



A Touchstone Energy® Cooperative 

A large yellow circle with a white border is centered on the page. It contains the title text. The background of the entire page is a photograph of a field of sunflowers in the foreground and several wind turbines in the distance under a cloudy sky. A large, stylized sun graphic is overlaid on the left side of the image, with a yellow circle at its center and rays extending outwards.

MINNKOTA  
**SUSTAINABILITY**  
REPORT

# PEOPLE. PROGRESS. PURPOSE.

## MISSION STATEMENT

Minnkota Power Cooperative’s mission is to provide the best energy value in the region. While value encompasses many different things, what truly sets Minnkota apart is its unwavering dedication to putting people first. Electricity is the product, but improving the lives of its members, employees and community members is the core of the business. In an electric cooperative, every decision is made by people, for people, fostering a sense of shared ownership and responsibility within the organization. Together, we can accomplish amazing things.

## TABLE OF CONTENTS

Message from the CEO .....4  
About Us.....5

### 6 PEOPLE

Employees .....7  
Employee Shared Values .....7  
Safety Success .....8  
Longstanding Union Relationships .....8  
Diversity, Equity, Inclusion and Accessibility .....9  
Employee Turnover .....9  
Employee Development .....9  
Supporting Veterans .....10  
Accountability and Transparency .....10  
Culture of Continuous Improvement .....10

### 12 PROGRESS

Diverse Energy Mix.....12  
Demand Response Leader.....14  
Integrated Resource Plan Approval .....15  
Environmental Commitment.....15  
Decarbonization and Project Tundra .....16  
Federal Funding .....18  
Direct Air Capture .....19  
Supporting Renewable Development.....19  
Record Year for Electrification .....20  
Power Plant Operations.....22  
Grid Reliability Concerns Rising.....23

### 24 PURPOSE

Responsive to Member Needs .....24  
New Wholesale Power Contracts .....25  
Cooperative Principles.....26  
Community Support .....26  
Charitable Causes.....27  
Economic Development .....27  
Development of Community Benefits Plan.....27

# MESSAGE FROM THE CEO

At Minnkota, our power is our people. This mantra encapsulates our deep-rooted belief that the strength of our cooperative doesn't just stem from the electricity we generate and deliver, but from the dedicated individuals who work tirelessly to power communities and drive positive change. Our employees, members, partners and end-use member-consumers are integral to our mission of delivering reliable, affordable and sustainable energy.

As always, the safety of our people is our top priority. In 2023, a major milestone of 2 million hours worked without a lost-time injury was reached for the first time in Minnkota history. Our culture of safety fosters open communication throughout the entire organization, while recognizing and rewarding safe behaviors. By prioritizing this core value, Minnkota not only protects its employees and assets but also contributes to the overall well-being of the communities it serves.

Another major accomplishment of 2023 was the collaborative effort with our member cooperatives that resulted in new wholesale power contracts. The mutual respect and trust exhibited through these discussions helped further strengthen our relationships and position us to continue forward together on a path toward sustainability. The success of this endeavor showcases the cohesiveness and unity of our cooperative family.

Strong relationships and support within our membership will be critical to navigating the complexities of the energy transition. We recognize the pressing need to make progress toward decarbonization goals while still retaining electric grid reliability and affordability. That's why we continue to pursue Project Tundra to reduce our carbon footprint and advance next-generation carbon capture technologies needed to meet global emissions targets.

We are also pursuing federal funding opportunities to add more renewable energy to our grid, expand our power delivery systems and modernize our equipment to meet the needs of tomorrow.

As a not-for-profit cooperative, concern for community remains foundational to our operations. We actively engage with our communities through outreach programs, educational initiatives and partnerships aimed at enhancing quality of life and fostering economic development. By empowering individuals and organizations, we strengthen the social fabric and contribute to building resilient and vibrant communities.

From a governance perspective, we adhere to the highest standards of integrity in our decision-making processes and strive to maintain open communication channels with our members and stakeholders. Through effective governance, we ensure the long-term sustainability of our cooperative and uphold the confidence placed in us by people across the region.

In closing, I'm proud to present Minnkota's second Sustainability Report. As I look back over the last year, it's encouraging to see so much forward progress toward our sustainability goals. As we navigate the complexities of an evolving energy landscape, we remain steadfast in our commitment to innovation. By harnessing the collective power of our people, we will continue to lead the charge toward a bright and promising future.



*Mac McLennan*

**Mac McLennan**  
President and CEO

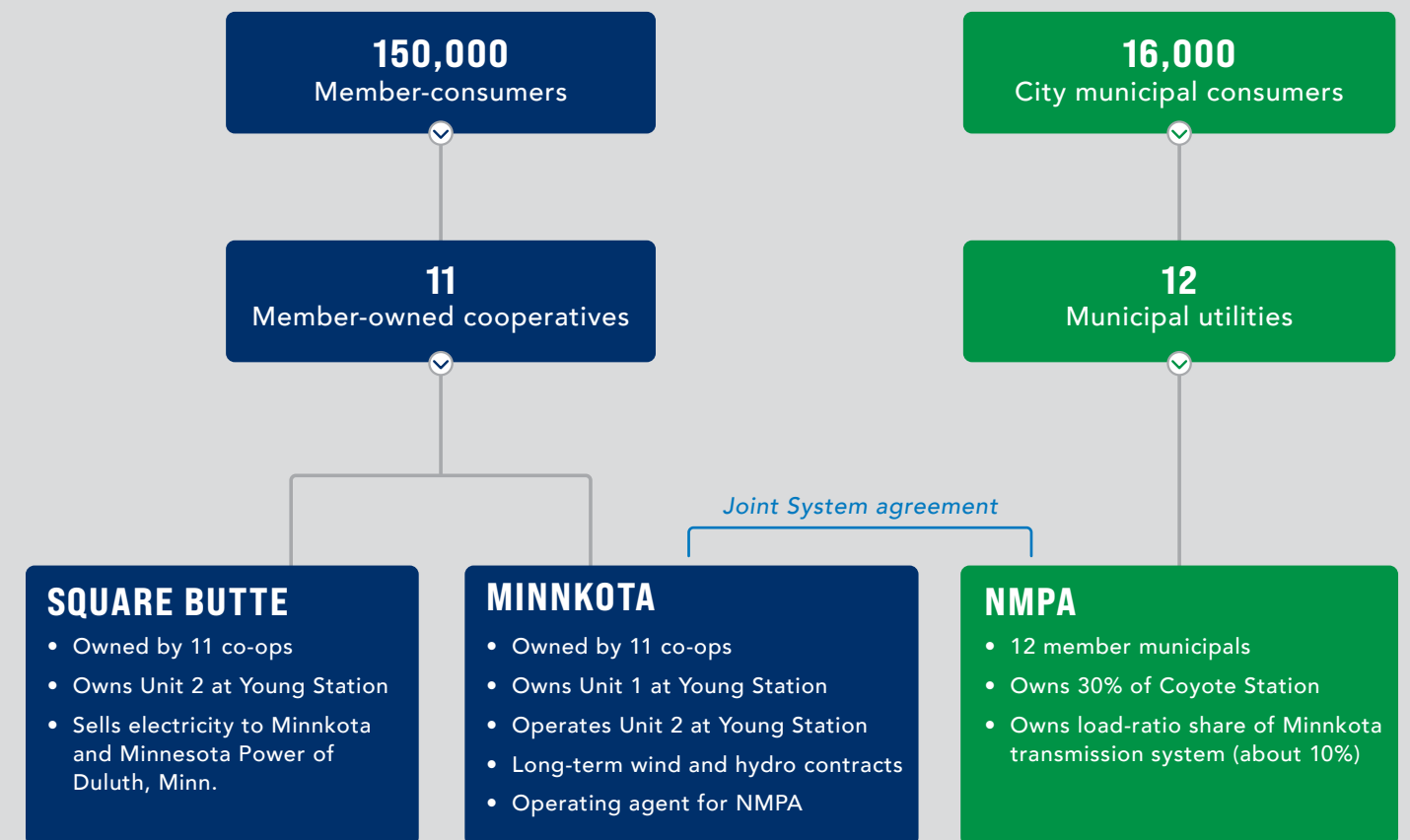
# ABOUT US

Minnkota Power Cooperative has worked for more than 84 years to provide the electricity that supports and unites rural communities across eastern North Dakota and northwestern Minnesota. As a not-for-profit generation and transmission cooperative, Minnkota provides wholesale electric energy to 11 member-owner distribution cooperatives. These members serve more than 150,000 member-consumer accounts in a 34,500-square-mile area, including many of the region's homes, farms, schools and businesses.

Minnkota has key energy partners in Northern Municipal Power Agency (NMPA) and Square Butte Electric Cooperative that provide strategic collaboration and support. NMPA supplies the electric needs of 12 associated municipals that serve more than 16,000 consumer accounts in the same geographic area as the

Minnkota member-owners. Square Butte owns Unit 2 at the Milton R. Young Station, a two-unit lignite coal-based power plant located near Center, N.D., and is governed by the Minnkota member cooperatives.

Headquartered in Grand Forks, N.D., Minnkota is committed to delivering safe, reliable, affordable and environmentally responsible electricity. The cooperative's electric generation portfolio includes wind and hydropower, along with baseload coal. In order to deliver power, Minnkota operates and maintains a robust set of electric transmission infrastructure, including more than 3,385 miles of transmission line and 258 substations. The cooperative's energy control center personnel monitor the essential systems that deliver power to the membership 24 hours a day.





Minnkota employees Sarah Lundeby and Tony Adensam work together in the cooperative's collaborative office setting. >



Minnkota is committed to consistent maintenance of its transmission infrastructure.



# PEOPLE

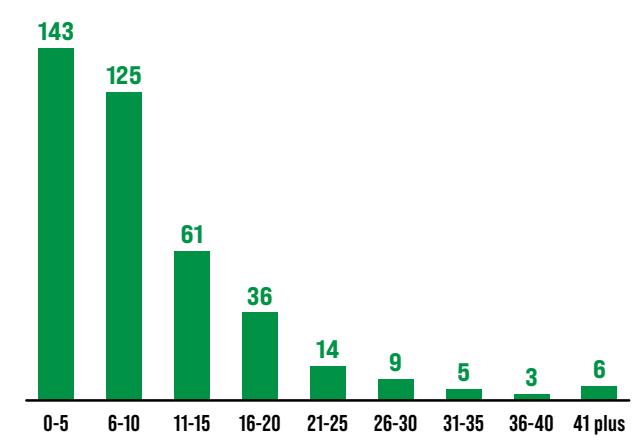
Minnkota thrives on the strength of its cooperative family – comprised of its members, employees, partners and communities. Our commitment lies in fostering a secure, inviting, and inclusive atmosphere where every individual's voice matters. We cherish the diverse ideas, contributions, and experiences that our people bring, recognizing them as the cornerstone of our success.

## EMPLOYEES

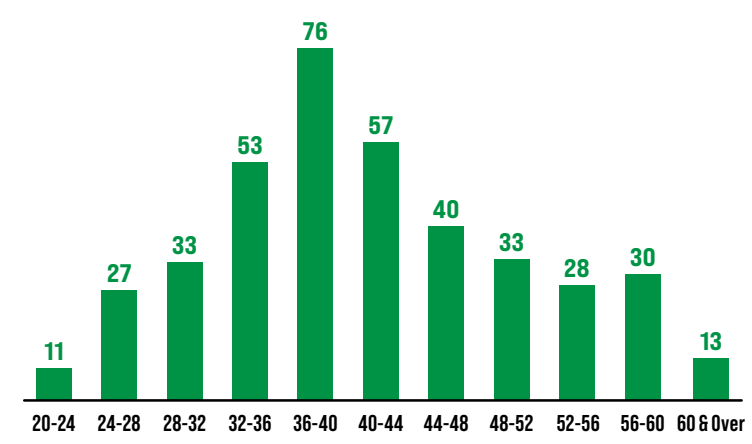
Minnkota has approximately 402 knowledgeable and skilled employees who work to bring reliable, low-cost electric energy to northwestern Minnesota and eastern North Dakota. The cooperative offers a collaborative workplace environment where all employees are respected and valued. Minnkota is proud to support its employees through a strong total rewards package that includes competitive compensation, recognition, and ongoing personal and professional development opportunities. A commitment to work-life balance helps ensure employees remain engaged, healthy and productive.

Employees are supported through a strong total compensation package that includes competitive pay and benefits, along with career growth opportunities. The cooperative offers medical, dental, vision, 401(k), pension, paid leave, life and accidental death insurance, and long-term disability.

### EMPLOYEES' YEARS OF SERVICE



### AGES OF EMPLOYEES



## EMPLOYEE SHARED VALUES

**Teamwork**  
Minnkota employees have joined together to adhere to a set of Shared Values. They embrace opportunities to improve the quality of our services and the effectiveness of our relationships with each other, our members and our industry partners.

We epitomize the cooperative spirit by working together with respect for other ideas and contributions. We believe in engaging in honest, open communication because the potential for success is greater when we share our diverse experiences.

**Safety**  
We recognize that people are the heart of our organization and keeping them safe is our top priority. We embrace a 24/7 culture of safety – at home, on the road, in the office and at the job site. We actively participate in safety and training programs for the benefit of our fellow employees, members and the general public.

**Innovation**  
We promote creativity and believe in the free exchange of knowledge and ideas. We agree to work every day to learn new things and challenge each other to strive for excellence.

**Integrity**  
We hold ourselves to the highest professional, moral and ethical standards. We are committed to doing the right thing – always.

**Reliability**  
Our organization is relied upon 24 hours a day. We dependably perform our job duties and agree to be responsible for the decisions we make, while taking pride and ownership in our work.

<b>402</b> employees	<b>189</b> union employees	<b>30%</b> of executive officers are women	<b>7.5%</b> turnover rate in 2023	<b>28</b> employees are veterans
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Minnkota Emergency Rescue Team participates in monthly rescue training at the Milton R. Young Station.

## SAFETY SUCCESS

Minnkota is committed to providing a safe and healthy working environment for its employees, members and partners. The cooperative conducts thorough training on safety procedures, equipment operation, hazard recognition and emergency response protocols. Regular refresher courses are conducted to ensure that knowledge remains current.

For the first time in the cooperative's history, Minnkota employees reached 2 million hours worked without a lost-time injury. Both the Milton R. Young Station and the Grand Forks headquarters each reached 1 million work hours independently within two weeks of each other in August 2023. The milestone is a major accomplishment for all employees and signifies the importance placed on safety at Minnkota.

The cooperative's Experience Modification Factor (EMOD) during the year was 0.838 – the lowest total since 2017. An EMOD less than 1.00 indicates a lower-than-expected loss experience and results in an insurance rate discount. Minnkota's Days Away, Restricted/Transfer (DART) Rate in Grand Forks was 1, which is better than the industry comparable rate of 1.3. The Young Station's DART rate was 0.6, which is better than the industry comparable rate of 0.8.

## LONGSTANDING UNION RELATIONSHIPS

Minnkota is proud of its longstanding relationship with the International Brotherhood of Electrical Workers (IBEW). Approximately 47% of our workforce is a member of either Local Union 1426 in Grand Forks or Local Union 1593 based in Hazen, N.D. Minnkota is committed to maintaining a culture of trust with employees while promoting a safe, well-trained and motivated workforce.

Since 1949, Minnkota has had a collective bargaining agreement in place with Local 1426, which primarily includes power delivery operations personnel. Together, these groups have developed an industry-leading apprenticeship program with standards

for training, on-the-job learning and related instruction in all phases of power delivery. The program is recognized and approved by the U.S. Department of Labor.

Minnkota and Local Union 1593, which includes power plant personnel at the Young Station, completed a three-year contract extension in 2023. Workers in Oliver County, North Dakota, where the power generation facility and associated mine are located, are consistently ranked as having the highest average annual wages in the state, according to North Dakota Job Service.

## DIVERSITY, EQUITY, INCLUSION AND ACCESSIBILITY

Minnkota strives to promote a diverse, equitable, inclusive and accessible culture for its employees, members and local communities. As a cooperative, Minnkota and its members are open to all who can use their services regardless of race, religion, gender or economic circumstances. Our organization is com-

mitted to providing a respectful, safe and welcoming atmosphere where all employees can have their unique ideas and experiences recognized. This is supported through both Corporate Policy and Board Policy.

## EMPLOYEE TURNOVER

Minnkota's employee turnover rate in 2023 was 7.5%, which is well below the industry average of 10.9%, according to the Center for Energy Workforce and Development's 2023 annual survey.

Minnkota hired 33 new employees during the year to ensure that it has the people in place to meet the challenges and opportunities ahead.

## EMPLOYEE DEVELOPMENT

With more than one-third of its workforce having less than five years of work experience at Minnkota, the cooperative launched a new employee onboarding program, *Watts Up*, in 2023. *Watts Up* attendees had the opportunity to learn from Minnkota leaders, tour critical energy facilities and collaborate with their colleagues. A knowledgeable and motivated workforce will be needed to ensure Minnkota is positioned to keep pace with a fast-changing industry.

In addition to strong apprenticeship programs, specialized training and ongoing development programs, Minnkota also provides up to \$30,000 per employee in educational assistance to pursue courses, licensure, training, certification or other programs that help the employee grow their skills and knowledge.



New employees enjoy snacks and soda at the "frunkgate" social hour.



Tours of Minnkota's critical infrastructure were an employee highlight during *Watts Up*.

## SUPPORTING VETERANS

Minnkota has a long-term commitment to service members, military families and veterans. The cooperative and its members provide electric service and support to the Grand Forks Air Force Base and Cavalier Space Force Station. Minnkota is also a long-time

supporter of veterans' charitable causes, including Honor Flight and the construction of Veterans Memorial Park in Grand Forks. Currently, Minnkota employs 28 veterans.

## ACCOUNTABILITY AND TRANSPARENCY

Minnkota offers a third-party ethics and compliance hotline that allows employees to anonymously report any concerns regarding potentially unlawful, unethical, unsafe or noncompliant behavior within

the organization. Minnkota's Corporate Policy ensures employee protection from retaliation for raising such concerns.

## CULTURE OF CONTINUOUS IMPROVEMENT

Minnkota collaborates with industry peers, regulators and safety organizations to share best practices and lessons learned. Studying past incidents, whether within the cooperative or elsewhere in the industry, is crucial for continuous improvement.

In 2023, Minnkota took significant steps to evaluate its safety, physical security, cybersecurity and power delivery operations plans and procedures. In June, Minnkota conducted its first North American Transmission Forum (NATF) peer review. Fifty energy professionals from across North America conducted a voluntary review spanning nine areas including cybersecurity, transmission substations and lines, system protection, supply chain risk management, vegetation management and beyond. After three days of group breakouts with Minnkota's subject matter experts (SMEs) and inspections of the cooperative's infra-



Dan Inman, Minnkota Vice President and Chief Information Security Officer, warned the 90 GridEx players at Minnkota headquarters that they should be prepared to feel some stress during the exercise.

structure, the reviewers identified seven noteworthy practices (which are given sparingly), 72 strengths and 120 areas to consider for improvement.

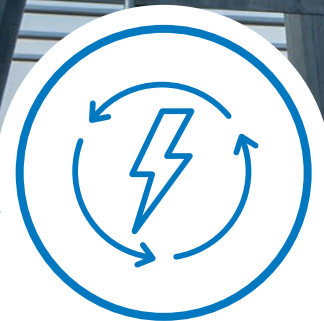
During the year, Minnkota also put its employees through the ultimate stress test during GridEx – North America's largest grid security exercise. For the first time, Minnkota worked side by side with its member cooperatives to respond to realistic simulations of physical attacks, cyberattacks, system failures, misinformation campaigns and other security-related incidents.

GridEx is coordinated through the North American Electric Reliability Corporation (NERC), which is the regulatory agency responsible for the security of the nation's electric grid. About 90 employees from Minnkota and the membership participated in the Nov. 14-15 exercise. Additionally, Minnkota staff engaged with MISO staff during the exercise and also had a representative from the North Dakota State and Local Intelligence Center (NDSLIC) in an observer role.

In 2024, Minnkota staff will continue to assess the NATF and GridEx reports and determine which areas for improvement will be prioritized and the associated timelines.

Minnkota's Kasey Borboa describes the features of the Prairie substation to NATF peer review visitors before leading them inside the control house.



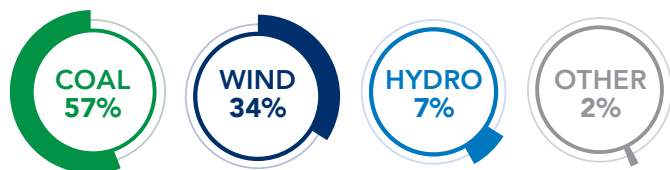


# PROGRESS

A transformation of our nation's electric grid cannot happen with the flip of a switch. It requires thorough evaluation and a purposeful process to significantly lower carbon emissions without sacrificing the reliability or affordability of electricity. Minnkota continues to evaluate options to further diversify its electric generation portfolio and advance technology in a way that helps the cooperative continue its progress toward sustainability goals.

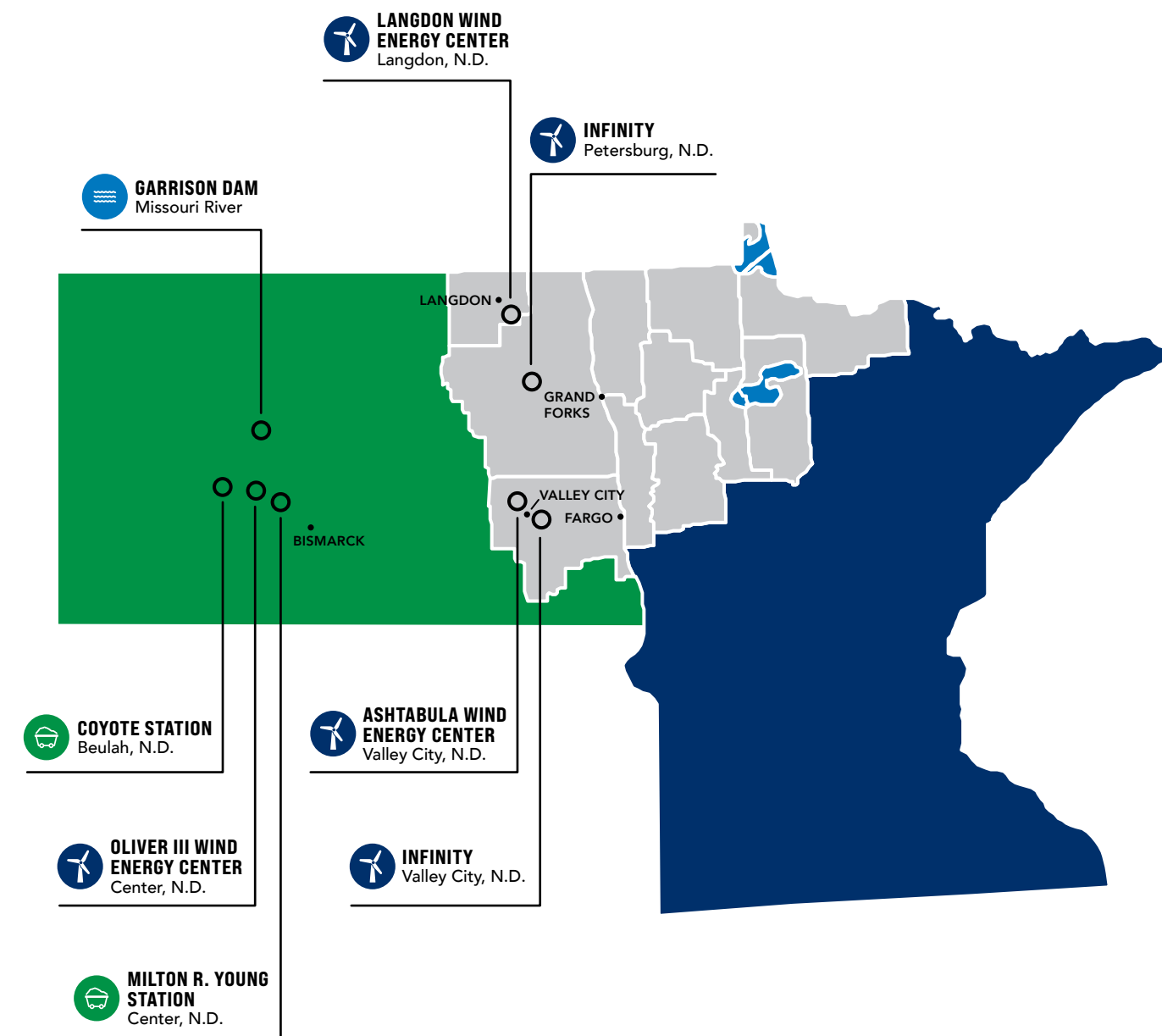
## DIVERSE ENERGY MIX

Minnkota has a diverse electric generation portfolio that includes wind, hydro and coal resources. In terms of nameplate electric generation capacity, about 57% is derived from coal, 34% from wind, 7% from hydro and 2% from other resources. Minnkota also participates in the Midcontinent Independent System Operator (MISO) wholesale market to both buy and sell surplus power. MISO is a not-for-profit, member-based organization. All of Minnkota's generation and load is modeled, scheduled, dispatched and settled financially in the MISO market.



Resource	Type	MW
Ashtabula Wind Energy Center	Wind	217.5
Langdon Wind Energy Center	Wind	139.5
Oliver III Wind Energy Center	Wind	100
Infinity Wind Projects	Wind	2
Garrison Dam (WAPA)	Hydro	101
Milton R. Young 1	Coal	250
Milton R. Young 2 (87% – Square Butte)	Coal	391
Coyote Station (30% – NMPA)	Coal	128
Other	Misc.	34
<b>Total</b>		<b>1,363</b>

## GENERATION RESOURCES MAP



## DEMAND RESPONSE LEADER

Minnkota administers one of the nation’s best demand response programs – a strategic tool to strengthen the reliability of the grid, while saving member-consumers millions of dollars. The program is a true grassroots effort, with consumers working cooperatively to accomplish something they could not do alone. Under direction of Minnkota and the members, consumers are empowered to collectively modify their electricity usage in a way that lowers overall costs and ensures grid stability.

When the demand for electricity in Minnkota’s system exceeds its available supply, the first option is to purchase energy from the wholesale electricity market. If Minnkota is not able to economically purchase the additional energy it needs, the cooperative’s demand response system is launched into action. Electricity consumers in the region voluntarily sign up for the program, which allows Minnkota to temporarily turn off electric heating, water heating, vehicle chargers and commercial account service. During these “control periods,” most consumers are automatically switched to a backup heating system or generator. The savings from not having to purchase additional high-priced power are passed on to consumers through a lower off-peak electric rate – a win for the member-consumer, a win for Minnkota and a win for the electric grid.

The program has become increasingly important as the MISO market has faced a growing number of

grid emergencies and maximum generation events. Minnkota’s demand response program is used to its full capability during these occurrences to help ensure reliability can be maintained. In 2023, Minnkota made investments in the physical equipment associated with the program – known as ripple injectors – at its Frontier substation near Fargo, N.D., and its Lakota substation in rural North Dakota.

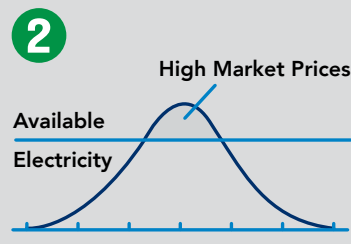
The demand response program, which was started in 1977, is popular with nearly 55,000 consumers participating across eastern North Dakota and northwestern Minnesota. About 350 megawatts – or one-third of Minnkota’s peak load – can be temporarily interrupted from Minnkota’s control center in Grand Forks.

Consumers often focus on how much electricity they use, but when they use electricity is just as important. The demand response program helps encourage the wise use of electricity by shifting demand from “on-peak hours” to “off-peak hours.” Using less on-peak power means lower costs for the co-op – and, ultimately, lower rates for member-consumers.

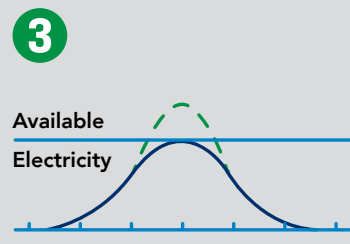
The Minnkota demand response program could not be a success without widespread support from the member cooperatives and associated municipals. Residential and business consumers also endorse the program because they understand it has been developed to provide them with the most value for their energy dollar.



1 Home uses electric heat at lower off-peak rate under normal conditions.



2 Electricity demand exceeds current power supply and economical energy purchases are not available.



3 Demand response is used to avoid uneconomical energy purchases and maintain system reliability.



4 Home is automatically switched from electric to a backup heating source. When demand response is no longer needed, the home is returned to electric heat.

## INTEGRATED RESOURCE PLAN APPROVAL

Minnkota’s Integrated Resource Plan (IRP) was accepted by the state of Minnesota’s Public Utilities Commission (PUC) in August 2023. The 15-year plan is established to show that Minnkota’s generation, transmission and demand response resources are adequate in meeting the cooperative’s forecasted energy requirements. Additionally, the plan highlights how Minnkota will maintain or improve elec-

tric service to consumers, maintain low electric rates and minimize environmental impacts and the risk of adverse effects from financial, social and technological influences. The IRP process is advisory to Minnkota due to its cooperative status and member-owned governance model. Minnkota is currently scheduled to submit its next IRP by Dec. 1, 2025.

## ENVIRONMENTAL COMMITMENT

Minnkota has a longstanding commitment to environmental stewardship and takes great pride in preserving the region’s air, water and land for future generations. As a cooperative, Minnkota operates 24 hours a day in the communities where its em-

ployees and members live, work, raise families and enjoy the great outdoors. From the open prairies of North Dakota to the lakes country of Minnesota, we strive to protect the natural beauty of the areas we serve.



A new 69-kV transmission line constructed near Lake of the Woods in Minnesota.

Oliver III Wind Energy Center



# DECARBONIZATION AND PROJECT TUNDRA

Decarbonization remains a key focus as Minnkota continues to navigate the energy transition. The cooperative acknowledges that it will live in a carbon-managed future, which will be shaped by public policy, regulations and societal expectations. Minnkota is steadfast in its commitment to advance technology, refine operational strategies and explore innovative solutions to minimize its environmental impact.

Development on Project Tundra made important strides in 2023. The initiative to build one of the world's largest carbon capture facilities at the Milton R. Young Station entered its final stage of development during the year with new partnerships. TC Energy joined the project team as the commercialization lead and a potential investor, while Mitsubishi Heavy Industries became the lead technology provider and Kiewit began managing construction planning activities. Together, these entities continue to work under an engineering, procurement and construction (EPC) model. A final investment decision is expected in 2024.

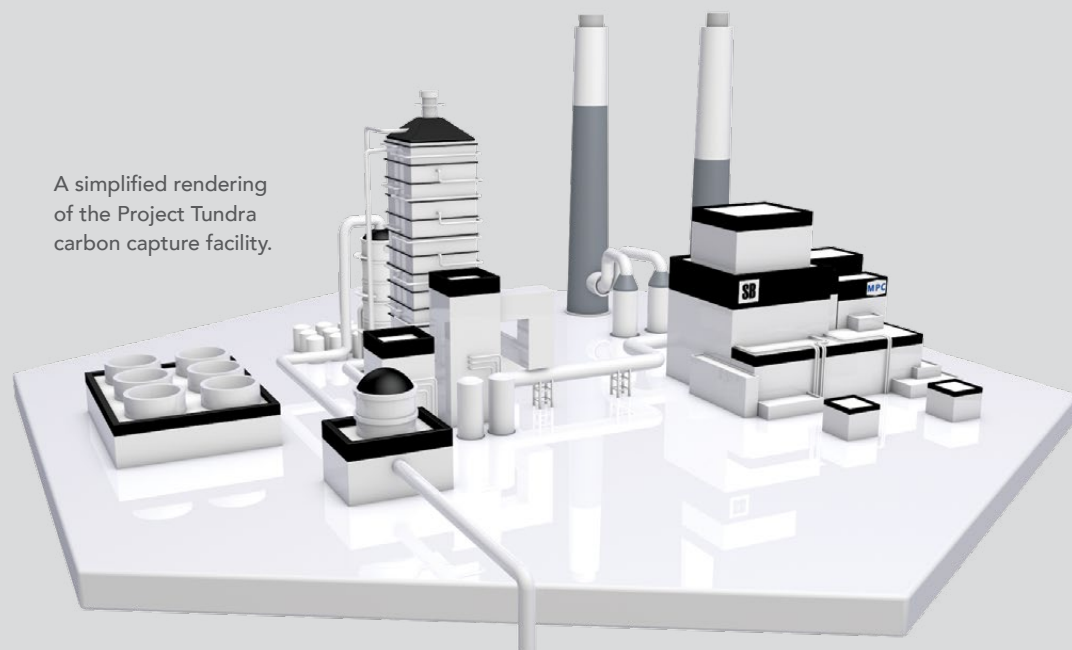
In the last year, the project has received important environmental approvals to ensure progress can

continue forward. The North Dakota Department of Environmental Quality approved an air permit for the carbon capture facility, while the state's Industrial Commission approved a second carbon dioxide (CO<sub>2</sub>) storage facility permit near Center, N.D. North Dakota is one of only three states that has received approval from the Environmental Protection Agency to regulate geologic storage of CO<sub>2</sub> (also known as primacy). This is the sixth Class VI injection well permit that has been issued in the state.

Project Tundra aims to capture and safely store up to 4 million metric tons of CO<sub>2</sub> annually. The Dakota Carbon Center West storage facility has the capacity to store 122 million metric tons of CO<sub>2</sub> over a 20-year period. Combined with the already permitted Dakota Carbon Center East facility, Minnkota has the capability to store 222 million metric tons of CO<sub>2</sub> over two decades in Oliver County. The additional storage space provides redundancy and future opportunities for Project Tundra.

The process for receiving the Class VI permit required significant data collection, analysis and documentation to ensure safe, permanent storage. Two stratigraphic test wells were drilled more than 10,000

A simplified rendering of the Project Tundra carbon capture facility.

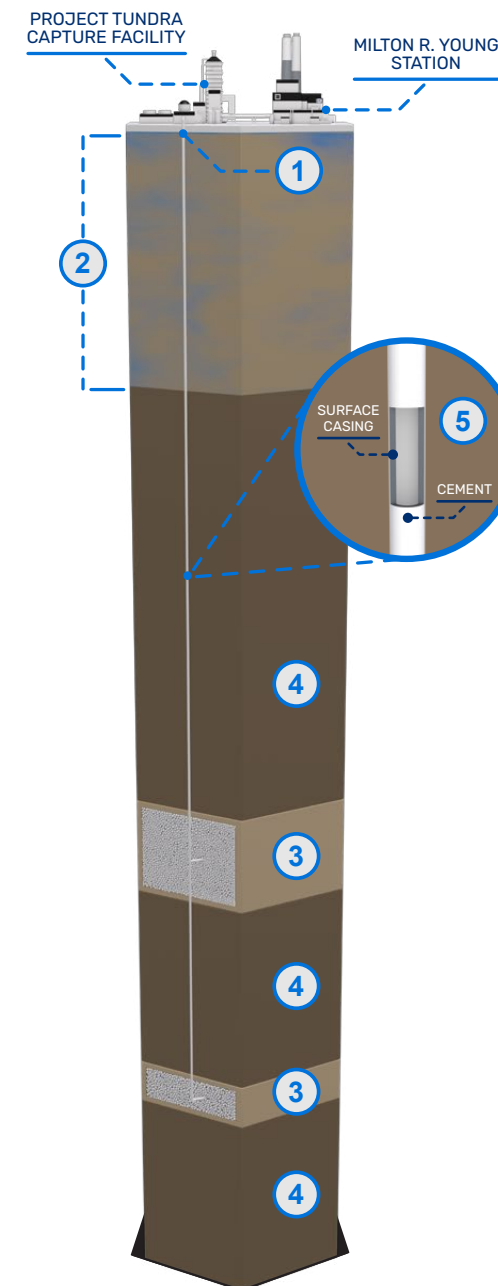


feet underground to retrieve core samples in 2020, while a series of seismic and geophysical surveys were also conducted in the area. The permit requires the installation of a wide array of monitoring technologies to track CO<sub>2</sub> movement in the subsurface, including down-hole and surface CO<sub>2</sub> sensors.

Project Tundra is fortunate to have significant state and federal support. In 2023, the project secured \$250 million in low-interest loans through North Dakota's Clean Sustainable Energy Authority (CSEA). The project team closed out the year with the announcement that it is a recipient of U.S. Department of Energy funding through its Carbon Capture Demonstration Projects Program. The funding is under award negotiation for up to \$350 million.

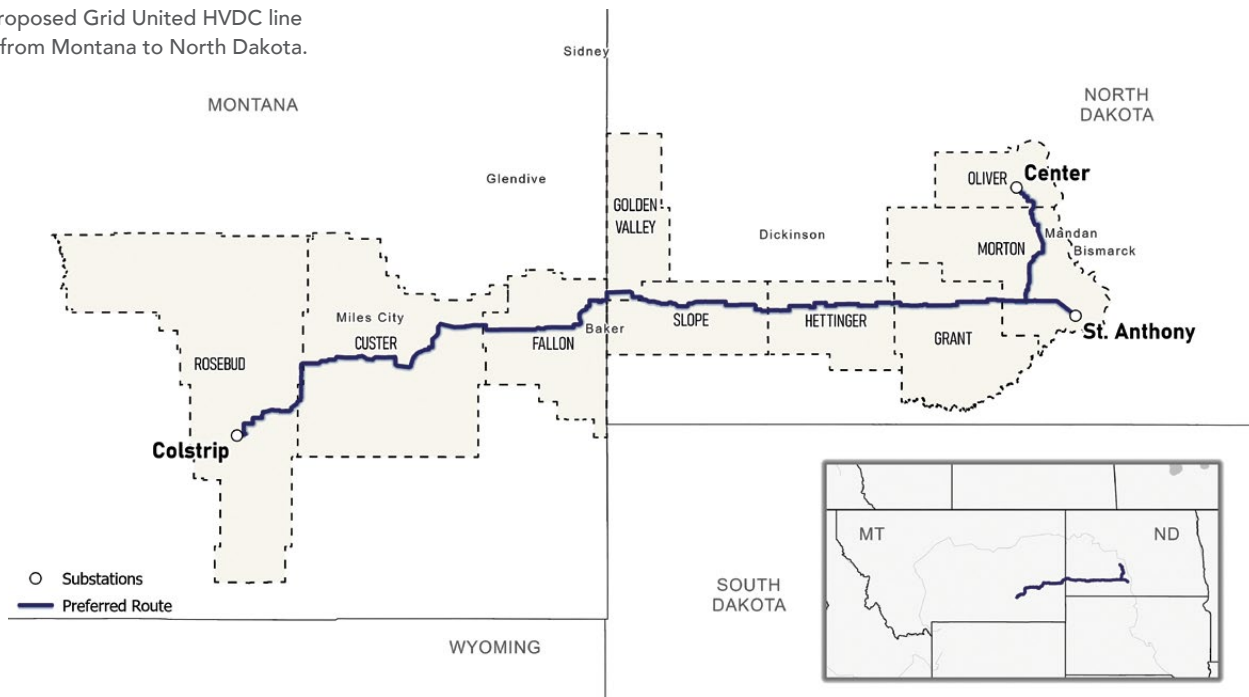
With project activities continuing to ramp up, Minnkota continued working closely with member cooperatives, local landowners, community members and other key stakeholders. Consistent landowner meetings were held, project leaders presented to county and state officials, and educational sessions were held with member system board directors and staff. Minnkota is committed to keeping open lines of communication as the project moves ahead.

## HOW CARBON STORAGE WORKS



- 1 INJECTION SITE**  
After CO<sub>2</sub> is captured from the Young Station and compressed, it is transported to a nearby injection site.
- 2 FRESHWATER AQUIFER AND SALINE FORMATIONS**  
The injected CO<sub>2</sub> safely descends to the storage zone, which is nearly a mile from sources of drinking water. The CO<sub>2</sub> is locked into the storage zone by impermeable cap rock, which has been thoroughly researched and studied.
- 3 STORAGE ZONE**  
The CO<sub>2</sub> travels 5,000 to 10,000 feet underground specially designed piping. When it meets the selected storage zone, the CO<sub>2</sub> spreads out into the permeable sandstone rock layer.
- 4 IMPERMEABLE CAP ROCK**  
The CO<sub>2</sub> rises in the storage zone, but it is stopped and held by impermeable cap rock above and below the permeable sandstone layer. Over time, the injected CO<sub>2</sub> dissolves onto the rock grains, trapping it further.
- 5 INJECTION AND MONITORING**  
Specially designed piping is used to safely transport and inject CO<sub>2</sub> approximately one mile underground in geologic formations. The injection and storage sites are continuously monitored using both fiberoptic and ultrasonic technologies to ensure the CO<sub>2</sub> remains in place and operations are conducted safely and efficiently.

The proposed Grid United HVDC line route from Montana to North Dakota.



## FEDERAL FUNDING

Through passage of the Inflation Reduction Act and the Bipartisan Infrastructure Law, Minnkota has access to new tools and resources to navigate the energy transition. As funding opportunities opened in 2023, Minnkota pursued strategic opportunities to enhance its power supply portfolio, expand its power delivery system and add new smart grid technologies.

A robust Letter of Interest (LOI) was submitted through the U.S. Department of Agriculture's (USDA) Empowering Rural America (New ERA) Program, which appropriated \$9.7 billion in funding specifically for electric cooperatives. Grants and loans are provided for projects that achieve the greatest reduction in greenhouse gas emissions associated with rural electric systems. Although details of Minnkota's full LOI remain confidential, the cooperative is currently evaluating renewable energy projects in North Dakota and Project Tundra. Minnkota anticipates learning more in mid-2024.

Transmission expansion and modernization is a key to making progress toward a low-carbon future. Minnkota worked closely with utility partners to submit applications to the Department of Energy

through its Grid Resilience and Innovation Partnerships (GRIP) program.

The largest project under consideration is Grid United's Northern Plains Connector. Minnkota is participating with other utilities in pursuing funding for the 500-kilovolt high voltage direct current (HVDC) transmission line connecting the eastern and western electric grids. The line travels approximately 415 miles from Montana to North Dakota (near the Young Station). The project has the potential to improve grid resiliency by transporting power in either direction along the line.

Within Minnkota's service area, the cooperative is pursuing smart grid technologies as part of its established distribution automation program. Systems are added at the substation site that provide real-time data access and enhanced system visibility to Minnkota's power system operators. This enhanced situational awareness helps improve reliability and limits outage events. Additionally, projects to sectionalize transmission lines are also being pursued. These efforts help limit the overall impact of outage events. Minnkota anticipates learning more about these applications in mid-2024.

## DIRECT AIR CAPTURE

With approved CO<sub>2</sub> storage facilities near the Young Station, Minnkota is supporting a direct air capture (DAC) feasibility study. The project, known as the Prairie Compass DAC Hub, is led by Climeworks and the University of North Dakota Energy & Environmental Research Center (EERC), which received a \$12.5 million DOE grant in 2023 for DAC research.

Minnkota is supporting the initial feasibility work, which includes the potential for the cooperative to

provide support services to the project. The Prairie Compass DAC Hub will utilize Climeworks' DAC technology. Climeworks is currently operating the world's largest and only commercial DAC plus storage facility, "Orca," in Iceland. If successful in its first phase, the Prairie Compass DAC Hub would be eligible to apply for additional DOE funds to support DAC+S deployment to capture and store 1 million metric tons of CO<sub>2</sub> annually by 2030.

## SUPPORTING RENEWABLE DEVELOPMENT

Minnkota offers member-consumers in its system the option to choose how much of their energy is produced by renewable resources through the Infinity Renewable Energy program. Renewable energy credits (RECs) are retired on the member-consumer's behalf for up to 100% of the energy consumed. A REC is verification that electricity was generated from an eligible renewable energy resource and was successfully integrated onto the electric grid. Additionally, RECs verify that the renewable attributes are only claimed once. The Infinity program is popular with both residential and commercial consumers.

The Minnkota board of directors has approved policies and made other accommodations that support its member distribution cooperatives building community renewables. Cass County Electric Cooperative of Fargo, N.D., has the 100-kilowatt (kW) Prairie Sun project and Beltrami Electric Cooperative has the 80-kW Northern Solar project. The projects allow member-consumers to purchase a portion of the output of the facility, while avoiding solar panel installation, maintenance, insurance and other issues.



Prairie Sun Community Solar Garden in Fargo, N.D.

Ashtabula wind farm

# RECORD YEAR FOR ELECTRIFICATION

The call for electrification across Minnkota's service area has surged to levels not seen in decades. The cooperative spearheads various programs aimed at assisting its member systems in promoting the prudent utilization of energy and the adoption of electric-powered heating, water heating and vehicle charging solutions. Harnessing electricity as the primary energy source in these applications often leads to dual benefits for member-consumers, including cost savings and environmental advantages.

In 2023, Minnkota achieved a program-record milestone by incentivizing a remarkable number of high-efficiency electric heat pumps. Over the course of the year, more than 2,100 tons of heat pump technology were installed, surpassing the previous record of 1,664. The cooperative also witnessed a significant uptake in off-peak electric heating systems, with rebates totaling 4,804 kW – marking the highest installation rate since 2017. Over the last decade, participants in the Value of

Electricity program have installed 52,552 kW of electric technologies and 12,786 tons of electric heat pump systems through an investment of more than \$2 million from Minnkota.

While electric vehicle (EV) adoption rates in eastern North Dakota and northwestern Minnesota may trail behind other regions in the country, Minnkota observes a steady rise in interest. In 2023, the cooperative achieved another milestone by incentivizing a record-breaking 34 off-peak EV chargers, surpassing the previous record set in 2022.

Minnkota remained proactive in promoting electric vehicles throughout 2023. An acquisition of a Ford F-150 Lightning facilitated firsthand experiences for employees, members, and local community mem-

bers in driving and utilizing the all-electric truck. With an impressive range of about 320 miles and a zero-to-60 speed of approximately four seconds, the Lightning became a popular conversation piece at various venues, including job sites, parades, member events and public outings.

In addition to its comprehensive systemwide electrification initiative, Minnkota oversees the Minnesota-based PowerSavers program. In 2023, this program facilitated savings of 20.2 million kWh for consumers. Energy experts within the program collaborate with residential, business and industrial consumers to enhance their energy efficiency practices. Since 2010, more than \$38 million has been invested to help consumers save 373.8 million kWh.



Minnkota employees Sadie Gilbraith (background) and Jordan Bresnahan test drive the Ford Lightning.



The Ford Lightning made trips to many events throughout the region in 2023.



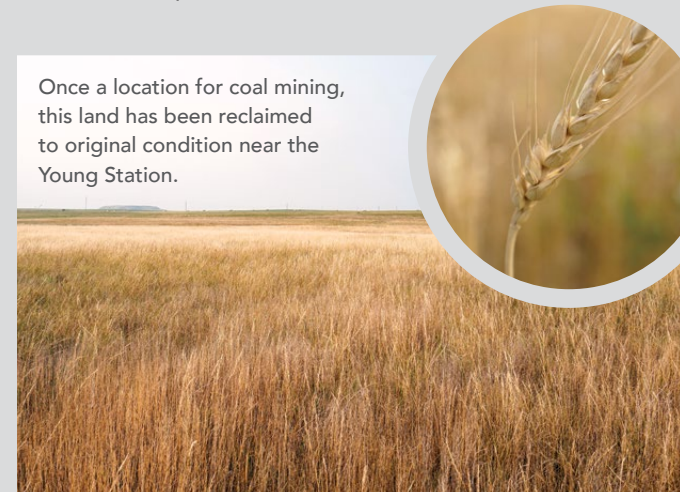
Co-op members Mike and MindyJo Halvorson received electrification rebates for the installation of their cold-climate heat pump.

# POWER PLANT OPERATIONS

As the operator of the Young Station, Minnkota and its partners in power production are committed to being strong stewards of the environment. The plant's employees have a personal stake in ensuring the air, water and lands are kept in pristine condition for current and future generations.

## Land reclamation

Once coal mining has been completed, BNI Coal begins its award-winning reclamation process. Every acre mined is restored to original condition or better than original condition in accordance with state law. That means if the land mined once grew crops, it must be able to do so again after reclamation and achieve the same or better yields. North Dakota has one of the best reclamation laws in the nation, which is administered and enforced by the North Dakota Public Service Commission. BNI has invested tens of millions of dollars in the equipment necessary to ensure it remains at the forefront of reclamation practices.



Once a location for coal mining, this land has been reclaimed to original condition near the Young Station.

## Air quality

The Young Station is equipped with state-of-the-art emission control technologies. The exhaust gas from the boiler is cleaned by equipment, like scrubbers, which ensure strict air quality standards are met. The plant has modern systems in place that remove emissions of sulfur dioxide, nitrogen oxides, mercury, particulate matter and others in accordance with state and federal standards.



The Milton R. Young Station meets all air, land and water quality requirements.

## Water quality

When constructing the Young Station in the late 1960s, Minnkota also built Nelson Lake – a 2.5-mile-long, 660-surface-acre reservoir for cooling, boiler makeup and other station uses in the power production process. All water used in plant processes is tested and treated to confirm that its quality meets all standards for discharge. The Young Station remains compliant with all state and federal water standards, including the EPA's Effluent Guidelines rule and the Cooling Water Intake rule. Over the past 50-plus years, the lake has turned into an environmental and community success story. The warm water discharged from the Young Station means Nelson Lake rarely freezes, making it unique among North Dakota's lakes for fishing and year-round water sports. It is home to some of the state's largest crappies and largemouth bass. Public areas along the lake are consistently used for camping, boating, picnics and other recreational purposes. Minnkota granted the North Dakota Game and Fish Department an easement ensuring public access to Nelson Lake.

## Coal combustion residuals

Minnkota is in full compliance with the EPA's Coal Combustion Residuals (CCR) rule at the Young Station. Much of the station's bottom ash is recycled by a company that uses it to create shingles and sandblasting material. Coal ash that is not able to be recycled is stored on-site in compliant disposal facilities with composite clay/synthetic membrane liners, which were proactively implemented by Minnkota prior to the requirement.

# GRID RELIABILITY CONCERNS RISING

Minnkota is connected to a regional grid that is facing a high to extreme risk of reliability issues in the next five years, according to assessments from leading grid regulators completed in 2023.

The North American Electric Reliability Corporation (NERC) – the entity responsible for developing and enforcing mandatory reliability standards for utilities in the United States and Canada – released its Long-Term Reliability Assessment in December 2023. The report found that rising peak demand for electricity and the planned retirement of 83,000 megawatts (MW) of fossil fuel and nuclear generation over the next 10 years creates blackout risks for most of the United States.

The highest risk level is in the MISO region, which covers 15 states from Minnkota's service territory through the central U.S. to Louisiana. Although this region plans to add 12,000 MW of new resources in the next five years, the retirement of power plants is expected to leave the region with a shortfall of 4,700 MW by 2028.

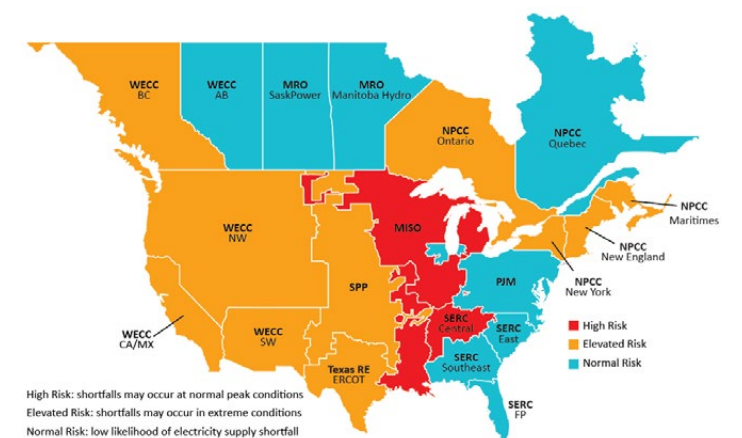
The top recommendation from NERC in the report is for the addition of new resources with needed reliability attributes and to make existing resources more dependable. Other important recommendations include the expansion of power transmission infrastructure, updates to wholesale energy market designs and strengthened relationships among reliability stakeholders and policymakers.

The Midwest Reliability Organization (MRO) came to a similar conclusion about the dire state of grid reliability when it released its 2024 Regional Risk Assessment in February 2024. For the first time in its history, MRO identified an extreme risk – uncertain energy availability. MRO is one of six regional entities operating underneath NERC to ensure the reliability of the bulk electric system through the enforcement of reliability standards.

The report identified that "conventional, baseload generation that is available on demand is being retired and replaced with resources with limited energy availability due to uncertain fuel supplies that are increasingly weather dependent."

Also in February 2024, MISO released an update to its Reliability Imperative – the grid operator's document describing how its members and states have to address the urgent and complex challenges to electric system reliability in the region. Studies conducted by MISO and other entities indicate "the transition that is underway to get to a decarbonized end state is posing material, adverse challenges to electric reliability." MISO says a key risk is that many existing dispatchable resources that can be turned on and off and adjusted as needed are being replaced with weather-dependent resources such as wind and solar that have materially different characteristics and capabilities. While wind and solar produce needed clean energy, they lack certain key reliability attributes that are needed to keep the grid reliable every hour of the year.

Minnkota continues to advocate for the prioritization of grid reliability with policymakers, regulators and other key stakeholders. These reports will be shared in the upcoming year to help people understand the challenging circumstances impacting Minnkota and what must be done to create positive change.



NERC's Long-Term Reliability Assessment indicates Minnkota's region is at high risk for reliability concerns.



Minnkota annual meeting

Minnkota welcomes school groups into its facilities to learn more about safety around electricity.

# PURPOSE

As a not-for-profit cooperative, Minnkota is simply different from many utilities. Our organization exists for the sole purpose of meeting the needs of our member-owners. Minnkota is governed by a board of directors democratically elected from the membership – not faraway investors. As a generation and transmission (G&T) cooperative, Minnkota both generates and transmits wholesale electricity to meet the power needs of its member-owner distribution cooperatives who, in turn, sell power to retail member-consumers. Those consumers are members of their distribution cooperative, meaning they collectively own the cooperative and have a voice in its decision-making.

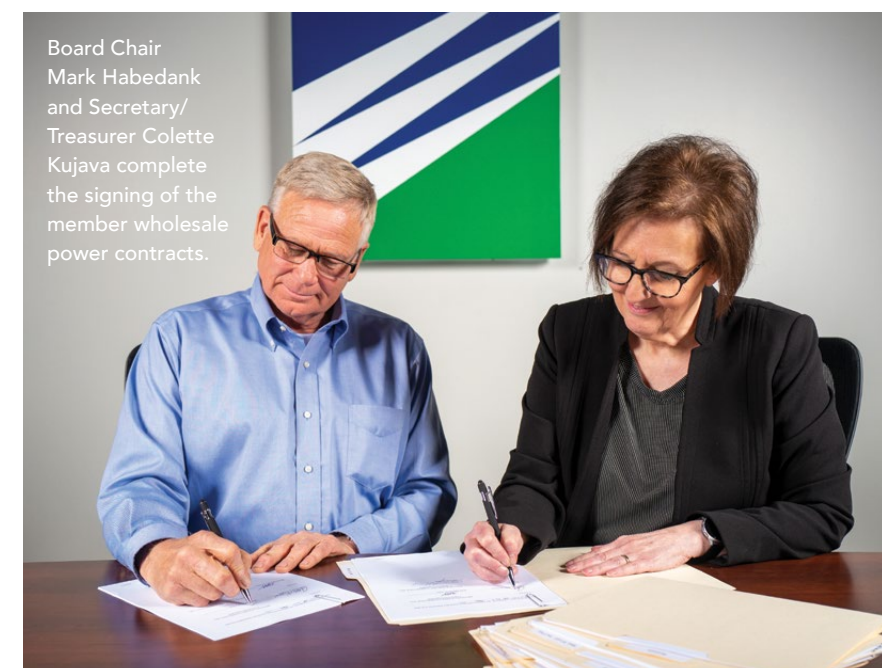
## RESPONSIVE TO MEMBER NEEDS



Minnkota's CEO Mac McLennan speaks at the annual meeting.

Our democratic, member-owned structure allows us to respond directly to our members' needs, as we do not require regulatory approval for our programs, budgets or rates. Rather than having to go through a utility commission process, as is the case with investor-owned utilities, we are able to work with our members, identify their needs or unique circumstances and make changes accordingly. Minnkota members are diverse and have individual goals and interests, but they recognize they are stronger when working together. The Minnkota board meets each month, while Minnkota staff meets with member managers and other key staff on a regular basis. Together, these individuals help assess risks and develop a consistent set of annual values, objectives and strategic initiatives.

## NEW WHOLESALE POWER CONTRACTS



Board Chair Mark Habedank and Secretary/Treasurer Colette Kujava complete the signing of the member wholesale power contracts.

renewal structure. Starting in 2026, the contracts will be automatically extended by two years each even-numbered year. That schedule will continue unless either Minnkota or the member cooperative formally requests a change. Additionally, Minnkota has a board of directors' policy in place to review the contracts every five years.

The evergreen structure helps provide stability and certainty for Minnkota and the members without the need for a multidecade extension, which has historically been used in the electric cooperative industry. Maintaining a contract length of more than 35 years ensures that optimal financing can

In the spring of 2023, the 11 Class A member-owners signed new wholesale power contracts with Minnkota that extend through 2060. These foundational agreements create a framework for the organizations to continue working together toward their common goal of reliable, affordable and sustainable electricity.

be secured for current and future projects. In addition, the contracts help demonstrate financial health to potential lenders and rating agencies.

The Minnkota board and staff emphasized collaboration with the member cooperative staff and boards throughout the 18-month process. Membership meetings, listening sessions and educational presentations were provided to ensure transparency and collaboration. One of the key changes in the new contracts is the implementation of an evergreen

While the membership is united through Minnkota's role as the wholesale power provider, there is recognition that a fast-changing industry requires electric cooperatives to be flexible and adaptable. Within the new contracts, each member cooperative may receive up to 5% of its highest historical monthly uncontrolled demand from a source other than Minnkota. This amendment comes with added protections against inequitable cost-shifting amongst members.

# COOPERATIVE PRINCIPLES

## Open and Voluntary Membership

Membership in a cooperative is open to all people who can reasonably use its services and stand willing to accept the responsibilities of membership, regardless of race, religion, gender, or economic circumstances.

## Democratic Member Control

Cooperatives are democratic organizations controlled by their members, who actively participate in setting policies and making decisions. Representatives (directors/trustees) are elected among the membership and are accountable to them. In primary cooperatives, members have equal voting rights (one member, one vote); cooperatives at other levels are organized in a democratic manner.

## Members' Economic Participation

Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital remains the common property of the cooperative. Members allocate surpluses for any or all of the following purposes: developing the cooperative; setting up reserves; benefiting members in proportion to their transactions with the cooperative; and supporting other activities approved by the membership.

# COMMUNITY SUPPORT

Minnkota is embedded in its local communities and thrives on fostering growth and vitality in the region. As a cooperative, Minnkota stands apart from other utilities due to its close connection with the members it serves, placing paramount importance on people in every facet of their operations.

## Autonomy and Independence

Cooperatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control as well as their unique identity.

## Education, Training and Information

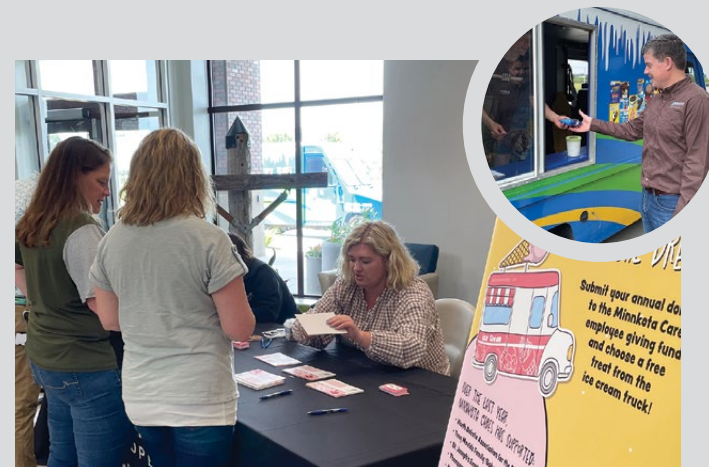
Education and training for members, elected representatives (directors/trustees), CEOs and employees help them effectively contribute to the development of their cooperatives. Communications about the nature and benefits of cooperatives, particularly with the general public and opinion leaders, help boost cooperative understanding.

## Cooperation Among Cooperatives

By working together through local, national, regional and international structures, cooperatives improve services, bolster local economies, and deal more effectively with social and community needs.

## Concern for Community

Cooperatives work for the sustainable development of their communities through policies supported by the membership.



Minnkota's Grand Forks employees made annual pledges to the Minnkota Cares fund during an Ice Cream for Local Dreams event. In all, employees donated \$3,947 to the employee giving fund, which will be distributed to local charities and causes throughout the year.



Tim Sullivan, Farm Rescue executive director (center right), accepts a donation from Minnkota's Lowell Stave, vice president and COO (far left); Stacey Dahl, vice president of external affairs (center left); and Brita Endrud, government affairs representative (far right).

# CHARITABLE CAUSES

Minnkota continued its strong commitment to provide financial support to critical nonprofits, charitable causes and educational institutions that make a difference in eastern North Dakota and northwestern Minnesota. Approximately \$175,000 was contributed in 2023 to a variety of different entities, including: Community Violence Intervention Center (CVIC), Altru Health Foundation, BIO Girls, Farm Rescue, Anne Carlsen Center, Grand Forks Career Impact

Academy, United Way of Grand Forks, Greater Grand Forks Women's Leadership Cooperative and Special Olympics of North Dakota, Oliver County Ambulance, Oliver County Fair Board, Gateway to Science, University of North Dakota, North Dakota State University (NDSU), University of Mary, University of Jamestown, Valley City State University and NDSU's Quentin Burdick Center for Cooperatives.

# ECONOMIC DEVELOPMENT

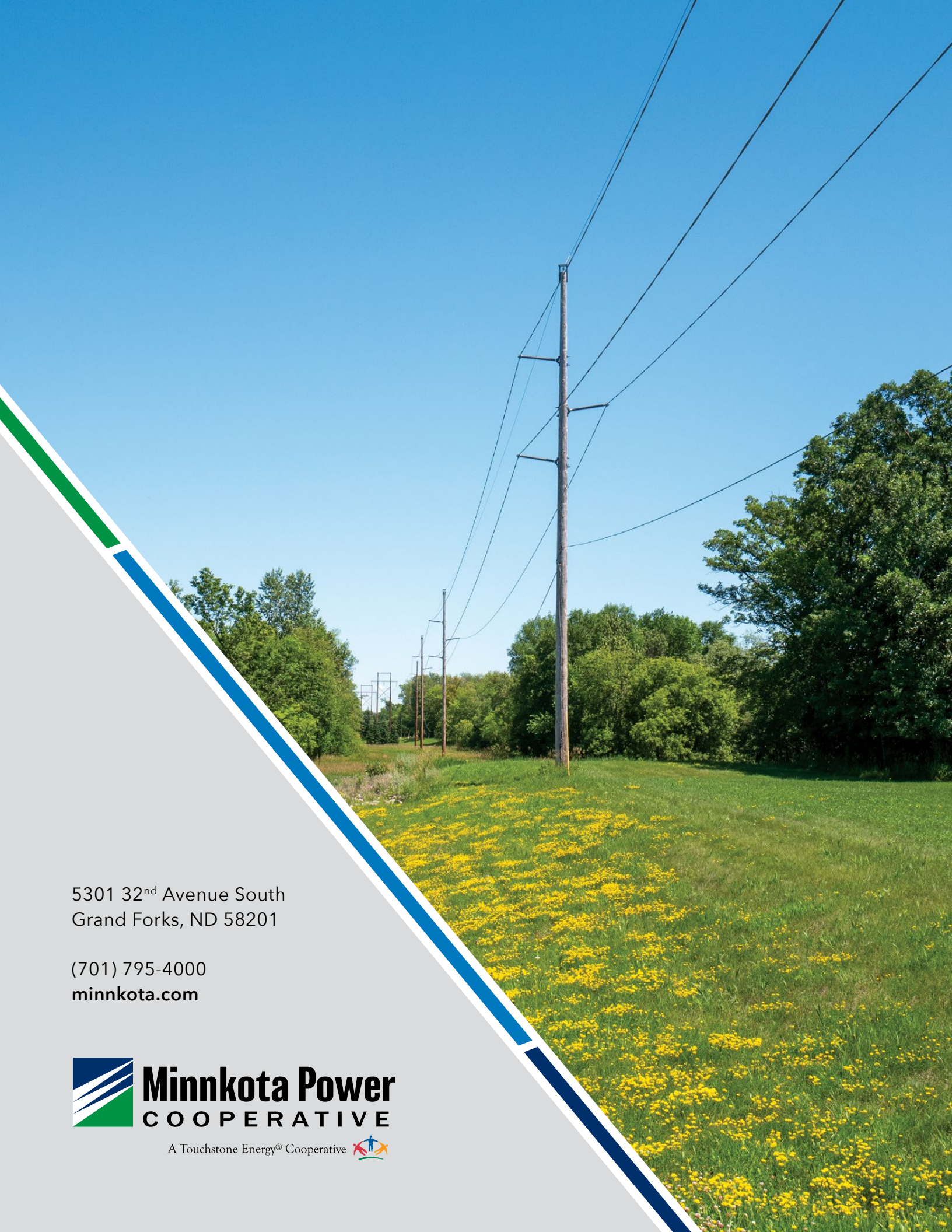
Working closely with the member and associated municipal systems, Minnkota has an economic development program with an active project pipeline at the end of the year that includes more than 50

projects in various stages of development. Attracting and retaining business activity helps contribute to the overall vibrancy of the region.

# DEVELOPMENT OF COMMUNITY BENEFITS PLAN

While finding ways to support its communities is nothing new for Minnkota, the cooperative developed its first Community Benefits Plan (CBP) in 2023, which is needed to pursue funding for clean energy technologies through the Bipartisan Infrastructure Law and the Inflation Reduction Act. Minnkota's CBP provides information on how it will engage with communities and labor to collaboratively find ways to ensure the project benefits are being equitably

shared. This includes identifying how diversity, equity, inclusion and accessibility efforts will be advanced; investments that will be made in America's workers through quality jobs; and how Justice 40 will be implemented, which directs 40% of the overall benefits of certain federal investments to flow to disadvantaged communities. Minnkota will continue to work with key stakeholders in 2024 to develop the next steps in the CBP process.



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