High Voltage Transmission

765kV **345kV** 230kV

High Voltage Direct Current Transmission

525kV 400kV **250kV**

Sub-Transmission

115kV **60kV** 46kV
43.8kV 41.6kV **69kV**

REGIONAL TRANSMISSION OPERATORS

MIDWEST RELIABILITY
Organization

Interregional T I E S

2026 ANNUAL REPORT

NORTH DAKOTA TRANSMISSION AUTHORITY

PREFACE

The North Dakota Transmission Authority (Authority) was created by the North Dakota Legislative Assembly in 2005 at the request of the North Dakota Industrial Commission. The Authority's mission is to facilitate the development of transmission infrastructure in North Dakota. The Authority was established to serve as a catalyst for new investment in transmission by facilitating, financing, developing and/or acquiring transmission to accommodate new lignite, wind, natural gas and other energy development. The Authority is a builder of last resort, meaning private business has the first opportunity to invest in and/or build transmission.

By statute, the Authority membership is comprised of the members of the North Dakota Industrial Commission. Claire Vigesaa was appointed Executive Director of the Authority in July 2023. The Executive Director works closely with the Industrial Commission Administrative Office staff and receives direct general fund appropriation.

NORTH DAKOTA INDUSTRIAL COMMISSION

KELLY ARMSTRONG
Governor

DREW H. WRIGLEY
Attorney General

DOUG GOEHRING
Agriculture Commissioner

NORTH DAKOTA TRANSMISSION AUTHORITY

CLAIRE VIGESAA
Executive Director
ND Transmission Authority

Cover photos by Minnkota Power Cooperative

STATUTORY AUTHORITY

Statutory authority for the Transmission Authority is found in chapter 17-05 of the North Dakota Century Code. Section 17-05-05 N.D.C.C. delineates the powers of the Authority, including:

1) make grants or loans to borrow money

2) issue up to $800 million in revenue bonds

3) enter lease-sale contracts

4) own, lease, rent and dispose of transmission facilities

5) enter contracts to construct, maintain and operate transmission facilities

6) investigate, plan, prioritize and propose transmission corridors; and

7) participate in regional transmission organizations.

Before the Authority may exercise its power to construct transmission facilities, it must follow a process defined by statute to ensure public participation and comment. In particular, the Authority must publish a notice describing the need for the transmission project. Entities interested in construction of the facilities or furnishing services to satisfy the identified needs have 180 days to respond by filing a notice of intent. If the Authority receives notice of intent from an interested entity, it may not exercise its power to construct unless the Authority makes a finding that doing so would be in the public interest. In making such a finding, the Authority shall consider the economic impact to the state, economic feasibility, technical performance, reliability, past performance, and the likelihood of successful completion and ongoing operation.

The Authority may finance approved projects through the issuance of bonds. Under current law up to 30 percent of the cost of a project may be financed by selling bonds that include the moral obligation of the State of North Dakota. In other words, up to $240 million of the Authority's $800 million total bonding authority may be sold with the moral obligation of the state. The moral obligation component enhances the marketability of the Authority's bonds.

TABLE OF CONTENTS

Executive Summary 4

Budget 6

Activities 7

Studies 9

Summary Reports 10

Grid Resilience Grants 11

Grid Reliability Challenges 12

Grid Enhancing Technologies (GETs) 14

Midwest Reliability Organization 14

Regional Transmission Operators (RTOs) 16

North Dakota Generation Projects 23

North Dakota Transmission Projects 24

EXECUTIVE SUMMARY

North Dakota's electric grid is undergoing a pivotal transformation as it confronts the combined pressures of evolving energy demands, aging infrastructure, and the rapid integration of resources. Investment in transmission development has become a strategic necessity for sustaining grid reliability and long-term economic growth.

North Dakota's electric transmission system, the backbone of energy delivery, faces increasing strain from both supply-side and demand-side shifts. Historically designed to move electricity from coal-generating stations to neighboring states, the grid must now accommodate rising wind generation, new industrial loads, and regional export of power.

Major transmission initiatives, including multi-state high-voltage projects and grid modernization programs led by merchant developers, utilities and regional transmission organizations (RTOs) such as the Midcontinent Independent System Operator (MISO) and Southwest Power Pool (SPP), aim to address congestion, enhance transfer capacity, and improve system flexibility. These investments are crucial for enabling energy development while maintaining reliability during extreme weather events.

Maintaining resource adequacy—ensuring sufficient generation to meet demand at all times—remains an evolving challenge. North Dakota's renewable growth has introduced variability that requires new capacity planning paradigms. While abundant wind resources contribute to a clean and affordable supply mix, intermittent output underscores the need for:

- Flexible generation resources such as natural gas, coal, nuclear, hydropower, and emerging storage technologies
- Expanded transmission to import and export power efficiently across regions
- Enhanced forecasting and demand response to manage peak loads and system imbalances

Proactive resource planning through MISO and SPP coordination will be central to managing seasonal adequacy and preserving reliability standards.

Extreme temperature events, such as polar vortices and heatwaves, have exposed vulnerabilities in fuel delivery systems and generator availability. Additionally, the aging transmission network faces physical and cyber threats that can compromise reliability. Key reliability challenges include:

- Transmission congestion
- Inadequate interregional transfer capacity
- Grid resilience under increasing severe weather conditions
- Supply chain and permitting delays for new infrastructure

Addressing these concerns will require both physical investments and regulatory collaboration to streamline project approvals and upgrade critical assets.

Despite these challenges, North Dakota is well positioned to lead in grid innovation and transmission development across the Upper Midwest. The state's unique combination of abundant coal and natural gas resources, strong wind resources, interest in carbon capture, and proximity to major market hubs create opportunities to:

- Expand oil/gas development, ag processing, data & AI centers in North Dakota
- Export energy through expanded high-voltage corridors
- Leverage grid-enhancing technologies to improve the efficiency of existing infrastructure
- Attract industrial investment from sectors seeking reliable, clean power
- Collaborate regionally to strengthen interconnections with neighboring states and markets

Strategic public-private partnerships, coordinated regional planning, and forward-looking policy frameworks will determine how effectively North Dakota capitalizes on these opportunities.

North Dakota's path forward in electric transmission development, resource adequacy, and grid reliability will define the state's energy future. By strengthening transmission infrastructure, diversifying generation portfolios, and enhancing interregional cooperation, North Dakota can ensure a resilient, affordable, and sustainable grid that supports economic growth and energy leadership across the Midwest.

Executive Director

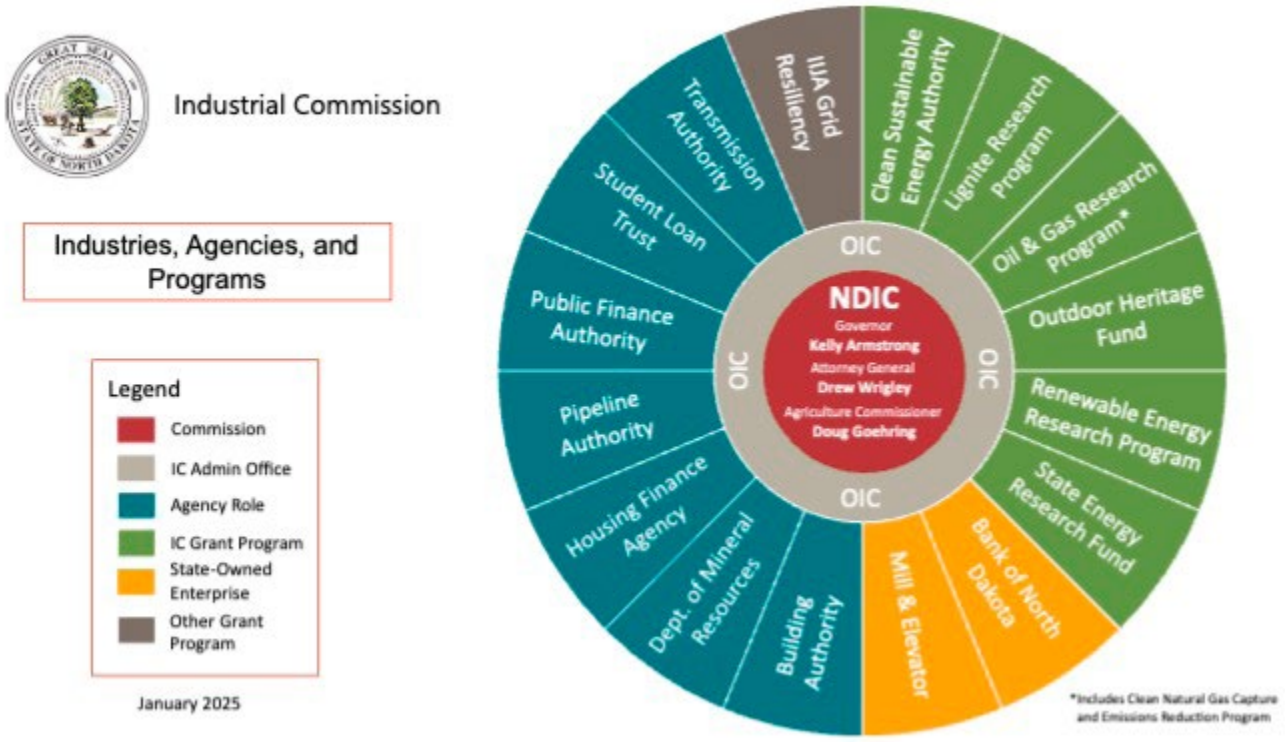
Photo by Carmen Devney

Vigesaa *appreciates the guidance and support of the North Dakota Industrial Commissioners and Executive Director,* ***Karen Tyler****.*

BUDGET

The Transmission Authority is one of 16 agencies, authorities, enterprises and grant programs operated under the direction of the North Dakota Industrial Commission. Karen Tyler serves as the Executive Director of the Industrial Commission providing administrative guidance and support for the North Dakota Transmission Authority. The funding for the operation of the NDTA is within the general fund appropriation to the ND Industrial Commission.

The chart below shows the relationship between the ND Transmission Authority within the ND Industrial Commission's industries, agencies and programs.



The 69th ND Legislative Assembly appropriated $400,000 to the ND Industrial Commission general fund budget to operate the NDTA for the 2025-2027 biennium. The Legislative Assembly also appropriated $1,782,794 for the 15% match requirement for the IIJA Grid Resilience Formula Grant Program. This match enables North Dakota to access $11,885,295 in DOE funds for grid enhancing project awards to utilities serving North Dakota consumers.

In its history, the NDTA has financed one project, Rainbow Energy's purchase of the NEXUS HVDC line that originates at Coal Creek Station and terminates in the Minneapolis area. The bond financing's term is 20 years with interest at a rate of 3.55% per annum secured by the mortgaged property.

Photo by Carmen Devney

*ND Industrial Commision staff **Karen Tyler**, Executive Director and **Andi Rebsom**, Fiscal Manager discuss ND Transmission Authority finance with Executive Director, **Claire Vigesaa**.*

ACTIVITIES

The ND Transmission Authority seeks to facilitate open communication among policymakers, regulators, state agencies, regional transmission organizations, developers and the electric utility industry. Open communication and shared vision provide for efficient and effective transmission expansion for a reliable and affordable grid. The NDTA is available to present to associations, communities, and other entities upon request. The NDTA fields regular calls from ND Legislative Leadership, trade associations and community leaders. The NDTA presented and/or participated in the following events/associations this past year:

Spiritwood Energy Park Tour – Hosted by Rachel Retterath, Great River Energy
Clean Sustainable Energy Authority – Technical Review Committee & Board Meeting
UND Energy Hawks Student Group – Presenter
NDSU Bison to Bakken Student Group - Presenter
Stutsman County Zoning Committee – Set Back Issues - Testified
Energy & Environmental Research Center Tour – Hosted by Brad Stevens & Daisy Selvaraj
BNI – Minnesota Power Allete Educational Event – Hosted by Mike Heger & Cheryl Froelich
ND Energy Development & Transmission Interim Meeting – Ellendale - Rep Anna Novak, Chair - Presented
ND PSC Educational Events with MISO & SPP
Great River Energy Transmission Plan Update – Host Owen Henrickson
ND Department of Commerce – Quarterly Energy Meetings
Advanced Nuclear Energy Interim Legislative Committee – NDIC Designated Committee Member
NDAREC Policy Update – Josh Kramer
National Governor's Association Energy Policy Institute – Boston
National Governor's Association Transmission Summit – Boston
Great Plains Collaborative Committee (one of 11 states) – Committee Member
North Plains Connector Public Information Session – New Salem
ACORE Grid Forum – Washington, D.C.
Rainbow Energy – Nexus Transmission Line Update – Stacy Tschider/Jessica Bell - Hosts
ND Energy Development & Transmission Interim Meeting – Bismarck
Conoco Phillips Management Grid Discussion – Brady Pelton, ND Petroleum Council
Minnesota Power Allete Project Update – Julie Pierce
Lignite Energy Council Annual Meeting – Bismarck
ND PSC Emmons/Logan Battery Storage Hearing – Linton
Basin Electric Power Cooperative Load Forecasting Discussion – Jay Lundstrom - Host
Midwest Governors Association Mid-GRID 2035 Meeting – Columbus, OH - Presenter
Collaborate Advancing Rapid Load Addition – DOE Application Submission
PSC Technical and Public Hearings for JETx Project - Testimony
Dakota Morning Radio Show – Alison Ritter – Host - Guest
National Association of State Energy Offices – Transmission Summit - Arlington VA – Presenter
North American Electric Reliability Corporation Grid Reliability Technical Workshop – Washington D.C.
US Energy Association Coal Workshop – Bismarck
Minneapolis MISO Operations Center Visit – Bridget Docktor & Brian Tulloh - Hosts
Advanced Nuclear Energy Committee Meeting – Idaho National Laboratory, Idaho Falls, ID
Western Dakota Energy Association – Watford City – Presenter

ND Society of Professional Engineers – ND Chapter - Grand Forks - Presenter

Midwest Reliability Organization Summit – Omaha, NE

DOE SPARK Application – Lead Applicant & Advisory Committee

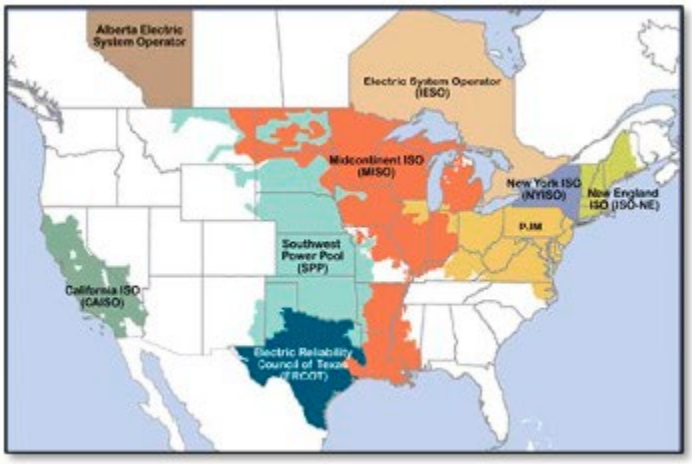
ND Interim Energy Development and Transmission Meeting – Grand Forks – Presenter

Energizing North Dakota Energy – Grand Forks

Midwest Governors Association (MGA): The MGA established an initiative (MID-GRID 2035) for regional transmission education and planning to position the Midwest as a modern energy producer and low-cost energy provider, with the goal to establish a long-term transmission grid vision for the region. The NDTA participated in conferences held by the MGA, MID-GRID 2035 quarterly meetings including a conference in Columbus, OH. The 2026 MGA Transmission Summit will be held in Bismarck on July 8-9, 2026. In addition, the NDTA participated in Transmission Conferences hosted by the National Governor's Association in Boston, MA, and a National Association of State Energy Offices in Washington, D.C. As executive director, I also participate in the Great Plains Collaborative Energy Discussions.

Midwest Reliability Organization (MRO): On October 25, 2023, the NDTA became a member of the MRO in the Adjunct Sector. MRO's primary responsibilities are to ensure compliance with mandatory reliability standards by entities who use, own or operate the North American bulk power system; conduct assessments of the grid's ability to meet electric power demand in the region; and analyze regional system events. Additionally, MRO creates an open forum for stakeholder experts in the region to discuss important topics related to addressing risk and improving reliable operations of the grid. MRO serves as a vital link between grid owners, users, operators, and other stakeholders who share common reliability interests in the region. The organization presents opportunities to learn with electric grid operators in the region. Board representatives from our constituents include Darcy Neigum-MDU, JoAnn Thompson-Otter Tail Power Company, Lloyd Linke-WAPA, Priti Patel-Great River Energy, and Sandra Johnson-Xcel Energy.

Regional Transmission Organizations: As shown on the map that follows, North Dakota is served by two regional transmission organizations, Mid-Continent Independent System Operator (MISO) and the Southwest Power Pool (SPP). The NDTA attends numerous committee meetings for both MISO and SPP to keep abreast of initiatives that impact grid reliability, particularly for North Dakota. Both RTOs are undergoing transformative policy and procedural process changes due to significant load growth, changing generation mixes and transmission development.



STUDIES

LARGE LOAD IMPACT STUDY ON NORTH DAKOTA

The NDTA commissioned the Energy & Environmental Research Center (EERC) and Power Systems Engineering to develop an analytical framework for supporting near-to-long-term planning and decision making around key issues facing North Dakota's electricity sector. Key issues investigated included the impacts of a changing resource mix, new policies and regulations affecting coal-based electricity, increasing penetration of renewable sources, lead times for transmission infrastructure build-out, and load growth on resource adequacy and electric reliability within the state as well as the regional grid. The final report was completed in the 3rd quarter of 2025. The study placed large loads in three regions of the state: 1,400 MW-East, 1,100 MW – Central and 600 MW -West. Through integrated reliability and economic analysis, the study evaluated how large-load additions influence transmission loading, system reliability, transmission congestion, electricity market prices, generation dispatch and renewable generation and curtailment. The study showed that additional large-load scenarios caused the number of thermal and voltage violations to increase significantly. The study underscores that coordinated generation and transmission development will be required to add significant large-load projects to the grid. The study results were shared with the ND Energy Development & Transmission Interim committee, the ND PSC, SPP, MISO and the industry.

COLLABORATIONS ADVANCING RAPID LOAD ADDITIONS

In August 2025, the North Dakota Industrial Commission, acting as the North Dakota Transmission Authority, submitted a concept paper to DOE for Collaborations Advancing Rapid Load Additions (CARLA). In December we were invited to submit a full application. Organizations/Key Personnel involved in the project include:

North Dakota Industrial Commission acting as the ND Transmission Authority-Claire Vigesaa
Southwest Power Pool – Jake Dubbs
Midcontinent Independent System Operator – Bridget Docktor
Applied Digital – Nick Phillips
University of Illinois Urbana-Champaign – Leslie M. Gioja, PE Hafiz Salih, PhD
Energy & Environmental Research Center – Brad Stevens, PE; Daisy Selvaraj, PhD
Power System Engineering – vendor

This project seeks to develop new approaches and frameworks for system planning, cost recovery, and risk analysis for electricity demand growth to facilitate rapid near-term load additions while minimizing or preventing rate increases for customers. The work includes evaluating the current electrical grid in North Dakota to assess the current grid capacity for future large load additions, as well as assessing the current procedures for load, generation and transmission capacity to identify bottlenecks and potential solutions that may provide visibility to more affordable load pocket areas. This could ultimately reduce or eliminate the current data scouting challenge, maintain grid reliability, and still enable data center growth.

The specific project goals are to: (1) assess the current and near-future demand and generation profile of North Dakota; (2) identify available capacity for new projects and potential areas for future interconnections; (3) assess the grid planning process and procedures to identify bottlenecks or challenges; (4) perform what-if scenario analyses to evaluate risks and mitigation strategies associated with the time lag between demand and asset approval and construction; and (5) propose potential improvements to process and procedures, which will facilitate more accurate demand and generation projections and reduce interconnection queue times.

The proposed project budget request (no match required) is $4,814,906. If awarded, the project would quickly engage electric utilities serving in North Dakota and the ND PSC for the two-year study period.

ND LEGISLATIVE INTERIM ADVANCED NUCLEAR ENERGY COMMITTEE

The 69th North Dakota Legislature initiated two bills that support nuclear generation studies. Senate Bill 2159 authorized study by removing a prohibition against EERC studying nuclear energy that was in section 15-11-40 (4) of the North Dakota Century Code. SB 2159 was a companion bill to HB 1025. HB 1025 was a Legislative

Management Study – Advanced Nuclear Energy. This bill sets up a study for the 2025-26 interim. Legislative management shall study the feasibility, siting and deployment of advanced nuclear power plants in the state. The Study will consider siting, grid connectivity, land use considerations, economic impacts, temporary and permanent nuclear waste store, small modular and micro nuclear reactors and provisions of the North Dakota Century Code that place restrictions on advanced nuclear energy development, if any.

The ND Legislative Interim Advanced Nuclear Energy Committee engaged Nucleon to provide five reports:

1. Siting and Land Use Report – December 2025
2. Economic Impacts & Private Sector Financing Report – March 2026
3. Nuclear Waste Storage Assessment Report – March 2026
4. Technology Assessment & Feasibility Report
5. North Dakota Century Code Report

The Advanced Nuclear Energy Interim Committee held a committee meeting at the Idaho National Laboratory (INL) in April 2026. The two-day event was filled with informative presentations and facility tours by INL Leadership. Photo Credit - INL Communications Department.

GRID RESILIENCE GRANTS

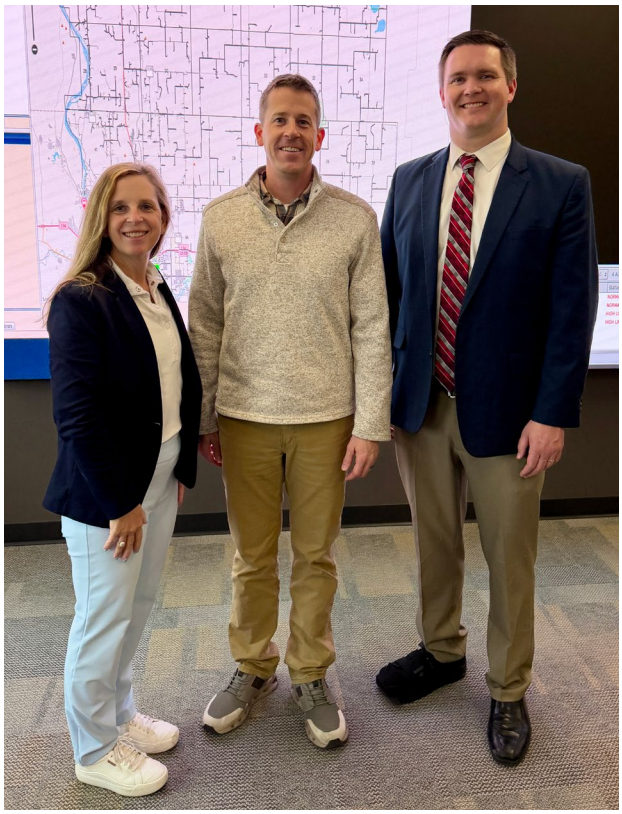
IIJA SECTION 40101(D) FORMULA GRANTS

FY22-FY23 Grant Subrecipients	
Capital Electric Cooperative	$ 321,930
Otter Tail Power Company	$4,432,088
Northern Plains Electric Cooperative	$ 586,000
McKenzie Electric Power Cooperative	$2,843,075 (returned)

FY24 Grant Subrecipients	
Burke-Divide Electric Cooperative	$ 550,000
City of Lakota	$1,707,109
Verendrye Electric Cooperative	$ 314,250
KEM Electric Cooperative	$ 620,000
City of Valley City	$ 715,468

FY24 (dollars not used by Valley City) Awarded 11/2025	
City of Northwood	$ 240,917

Northern Plains Electric Cooperative completed their IIJA grant project in April 2025, the installation of several SCADA ready reclosers. The state of the art recloser control panel and a completed substation are pictured above.



***Carmen Devney**, NDIC Grant Program Specialist and **Jordan Kannianen**, NDIC Deputy Executive Director, congratulate **Greg Owen**, Capital Electric Cooperative Manager of Engineering for completing their IIJA Grant project in January 2025. Capital's project consisted of converting state highway power line crossings from overhead to underground.*

GRID RELIABILITY CHALLENGES

The US electric power system is entering a period of rapid and transformational change due to:

- Re-shoring of industrial activity
- Unprecedented surge in demand for data centers and artificial intelligence
- Accelerating electrification of buildings and transportation
- Aging grid and generation infrastructure

Meeting this demand will require significant investments in grid infrastructure, which can be costly and take a long time. The key question is how can utilities, system planners, policymakers, and regulators collaborate to serve new loads more quickly and cost effectively, while still meeting state and corporate energy goals reliably and affordably?

Each year, NERC is responsible for independently assessing and reporting on the overall reliability, adequacy, and associated risks that could impact the upcoming summer and winter seasons, as well as the long-term, 10-year period. As emerging risks and potential impacts to reliability are identified, special assessments are conducted that provide similar technical framework and insights about the range and specific aspects of these to guide steps that may be warranted. Unbiased judgment of industry's plans for maintaining electric reliability in the future are founded on solid engineering through collaborative and consensus-based assessments.

By identifying and quantifying emerging reliability issues, NERC can provide risk-informed recommendations and support a learning environment for industry to pursue improved reliability performance. These recommendations, along with the associated technical analysis, provide the basis for actionable enhancements to resource and transmission planning methods, planning, and operating guidelines, and NERC Reliability Standards. The graphic below demonstrates the Risk Area Summary 2026-2030 in NERC's 2025 Long-Term Reliability Assessment.

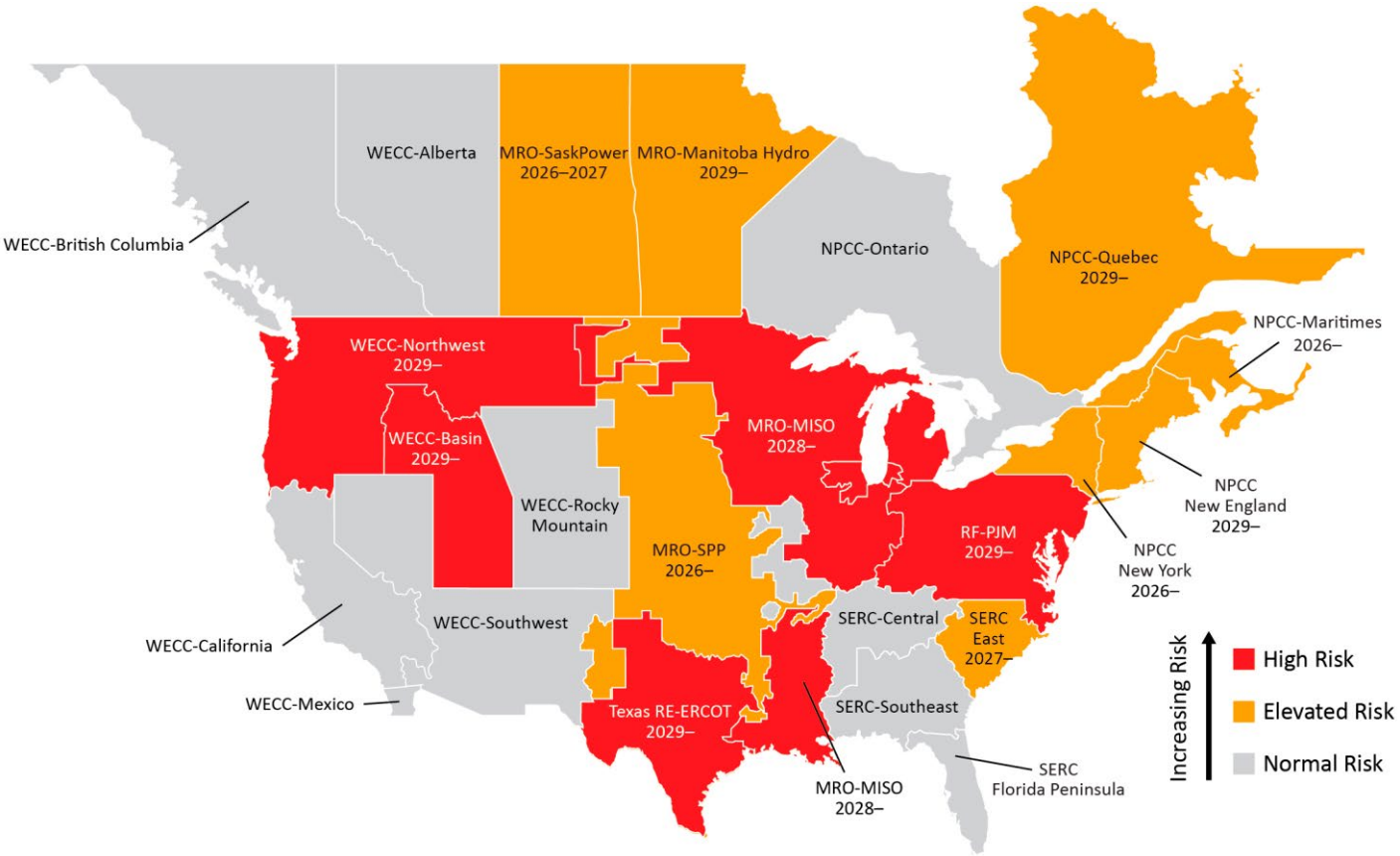


Figure 1: Risk Area Summary 2026–2030
Shows highest risk classification that occurs in the first 5 years and states initial year of occurrence

In addition to the challenges of planning, cost allocation, building and operating; siting, landowner and public acceptance of large-scale projects and linear infrastructure is increasingly difficult. Communication and collaboration with communities and landowners needs to start early and often.

It will require full engagement of industry, policymakers and regulators to expeditiously develop generation capacity and transmission assets to meet load growth. Although there has been movement on regulatory relief here in the USA, global competition for transmission and generation building materials and equipment will present challenges for developers. That leads to the critical challenge of timing, failure to get generation and transmission in place to meet industry expectations will limit economic growth as well as hinder grid reliability.

GRID ENHANCING TECHNOLOGIES (GETs)

A future-ready grid requires infrastructure built with the latest technologies, including everything from complex devices compatible with digital technology to fundamental capabilities, such as mapping out the flow of electricity. Grid-enhancing technologies (GETs) maximize the electricity transmission across the existing system through a family of technologies that includes sensors, power flow control devices, and analytical tools.

GETs are gaining traction and have the advantage of speed…compared to the time to build transmission! GETs enables increased transmission capacity, reduces congestion and accelerates generation integration. Great River Energy has one of the largest deployments of drone-installed dynamic line rating sensors in the USA. WAPA and Basin Electric Power Cooperative collaborated on the installation of DLR on WAPA's 230kV transmission line near Watford City. There are three major GETs solutions:

1. ***Dynamic Line Ratings (DLR)*** *– Real-time monitoring of transmission line capacity based on environmental conditions.*
    a. *Real-time capacity monitoring: DLR adjusts transmission line ratings based on temperature, wind speed and grid conditions.*
    b. *Reducing congestion costs: DLR can unlock up to 60% more capacity, reducing charges and energy costs.*
    c. *Enhancing Grid Reliability: Accurate, dynamic ratings improve operational decisions and prevent overload risks.*
    d. *Support Generation Integration: DLR allows greater utilization of generation by adapting to environmental conditions.*
2. ***Advanced Power Flow Control (APFC)*** *– Optimizes power distribution using modular power electronics to enhance grid flexibility.*
    a. *Optimizing Power Distribution: APFC dynamically adjusts power flow across transmission lines, reducing congestion.*
    b. *Enhancing Grid Stability: APFC mitigates voltage fluctuations and supports frequency regulation.*
    c. *Modular and Scalable Deployment: APFC solutions can be installed incrementally and redeployed as needed.*
    d. *Reducing Infrastructure Costs: APFC minimizes the need for costly new transmission lines by improving existing capacity.*
3. ***Topology Optimization Software (TTO)*** *– Reconfigures grid topology to reduce congestion and improve transmission efficiency.*
    a. *Dynamic Grid Reconfiguration: Software-driven topology changes optimize power flows and reduce congestion.*
    b. *Minimizing Renewable Curtailment: Topology optimization ensures maximum utilization of renewable generation.*
    c. *Fast and Cost-Effective Deployment: Unlike physical upgrades, software-based solutions can be rapidly implemented.*
    d. *Enhancing Operational Flexibility: Operators can quickly adjust grid configurations to improve efficiency and resilience.*

MIDWEST RELIABILITY ORGANIZATION (MRO)

More than 260 organizations participate in the production and delivery of electric power, serving approximately 28 million people in MRO's region. These companies are required to comply with mandatory NERC Reliability Standards and requirements, which MRO oversees. Membership with MRO is voluntary, free of charge, and is not based on a company's NERC registration status. MRO has two classes of members: Adjunct Members (The ND Transmission Authority is in this category) and Industry Members that qualify for one of seven industry sectors. Industry Sector Members are allowed to participate on the board of directors and MRO's organizational groups. Currently, MRO

has 105 members, including 13 Adjunct Members. The 23-member hybrid board of directors includes four independent directors, two regional directors, and seventeen industry sector directors. The independent and regional directors are elected by all members, and the industry sector directors are elected by the seven sectors those directors represent. The board's Organizational Group Oversight Committee—a sector-based group of board members—oversees MRO's advisory councils and subgroups. The purpose of the organizational groups is to provide a forum for stakeholders across the region to discuss risk, develop risk mitigation strategies, expand outreach and awareness, promote information-sharing, and publish guidance for the region.

The MRO's 2026 Regional Risk Assessment identified the top six risks to reliable and secure operation of the regional bulk power system. The risk level and descriptions follow:

***Claire Vigesaa**, Executive Director-NDTA, invited to participate in NERC's Reliability Workshop in Washington D.C. March 2026.*

1. ***Extreme: Uncertain Energy Availability:** Increasing electricity demand coupled with rapid retirement of traditional power plants creates potential energy shortfalls. This is especially true when replacement generation is variable, weather-dependent and may not be available when needed.*
   ***Drivers:** Legislative policies, generator retirements, new resource constraints, demand growth, inadequate transmission.*
2. ***High Nation-State Threats:** The strategic objections of nation-state-sponsored actors from China, Russia and Iran pose significant cyber threats to the North American bulk power system. Their objectives vary but generally aim to weaken our military and economic systems.*
   ***Drivers:** Heightened geopolitical tensions, increasing sophistication of threat actors, insufficient internal controls.*
3. ***High: Generation Outages During Extreme Cold Weather:** The electricity grid faces significant challenges during extreme cold weather, which occurs more often and with greater intensity and duration. Recent events resulted in unprecedented customer load shed to maintain system stability.*
   ***Drivers:** Insufficient winterization, lack of fuel supply, gas/electric interdependencies, generator retirements.*
4. ***High Supply Chain Compromise** Occurs when a vendor is the vector for a threat actor who manipulates hardware, software, connected services, or software delivery mechanisms for financial gain. The risk is amplified by the limited number of vendors serving the industry.*
   ***Drivers:** Supply chain complexity, growing reliance on third-parties, lack of third-party controls and visibility.*
5. ***High Inadequate IBR and DER Performance and Modeling:** Inverter-Based Resources (IBRs) and Distributed Energy Resources (DERs) -wind, solar and battery—are a relatively new technology for generating electricity. Industry and manufacturers are learning how to reliability integrate these resources into the power grid.*
   ***Drivers:** Increasing reliance on IBRs to serve load, lack of visibility, lack of experience with technology.*
6. ***Material and Equipment Unavailability:** National and world-wide electric demand is creating high demand for generation and transmission components; demand is greater than domestic/international manufacturing can produce in a timely manner.*
7. ***High Malicious Insider Threat:** Malicious insiders (employees, vendors, contractors) with access to critical systems and intent to do harm, can disrupt bulk power system operations. This risk does not include insider intelligence.*
   ***Drivers:** Limited detective controls in place, lack of insider threat programs.*

REGIONAL TRANSMISSION OPERATORS (RTOs)

North Dakota is served by two RTOs, Midcontinent Independent System Operator (MISO) and the Southwest Power Pool (SPP).

The MISO footprint covers the service territories of Otter Tail Power (OTP), Montana-Dakota Utilities (MDU), Great River Energy (GRE), Xcel Energy, Missouri River Energy Services (MRES), and a small amount of transmission assets owned by Upper Missouri Power Cooperative. In addition, MISO has an agreement with Minnkota Power Cooperative that provides them with many of the same services. Western Area Power Administration (WAPA) and Basin Electric Power Cooperative (BEPC) are members of the Southwest Power Pool. SPP BEPC members Mountrail-Williams Electric Cooperative, Central Power Electric Cooperative, Roughrider Electric Cooperative and Mor-Gran-Sou Electric Cooperative have also joined SPP individually due to their transmission ownership.

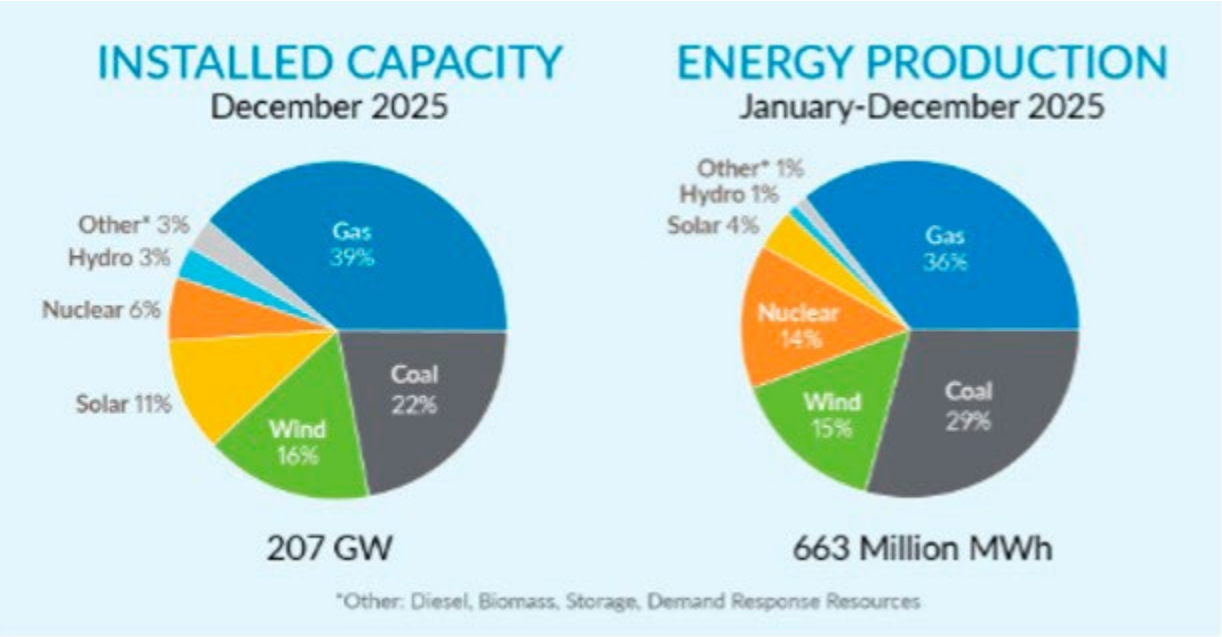
MISO and SPP also operate the power markets in their respective territory. Pricing for selling electricity into the grid and for buying electricity from the grid is managed by them. This process determines which generating units that have been bid into the market by Market Participants (MP) will be providing generation at any point in time and which units will provide various ancillary services to sustain voltage, assure reliability, etc.

WAPA is the Transmission Operator for the SPP transmission network in North Dakota. ND PSC Commissioner Randy Christmann serves on the SPP Regional State Committee. ND PSC Commissioner Jill Kringstad represents the ND PSC on the MISO Advisory Committee. Victor Shock, Director, Public Utilities Division, and PSC staff Chris Hanson, Leif Clark, Robert Frank and Adam Ranfandt participate in RTO committee work.

Both MISO and SPP acknowledge the Administration's support for baseload generation and the pressure relief (proposed EPA regulations) on coal and fossil fuel generation. Avoiding premature shutdown of coal facilities will provide much needed capacity for demand growth. SPP and MISO have both implemented expedited resource study approaches to speed the interconnection queue process, adding much needed new generation capacity to the grid.

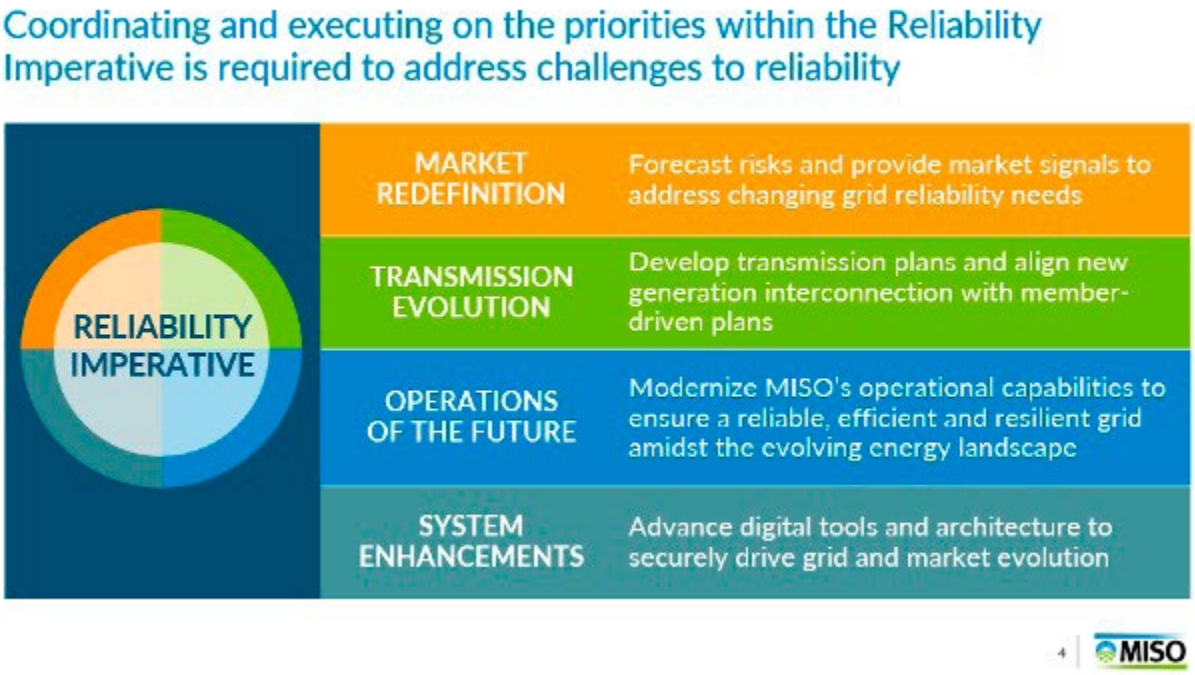
MIDCONTINENT INDEPENDENT SYSTEM OPERATOR (MISO)

MISO manages the flow of electricity across 15 U.S. states and the Canadian province of Manitoba, serving a population of 45 million with 79,000 miles of transmission lines in its network. MISO's peak demand of 127.1 GW occurred on July 20, 2011.



MISO'S RELIABILITY IMPERATIVE

MISO's "Reliability Imperative" addresses the shared responsibility the regional transmission organization, the states, and members must navigate the challenges of the electric grid within the MISO region. This includes planning for large load additions, tightening reserve margins, and working to decrease the interconnection queue length. MISO, states, and its members have been working through these challenges through stakeholder and the Organization of MISO States (OMS) workshops on large load planning, long range transmission planning, and their expedited resource addition study (ERAS). ERAS is designed to move projects through the interconnection queue more quickly after state authorization to apply.



MISO'S VALUE PROPOSITION

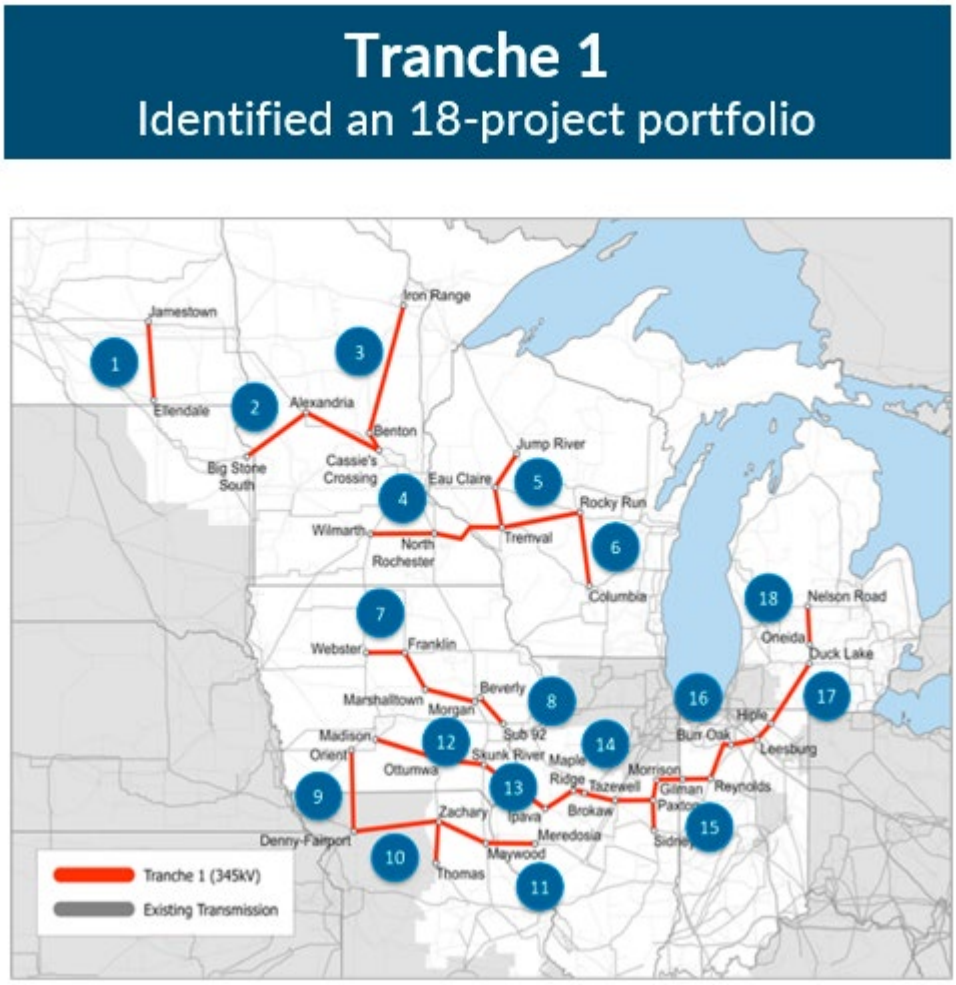
The value of a regional transmission organization (RTO) comes from the ability to share resources across the region. As resource mixes change and severe weather continues to increase, the value of sharing resources across

the region is even more important. MISO began calculating the value they provide to the regional market in 2007 through extensive stakeholder collaboration. "Since its inception, the value of MISO participation has increased, reaching approximately $5.1 billion in 2024, with cumulative benefits exceeding $50 billion." MISO membership benefit to cost ratio was 15:1 in 2024.

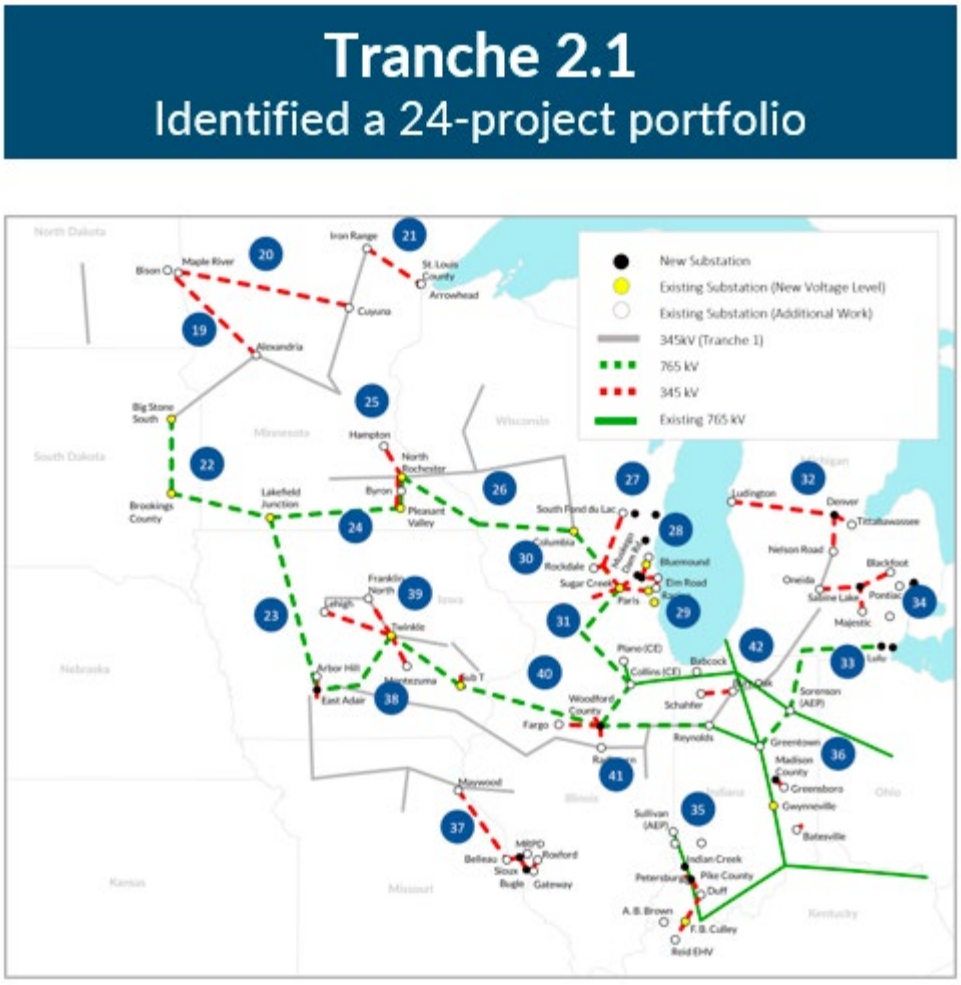
MISO is currently working with stakeholders to update its Value Proposition calculation for 2025 to better account for changing load growth, resource mix changes, operational risk, and transmission needs.

MISO'S LONG RANGE TRANSMISSION PLANNING

Included in MISO's Long Range Transmission Planning process, is MISO's Transmission Expansion Plan (MTEP). During the MTEP process, states and members work with MISO to address local and regional reliability needs. There are currently two long-term transmission plans in motion. Tranche 1 includes 18 projects across the MISO Midwest subregion estimated to cost $10.3 billion. The Jetx project was one of the 18 projects in Tranche 1.



Tranche 2.1's portfolio focused on creating a 765 kV transmission "highway" within the MISO region to maximize value based on land use, line distances, transfer levels, and costs. Tranche 2.1 includes two 345 kV transmission line projects that reach North Dakota, the Maple River to Cuyuna transmission line and the Bison to Alexandria transmission line. The total cost of Tranche 2.1 is estimated to be $21.9 billion with a benefit-to-cost ratio between 1.8 and 3.5. MISO is currently working with stakeholders to finalize "Futures" assumptions that will be used in the next planning phase.

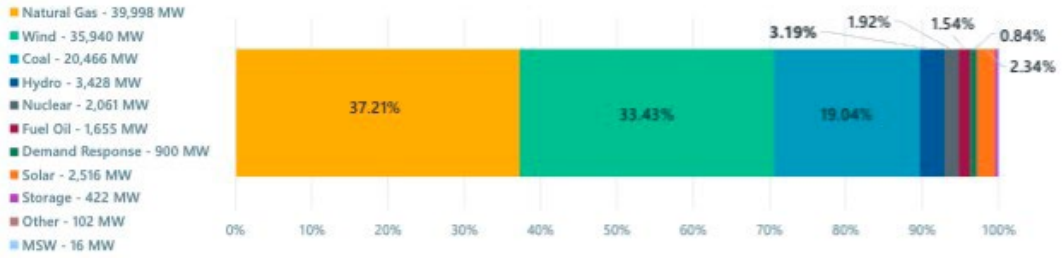


SOUTHWEST POWER POOL (SPP)

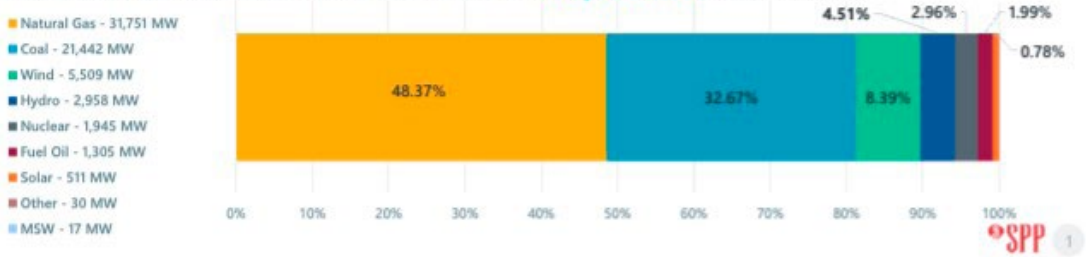
The Southwest Power Pool serves members in all or part of 14 states and provides additional energy services in 23 states and provinces. Its service territory covers 557,546 square miles and includes 5,292 substations and 72,884 miles of transmission lines. SPP has 63,908 MW of accredited generation capacity (accredited as of June 2024). SPP's coincident peak load of 56,184 MW occurred on July 31, 2023.

Over the past year, SPP has advanced a series of forward leaning initiatives that collectively enhance regional grid reliability, modernize transmission planning, and significantly accelerate the interconnection of new resources. These accomplishments reflect SPP's commitment to meeting growing load across the central United States—including in North Dakota—with policies and tools that shorten timelines, improve transparency, and support reliable, affordable service across the SPP footprint.

NAMEPLATE GENERATING CAPACITY – 107,502 MW *(As of March 2026)*

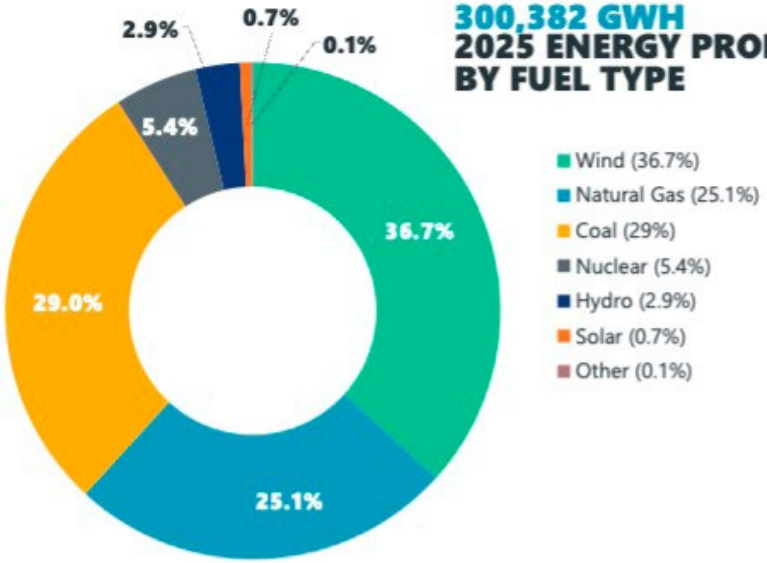


ACCREDITED GENERATING CAPACITY – 65,639 MW *(As of Summer 2025)*



SPP 1

300,382 GWH 2025 ENERGY PRODUCTION BY FUEL TYPE



SPP 2

SPP RESPONDING TO RAPID LOAD GROWTH AND NEW DEMANDS ON THE GRID

SPP continues to face historic load growth driven by economic expansion, evolving industrial demand, and the rapid development of data centers. SPP emphasized that projected load growth in some areas has increased dramatically, with expectations of sustained long term increases across the region.

To respond, SPP has prioritized accelerated planning processes and expanded transmission capability to ensure reliability during extreme weather and high demand periods. These efforts align with the reliability priorities of North Dakota utilities and policymakers, who have emphasized the need for sufficient accredited capacity and robust transmission to serve both existing customers and new large loads.

SPP INNOVATION IN TRANSMISSION PLANNING AND INTERCONNECTION

Over the last 12 to 18 months, SPP has delivered multiple industry leading reforms designed to improve "speed to power": a priority for states anticipating major industrial development and electrification related growth.

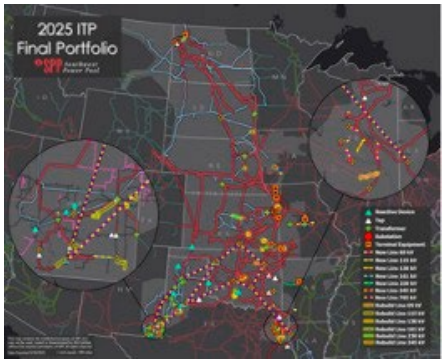
Key accomplishments include:

- **Expedited Resource Adequacy Study (ERAS) process**, now approved and affirmed by FERC, allowing load serving entities to more quickly interconnect generation needed specifically for resource adequacy. This has significantly reduced study timelines and supports regional reliability during periods of high load.
- **Surplus Plus provisions**, enabling entities to add generation at existing sites without undergoing the full generator interconnection (GI) process, further accelerating the delivery of new capacity.
- **High Impact Large Load (HILL) study process**, which allows certain large loads to be interconnected along with associated generation in 90 days or less when key criteria are met. This innovative framework is particularly valuable for regions experiencing large new industrial demand and offers a timely solution for economic development opportunities in North Dakota and the Upper Great Plains.
- **Conditional HILL process**, filed with FERC, which would allow load to be interconnected even more quickly on an interruptible basis: a pioneering approach to flexibility and speed.
- **Consolidated Planning Process (CPP)**, an integrated and forward looking planning framework expected to enhance certainty for developers by combining transmission planning and interconnection studies. Once approved, this approach will create more optimized and cost effective solutions across the footprint, directly benefiting states like North Dakota by reducing congestion and improving long term reliability.
- SPP continues to modernize its planning and operational tools, as through its partnership with **NVIDIA and Hitachi** to develop advanced planning technology, enabling more accurate modeling, faster analysis, and improved system planning.

Together, these reforms represent a bold restructuring of SPP's planning and interconnection processes and set a national example for accelerated, coordinated infrastructure development.

SPP MAJOR TRANSMISSION INVESTMENTS AND LONG TERM GRID VISION

SPP's recent planning work includes significant progress on long range transmission development. Recent efforts have emphasized a coordinated backbone strategy designed to support substantial future load and facilitate reliable generation interconnection across the region.



- SPP has introduced a vision for a 765 kV extra high voltage backbone, which will support long-term reliability and load growth. Although still in early stages, this effort aligns with the needs of states experiencing increasing congestion and major anticipated load additions.

- The organization continues implementation of its 2025 Integrated Transmission Plan (ITP) portfolio: an ~$8B portfolio of transmission projects that enhance regional reliability, reduces congestion, and supports resource adequacy and delivery point additions at a benefit-to-cost ratio of between 12-18:1. These projects complement new and ongoing transmission development in North Dakota—particularly in the western part of the state—where SPP's planning assessments have identified the need for additional 230 kV and 345 kV infrastructure.

Together, these investments improve the operational flexibility of the broader SPP system, which transmits power across more than 70,000 miles of transmission lines and includes thousands of substations across a highly interconnected region.

SPP STRENGTHENING RESOURCE ADEQUACY AND WINTER PREPAREDNESS

SPP has made notable progress enhancing regional resource adequacy, including significant improvements in resource accreditation. These steps have incentivized stronger performance across the generating fleet and contributed to reliable operations during recent severe winter events.

FERC has recognized SPP's leadership in accelerating interconnection timelines and advancing policies necessary to ensure continued reliability under growing demand. These acknowledgements underscore the regional value of SPP's reforms and support ongoing collaboration with state regulators, including North Dakota's PSC.

SPP REGIONAL BENEFITS FOR NORTH DAKOTA

North Dakota's participation in SPP provides important benefits for both reliability and economic opportunity:

- Faster interconnections support new load growth tied to agriculture, energy production, advanced manufacturing, and data center development: all priorities identified by North Dakota energy officials.
- Integrated regional planning helps address congestion in key areas serving the Bakken and other high-growth regions.
- Transmission investments across the Upper Great Plains enhance reliability in extreme weather and support the continued use of North Dakota's diverse generation resources, including dispatchable baseload.
- Policy leadership at SPP ensures that North Dakota's regulatory perspectives are incorporated into major regional planning decisions.

As load growth accelerates nationwide, North Dakota's position within SPP's service territory, supported by a rapidly evolving planning framework, will continue to provide significant value by enabling reliable service, supporting economic expansion, and improving connectivity across the broader regional grid.

NORTH DAKOTA GENERATION PROJECTS

Rainbow Energy: As of 2026, Rainbow Energy Center continues to advance a growth strategy centered on Coal Creek Station and the Nexus HVDC Line. The Rainbow Substation is complete and operational, enabling service to large on-site loads and supporting continued development at the site. Rainbow is evaluating options to expand capacity on the Nexus Line, along with diversified electricity generation expansion at the site to meet growing demand and enhance overall system reliability. Coal Creek Station continues to reliably serve 205 MW of interruptible on-site load through Adakon Energy. Rainbow Energy Center values its strong partnerships and remains committed to the reliable, efficient delivery of power in support of North Dakota's energy and economic goals.

NextEra: NextEra Energy Resources' subsidiaries have been fueling North Dakota's economic growth since 2003, while moving our country toward energy independence. NextEra Energy Resources plays a role in the state's energy future through operations at its various facilities, including 16 operational facilities with a combined 1,784.9 MW of operational capacity, in addition to two operational pipeline assets. The company has invested more than $3.7 billion in energy infrastructure across the state with more than $8.7 million paid in annual land payments and $6.6 million paid in annual property taxes over the past two decades.

NextEra Energy Resources has multiple projects in various stages of development across the state, including renewable energy centers, battery energy storage systems, and transmission lines supporting various facilities. Additionally, NextEra Energy Resources and Basin Electric Power Cooperative (Basin Electric) have signed a memorandum of understanding to explore the joint development of a new combined-cycle natural gas-fueled generation facility in Basin Electric's North Dakota service territory. With a planned capacity of approximately 1,450 megawatts, the project, developed under Basin Electric's Large Load Commercial Program, would serve as the foundation for a multi-gigawatt data center campus. Basin Electric's Large Load Commercial Program is designed to reliably serve new, high-demand energy users while ensuring developmental and operational costs are covered by the large load that requires them.

WAPA – Upper Great Plains: WAPA-UGP markets and transmits federal hydropower from the region's Pick-Sloan Project dams. Operated by the U.S. Army Corps of Engineers, the Garrison Dam's five turbines, with a total installed capacity of 583 MW, produce around 2 million MWh annually. Garrison continues to receive unit maintenance and protective relay replacements on all units.

Basin Electric Power Cooperative: Basin Electric recently completed the addition of its fourth phase of natural gas generation at the Pioneer site. A total of 583 MW came online in 2025, consisting of six reciprocating engines and two combustion turbines.

Construction has also begun on the 1,470 MW Bison Station, a combined-cycle generating facility near Epping. The project is expected to be in service by 2030.

On the renewable energy front, Basin Electric is preparing to repower the Prairie Winds – North Dakota site near Max, ND. The eighty 1.5 MW wind turbines will be upgraded to units capable of 1.6 MW, increasing production and improving performance at lower wind speeds.

Otter Tail Power Company: Otter Tail Power's Abercrombie Solar is a 295-MW solar generation facility the company plans to build in Abercrombie Township northwest of Wahpeton, ND. In the second quarter of 2025, the Minnesota Public Utilities Commission and the South Dakota Public Utilities Commission approved cost recovery for Abercrombie Solar to serve customers in their respective states. The North Dakota Public Service Commission approved an Integrated Resource Plan action plan in 2024 that didn't include additional solar resources.

Once complete, Otter Tail Power estimates Abercrombie Solar will provide $23.8 million in local and state tax benefits over the 35-year life of the facility and create approximately 300 construction jobs at peak construction.

Otter Tail Power is upgrading and refurbishing wind turbines at four of their owned wind energy centers. They repowered the Langdon Wind Energy Center in late 2024 and finished equipment upgrades at their Ashtabula, Ashtabula III, and Luverne Wind Energy Centers in Q1 2026. Otter Tail Power expects this wind repowering to

provide approximately 164 GWh of additional energy—the equivalent of a new 40-MW facility.

The company is also pursuing a new 200-300 MW wind facility in North Dakota to continue to meet the energy needs of its customers across the three states it serves.

Montana-Dakota Utilities Co.: The 250 MW Badger Wind project located near Wishek, ND, was placed in-service in December. MDU has a 49 percent ownership interest in the project.

Minnkota Power Cooperative maintains a diverse power supply portfolio with all generation resources located in North Dakota, including coal, wind and hydroelectric facilities. The cooperative continues evaluating its long-term resource strategy to ensure it can provide reliable, affordable and sustainable electricity for its members well into the future.

Progress continues on development of the Flickertail Wind Farm, a 370-megawatt (MW) project planned near New Rockford, ND. The wind facility will be owned and operated by PRC Wind, with Minnkota purchasing all of the energy produced through a long-term power purchase agreement. The project is expected to begin commercial operation in 2028.

Minnkota is also evaluating the potential addition of natural gas generation in North Dakota. Natural gas generation would provide flexible, dispatchable power that can complement other resources in the portfolio. The cooperative continues assessing potential technologies, locations, facility size and other considerations before making a final investment decision.

Great River Energy is advancing generation resources that complement its transmission investments. Great River Energy will purchase energy from a grid connected energy storage project that will be co-located with the Emmons–Logan wind farm and developed by NextEra Energy Resources, deploying 140 megawatts of four-hour battery storage with completion targeted by 2027. Great River Energy is also collaborating on other wind projects and evaluating potential North Dakota and Minnesota sites for future natural gas combustion turbine generation to provide firm, dispatchable capacity.

NORTH DAKOTA TRANSMISSION PROJECTS

Transmission line development is an exhaustive process, often taking 8 to 10 years from idea to operation. The load growth, particularly in Western ND, has been phenomenal but challenging for the power supplier and transmission developers. Today, there is significant transmission congestion in Southeast North Dakota. Fortunately, there are several transmission projects approved and well on their way to construction to alleviate the congestion and accommodate load growth, improve grid reliability and consumer security. The various utility projects are as follows:

RAINBOW ENERGY

Rainbow Energy owns the 436 mile High Voltage Direct Current (Nexus) line that originates at Coal Creek Station and terminates near Minneapolis, MN. The ND Industrial Commission, acting as the ND Transmission Authority provided bond financing for the purchase of the line from Great River Energy. Rainbow Energy is now evaluating options to expand capacity on the Nexus Line.

WESTERN AREA POWER ADMINISTRATION (WAPA)

WAPA's Upper Great Plains (UGP) transmission facilities are under the functional control of the Southwest Power Pool (SPP) Regional Transmission Organization and are included in the annual SPP transmission assessments. SPP's Integrated Transmission Planning (ITP) assessments identify a portfolio of transmission projects comprised of reliability, economic, short circuit, and operational projects intended to mitigate several system issues.

SPP's 2024 ITP portfolio included projects to address the rapid load growth in North Dakota. One of the major projects in the WAPA footprint is a new 439-mile, 345-kV line from Belfield to Maurine to New Underwood to Laramie River that brings large economic benefits to North Dakota and the SPP region. This project aims to address

the extra high-voltage deficiency in this area and benefit rural communities in western Nebraska and the Dakotas. Another major project for North Dakota is a new 230-kV line from Dawson County, Montana, to Williston, North Dakota, that would provide reliability and economic benefits and greatly reduced congestion on the area's 115-kV system.

SPP's 2025 ITP assessment identified a new 345-kV line from Belfield to Roundup that further builds upon the projects from the 2024 portfolio by relieving economic congestion in the area.

Other age and replacement projects identified by WAPA-UGP in the North Dakota area include a Fargo bus upgrade, Charlie Creek-to-Garrison transmission line rebuild, Jamestown reactor replacement, and Jamestown-to-Fargo 230-kV structure reroute. WAPA-UGP recently completed the Fargo bus upgrade with the remaining projects expected to be finished over the next one to two years. These projects will increase capacity, alleviate congestion, increase storm resilience, and provide for continued stability in their local areas.

Together, all these projects will increase transmission reliability in North Dakota, relieve economic congestion, ensure worker safety and line reliability, improve voltage control, and provide stability to the region.

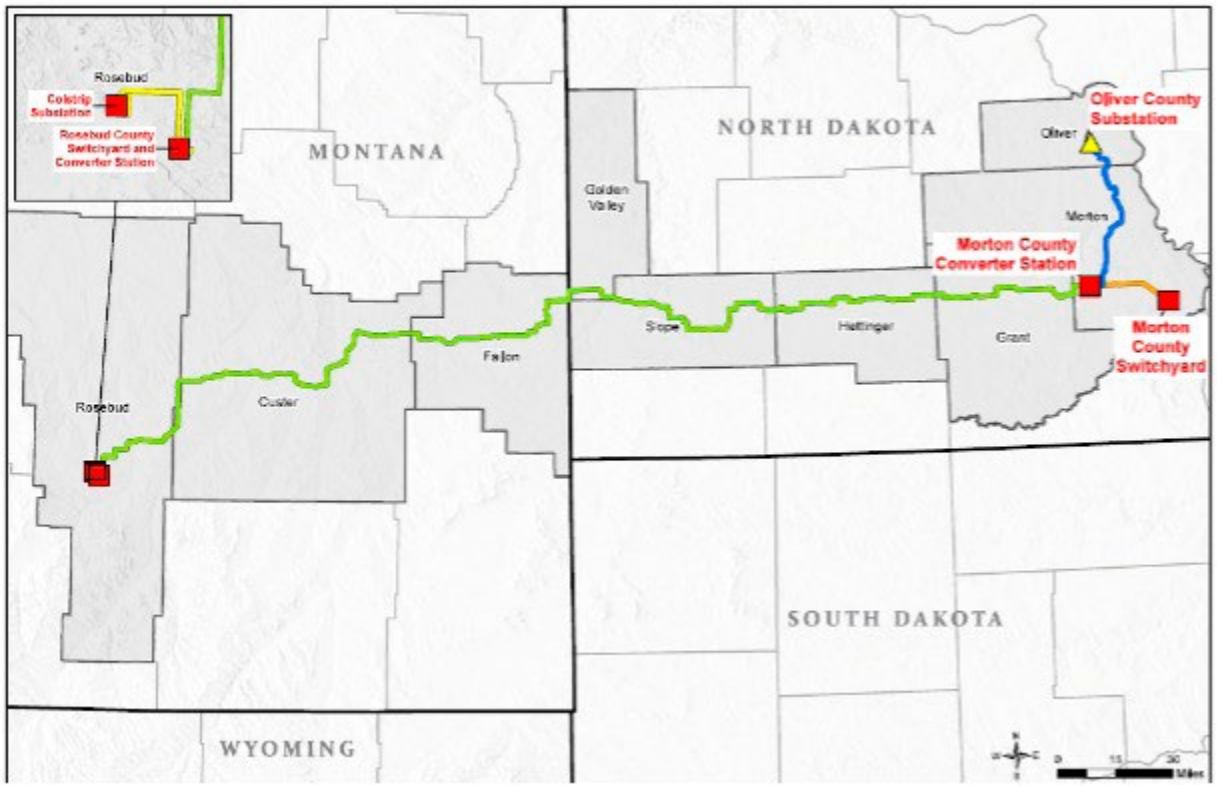
MISSOURI RIVER ENERGY SERVICES

Missouri River Energy Services (MRES) provides supplemental wholesale power to 61 municipal electric utilities, six of which are located in North Dakota (Cavalier, Hillsboro, Lakota, Northwood, Riverdale, and Valley City). MRES also provides some services to its lone North Dakota associate member, Maddock. MRES is one of the utilities involved in the Bison, North Dakota to Alexandria Minnesota second circuit 345 kV transmission line project. This project will be constructed on mostly existing transmission line structures from the existing Bison Substation near Fargo, North Dakota to the existing Alexandria Substation in Alexandria, Minnesota. The existing 345 kV structures were previously permitted in North Dakota and Minnesota, and were constructed as double-circuit capable lines as a part of the CapX Fargo to St. Cloud 345 kV Transmission Project. This project will benefit the municipal electric utilities of North Dakota. MRES also actively participates in the transmission planning activities of both regional transmission organizations (MISO and SPP) covering North Dakota.

GRID UNITED – NORTH PLAINS CONNECTOR

Grid United's North Plains Connector (NPC) Project is a proposed approximately 420-mile, 525 kilovolt high voltage direct current (HVDC) project designed to bridge the Eastern and Western Interconnections between North Dakota and Montana. The project has been in development since 2021 and continues to make substantive progress towards meeting its estimated in-service date of 2032. The line is expected to have an initial capacity of 3,000 MW and will connect three electric transmission regions: the Western Interconnection, the Midcontinent Independent System Operator (MISO) and the Southwest Power Pool (SPP).

As of December 2025, NPC has voluntarily acquired access for over 95% of the project's right of way, including over 98% acquisition in North Dakota. NPC is a merchant development but has secured commitments from utilities across the project's footprint including Montana-Dakota Utilities and Allete with operations in North Dakota. The project is on track to have permitting substantially completed by the end of 2026 and will begin construction in 2028.



CENTRAL POWER COOPERATIVE (CPEC)

Long Term Investments Completed in 2025

- **Apple Creek Distribution Substation – South Bay Addition** – CPEC completed construction of an additional 43.8-13.2kV, 14 MVA distribution substation bay within the existing Apple Creek substation to provide capacity and redundancy in the vicinity of Lincoln, ND. The transmission line serving the substation was modified as part of the project and new motor operated devices were added to the substation tap switches.
- **Kensal Distribution Substation Replacement** – The original Kensal substation was built in 1973 and the structures were compact with tight clearances between substation components. The replacement Kensal distribution substation was built roughly 2 miles northeast of the original substation and was loaded in late December.
- **Kensal to Glenfield 43.8kV Transmission Line Project** – The new 16-mile transmission line was constructed to provide looped service to Central Power's Glenfield and new Kensal distribution substations. This line, combined with the new Kensal Tap to Kensal 43.8kV transmission line which is described directly below, will eventually allow the existing 18.4-mile Brantford Tap to Glenfield line, built in 1959, to be taken out of service long enough to permit a total line rebuild.
- **Kensal Tap to Kensal 43.8kV Transmission Line Project** – The new 13.5-mile transmission line is nearly complete with one remaining 3,000' crossing over the Arrowwood National Wildlife Refuge remaining. CPEC has all required permits and our line contractor plans to complete the crossing in early 2026.
- **New Rockford Distribution Substation Replacement** – The Central Power New Rockford distribution substation was built in 1950 and the structures were a compact design with very tight clearances between substation components. Central Power completed construction of a larger modern replacement for the New Rockford distribution substation south of the existing substation but it has not been energized after delays associated with underground railroad crossings. CPEC anticipates completing the project in late spring 2026.
- **Wahpeton ProGold Substation Control System Replacement** – The ProGold control and protection system was replaced as part of a planned equipment replacement rotation. The project involved designing, building, programming, and replacing the existing control and protection system with modern microprocessor-based relays and control equipment.

- **Ward 230kV Substation Control System Replacement** – The control and protection system for Central Power's part of the substation, which is jointly owned with WAPA, was replaced as part of a planned equipment replacement rotation. The project involved designing, building, programming, and replacing the existing control and protection system for the 115kV and 43.8kV portions of the substation with modern microprocessor-based relays and control equipment.

CPEC Projects for 2026

- **Benedict Breaker Station - Breaker 15 Replacement** – Benedict breaker 15 is at the end of its useful life and will be replaced with a modern SF6 breaker.
- **Bismarck East Substation Control System Replacement** – The Bismarck East distribution substation protection system was installed in 2003 and has reached the end of its useful life. The project will involve replacing four protective relays and the substation Programmable Logic controller (PLC) with modern versions.
- **Bismarck North Circuit Switcher 362 & 462 Replacement** – These two fault clearing devices are at the end of their useful life and will be replaced with new 115kV SF6 power circuit breakers.
- **Blue Flint Distribution Substation – South Bay Addition** – We will add a 43.8-13.2kV, 14 MVA distribution substation bay within the existing Blue Flint substation to provide capacity and redundancy for the Blue Flint Ethanol Plant.
- **Crooked Lake to Lincoln Valley 43.8kV Transmission Line Construction** – The new 22 mile 43.8kV transmission line, once completed, will provide looped transmission service to Central Power's Crooked Lake and Lincoln Valley substations. This new line will also eventually allow the existing 15-mile-long Crooked lake line and the 21-mile-long Lincoln Valley line, which were built in 1963 and 1966 respectively, to be taken out of service long enough to permit total rebuilds.
- **Dunning 115kV Substation Equipment Replacement** – The Dunning 115-43.8kV transformer along with four 43.8kV breakers and the 43.8kV potential transformers are reaching the end of their useful life. CPEC plans to install a new larger 115-43.8kV transformer, to replace the four breakers along with their disconnect switches, to replace the potential transformers, and to replace the 43.8kV bus.
- **Mallard 115kV Substation Capacity Related Transformer Replacement** – Central Power ordered a larger transformer for its initial Phase 1 Mallard rebuild project that occurred in 2023 but that transformer was delivered to the Carrington 115kV substation after the Carrington transformer failed. CPEC now plans to replace the smaller 1993 transformer at Mallard with a new larger unit and will relocate the existing Mallard transformer, which still has a significant life expectancy and value, to the Gibbs 115kV substation. The existing Gibbs 115-43.8kV transformer is a rather small and portable unit which will then be moved to a Central Power transformer nursery where it will be stored energized until it is needed somewhere.
- **Menoken Distribution Substation Rebuild** – The Menoken distribution substation structures are a compact design with very tight clearances between substation components, the substation is contained in a very compact fenced area, and Capital Electric Cooperative requested additional distribution circuit exits which cannot be accommodated within the existing footprint. Central Power will build a modern substation with an expanded low side structure on the existing site.
- **Millarton Distribution Substation Construction** – Central Power will build a new 115-12.5kV distribution substation to replace the existing Millarton substation. The new substation will be served from a tap on WAPA's Jamestown to Edgeley transmission line.
- **Neal 115kV Substation Equipment Replacement** – The Neal 115-43.8kV transformer along with four 43.8kV breakers and the 43.8kV potential transformers are reaching the end of their useful life. CPEC plans to install a new larger 115-43.8kV transformer on a new pad within the Neal substation and to replace the four breakers along with the potential transformers in their existing locations. Power transformer vendors within the U.S. are still experiencing four-year lead times and Central Power determined that it would be advantageous to leave the existing transformer in place, as an energized spare unit, after disconnecting the low side connections. CPEC will then be in a position to relocate the older unit as a temporary replacement should we experience a 115-43.8kV transformer failure within any of our substations.
- **Rolla to Rock Lake 43.8kV Transmission Line Rebuild** – The 16.2 mile 43.8kV transmission line between Central Power's Rolla 115kV substation and Central Power's Rock Lake distribution substation along with the 2-mile tie line between Central Power's Rock Lake Tap and Otter Tail Power's Rock Lake line were built in 1967. These lines are of unshielded construction and are reaching the end of their useful life with a history of broken

insulators. CPEC plans to build complete replacements in or near their existing locations.

- **Ruthville 115kV Substation Control System Replacement** – The Ruthville substation control and protection system will be replaced as part of a planned equipment replacement rotation. The project will involve designing, building, programming, and replacing the existing control and protection system using modern microprocessor-based relays and control equipment.
- **Woodworth to Robinson to Tuttle 43.8kV Transmission Line Rebuild** – The 20 mile 43.8kV transmission line between Central Power's Woodworth and Robinson substations was built in 1972 while the 12 mile 43.8kV transmission line between Central Power's Robinson and Tuttle substations was built in 1978. These lines are unshielded with a history of galloping and broken insulators. CPEC plans to build complete replacements in or near their existing locations.
- **Wyndmere North Distribution Substation Rebuild** – The Wyndmere North distribution substation structures are a compact design with very tight clearances between substation components, the substation is contained in a very compact fenced area, and Dakota Valley Electric Cooperative is planning to replace the distribution circuits leaving the substation. Central Power will build a modern substation directly adjacent to the existing site.

BASIN ELECTRIC POWER COOPERATIVE

Basin's current transmission activity includes the following projects:

- Leland Olds – Crane Creek – Tande 345 kV (161 miles) – 2026
- Wheelock – SK Border 230 kV (53 miles) – 2027
- Tande – SK Border 230 kV (59 miles) – 2027
- Patent Gate – Pioneer (50 miles) – 2029
- Leland Olds – Logan – Crane Creek 345 kV (130 miles) – 2032

In addition to those active projects, SPP's Board of Directors approved the 2025 ITP portfolio in November 2025 and approved the modification of projects from the 2024 ITP in February 2026 to be Basin's responsibility. Basin is currently developing cost estimates for these projects and has not yet taken them to their Board for approval. These projects include:

- Laramie River Station - Rapid City 345 kV (~240 miles)
- Rapid City - Belfield 345 kV (~235 miles)
- Belfield – Roundup 345 kV (~60 miles)
- Dawson County – Judson 230 kV (100 miles)
- Marley area 345/115 kV substation

OTTER TAIL POWER COMPANY

Otter Tail Power Company is currently working on several major transmission grid enhancement projects in North Dakota to enhance reliability, increase resiliency to extreme weather events, reduce congestion, and expand access to low-cost electricity. These projects include:

Jamestown – Ellendale 345-kV Transmission Line
In partnership with Montana-Dakota Utilities, Co., Otter Tail Power is developing a new approximately 92-mile, 345-kV transmission line from Jamestown, ND, to Ellendale, ND. Both ends of the line will have expanded substations to support the double-circuit capable line, with the company expanding the Jamestown substation. In addition, Otter Tail Power will be replacing the 345- and 230-kV transformers at the Maple River 345-kV Substation near Fargo, ND, as an underlying upgrade.

Maple River – Cuyuna 345-kV Transmission Line
Otter Tail Power is collaborating with Great River Energy (GRE) and Minnesota Power (MP) to develop the Maple River–Cuyuna transmission line, which includes construction of a new approximately 160-mile, 345-kV transmission line. The line will connect Otter Tail Power's Maple River Substation near Fargo, ND, to MP's Cuyuna substation near Riverton, MN. The Project is to be constructed with double-circuit capable structures, though initially operated as a

single transmission line. The North Dakota portion of the project consists of approximately six to ten miles of new 345-kV transmission line extending from Otter Tail Power's existing Maple River Substation to the North Dakota/Minnesota border, with much of the project located in Minnesota.

Forman – Hankinson 230-kV Rebuild
Otter Tail Power is also undertaking a project to rebuild the existing 37-mile, 230-kV line between the Forman Substation near Forman, ND, and the Hankinson Substation, near Hankinson, ND.

Fargo – Alexandria 345-kV Transmission Line
Xcel Energy, in partnership with Otter Tail Power, Great River Energy, Minnesota Power, and Missouri River Energy Services is adding a second 345-kV circuit along the existing 135-mile transmission line from Xcel Energy's Bison Substation near Fargo, ND, to their Alexandria Substation in Alexandria, MN.

Big Stone South – Hankinson – Bison 345-kV Transmission Line
As part of the Joint Targeted Interconnection Queue study completed by MISO and the Southwest Power Pool (SPP), Otter Tail Power and Xcel Energy are moving forward with the development of a new approximately 75-mile, single-circuit 345-kV line from Otter Tail Power's Hankinson Substation near Hankinson, ND, to Xcel's Bison Substation near Mapleton, ND. Otter Tail Power will continue the new single circuit 345-kV line from Hankinson, ND, to its Big Stone South Substation near Big Stone City, SD, a distance of approximately 75 miles.

Big Stone South to Hankinson to Bison will provide reliable connections and reduce congestion along the boundaries between the MISO and SPP grids.

The project will be partially funded through U.S. Department of Energy grants, helping lower long term costs for customers. The remaining costs are expected to be covered by long term contracts, meaning the generators that benefit from the project will help pay for it. Improvements are also planned at both endpoint substations with the most significant improvement involving the construction of a new 345-kV switchyard at Otter Tail Power's Hankinson Substation.

Beyond these major transmission projects, Otter Tail Power is evaluating several local 230-kV and 115-kV transmission projects to help alleviate local and regional transmission congestion and enhance reliability. And to address concerns with aging infrastructure, Otter Tail Power is performing several transmission line upgrades across its system, some of which are located in North Dakota. For example, 41.6-kV transmission line upgrades are currently underway between Buffalo and Colgate, as well as between Rugby and Bottineau, along with numerous overhead-to-underground distribution projects.

Otter Tail Power is the middle of its **Next-Generation Grid Resiliency Plan**, a grant-funded program focused on improving system reliability. The plan increases transmission and distribution pole inspections by 63% and includes expanded vegetation management across North Dakota. Guided by the Intelligent Vegetation Management System, 26 distribution feeders (approximately 95 miles) were fully trimmed in 2025, with plans in 2026 to address 65 overhead feeders totaling about 350 miles.

Improving reliability includes decreasing risks associated with natural events like storms and wildfires. In 2025 Otter Tail Power completed a Wildfire Mitigation Plan to address landscape and environmental risks associated with wildfires. This plan includes identification and assessment of areas in their system that may be prone to wildfires, use of internal and external sources to evaluate and mitigate risks, programs to reduce wildfire hazards, work practices aimed at mitigating identified risks, enhancement of protocols for effective mitigation, employee training on wildfire safety and operational responsibilities, and engagement with community members and stakeholders in wildfire mitigation efforts.

XCEL ENERGY

Xcel Energy is working to develop several regional transmission projects that will help deliver continued reliability to customers throughout the region to meet future expected electric growth.

Key projects completed:

- Brookings County-Twin Cities 2nd Circuit (adding a 2nd circuit to the open position on portions of the 345 kV

transmission line between Brookings, SD and Hampton, MN).

Future regional projects—MISO Tranche 2.1

- Fargo-Alexandria 2nd Circuit (MISO LRTP 19). This MISO Tranche 2.1 project will add a second circuit to existing transmission infrastructure between the Bison Substation near Fargo and the Alexandria Substation in Alexandria, MN. A Certificate of Need was filed in January 2026 in Minnesota and expect to file regulatory applications in North Dakota in Q1 2026.
- Fargo Area Upgrades. This MISO Tranche 2.1 project will rebuild aging infrastructure in the Fargo area to increase transmission line ratings and increase capacity in the growing Fargo area. The rebuilt 230 kV transmission lines will improve reliability and enable continued electric and economic growth in the Fargo area.
- PowerOn Midwest (MISO LRTP 22, 23, 24, 25). This MISO Tranche 2.1 project extends from the Big Stone South Substation and connects to the Brookings County substation (Brookings, SD), Lakefield Junction Substation (Jackson County, MN), Pleasant Valley Substation (Mower County, MN), North Rochester Substation (Goodhue/Olmstead Counties, MN), and includes two 345 kV segments in Dodge, Olmstead and Dakota Counties in Minnesota). The Minnesota Certificate of Need was filed in February 2026; the South Dakota Facility Permit will be filed in September 2026.
- Gopher to Badger Link (MISO LRTP 26). This MISO Tranche 2.1 project extends from the North Rochester Substation to the Mississippi River (and into Wisconsin). Xcel Energy and Dairyland Power Cooperative filed an application for a Certificate of Need in February 2026 and are developing route options, including hosting open houses asking for feedback on preliminary options. We expect to file a Route Permit application in Fall 2026.

Joint Transmission Interconnection Queue

- Bison-Hankinson-Big Stone (North Dakota and South Dakota). This 345 kV project, along with others in the region, will connect the MISO and SPP systems, increasing generation capacity and help ensure reliability due to increased access to energy resources. Regulatory applications are expected to be filed in 2026.
- Lyon County-Lakefield Junction (Minnesota). This 345 kV project will also connect MISO and SPP systems, increasing generating capacity and help ensure reliability due to increased access to energy resources. Regulatory applications are expected to be filed in 2027.

Buffalo Ridge Rightsizing

- Xcel Energy is developing a new 345 kV project that will connect the Pipestone and Chanarmbie Substations in Southwest Minnesota with the Renner and Split Rock Substations in South Dakota.

MONTANA DAKOTA UTILITIES (MDU)

Montana-Dakota Utilities Co. (MDU) completed several projects in 2025. Wishek Substation, completed in October, was rebuilt based on age and condition and to accommodate the Badger Wind interconnection. Substation and transmission work was completed at Ellendale for new data centers. An addition was placed in-service at MDU's Tioga 230 kV Substation to retire existing facilities due to age and condition.

MDU also has several projects in development or under construction. MDU continues its partnership with Otter Tail Power Company in the Jamestown to Ellendale (JETx) 345kV transmission project. Both ends of the line will have expanded substations, with MDU expanding the Ellendale Substation. The JETx project is expected to be completed in early 2029. A new Stanley Substation is being constructed to replace the existing substation. This project will improve reliability in the Stanley area and is scheduled for completion in 2026. Construction will begin in the summer of 2026 on the Lignite to Kincaid 60 kV transmission line. This new transmission line will eliminate the need for the Kincaid Substation, which will be retired. Development activities continue for the Hettinger to Elgin transmission line upgrade project. This project will convert the existing 69kV line to 115kV. The scheduled in-service date is 2028. The Merricourt project will also continue throughout 2026 with an expansion of the Merricourt Substation to support MDU's existing 42 kV system in the area. This project includes constructing two new 42 kV transmission lines from Merricourt to the Fredonia area and the Ashley area. These system upgrades will improve load serving capability and improve reliability. Scheduled in-service dates are 2028.

MINNKOTA POWER COOPERATIVE

Minnkota Power Cooperative continues to advance several power delivery infrastructure projects and operational

improvements across North Dakota. The cooperative currently operates and maintains 265 substations and approximately 3,890 miles of transmission line.

In 2025, Minnkota responded to some of the most severe summer storm damage in its history. Major storm systems in June and August caused significant damage to portions of the transmission system, requiring extensive repair efforts.

Minnkota operates two 345-kilovolt (kV) transmission lines stretching more than 364 miles, carrying power from western North Dakota generation resources to load centers in eastern North Dakota. In 2025, crews replaced 13 transmission structures and completed other improvements along this corridor, helping extend the life of this critical high-voltage infrastructure.

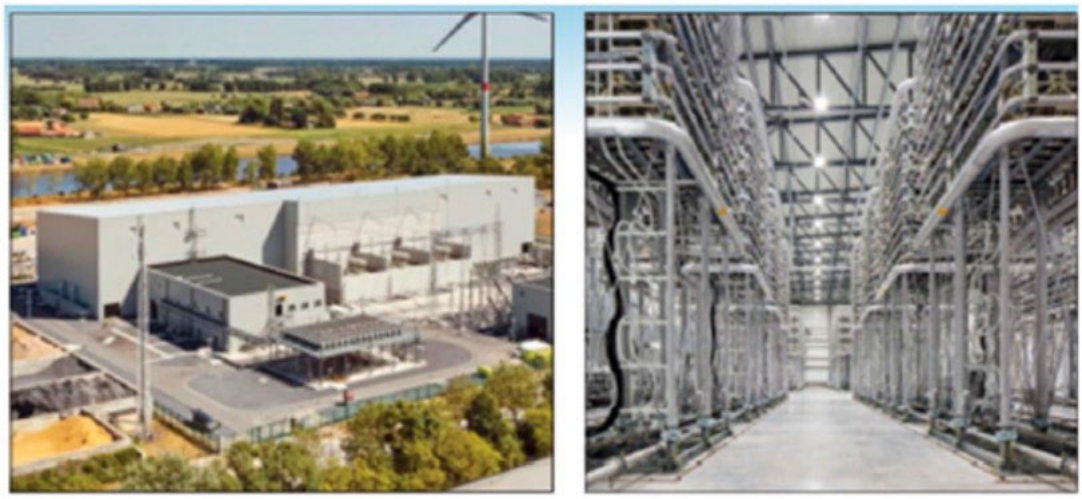
The cooperative also continued its programmatic reliability improvement efforts. This work included a complete rebuild of 35 miles of 69-kV transmission line in eastern North Dakota. Distribution substation improvements also moved forward, with full rebuilds completed at the Cominco and Leal substations in North Dakota. Together, these projects reduce outage risk and improve system performance.

Minnkota also completed significant system modifications related to the Fargo-Moorhead Flood Diversion Project. The Oxbow 69-kV substation was relocated and rebuilt outside the floodplain to protect critical infrastructure. In addition, eight transmission line crossings were modified to span the diversion channel, ensuring system integrity as the region's landscape evolves.

Near Harwood, Minnkota is also preparing to serve a large data center currently under development. In 2026, the cooperative plans to construct approximately 1.75 miles of 345-kV transmission line and a new 345-kV substation to support the load. In addition to serving the data center, this infrastructure will create opportunities for long-term growth in the region north of Fargo. All project costs will be fully funded by the data center developer.

MINNESOTA POWER – ALLETE

Minnesota Power/ALLETE will begin construction of its HVDC Modernization Project at their HVDC terminal near Center, ND in 2027. The project will increase capacity of the existing corridor from 550MW to 900MW with potential to increase to 1,500MW along with bringing new flexibility and reliability attributes to the North Dakota grid. The project work occurs at either end of the HVDC line at the converter stations. The project will begin in Spring of 2027 and will be completed in 2029.



The new voltage source converter station will look like the above when completed.

Minnesota Power is collaborating with Otter Tail Power (OTP) and Great River Energy (GRE) to develop the Maple River–Cuyuna transmission line, which includes construction of a new approximately 160 to 180-mile, 345-kV transmission line. The line will connect OTP's Maple River Substation near Fargo, ND, to MP's Cuyuna substation

near Riverton, MN. The Project is to be constructed with double-circuit capable structures, though initially operated as a single transmission line. The North Dakota portion of the project consists of approximately six to ten miles of new 345-kV transmission line extending from OTP's existing Maple River Substation to the North Dakota/Minnesota border, with much of the project located in Minnesota.

GREAT RIVER ENERGY

Great River Energy's transmission system is part of a coordinated regional grid serving the Upper Midwest. Great River Energy owns and operates more than 5,100 miles of transmission lines and over 100 substations and supplements its system through contractual access to other utilities' facilities across six MISO pricing zones. To maintain reliability, Great River Energy makes substantial annual investments in maintenance, replacement and upgrades, with a strong emphasis on system resilience. Using lessons learned from major storms and a future weather risk study, Great River Energy prioritizes rebuild projects as part of our asset renewal plan and targets rebuilding 50 to 80 miles of transmission line infrastructure each year.

Beyond its local system, Great River Energy is actively collaborating on regional transmission solutions to support new generation, meet growing electricity demand and improve resilience amid more frequent extreme weather. In December 2024, the MISO Board approved Tranche 2.1 of the Long Range Transmission Plan (LRTP). Great River Energy is participating in two North Dakota–related projects: the Maple River to Cuyuna 345-kV transmission line project and the Fargo to Alexandria second-circuit 345-kV transmission line project. Certificate of need applications for both projects were filed with the Minnesota Public Utilities Commission in January 2026, with North Dakota regulatory applications expected in the second half of 2026. GRE is co-developing these projects with several regional utilities. Public engagement began in 2025 with additional outreach planned in 2026.

Great River Energy is also pursuing strategies to maximize the capacity of existing transmission infrastructure. A pilot project with Heimdall Power deployed dynamic line rating sensors that collect real-time environmental and line data to increase usable transmission capacity. After 12 months of operation, the project demonstrated up to 63% additional capacity during peak demand and an estimated $3 million in avoided congestion costs over five years. Great River Energy has also launched a multi-year monitoring pilot with Prisma Photonics across approximately 90 miles of transmission lines, providing real-time alerts for grid events such as faults, physical disturbances and severe weather, improving situational awareness and response efficiency.

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Thanks for the Energy Information Administration (EIA), Southwest Power Pool (SPP), Midcontinent Independent System Operator (MISO), area utilities and WIND and their members especially.