

AUGUST 2022

CIRCUITS

FOR DAKOTA ELECTRIC MEMBERS



MINNESOTA



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RESILIENCY**
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**DAKOTA
ELECTRIC**
ASSOCIATION
Your Touchstone Energy® Cooperative

CONTACT US

Member Service & Drive-Up Window

7 a.m. – 7 p.m. Monday – Friday
651-463-6212 or 1-800-874-3409
Minnesota Relay Service 711

Lobby - 7 a.m. - 4:30 p.m. Monday - Friday

4300 220th Street West
Farmington, MN 55024

24-Hour Outage & Emergency Service

651-463-6201 or 1-800-430-9722

Underground Cable Locations

Gopher State One Call 811 or
651-454-0002 or 1-800-252-1166
www.gopherstateonecall.org

Tree Trimming & Street Lights

651-463-6287

Dakotaelectric.com

customerservice@dakotaelectric.com

*Dakota Electric is an equal opportunity/
affirmative action employer.*

*Dakota Electric Association® and Dakota
Electric® are registered service marks of the
cooperative.*

*All programs and rebates are subject to
change without notice. Funds are limited and
available on a first-come, first-served basis.*

BOARD OF DIRECTORS

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GRID RESILIENCY

Low Chance of Rolling Blackouts

You may have read about the possibility of energy shortages and rolling blackouts this summer. While the chance of this is very low, we want to provide more information on this topic and alleviate concern.

What are rolling blackouts?

Rolling blackouts are controlled, temporary power outages that help bring balance to the supply and demand of electricity and stabilize the grid. Rolling blackouts are typically the last step in a series of emergency procedures after a power supply shortage is detected.

Why could we have rolling blackouts?

When the demand for electricity becomes higher than the supply it can cause a widespread blackout. These temporary outages, or rolling blackouts, allow the available energy supply to be shared and help prevent everyone in the area from experiencing an extended blackout.

Who determines if rolling blackouts are necessary?

Midcontinent Independent System Operator (MISO) oversees the power grid in 15 U.S. states, including Minnesota, and the Canadian province of Manitoba. MISO can call for rolling blackouts if necessary, but has many preventative measures and emergency operating procedures in place. The MISO system has already successfully operated through extreme weather this summer.

How does Dakota Electric prepare for rolling blackouts?

Dakota Electric works with Great River Energy to prepare for all types of situations. In the unlikely event that a rolling blackout occurs, we are prepared to make sure any service disruption is limited.

MISO can also call on electric co-ops to reduce energy through demand management. When this occurs, Dakota Electric is in a great position given our decades long commitment to load management. Through our programs, like Cycled Air Conditioning®, Dakota Electric can significantly reduce peak demand in the summer if needed.

How can you prepare for rolling blackouts?

The chance of rolling blackouts this summer is very low, but Dakota Electric wants to make sure that our members are prepared if one does occur. Here are some things you can do in case of an outage:

- Stay up-to-date on information from Dakota Electric about energy conditions. Follow us on social media for real-time updates.
- Stock up on essentials such as food, water and medication.
- Have a flashlight and batteries handy.
- Critical care patients should have a backup plan for lifesaving equipment in case of unplanned outages.

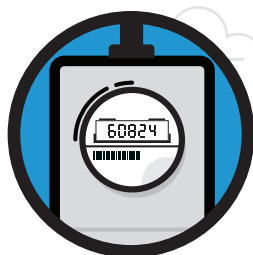
How can you help prevent rolling blackouts?

The best thing you can do to help is to lower your own electricity use. Here are some things that you as a member can do:

- Participate in one of Dakota Electric's load management programs, call 651-463-6243 to learn more.
- Perform energy-demanding tasks during off-peak hours.
- Unplug appliances and electronics that aren't in use.
- Take steps to improve your home's energy efficiency.
- Invest in smart home technology.

MONITORING THE LINE FOR RELIABILITY

At Dakota Electric, we proactively manage our electrical infrastructure using a variety of automation technologies that improve power reliability, shorten outage times and reduce labor time for crews. Here are a few ways we monitor and improve our reliability.



AMI

Advanced metering infrastructure (AMI) provides real-time data to the co-op. In addition to meter reading, this data helps us detect faults and other potential problems on the electrical system, resulting in increased power reliability for members.

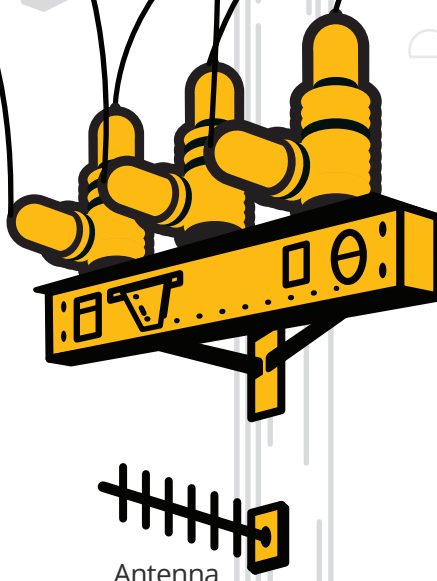
FAULT INDICATORS

Fault indicators typically clamp on or connect to the power line and provide an indication of where problems exist locally. This helps to provide more reliable energy to members.



VEGETATION MANAGEMENT

In 2020, Dakota Electric began a five-year vegetation management plan removing and pruning trees and vegetation growing too close to power lines to reduce the potential for outages.



RECLOSERS

A recloser acts like a circuit breaker for power lines. When a problem occurs, the recloser temporarily shuts off power. If the problem is temporary, the recloser restores power automatically (this is why you sometimes see the power blink). If the problem persists, the recloser will shut off power until a crew can make repairs. The recloser's antenna provides wireless, real-time data back to the co-op.

BATTERY ENERGY STORAGE

The United States is projected to have 4.6 GW of large-scale battery energy storage capacity by 2023. With various grid benefits and decreasing costs, the battery energy storage market will likely see continued growth in coming decades.

What is battery energy storage?

Battery storage is a technology that enables power system operators and utilities to store energy for later use. A battery energy storage system (BESS) is a device that charges (or collects energy) from the grid and then discharges that energy at a later time.

What's driving market growth?

Several factors have allowed the battery energy storage market to grow, including decreasing costs and improvement in technology. The median energy capacity costs for large-scale batteries was roughly \$2,150/kWh in 2015 and has decreased between 50-60% in the last few years to a median of about \$800/kWh. While each technology has its strengths and weaknesses, lithium-ion makes up the majority of utility-scale battery systems in the U.S. due to cost declines and a high energy density. New battery technologies are also being developed, such as the iron-air-exchange battery that could potentially provide long-duration energy storage for less than \$20/kWh. It is expected that these cost declines, coupled with policy incentives, will drive increased demand for battery storage from utilities, commercial and industrial (C&I) consumers and residential consumers, leading to continued growth in the battery market in coming years.

What's the opportunity for members and co-ops?

Battery energy storage projects provide co-ops a unique opportunity to take advantage of a variety of benefits. The most common application of battery storage is for maintaining service quality, which helps to balance any momentary differences between supply and demand at any time. Batteries are also becoming increasingly common in pairing with renewable energy projects. To maximize the benefits of renewable energy projects, batteries can store excess energy to be deployed during times of higher demand when prices are higher. This helps to reduce costs for the co-op and for members. Many electric cooperatives have already deployed battery storage projects. Interest among electric co-ops in deploying battery energy storage is growing, and will likely accelerate as more experience is gained, costs

continue to fall, and technological advancements improve the performance of batteries. As co-ops look towards the future, batteries will play a critical role in providing backup power to the grid.

Great River Energy battery storage project

Great River Energy is partnering with Form Energy on its upcoming Cambridge Energy Storage Project. Form Energy's "iron air" batteries can provide long-term energy storage, offering Great River Energy another tool to deliver electricity during challenging weather events.

"While other battery technologies employ expensive and rare metals, iron is one of the safest, cheapest and most abundant minerals on Earth," said Great River Energy President and Chief Executive Officer David Saggau. "And, of course, our northern Minnesota member-owner cooperatives are located on one of the world's richest iron ore reserves."

The energy storage project is expected to be in operation at the end of 2023 in Cambridge, Minnesota. It will be the first commercial deployment of Form Energy's proprietary multi-day energy storage technology.

Rendering of the Form Energy battery system:



Sources: NRECA and Great River Energy

THE FUTURE IS ELECTRIC

Advancements in technology and battery power, coupled with decreasing costs, are winning over consumers looking for comparable utility and versatility.

Indoor use

Inside the home, consumers and homebuilders alike are turning to electric appliances to increase energy efficiency and savings. Electric induction stoves, which cook food without any flame, help reduce indoor air pollution and can bring water to a boil in under two minutes. Robotic vacuums are also gaining in popularity. *Fortune Business Insights* attributes the growth and popularity of robotic vacuums like Roomba to a larger market trend of smart home technology and automation (think Alexa directing a Roomba to vacuum).

Outdoor use

In the past few years, battery storage technology has advanced significantly. Hand-held tools with plug-in batteries can hold a charge longer and offer the user the same versatility and similar functionality as gas-powered tools. For DIYers and those in the building trades, national brands such as Makita, Ryobi and Milwaukee offer electric versions of their most popular products like drills, saws, sanders and other tools. In addition to standard offerings, consumers can now purchase a wider array of specialty tools that plug-in such as power inverters, air compressors and electric lawn equipment.

Benefits of going electric

Electric equipment requires minimal maintenance, where often the biggest task is keeping them charged. Electric equipment is also quieter, making it easier to listen to music or your favorite podcast while performing outdoor work. Another benefit of using electric appliances or equipment is that by virtue of being plugged into the grid, the environmental benefits of electric devices improves over time. Electricity is becoming cleaner through increasing renewable energy generation, so equipment that uses electricity will have a diminishing environmental impact over time.

Rebates & Offers

Take advantage of our battery-powered yard-tool rebates along with our promotional rebates on installing a qualifying, energy-saving air-source heat pump or ductless air-source heat pump. Learn more at www.dakotaelectric.com/member-services/programs-rebates/for-your-home.

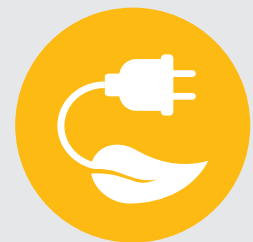
Source: NRECA

Did You Know?

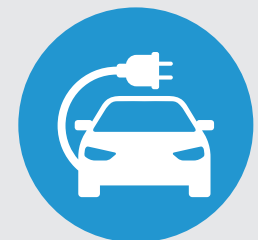
Electricity is becoming cleaner every day and can save members money on their energy costs over time?



Since 2005, Great River Energy's carbon emissions from supplying energy have decreased by 38%.



Electricity is getting cleaner and more renewable, so anything that uses electricity will have a smaller environmental impact over time.



Electric vehicles are highly efficient, converting around 77% of their power into movement.

YOUTH TOUR

2022



Every June, Dakota Electric sponsors high school students on an all-expenses-paid trip to Washington, D.C., to learn about the cooperative business model, meet elected officials, visit monuments and museums, tour federal agencies and discuss issues that are most important to them.

Here are what two of the students had to say about their experience.

"Words cannot describe how thankful I feel to have gained this opportunity through Dakota Electric. I've gained so much knowledge and even more friendships. Thank you for this adventure of a lifetime! I will never forget it!"

-Chloe Bechard

"Thank you so much for this experience! I had an amazing time in Washington, D.C., and gained a lot of confidence. I am very excited and honored to represent Minnesota on the Youth Leadership Council!"

-Sarah Rauf



SPOTLIGHT



During Youth Tour, students have the chance to be selected to represent their state on the NRECA Youth Leadership Council (YLC). This year, Sarah Rauf from Lakeville North High School was selected to represent Minnesota. She will return to Washington, D.C., in July for a leadership workshop which will focus on the electric cooperative industry.

Congratulations, Sarah!

COMMUNITY

Energy Tours Sept. 8 & 9

Sign up now!

Dakota Electric's energy tours offer an up-close look at three types of power generation.

The cost is \$10 per person and includes transportation and lunch. Children must be at least 12 years old and accompanied by an adult. Tours fill on a first-come, first-served basis.

Dates: Thursday, Sept. 8, 8 a.m. to 4 p.m.
Friday, Sept. 9, 8 a.m. to 4 p.m.

McNeilus Wind Farm, located in Dodge Center, Minnesota, includes 41 turbines. Members will have the opportunity to go inside the base of a turbine and talk to an engineer.

Pleasant Valley Station, near Sargeant, Minnesota, is a natural gas peaking plant that generates electricity during times of high electrical demand.

Randolph solar is a local two-megawatt solar site providing power to Dakota Electric members.

Register online at <https://2022energytour.eventbrite.com>. Select the tour date you plan to attend and click register.



SAVE THE DATE!

Food Drive

On **Saturday, Sept. 17**, Dakota Electric will be collecting food at the Hy-Vee located on Pilot Knob in Lakeville.

Donate cash or non-perishable food items for a chance to win an electric bike from Valley Bike & Ski!

More information to come!

Visit Us at the Dakota County Fair



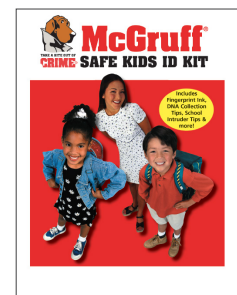
**AUGUST
8-14**

Check out our booth in the Red Commercial Building!
Talk to one of our Energy Experts® for information on:

- Energy-saving tips & programs
- Rebates
- Special promotions

For more fair details, visit www.dakotacountyfair.org.

FREE McGruff Safe Kid ID Kits



The McGruff Safe Kids ID Kits aim to teach children about safety in a fun and friendly way. Along with providing safety advice to children, they also give parents a convenient way to store their child's important information.

The kits include:

- Tear-out fingerprint card with child-safe fingerprint ink
- McGruff the Crime Dog tear-out emergency numbers card
- 911 instructions
- DNA collection tips
- Fun, family-friendly quizzes and games reinforcing the safety message

To request a free kit, visit www.mcgruffsafeikit.com/united-states.



Your Touchstone Energy® Cooperative

4300 220th Street West
Farmington, MN 55024

UPCOMING EVENTS

- **Dakota County Fair**
August 8-14
- **Board Meeting**
August 25, 8:30 a.m.

Find board meeting agendas and
approved meeting minutes at
www.dakotaelectric.com/monthly-board-meetings.



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CONNECT WITH US!



2022 ENERGY TRENDS EXPO

Reliability & Optimization

SAVE THE DATE!
THURSDAY, SEPT. 29, 5-7 PM



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