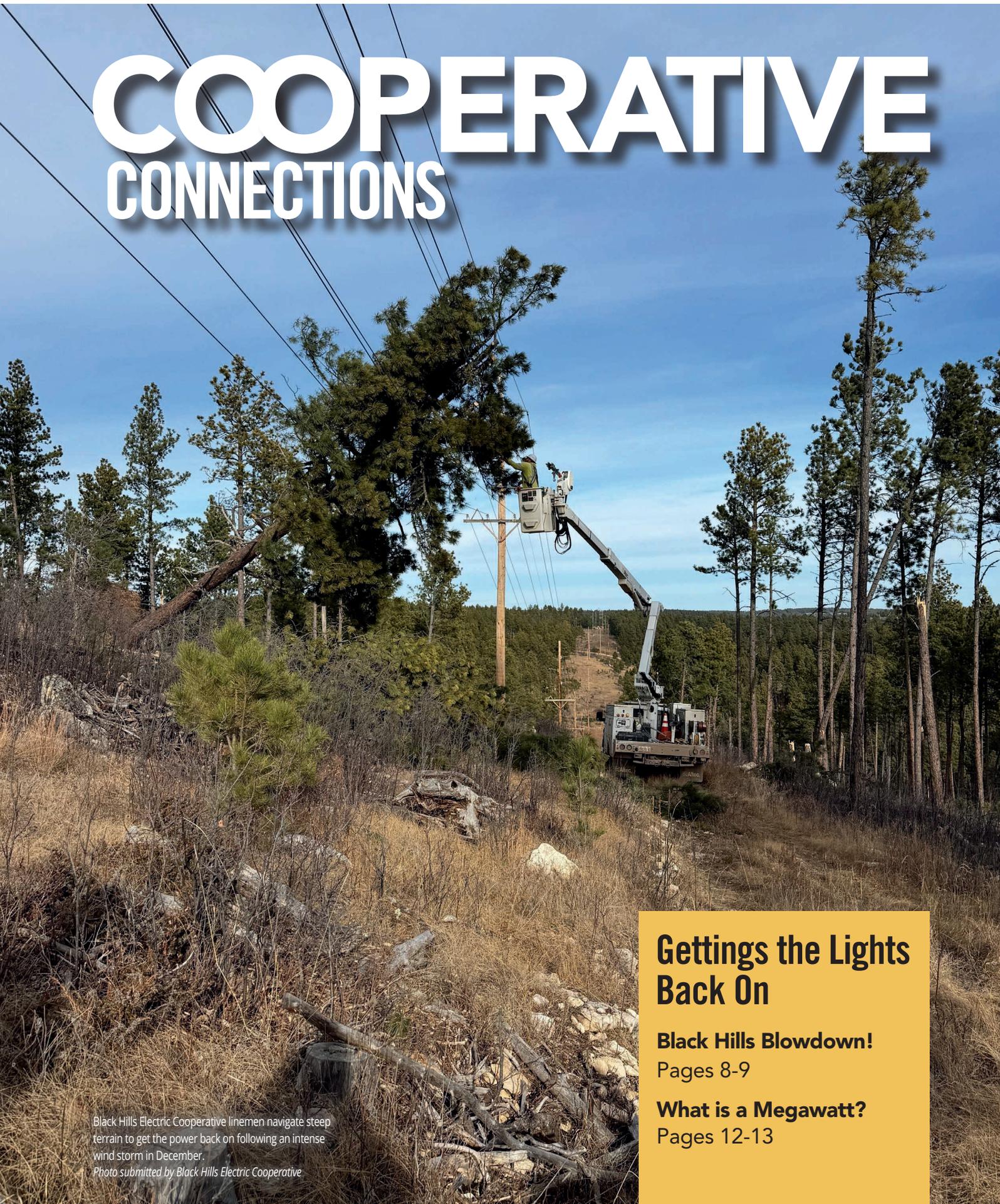


COOPERATIVE CONNECTIONS



Black Hills Electric Cooperative linemen navigate steep terrain to get the power back on following an intense wind storm in December.
Photo submitted by Black Hills Electric Cooperative

Gettings the Lights Back On

Black Hills Blowdown!
Pages 8-9

What is a Megawatt?
Pages 12-13

Data Centers



Matt Sleep
CEO

DATA CENTERS. You may have been hearing data centers being mentioned more in the news. They have certainly been mentioned a lot in this year’s legislative session. My wife and I had supper last night with three of her uncles. They are all from the northeastern part of the state. They were not too keen on providing any tax incentives that would benefit data center owners. They wondered what

I thought. I gave them an abbreviated version of the speech that I gave at the 2025 annual meeting of Butte Electric. I focused on why we have data centers in the first place. We all have cell phones.

We all communicate via text. We are all finding it easier to snap a picture without the “kodak” moment. Everything we do, all day, is generate enormous amounts of data. The data must be processed, transferred, and stored somewhere. Our society is becoming a digitalized one, whether we like it or not.

As we increasingly become more ‘digitized’, which in turn necessitates the need for more data centers. We can readily see the casualties from this. One of the biggest is the slow demise of our postal system. Over the last six months or so, I have listened

to Butte Electric members, friends, strangers, and politicians complain about the postal system and how inefficient and slow it is. All the while we all send texts and emails instead of letters and we all pay bills online through a plethora of options instead of mailing them.

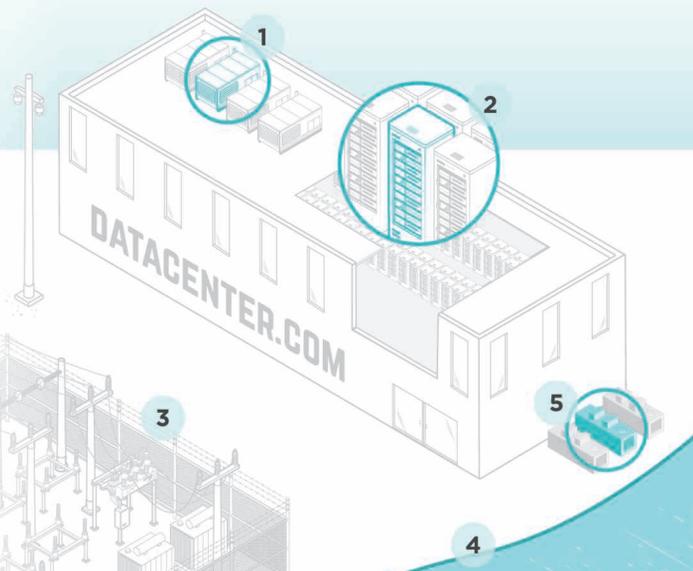
My biggest concern from the ‘digitization’ of our society is the impact that it will have on our electricity rates. I’ve mentioned this before; we have a growing imbalance in supply and demand in the electrical world. There is a rapidly increasing demand for electricity, while in turn the ability to generate electricity is not and cannot increase at the same rate. This in turn will continue to put upward pressure on rates that everyone will pay for electricity. There is no easy fix to this. Fortunately, there are a lot of brilliant minds focusing on solving this conundrum as we speak. It will be interesting to see how it all pans out in the future. I have no answer to this (thank goodness, because no one from Washington has called me to see if I have an answer, either) I’m just pointing out that everyone who has a cell phone, laptop, iPad, computer, or anything else that creates ‘data’ needs to keep in mind Newtons 3rd law of motion, which is “for every ACTION there is an equal and opposite REACTION.” And thus, as I say, “voila we have DATA CENTERS!”

Over the last month, I’ve had a recurring conversation with people from the generation who were able to experience electricity for the first time. Their first recollections dated back to the late

Big Data, Bigger Demands

Many companies are choosing rural areas for their data centers because of cheaper land, available power and potential tax breaks. Data centers require huge amounts of electricity to operate, which presents new opportunities and challenges for electric co-ops.

- 1 HVAC:** Constant cooling is needed to ensure the servers function properly.
- 2 Servers:** Servers run applications and process data 24/7. One server rack can consume enough electricity to power a small home. A large data center can house thousands of server racks.
- 3 Infrastructure:** Data centers often require new electrical infrastructure to meet their power needs.
- 4 Water Source:** Many large data centers are deploying evaporative cooling, which is more efficient than compressor-based systems.
- 5 Backup Power:** On-site generators keep data centers running during power outages and can also be used to help lower demand when electricity use spikes.



1940's to early 1950's. The most common memories were being grateful and appreciative of the convenience and not having to deal with the dirty old batteries in their homes and the noisy old light plants (generators).

It's interesting how things circle back around. We've had a couple of experiences over the past year that have brought back the gratefulness and appreciation for having reliable electricity. We had a few storm events and equipment malfunctions from outside our systems that created outages and damage. During these times there was the shock of not having electricity followed by gratefulness and appreciation that the lights turned back on when all the damage was repaired. After that, and before that, people started looking at adding batteries and generators to their homes. In around about way, we are circling back.

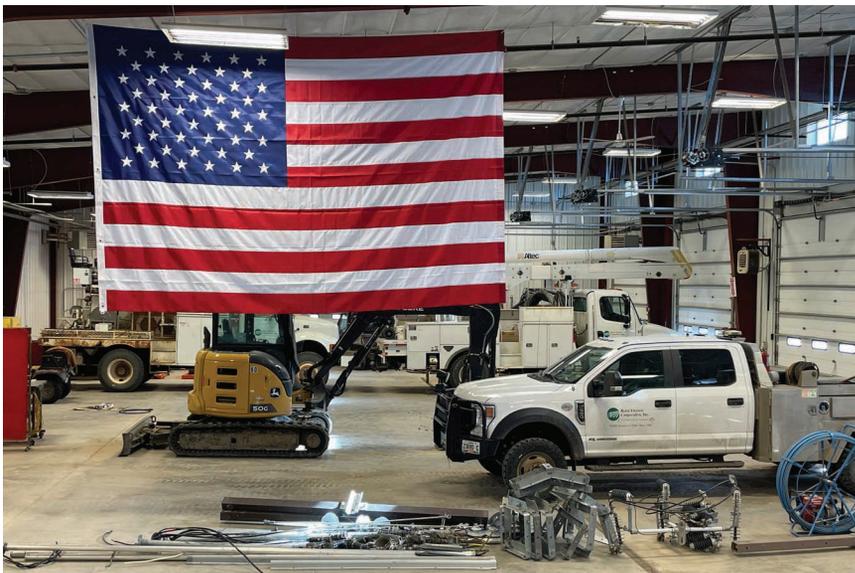
We had a cold snap in January. Despite the cold snap the weather has been good to get work done on the Butte Electric system. The crews have been out trying to get ahead of a lot of the work we will have in 2026. Jeff and his crew have been busy retiring a portion of the Arpan line. That has been going well. There were a few days when Jame and Adam had their

crews up helping on that Arpan project.

If the weather holds, we are going to start line patrolling earlier than normal this year. I've been visiting with Brett, Chuck, Adam, Jeff, and James about taking advantage of the weather to get out and check out our lines so that we can schedule tree trimming and maintenance through the rest of the year. Please let us know if you see any trees that need to be cut, poles that need to be replaced, or hardware that looks like it isn't right and we'll send out a crew to take a look.

Lastly, a reminder plus a request. As a reminder, please be careful around power lines. Electricity is unforgiving! If there is ever a situation with down power lines or anything around them, please call us at (605) 456-2494 and we'll send a crew out. As the old safety adage goes, "and please don't try this at home!" Our crews are trained to deal with any power line situation. Our focus is always on providing safe, reliable, and affordable electricity to you, our members. And a request, if your contact information has changed, please reach out to us and update it with us. This is just as much a safety issue as it is good business.

Be safe, enjoy march madness, and thank you for your membership!



Inside the Newell Shop.
Photo by Butte Electric Cooperative

COOPERATIVE CONNECTIONS

BUTTE ELECTRIC

(ISSN 1531-1031)

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Butte Electric Beacon Cooperative Connections is the monthly publication for the members of Butte Electric Cooperative, Inc., PO Box 137, Newell, SD 57760. Families subscribe to Cooperative Connections as part of their electric cooperative membership. Cooperative Connections' purpose is to provide reliable, helpful information to electric cooperative members on electric cooperative matters and better rural living.

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Ensuring Drone Safety Near Power Lines

As drones continue to gain popularity for recreational and commercial use, their integration into our daily lives should not lessen the consideration of safety – particularly when it comes to flying near power lines. The intersection of drone technology and electrical infrastructure necessitates adherence to safety protocols, regulations, and best practices to protect both pilots and the integrity of electrical systems.

Power lines are essential components of our electrical grid, delivering energy to homes and businesses. However, they can pose serious hazards for drone operators. Collisions with power lines can cause significant equipment damage, leading to costly repairs or replacements. More critically, such incidents can disrupt service for hundreds of members, creating outages that could last for hours or even days.

The Federal Aviation Administration (FAA) has established regulations governing drone use, including restrictions on flying in proximity to power lines. According to FAA guidelines, drone pilots must always maintain a visual line of sight with their aircraft and avoid flying over people. When operating near electrical infrastructure, it is crucial to adhere to the regulations pertaining to altitude and no-fly zones.

Drone operators should also be familiar with state and local laws, as some municipalities have designated specific areas as no-fly zones, particularly near critical infrastructure like power facilities. Understanding these regulations is not only a legal requirement but also an essential step in ensuring the safety of all involved.

Best Practices for Safe Operations

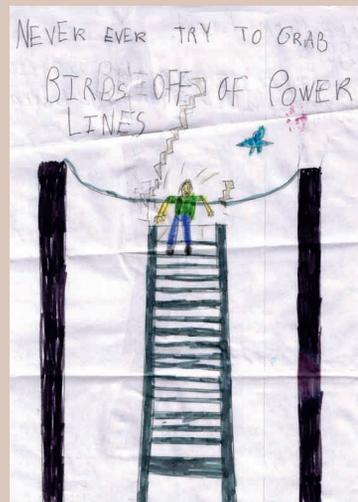
To minimize risks when flying drones near power lines, operators should adopt several best practices:

1. **Pre-Flight Planning:** Before taking off, thoroughly assess the flight area. Identify the location of power lines, potential obstacles, and any relevant no-fly zones. Consulting local maps and aerial photography can aid in understanding the landscape.
2. **Maintain Safe Distances:** When operating near power lines, always keep a safe distance. The FAA recommends a separation of at least 500 feet from energized power lines to avoid potential collisions. Keeping a safe buffer not only protects the drone but also mitigates risks to nearby electrical infrastructure.

3. **Use Technology Wisely:** Many modern drones come equipped with GPS and obstacle avoidance systems that can aid in safe navigation. Utilize these features and ensure that your drone's software is updated to reduce the likelihood of malfunction.
4. **Operating in Controlled Conditions:** Avoid flying drones in poor weather conditions such as high winds, rain, or reduced visibility. Harsh weather not only affects flight stability but can also lead to loss of control over the drone, increasing the risk of accidents.
5. **Emergency Procedures:** In case of a malfunction or loss of control, having an emergency plan in place is vital. Be prepared to communicate with local authorities if a drone becomes entangled in power lines or presents a safety concern.

As the popularity of drones continues to soar, awareness around safety protocols, especially near power lines, has become increasingly critical. By understanding the risks involved, adhering to regulations, and implementing best practices for safe drone operations, pilots can ensure the protection of themselves, others, and vital electrical infrastructure. Responsible drone use fosters innovation while ensuring safety remains paramount in our evolving technological landscape.

"Never ever try to grab birds off of power lines!"



**Naomi Krcil,
Age 8**

Naomi warns readers to never EVER grab birds off of a power line. Great picture, Naomi! Naomi's parents are Andrew and Andrea Krcil from Dante, S.D.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

Scrumptious SALADS

MACARONI SALAD

Ingredients:

2 cups macaroni (cooked, drained, rinsed and cooled)
2 or more cups of carrots (chopped or shredded)
1 small chopped onion (optional)
1 cup chopped green pepper (optional)

Dressing

1 cup mayonnaise (Hellmans)
1/4 cup vinegar
1/2 cup sugar
7 oz. sweetened condensed milk
1/4 tsp. salt
1/4 tsp. pepper

R. Gregg Fritz
H-D Electric

KARI REDER'S POTATO SALAD

Ingredients:

7-8 lbs. potatoes, Yukon gold or red
1 dozen eggs
1 med. sweet onion
2 cups Mayo
1 tbsp. cream
1/4 cup of apple cider vinegar
1/2 cup of sugar or splenda
1 1/2 tbsps. mustard
2 tbsps. celery seed
Celery salt, salt and pepper to taste

Method

Boil potatoes and eggs, peel and dice. Add the chopped onion. Mix together mayo, cream, apple cider vinegar, sugar, mustard, celery seed, celery salt, salt and pepper. Mix all together well and refrigerate.

Kari Reder
Northern Electric

SUMMER GARDEN PASTA SALAD

Ingredients:

1 lb. thin spaghetti, broken into 1" pieces
1 pt. cherry tomatoes, halved
2 med. zucchini, peeled & diced
2 med. cucumbers, diced
1 green pepper, diced
1 red pepper, diced
1 - 16 oz. can sliced black olives, drained

Dressing:

1 - 16 oz. bottle Italian dressing
1/4 cup parmesan cheese
1 tbsp. sesame seeds
1 tsp. paprika
1/2 tsp. celery seed
1/2 tsp. garlic salt

Method

Cook pasta; drain. Drizzle with 1-2 tsps. olive oil. In large bowl, combine pasta, tomatoes, zucchini, cucumber, peppers and olives.

Whisk dressing ingredients together. Pour over salad ingredients and toss to coat.

Cover and refrigerate for three hours.

Jane Ham
Cam Wal Electric

Please send your favorite recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in December 2025. All entries must include your name, mailing address, phone number and cooperative name.

How Energy Efficiency Rebates and Incentives Work



Miranda Boutelle
Efficiency Services
Group

One of the most common questions I get about energy efficiency rebate programs is, “Why would the company that sells me energy want me to use less of their product?” It’s a good question.

Rebates provide financial incentives for people to use less energy in their homes by reducing the costs of efficiency upgrades, such as insulation, new HVAC systems, water heaters or other appliances. This helps your electric cooperative save money by eliminating or delaying the need to buy additional power or build new power generation facilities. Using less energy also helps lighten the load on existing generation and transmission infrastructure that delivers power to your home through your electric cooperative.

Helping consumers save energy is a powerful tool for electric co-ops. Instead of building or paying for more power generation to meet rising needs in the local community, co-ops create programs that help people save energy in their homes and businesses.

Your cooperative and other local organizations may offer efficiency programs with special incentives for home upgrades, such as rebates paid after a project is completed. State and federal tax credits may also allow you to reduce the amount of taxes you owe for completing eligible home purchases or upgrades. Federal energy efficiency tax credits ended Dec. 31, 2025. If you completed any upgrades before that date, you can apply for credits on your 2025 federal filings.

Energy efficiency programs are funded through a variety of sources, including surcharges on customer utility bills, grants, and state and federal funding. Some states and regions are required by law to provide energy efficiency programs.

If you are planning to purchase new appliances, equipment or complete an efficiency

upgrade, do your research first. I recommend starting with your electric cooperative to see if they offer energy efficiency programs. Also check with your state energy office, which might have additional programs to help. The Inflation Reduction Act allocated federal funds to state-administered programs, including home efficiency rebates and home electrification and appliance rebates, to help residents with retrofits such as windows, insulation, air sealing, HVAC equipment and appliance upgrades.

There are also income-eligible programs available for energy assistance and weatherization, such as the U.S. Department of Energy Weatherization Assistance Program, typically administered by a local community action agency.

Once you identify a rebate, tax credit or financing option you’re interested in, review the criteria carefully. Criteria can vary by program, so make sure you know the eligibility requirements before making a purchase to avoid missing out on energy-saving opportunities.

Some programs require preapproval before you begin a project. Proof of existing equipment or conditions may be required, such as insulation levels or window types. You may also need to schedule an energy audit conducted by a program representative or photo documentation.

Once you know your project meets the requirements of any available programs, you can proceed with installation. You will likely need to fill out an application and submit a final invoice to prove the project is complete. You may also need to submit pictures or have an inspection from a program representative.

Once approved, your rebate will typically be issued as a bill credit or check, depending on the source.

Participating in a rebate program can help you lower your energy use, save money and improve comfort in your home. It can also help your energy provider and the electric grid. Contact your local electric cooperative to learn more about available rebates and incentives.

The People Who Keep The Lights On

How Member Services Staff Connect Co-ops With Communities

Jacob Boyko

jacob.boyko@sdrea.coop

There's more than meets the eye when it comes to providing safe and reliable electricity to co-op members in South Dakota. One of the key cooperative principles is commitment to community, and for co-ops' member services staff, it's all in a day's work.

Community Impact

Mike Dangel is the member services advisor for Charles Mix Electric Association, an electric cooperative based in Lake Andes serving members across Charles Mix County in southeast South Dakota. For Dangel, getting out in the community and being the face of the co-op comes naturally; he helps with 4-H, volunteers for the fire department and serves on the local school board.

"Concern for Community is one of cooperatives' core values, and it is part of my role to promote that," Dangel said. "Our participation in community events and charity fund-raisers gives our co-op more of a 'human' feel. It's important to be visible within the community so the co-op has a face and is not just another generic corporate entity."

Dangel started at the co-op in 1994 shortly after earning his power line construction diploma from Mitchell Technical College. He started as a 1,000-hour temporary worker, and after proving himself in the field, Dangel was hired full-time in 1997 as a journeyman lineman. His new role taught him all about energy, utilities and the electric grid we all depend on every day to keep the lights on. Dangel was a lineman for 18 years before being promoted to member services advisor after the previous person in the role, Russell Gall, took on the general manager title at Charles Mix Electric.

Along with his years of diverse experience, Dangel's expertise is further strengthened as a member of the cooperative, making him a valuable resource to answer members' questions and promote the responsible and efficient use of electricity.

"I find the most rewarding part of my job is communicating with our members and helping them understand how their wise use of electricity can make a big difference in their lives," he said.

Co-ops in the Classroom

Dangel brings some of that expertise into area classrooms as he talks to students about energy efficiency, safety around electricity and co-ops' Youth Tour, where South Dakota co-ops send qualifying students on a trip to Washington, D.C. There, they network with other young co-op members from around the

country, meet with South Dakota's federal delegation and learn about the people's role in democracy. Dangel finds his efforts to promote Youth Tour especially rewarding.

Addie Walstad, a high school senior from Platte, was Charles Mix Electric's 2025 Youth Tour student. She was selected by the tour chaperones to be the Youth Leadership Council representative from South Dakota, an honor which brought her back to the nation's capital to learn more about the National Rural Electric Cooperative Association and participate in professional development courses. She was also selected to give the opening address at NRECA's annual conference in front of hundreds of co-op leaders from around the country.

Dangel said stories like Walstad's remind him of the outsized impact co-ops can have within their communities.

Member Services Career

Electric cooperatives offer many rewarding, purposeful careers, and member service roles are no exception. Dangel recommends the role to organized, patient and communicative individuals who want to make a positive impact within their community.

"Co-op employees talk about being part of a family, and it's definitely true," Dangel said. "I'd recommend this career path to anyone with a desire to help others. That's really the heart of it."

As a member services professional, You may be asked to:

- Be the face of your co-op in the community and at events.
- Answer members' questions and assist them with issues.
- Be an expert in the field – attend conferences and seminars to increase your knowledge and understanding.
- Cooperate among cooperatives; co-ops work together statewide and nationally to share knowledge and experience.
- Educate members on electrical safety and the co-op mission to provide safe, reliable and affordable power.
- Assist your co-op in a range of areas, like IT support, event planning, newsletter writing, marketing and educating the next generation of co-op members and leaders.



Mike Dangel gives an energy safety demonstration to the Platte/Geddes FFA.
Photo submitted by Charles Mix Electric



Intense wind left the crossarm of a broken three-phase pole hanging after a holiday storm.
Photos submitted by Black Hills Electric Cooperative

GETTING THE LIGHTS BACK ON

Black Hills Electric Cooperative Works Tirelessly Following Holiday Storm

Frank Turner

frank.turner@sdrea.coop

In the early morning hours of Dec. 18, powerful winds swept across western South Dakota, leaving much of the Black Hills without electricity. The outage included the home of Bill Brisk, manager of operations at Black Hills Electric Cooperative.

Through wild winds, Brisk set out for his office at the cooperative at 3 a.m., where he discovered that the windstorm was unlike anything he had seen in his 36 years with the cooperative.

“We get wind in the Hills,” Brisk said. “But nothing like that. In all of the time that I’ve been at the cooperative, I’ve never seen wind that strong.”

Wind gusts were later estimated at more than 100 mph, tearing through the Black

Hills with unprecedented force.

When Brisk arrived, the scope of the damage became clear. Nearly the entire system was down, and more than 11,000 of the co-op’s approximately 11,500 meters were without power. By daybreak, more than 96% of Black Hills Electric Cooperative’s system was dark, the largest outage event in the cooperative’s history.

Although an influx of outage calls from members came in around midnight, Brisk made an early and critical decision; crews would not be sent out while the storm was still raging.

“We began receiving calls around midnight, but I did not have our crews go out, just for the fact that it was just too dangerous,” Brisk said. “Trees were breaking off, conditions were hazardous, and I didn’t want to put our crews in any

dangerous situations.”

Instead, crews waited for daylight, when conditions allowed for safe assessment – the first step of getting the lights back on.

Assessment almost always begins with reporting from the community. Due to an overwhelming call volume during storm events, local reports of outages are forwarded to Basin Electric Power Cooperative’s Security and Response Services. These services relay important updates to electric cooperatives. Dispatchers communicate with linemen via push-to-talk radios and cell phones, tracking linemen from the time they leave the shop until the outage has been restored.

In addition to local reports, linemen also conduct their own assessments. That morning, linemen reported countless uprooted and snapped trees, downed poles and even wires lay broken across forest floors and roadways. In some areas, trees fell into other trees, creating dangerous conditions for anyone working below.

“I believe this was one of the worst storms in our cooperative’s history, including winter storm Atlas,” said Brisk.

As the assessment was underway, line

crews worked to bring downed substations back online first, then main three-phase feeders, followed by smaller distribution lines that bring power directly to homes and businesses. That order helps restore electricity to the greatest number of members as quickly as possible.

In the Black Hills, terrain adds another layer of complexity. Many lines run through dense forest, steep canyons and areas far from maintained roads.

“This isn’t square-mile territory,” Brisk said. “You might have to drive five or six miles just to get around a canyon.”

By midday Dec. 18, it was decided the damage was too widespread for Black Hills Electric to tackle alone. Brisk reached out to Mark Patterson, South Dakota Rural Electric Association’s manager of loss control, to request mutual aid from neighboring cooperatives – reinforcing a long-standing cooperative tradition built on neighbors helping neighbors.

Within hours, assistance began mobilizing. Crews, trucks and equipment arrived from across western South Dakota. Six electric cooperatives and a contractor ultimately sent help, bringing 55 additional linemen to the Black Hills. Those crews came from Butte Electric Cooperative, Cherry-Todd Electric Cooperative, Lacreek Electric Association, West Central Electric Cooperative, West River Electric Association, Rushmore Electric Power Cooperative and Kainz Power Lines, a local contractor based out of Custer.

“I had each operations manager of the responding cooperatives call me and ask what we needed,” Brisk said. “We asked for bucket trucks, digger trucks, chainsaws, attachments for skid steers, and extra line crews, and they sent everything we asked for.”

Days began early and ended late with crews often working 12 to 16-hour shifts. Brisk emphasized safety repeatedly to the crews as they worked among unstable trees, high winds and rugged terrain.

Behind the scenes, the restoration effort extended beyond the field. Office staff coordinated logistics and prepared meals. Lunches were packed daily for crews heading out before dawn. Supplies

were tracked, equipment was staged and communication updates were shared with members.

“It wasn’t just the line crews,” Brisk said. “Everybody stepped up.”

As crews continued working and Christmas approached, it appeared unlikely that power would be fully restored in time for the holiday. The visiting crews made it clear they were willing to stay through the holiday.

“All the outside crews said they weren’t leaving,” Brisk said. “They stayed to help us finish.”

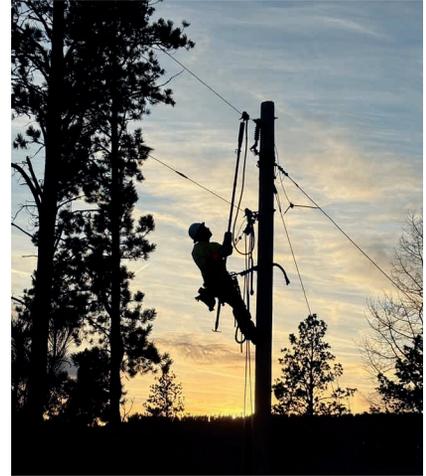
By Christmas Eve, most members had power for the holiday and visiting crews were able to return home. Even still, Black Hills Electric crews continued limited work through the holiday, work that continues today.

“To be truthful, we are still cutting trees, setting poles and repairing lines from this storm,” said Brisk.

The storm was later designated a FEMA-eligible event, requiring detailed tracking of labor, equipment and materials.

Looking back, Brisk said the restoration efforts relied heavily on cooperation and dedication among crews from the assisting cooperatives.

“It’s good to know you’ve got great neighbors,” he said. “When you need help, they come.”



An assisting lineman from West River Electric Cooperative installs a ground on the line to be further worked on.



Damage from the storm not only affected poles, but also uprooted trees.



Bill Brisk, manager of operations at Black Hills Electric Cooperative, gives a morning briefing, updating the cooperative and assisting crews with storm recovery assignments.

POWER PLAYERS OF THE GRID

Anthony Buckley
NRECA

Every time you flip a switch, you're connecting to one of the most complex systems ever built, also known as the North American electric grid. Often called the largest interconnected machine in the world, this network spans the United States, Canada and parts of Mexico. It includes thousands of generators, hundreds of thousands of miles of transmission lines and millions of miles of distribution power lines all working together to keep the lights on day and night.

But how does electricity actually get from a power plant to your home? And where do electric cooperatives fit in? Let's break it down.

The U.S. electric grid has three major components: generators, transmission and distribution. Each plays a critical role in delivering electricity where and when it is needed.

Generators: Making the Power

In the U.S., most power plants produce electricity by burning fossil fuels or by harnessing renewable resources like solar, wind and water. To ensure that enough electricity is generated to keep the lights on at an affordable price, two main structures exist.

The first is a "vertically integrated" model, where in some regions, a single utility owns everything from power plants to power lines and delivers electricity directly to consumers.

In other areas, a second model is used. Instead of one company making and delivering power, many companies sell electricity in a competitive market. Utilities buy electricity from these

generators and deliver it to consumers like you. In this model, a group called a regional transmission operator (RTO) or independent system operator (ISO) helps keep everything running smoothly. They make sure enough power is available every second of the day. This system is called a wholesale market, and it lets utilities buy extra power when they need it.

Most electric cooperatives don't own large power plants. Instead, they purchase power through long-term contracts, wholesale markets or from their generation and transmission cooperative (G&T), a member-owned utility that serves multiple co-ops in a designated region. G&T cooperatives are owned by distribution co-ops like yours. There are 64 G&T cooperatives across the U.S., and they often own power plants and transmission lines. G&Ts also plan for the future by investing in new generation sources, building infrastructure and integrating renewables, all while staying true to the cooperative model: member-focused, not profit-driven.

Once electricity is generated, it doesn't stay at the power plant. It begins a long journey to reach homes, farms and businesses. Power must travel across regions to where it's needed most, and that's where the transmission system comes in. These high-voltage lines act like energy superhighways, moving electricity efficiently over hundreds of miles before it's stepped down for local distribution and, ultimately, for the devices you use every day.

Transmission: The Energy Superhighway

Transmission lines move enormous amounts of electricity efficiently across



regions. Most distribution co-ops don't own these transmission lines, but they rely on their G&T cooperative to handle this part of the journey. G&Ts make sure power gets from the plant to your local co-op.

However, the electricity carried by transmission lines cannot be used as is because the voltage levels are too high. That's the job of the distribution network, which is the final step that brings power to your lights, appliances and devices.

Distribution: The Last Mile

The distribution network is the "last mile" segment of the electric grid and delivers generated energy from the transmission network to consumers. The high-voltage power from transmission lines is converted to lower voltages that home appliances, electric vehicles and personal devices can use. This is where your electric cooperative comes in to keep local lines maintained and power flowing to members 24/7/365.

Understanding how power moves from generation to your home helps explain why reliability and affordability depend on teamwork and collaboration between your local co-op, its G&T partners and the broader grid. Together, co-ops are preparing for tomorrow's challenges, so you can count on safe, reliable power for years to come.

HOW ELECTRIC CO-OPS CAN BENEFIT FROM SERVING DATA CENTERS

Cathy Cash

NRECA

Data centers, with ravenous appetites for land and electricity, are top of mind in rural America and for good reason.

Expected to lift new U.S. energy demand by 30% by 2030, data centers are setting their sights on electric co-op country, where power is affordable and reliable, and they have acreage to spread out.

Overall, data centers connect the world through digital networks and that requires a significant and steady flow of electricity without pause.

Their job is to electronically store, manage and transmit tons of internet-based information 24/7 to ensure the fast, uninterrupted operation of Amazon, Microsoft, Google, artificial intelligence and the World Wide Web with all its digital businesses, shopping, streaming and social media sites.

A typical data center can require 100 megawatts of electricity, which could serve nearly 100,000 households every day. A growing number of data centers are much larger. Known as a hyperscale campus, these centers demand upwards of 600 MW – enough to power to Washington, D.C.

So, can electric co-ops take advantage of data centers' gigantic demand and protect consumer-members at the end of the line?

The short answer: Yep. “Co-ops are uniquely positioned for this work,” says Allison Hamilton, markets and rates director for the National Rural Electric Cooperative Association. “Their commitment to serving all members – not just the large load – means they

approach these projects with care, collaboration and a focus on long-term community benefit.”

Electric co-ops already are serving almost 300 data centers nationwide, mostly in Virginia, Texas, Illinois, Oregon, and Georgia, with another 150 under construction to meet the escalating global needs of AI, digital programs and storage.

Lower land costs plus tax incentives for locating a business in rural areas are very attractive to data center developers. But perhaps the top draw is the reliable, affordable electricity co-ops offer.

With a footprint larger than a football field, these massive concrete, windowless structures house two huge energy consumers: thousands of computers and significant cooling systems to keep them running.

There are many pluses for co-ops serving data centers, too, beyond supporting an always-on digital marketplace and social gathering spots.

Co-op service areas with data centers are experiencing local business boomlets with jobs created around the new facility well after its construction. A data center's addition to the tax base also allows for school and road upgrades.

For the co-op, there can be greater efficiency gains and support for systemwide improvements, including broadband fiber for retail internet service. Having such a constant large energy consumer also offers a means to keep rates steady.

“The predictable, around-the-clock nature of these large loads can create stable revenues and reduce upward pressure on rates for the entire membership,” says Hamilton. “For

co-ops, data centers offer long-term load growth, revenue stability and potential for broadband and grid modernization. These projects can also bring new tax base, jobs and investment and attract additional businesses to the area.”

To secure these benefits, co-ops are encouraged to develop business strategies, practices and requirements when negotiating with data centers coming into their territory. These can include requiring a developer to pay upfront costs, including engineering studies, deposits and other necessary items before a contract is signed.

Co-ops are also developing rate structures, contract provisions and internal policies to mitigate financial risks to serving data centers.

They also are insisting on transparent negotiations and performance assurance to cover potential stranded investment or any default, like letters of credit, deposits and guarantees from a developer's parent company.

“As co-ops make these business decisions based on their own unique circumstances, they are learning from each other,” Hamilton says. “Sharing their experiences in addressing the challenges of serving large industrial loads, making sure assets are paid for upfront and their high-capacity demands are met are ways co-ops are avoiding cost-shifts to members.”

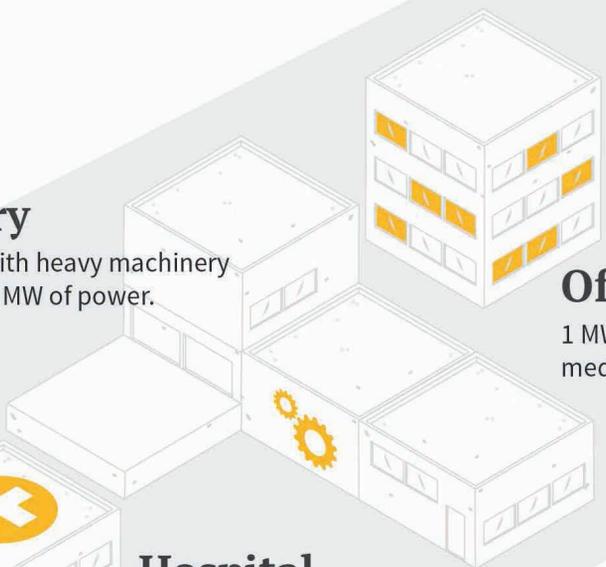
By working with data center developers, co-ops can leverage system upgrades and innovations that can drive down costs and boost reliability all for the benefit of their members.

“When co-ops take the time to understand and manage the challenges on the front end – whether it's infrastructure upgrades, rate design or contract terms – there can be significant upsides once a data center's load comes online,” says Hamilton.

What Can You Do With 1 Megawatt?

Factory

Facilities with heavy machinery can draw 1 MW of power.



Big Box Stores

1 MW will power a typical large retail store.



Office Building

1 MW can power several medium-sized office buildings.

Hospital

1 MW will power a small hospital.



Power Plant

Typical outputs:

Coal: 500 MW to 1 GW

Gas: 50 MW to 1 GW

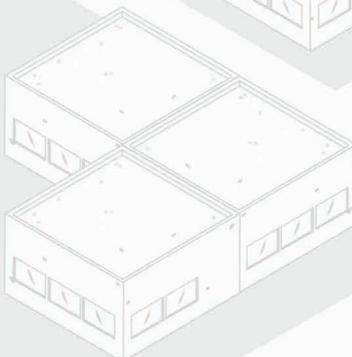
Nuclear: 500 MW to 1.5 GW

1 MW is 1 million watts of power.



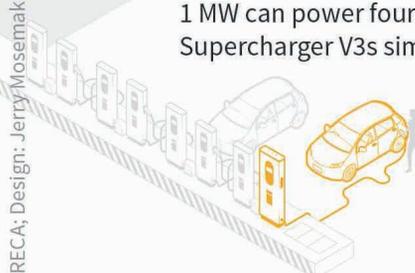
School

0.5 MW will power a medium-size public school.



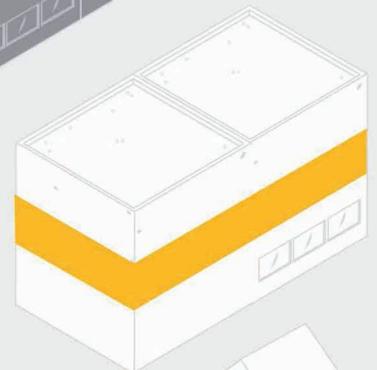
EV Charging

1 MW can power four Tesla Supercharger V3s simultaneously.



Data Center

1 MW will power one small data center.

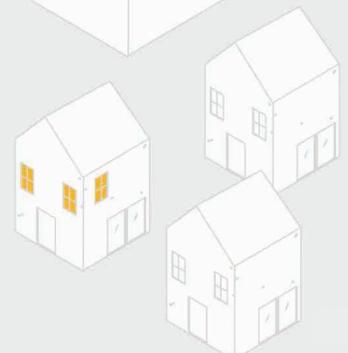


Other facilities that can draw up to 1 MW of power:

- High-speed rail
- Large farms
- Wastewater treatment
- Stadiums

Residential

1 MW can power 750 to 1,000 homes.



WHAT IS A MEGAWATT?

Jacob Boyko

jacob.boyko@sdrea.coop

If you're a regular Cooperative Connections reader, you've probably seen the term "megawatt" countless times. From articles about new power generation facilities, energy-saving tips, major infrastructure projects or energy policy, megawatts come up again and again. But what does a megawatt actually mean?

Watts, Kilowatts, Megawatts & More

A megawatt is a unit of power that measures the speed at which energy is generated or used at a given time. A megawatt is 1,000 kilowatts (KW), or 1 million watts.

You may recognize watts from the labels on everyday household items like light bulbs and phone chargers. These numbers indicate the amount of power the device draws while operating.

Here are the wattages for some common household items:

- LED Light bulb – 5-20 Watts
- Refrigerator – 350-800 Watts
- Desktop PC – 100-800 Watts
- LED Television: 30-300 Watts
- Microwave – 700-1,200 Watts
- Hair Dryer – 1,500-2,000 Watts
- Clothes Dryer – 1,800-5,000 Watts

At East River Electric Power Cooperative, the generation and transmission cooperative that sells power to member co-ops in Eastern South Dakota and Western Minnesota, Jennifer Gross uses a modified bicycle to help put power into perspective.

The bike is stationary – the pedals power a small generator wired to several different kinds of light bulbs. Gross, who is East River's education and outreach coordinator, says the "pedal power bike" demonstrates energy use in a tangible way and highlights the difference of energy-efficient products.

"It's actually quite difficult for the person pedaling to generate electricity consistently for more than a few minutes," Gross said.



"When they're pedaling to power the inefficient, old-school incandescent light bulbs, they can pedal for about one minute and not even keep it at 200 watts the whole time."

The electric grid experiences the most strain during peak demand times – the hours before and after work and school when most people are home doing laundry, watching TV etc.

In communities with hundreds to thousands of homes and businesses, electricity demand grows large enough to be measured in megawatts – the unit equal to 1,000 KW.

Your electric co-op's electricity is generated by Basin Electric Power Cooperative, which was formed in the 1960s by electric co-ops in the upper Midwest to generate electricity for co-ops. Serving over 3 million consumers across nine states, Basin generates power from its owned and leased assets, which include coal, natural gas, solar and wind. Basin's generation capability is so massive that it's measured in gigawatts – the unit equal to 1,000 MW.

Basin reports a maximum generating capacity of about 8,427 MW – or 8.427 GW. That figure reflects every available generation resource running at full output, including the oil-fueled peaking units used during times of high demand, along with purchases from the Western Area Power Administration and the Southwest Power Pool energy market.

On an even larger scale, the total installed generation capacity in the U.S. reaches the terawatt level, totalling about 1.3 TW, which is equal to 1,300 GW, 1.3 million MW or 1.3 billion KW – enough to simultaneously run about 1 billion hair dryers!

$$\begin{aligned}
 &1 \text{ Million Watts} \\
 &= \\
 &1,000 \text{ Kilowatts} \\
 &= \\
 &1 \text{ Megawatt} \\
 &= \\
 &1/1,000 \text{ Gigawatt}
 \end{aligned}$$

Your Co-op's Megawatts

As a co-op member, you're a part-owner of Basin Electric's generation resources. Here's a look at several of those facilities.



Antelope Valley Station
Beulah, N.D. • 1984
900 MW • Coal



Bison Gen. Station
Epping, N.D. • 2030
1,490 MW • Nat. Gas



Pioneer Gen. Station
Williston, N.D. • 2013
822 MW • Nat. Gas



Crow Lake Wind
White Lake, S.D. • 2011
172 MW • Wind



Wild Springs Solar
New Underwood, S.D.
2024 • 114 MW • Solar



MOVING A MOUNTAIN

Dakota Energy Cooperative raises line so the home can pass underneath.
Photo submitted by Dakota Energy Cooperative

Co-ops Assist Historic Home On Trek Through Rural South Dakota

Jacob Boyko

jacob.boyko@sdrea.coop

Jeff and Sherri Johnson had been waiting for years to build their dream home on their McCook County land, but with ongoing supply chain challenges, it was becoming increasingly difficult – and expensive – to build on their rural acreage.

When Sherri saw the sale listing for a beautiful historic home in northwest South Dakota, she knew that it was more than a house; it was a dream come true.

"I had a dream a few years ago about a blue house moving, and I saw this house that had been on the market for a while in Lemmon," Johnson recalled. "I saw the house, and then I remembered the dream, because when God gives us a dream, it just goes deep in there and you remember."

She knew she had to act, and soon after, the Johnsons were the proud owners of the 1910 prairie-style home. All they had to do was get it to their land north of Montrose.

Sherri and Jeff contacted Milbank House Movers to figure out just how exactly to transport a 100-ton house over 400 miles.

"For a 37-foot tall loaded, 2 ½ story house, this was one of the longest moves we have done," explained Josh Wendland from Milbank House Movers. "We had to reach

out to all of the power companies along the moving route to get their input as to how far they felt we could travel each day with how many power lines we would have to deal with on any give segment of the route. It was determined that the total move of 421 miles should be segmented into seven travel days on the road ranging from 14 miles the first day up to 98 miles on the furthest traveled day."

At Moreau-Grand Electric, crews found the house was too tall to pass under their lines even if they raised them up with their bucket trucks.

"We had to totally just cut some of the lines, the structure was so tall we couldn't lift them up high enough," said JJ Martin, the co-op's member services director.

Martin said power outages were pretty minor in the service territory until the house reached the US 212/SD 63 junction west of Eagle Butte, where the Western Area Power Administration had to cut its transmission line taking the southern portion of Moreau-Grand Electric's service territory offline.

"Once the structure moved through, we put the lines back up, and the outage only took about an hour or two in total," Martin said. "After that, there were a few minor distribution outages until they finally

crossed the Cheyenne River."

At East River Electric, the generation and transmission cooperative serving co-ops in eastern South Dakota and western Minnesota, operations dispatch worked in advance to identify power line crossings along the route that would need to be lifted or disconnected.

"We have a lot of our line measurements for these situations, but if it's an odd route, we go and get new measurements of lines that we may not have measured – like if they're trying to go through an area to avoid bigger infrastructure or bridges," explained Clayton Tanner, East River's system operations superintendent. "Depending on how close the load will get to our infrastructure, we decide whether we have to have our guys on scene to watch it go through, or if we have to switch that line out and ground it because there's a chance of it arcing over. There have even been cases where we've dropped the line to the ground and had them drive over it."

The house crossed 12 of East River Electric's transmission lines; nine of the lines had to be de-energized, three of the lines were lifted, and crews watched the house pass underneath in two other locations.

Despite the home's unprecedented journey, spending a week trekking 421 miles across rural highways through eight electric cooperatives, the house arrived in one piece.

The house joins another historic building on Jeff and Sherri's land: a 1903 rural schoolhouse that sat in Turner County for much of its life before being moved to Minnehaha County to serve as a Methodist Church, and finally to McCook County in 2011 when Sherri and Jeff purchased the building to move it and restore it to its former turn-of-the-century glory.

When asked if she had ever thought she'd get this far along with the house moving project, Sherri nodded an affirmative yes.

"We already did it once with the church," she said. "I wished we could have been able to do this about 10 years ago, since it probably would have fit a little better. But you know what? Things work out exactly the way they are supposed to."

History of the House

Known as the Ole Quamman house, the 1910 prairie style foursquare house spent the last 115 years on 2nd Avenue in Lemmon. Ole Quamman was one of the first businessmen to arrive in Lemmon, which was founded just three years before in 1907. Quamman created the town's Petrified Wood Park & Museum in 1933 to showcase petrified wood from Perkins County. At its Lemmon address, the house featured two flowerpots decorated with petrified wood on its walkway – those traveled with the home to McCook County.

The South Dakota State Historical Society writes that the interior of the home is "lavishly styled" and features some of the latest design ideology of the time.

It was added to the National Register of Historic Places in 2015, but lost its eligibility after the move. Sherri is applying to get the house back on the list for its architectural significance and level of preservation. She also plans to do the same with her historic church.

Sherri and Jeff Johnson with their new home on its foundation in McCook County. It sits on land that has been in Sherri's family for generations.

Photo by Jacob Boyko



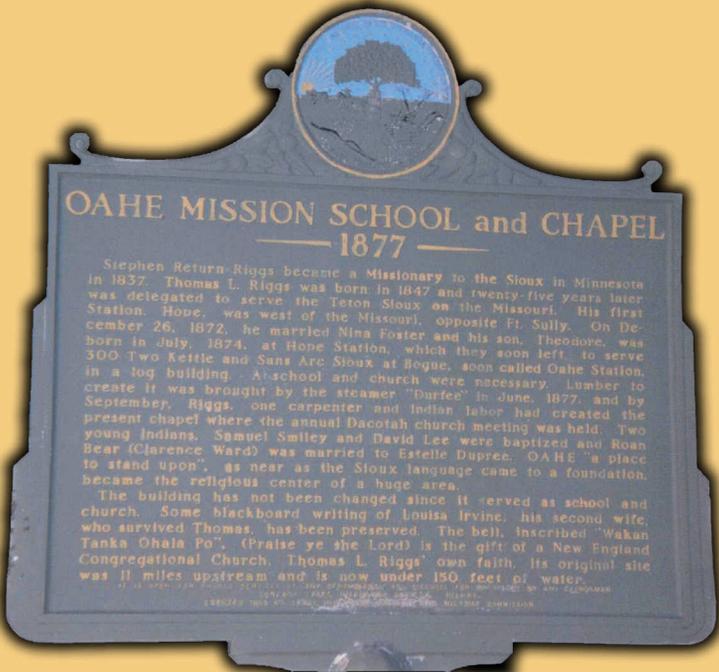
The house crosses the Oahe Dam – officially entering east river South Dakota.
Submitted Photo



The house rounds one of the final corners. Southeastern Electric Cooperative was on the scene to connect power.
Submitted Photo



In the application to add the house to the National Register of Historic Places, the South Dakota State Historical Society writes that the interior of the home has an "elegant Arts and Crafts design."
Submitted Photo



FROM SHERRI'S JOURNAL

The only place I wanted a picture of the house moving along its 400-mile journey was at the Missouri River crossing. I was plenty early on the morning of Nov. 17, 2025, when I parked my car at Oahe Dam Visitor Center. It was cold, windy, and still dark outside as I aimed my headlights at the Oahe Mission School and Chapel historical marker. I started reading the sign, but abruptly stopped when I read '...at Bogue...' Bogue was the maiden name of my 3x great grandma. Not only was I reading a sign about a building being moved as I waited for my historic house to move across the dam, but the name on the sign perfectly connected to a name in my ancestry. Daylight eventually dawned, the clouds broke, and sunlight lit up the house as it crossed the river. I had planned a picture, but God did so much more that morning. Now to him who is able to do immeasurably more than we all ask or imagine, according to his power that is at work within us. (Ephesians 3:20)



MARCH 7
Ag Day
 10 a.m.-2 p.m.
 Washington Pavilion
 Sioux Falls, SD
 605-367-6000

Washington Pavilion Photo

To have your event listed on this page, send complete information, including date, event, place and contact to your local electric cooperative. Include your name, address and daytime telephone number. Information must be submitted at least eight weeks prior to your event. Please call ahead to confirm date, time and location of event.

MARCH 5
SD Jazz Festival
 7:30 p.m.
 Johnson Fine Arts Center
 Aberdeen, SD

MARCH 7
Free Christian Men's Event
 The Barn at Aspen Acres
 8:30 a.m.-1:30 p.m.
 Spearfish, SD
 Register: RiseUpMen.com

MARCH 7
Southern Hills Holistic Fair
 9 a.m.-3 p.m.
 Mueller Civic Center
 Hot Springs, SD

MARCH 7-8
The Black Market
 Sat. 9 a.m.-5 p.m.
 Sun. 10 a.m.-3 p.m.
 W.H. Lyon Expo Building
 Sioux Falls, SD
 605-332-6004

MARCH 14-15
Philip Area Annual Rod & Gun Show
 Sat. 9 a.m.-5 p.m.
 Sun. 9 a.m.-3 p.m.
 American Legion Hall
 Philip, SD
 605-859-2135

MARCH 14
St. Uhro Finnish Festival
 11 a.m. Main Street Parade
 12 p.m. Community Ctr. Lunch
 Lake Norden, SD
 605-881-1758

MARCH 14
SNOLF (Snow Golf) Tournament
 Webster, SD
 Contact: Buster's Resort
 605-345-2787

MARCH 20-21
Badlands Quilters Getaway
 Fri. 5:30 p.m. Start
 Sat. 8 a.m. Start
 Wall Community Center
 Wall, SD
 605-279-2807

MARCH 20-22, 27-29
Mighty Corson Art Players
 March 20-21, 27-28: 7:30 p.m.
 March 22, 29: 2:30 p.m.
 Corson Playhouse
 Corson, SD
 www.mightycorson.com

MARCH 27
East Dakota Chapter NWF 33rd Annual Banquet
 Ramkota Expo Hall
 Sioux Falls, SD
 605-940-0702

MARCH 28
Coteau Prairie Masters Gardeners Ready, Set, Grow
 9 a.m.-12 p.m.
 Codington Cty. Extension Cplx.
 Watertown, SD

MARCH 28
VFW Teener Baseball Benefit Vegas Night
 Social: 4:30 p.m., Meal: 6 p.m.
 Tyndall, SD

APRIL 3
Bachelors of Broadway: Gentlemen of the Theatre
 7 p.m.
 Johnson Fine Arts Center
 Aberdeen, SD

APRIL 5
Easter Sunrise Service
 7 a.m.
 Mount Rushmore
 605-391-9156

APRIL 9
McCrossan Wildest Banquet Auction in the Midwest
 Jimmy Buffett Tribute
 Polynesian Paradise Dancers
 Sioux Falls, SD
 www.mccrossan.org

APRIL 9-11
Annual Schmeckfest
 German Heritage Celebration
 Freeman, SD
 605-925-4237
 www.schmeckfest.com

APRIL 18
Brookings Quilt Show XII
 9 a.m.-5 p.m.
 Admission: \$10
 Dakota Bank Center
 Brookings, SD
 605-690-3246

APRIL 18
Tri-Valley Chorus 75th Annual Show
 4 p.m.
 Centerville, SD
 605-201-9398

Note: We publish contact information as provided. If no phone number is given, none will be listed. Please call ahead to verify the event is still being held.