

APPENDIX B

10-Year Plans

July 1, 2024

VIA EMAIL and U.S. MAIL

North Dakota Public Service Commission
c/o Steven Kahl, Executive Secretary
600 E. Boulevard Ave., Dept. 408
Bismarck, ND 58505

RE: Minnesota Power's Ten-Year Plan – July 2024

Dear Mr. Kahl:

Enclosed is Minnesota Power's North Dakota Ten-Year Plan pursuant to N.D.C.C. § 49-22-04. The original and a copy of the Plan will be sent to the address above with copies filed with the Mercer, Morton, and Oliver County auditors.

Further, pursuant to N.D. Admin. Code 69-06-01-05, the enclosed Notice will be sent to the state agencies and officers as designated on the attached Notice Service List.

If you have any questions or need additional information, please contact me at 218-355-3082 or cvatalaro@allete.com.

Yours truly,



Claire Vatalaro
Regulatory Compliance Specialist

CMRV:th
Enc.

TEN-YEAR PLAN

Minnesota Power
An operating division of ALLETE, Inc.
Duluth, Minnesota

Prepared for the North Dakota Public Service Commission
Pursuant to Section 49-22-04 of the
North Dakota Century Code

July 2024

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Minnesota Power's TEN-YEAR PLAN

INTRODUCTION

Minnesota Power, an operating division of ALLETE, Inc., provides retail electric service to northeastern Minnesota and wholesale service to 15 municipal customers in Minnesota and one private utility in Wisconsin. Minnesota Power has historically maintained an energy resource portfolio of coal, hydro, and biomass. In an effort to meet Minnesota's Renewable Energy Standard (RES) and Carbon Free Standard (CFS) (Minn. Stat. § 216B.1691) and diversify its energy resource portfolio, Minnesota Power has been implementing a renewable development plan, which is captured in the Company's *EnergyForward* resource strategy. The *EnergyForward* resource strategy incorporates a diverse renewable strategy including hydroelectric, solar, biomass, and wind resources. Under this strategy, Minnesota Power is delivering 50 percent renewable energy to customers and is the first Minnesota utility to achieve this milestone. Over the past 15 years, the Company has undertaken an intentional effort to increase its deployment of renewable energy. In 2006 and 2007, Minnesota Power began purchasing the entire output of the Oliver County Wind Energy Center 1 and 2 (just under 100 megawatts ("MW")), wind farms built and operated by NextEra Energy in North Dakota. In 2008, Minnesota Power constructed the Taconite Ridge Energy Center, the first commercial wind generating station in northern Minnesota. The Bison Wind Energy Center ("Bison") in North Dakota came next, with four phases of the project completed between 2010 and 2015. Bison, now the largest wind farm in North Dakota with a capacity of just under 500 MW, leverages premier wind resources to deliver carbon-free energy to the Company's customers. In late 2020, Minnesota Power added 250 MW of wind energy through a Power Purchase Agreement ("PPA") with the completion of the Nobles 2 Wind Farm. Combined, these wind projects added more than 850 MW of renewable electricity to the Company's generation portfolio. The Company is committed to achieving an 80 percent reduction in carbon emissions by 2035 compared to 2005 levels and is working towards the recent carbon-free energy by 2040. The wind and solar approved in Minnesota Power's 2021 IRP will help to achieve both the RES and CFS. While delivering increasingly clean energy to customers, *EnergyForward* is also aimed at delivering safe, reliable, and affordable energy to customers across a smarter grid that is increasingly resilient. In the 2021 Integrated Resource Plan, the Minnesota Public Utilities Commission approved between 300 and 400 MW of new wind resources, up to 300 MW of new solar resources, and at least 100 MWh of storage demonstration projects by 2026, as practicable. Minnesota Power will use a bidding process for its future resource acquisitions for the projects.

¹Minnesota Power also continues to purchase energy and capacity from Square Butte Electric Cooperative's Milton R. Young Unit 2 plant that is delivered via Minnesota Power's +/- 250kV direct current transmission line ("DC Line") that runs between the Square Butte Substation in Center, North Dakota and Minnesota Power's Arrowhead Substation near Duluth, Minnesota.

¹ January 9, 2023 Order, Minnesota Public Utilities Commission Docket No. E-015/RP-21-33

Minnesota Power's Ten-Year Plan

SECTION A: Existing Energy Conversion Facilities²

Bison 1—81.8 MW

Bison 2—105 MW

Bison 3—105 MW

Bison 4—201.6 MW

Hydro Operations—120.8 MW

- St. Louis River System—87.6 MW
 - Knife Falls Hydro Electric Station—2.4 MW
 - Scanlon Hydro Electric Station—1.6 MW
 - Thomson Hydro Electric Station—72 MW
 - Fond du Lac Hydro Electric Station—11.6 MW
- Winton Hydro Electric Station—4.0 MW
- Prairie River Hydro Electric Station—1.1 MW
- Mississippi River System—24.5 MW
 - Little Falls Hydro Electric Station—4.7 MW
 - Blanchard Hydro Electric Station—18 MW
 - Sylvan Hydro Electric Station—1.8 MW
 - Pillager Hydro Electric Station—1.5 MW

Hibbard Energy Center—60 MW

Boswell Energy Center Unit 3—352 MW

Boswell Energy Center Unit 4—582 MW (468 MW Minnesota Power capacity)

Laskin Energy Center Units 1 and 2—98 MW (natural gas)

Taconite Ridge Wind Energy Center—25 MW

Camp Ripley Solar Facility—10 MW

(Non-regulated) Rapids Energy Center—25 MW

Purchases

- Square Butte—Young 2—80 MW in 2022
- Oliver County Wind Energy Centers I and II—98.6 MW

² Nameplate capacity.

- Wing River Wind—2.5 MW
- Manitoba Hydro—250 MW
- U.S. Solar—1 MW (community solar garden)
- Nobles 2 Wind Energy Center—250 MW
- Nemadji Trail Energy Center—116.2 MW (20% ownership in natural gas facility in Superior) Note that the NTEC project is going through the permitting process in Wisconsin. The exact in service date is unknown due to a longer than expected permitting process in WI.
- Sylvan Solar – 15.2 MW
- Laskin Solar – 5.6 MW
- Jean Duluth Solar – 1.6 MW
- HSC Solar Garden - .4 MW

Minnesota Power’s 2021 Integrated Resource Plan (“2021 Plan”) in Minnesota Public Utilities Commission (“MPUC”) Docket No. E015/ RP-21-33 (available on the MPUC’s eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp> or Minnesota Power’s website at: <https://www.mnpower.com/IRP2021> was filed on February 1, 2021. The filing provides further information on these generation facilities and is available upon request..

SECTION B: Energy Conversion Facilities under Construction

SECTION C: Proposed Energy Conversion Facilities on Which Construction is Intended Within the Ensuing Five Years

Minnesota Power may make individual applications to the North Dakota Public Service Commission (“NDPSC”) for approval of additional North Dakota wind facilities when the timing is determined.

SECTION D: Proposed Energy Conversion Facilities during the Next Ten-Year Time Period

See response to Section C.

SECTION E: Existing Transmission Facilities (Electric)

On December 31, 2009, Minnesota Power acquired the Square Butte +/- 250kV HVDC³ Line that runs 465 miles between the Square Butte Substation in Center, North Dakota and Minnesota Power’s Arrowhead Substation near Duluth, Minnesota. In 2013 Minnesota Power upgraded the capacity of the HVDC Line to 550 MW to assure deliverability of the Bison Wind Projects.

In 2009, Minnesota Power placed in-service a 230kV alternating current (“AC”) transmission line

³ High voltage direct current

(PU-09-587), approximately 22 miles in length that is required to transmit wind generation from the Bison 1 Wind Project substation to the proposed point of interconnection within the existing Square Butte Substation near Center, North Dakota. This transmission line will also be utilized as a generator outlet for future Minnesota Power wind projects.

To facilitate development of additional wind projects in North Dakota, Minnesota Power constructed additional transmission facilities that interconnect with the 230kV AC transmission line and the Square Butte Substation. Minnesota Power obtained NDPSC approval for an additional 10-mile western extension of the 230kV AC transmission line (PU-11-620) and that line is used for Minnesota Power's Bison 4 Wind Project.

Minnesota Power is a project participant in the CapX2020 transmission initiative, which includes the Twin Cities – Fargo 345kV Project that begins near Fargo, North Dakota and terminates at Monticello, Minnesota.

SECTION F: Existing Transmission Facilities (Pipeline)

None.

SECTION G: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years

Minnesota Power's HVDC Modernization Project is planned for implementation between 2025 and 2030. The HVDC Modernization Project is needed to modernize aging HVDC assets and improve the reliability of the regional transmission system. The existing HVDC terminal located near Center, ND, has operated for over 45 years, more than 15 years beyond its 30-year design life. In recent years, Minnesota Power has experienced HVDC terminal outages due to failures in the control system, power electronics, transformers, and other components. The orderly replacement of the HVDC terminal equipment is prudent to ensure continuous, efficient delivery of energy resources into the future.

To modernize the HVDC terminal and implement the latest technology, new electrical infrastructure will be constructed on a new site near Minnesota Power's existing HVDC system, located near the existing Square Butte East Substation. Minnesota Power is currently preparing project applications for submittal to Oliver County and the North Dakota Public Service Commission in the second half of 2024. Pending regulatory approvals, construction of the HVDC Modernization Project facilities could begin in 2025 and continue through project completion in the 2028 to 2030 timeframe.

The DC terminals were designed by General Electric ("GE") for a 30 year operating lifetime and currently have been operating reliably for over 45 years. The main components of the HVDC terminals include the thyristor valves and cooling, converter transformers, and smoothing reactors to complete the energy conversion. The original vendor, GE, left the HVDC business in the 1980s and in recent years it has been increasingly difficult to procure spare parts as the technology is becoming obsolete and the original designers are well into retirement. Minnesota Power has researched reverse engineering solutions to this technology issue, but has had limited results and thus spare and replacement parts for the HVDC system remain limited. By taking action to modernize the HVDC system, Minnesota Power will greatly reduce the likelihood of equipment failures and line outages.

Modernization of the aging infrastructure will allow Minnesota Power to continue to provide reliable operations and access to its North Dakota wind resources. It will also provide an opportunity to upgrade the system with additional capabilities, including an increase transfer capability from the current 550 MW and a more flexible operational profile with bi-directional flows.

Minnesota Power is actively pursuing the project and looking for an opportunity to execute it while balancing system reliability needs with costs to customers and prioritization of all capital projects. Following detailed specification and competitive bidding of the project, the earliest expected in-service date for the project is 2027. Depending on the final scope of the project Minnesota expects that permit approvals by ND PSC may be required.

SECTION H: Proposed Transmission Facilities on Which Construction is Intended Within the Ensuing Five Years (Pipeline)

None.

SECTION I: Proposed Transmission Facilities during the Next Ten Year- Time Period (Electric and Pipeline)

See response in Section G.

SECTION J: Regional Coordination

Minnesota Power's 2021 Plan in MPUC Docket No. E015/RP-21-33 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp>) contained extensive transmission and regional coordination information in Appendix F and is available upon request. Further information is available in the Minnesota Transmission Owners' Biennial Transmission Plan filed in MPUC Docket No. E999/M-23-91 and available at: <http://minnelectrans.com>.

SECTION K: Environmental Information

Minnesota Power's 2021 Plan in MPUC Docket No. E015/RP-21-33 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp>) contained extensive environmental information in Appendix E and is available upon request.

SECTION L: Projected Demand for Service

Minnesota Power's 2021 Plan in MPUC Docket No. E015/RP-21-33 (available on the MPUC's eDockets website: <https://www.edockets.state.mn.us/EFiling/search.jsp>) contained extensive demand and energy forecasting information and is available upon request. Minnesota Power also files annually with the MPUC an Annual Forecast Report in accordance with MPUC rules and that can be made available upon request.

Mr. Steven Kahl, Executive Secretary
Public Service Commission
600 E. Boulevard Ave., Dept. 408
Bismarck, ND 58505

Oliver County Auditor
P O Box 188
Center, ND 58530-0188

Morton County Auditor
210 Second Avenue NW
Mandan, ND 58554-3158

Mercer County Auditor
P O Box 39
Stanton, ND 58571-0039

July 1, 2024

NOTICE OF FILING

Please take notice that on July 1, 2024, Minnesota Power, 30 West Superior Street, Duluth, Minnesota, filed a Ten-Year Plan with the North Dakota Public Service Commission pursuant to N.D.C.C. § 49-22-04. Notice of the filing of this plan is pursuant to N.D. Admin. Code 69-06-02-02 to the following state agencies and officers as designated in N.D. Admin. Code 69-06-01-05:

1. Aeronautics Commission
2. Attorney General
3. Department of Agriculture
4. Department of Career and Technical Education
5. Department of Commerce, Division of Community Service
6. Department of Health
7. Department of Human Services
8. Department of Labor
9. Department of Transportation
10. Economic Development & Finance Commission
11. Energy Development Impact Office
12. Game and Fish Department
13. Geological Survey
14. Governor
15. Indian Affairs Commission
16. Job Service North Dakota
17. Parks and Recreation Department
18. Soil Conservation Committee
19. State Historical Society of North Dakota
20. State Land Department
21. State Water Commission

Yours truly,

Claire Vatalaro

Claire Vatalaro
Regulatory Compliance Specialist

CMRV:th

Chairman
Aeronautics Commission
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Dept. of Career & Tech. Edu.
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Executive Director
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Commissioner **Department of Labor**
600 East Boulevard Avenue, Dept. 406
Bismarck, ND 58505-0340

Director
Department of Transportation
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Geological Society
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State Water Commission
900 East Boulevard Avenue, Dept. 770
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Maple Grove, Minnesota 55369-4718
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greatriverenergy.com

July 1, 2024

VIA EMAIL AND EXPRESS MAIL

Mr. Steven Kahl
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

RE: Great River Energy 10-Year Plan for 2024-2034

Dear Mr. Kahl:

In accordance with Chapter 69-06-02-02 of the North Dakota Administrative Code, Great River Energy (GRE) hereby gives notice that it has submitted its North Dakota Ten-Year Plan Report, 2024-2034 (Report) to the North Dakota Public Service Commission (Commission) as required under Chapter 49-22-04 of the North Dakota Century Code (NDCC).

The Report details Great River Energy's current electric generation and transmission facilities and future for infrastructure development.

A copy of the Report is available upon request.

Please contact me at (763) 445-6116 or zruzycki@greenergy.com if you have any questions.

Sincerely,

GREAT RIVER ENERGY

/s/ Zac Ruzycki

Zac Ruzycki
Director, resource planning

Cc: County auditors (4)
Certificate of Service list

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Table 1: GRE's Owned Energy Conversion Facilities

Table 2: GRE's Existing Electric Transmission Facilities in North Dakota

Figure 1: GRE's Owned Energy Conversion Facility Locations

Figure 2: GRE's Member Service Territory

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INTRODUCTION

This report was prepared in accordance with the North Dakota Public Service Commission's (Commission) Guidelines (Guidelines) for compliance with the requirements of Chapter 49-22-04 of the North Dakota Century Code. Great River Energy (GRE) offers to provide additional information to the Commission upon request.

SECTION 1: Owned Energy Conversion Facilities

A description of the general location, size, and type of all facilities to be owned or operated by the utility during the ensuing 10 years, as well as those facilities to be removed from service during the 10-year period.

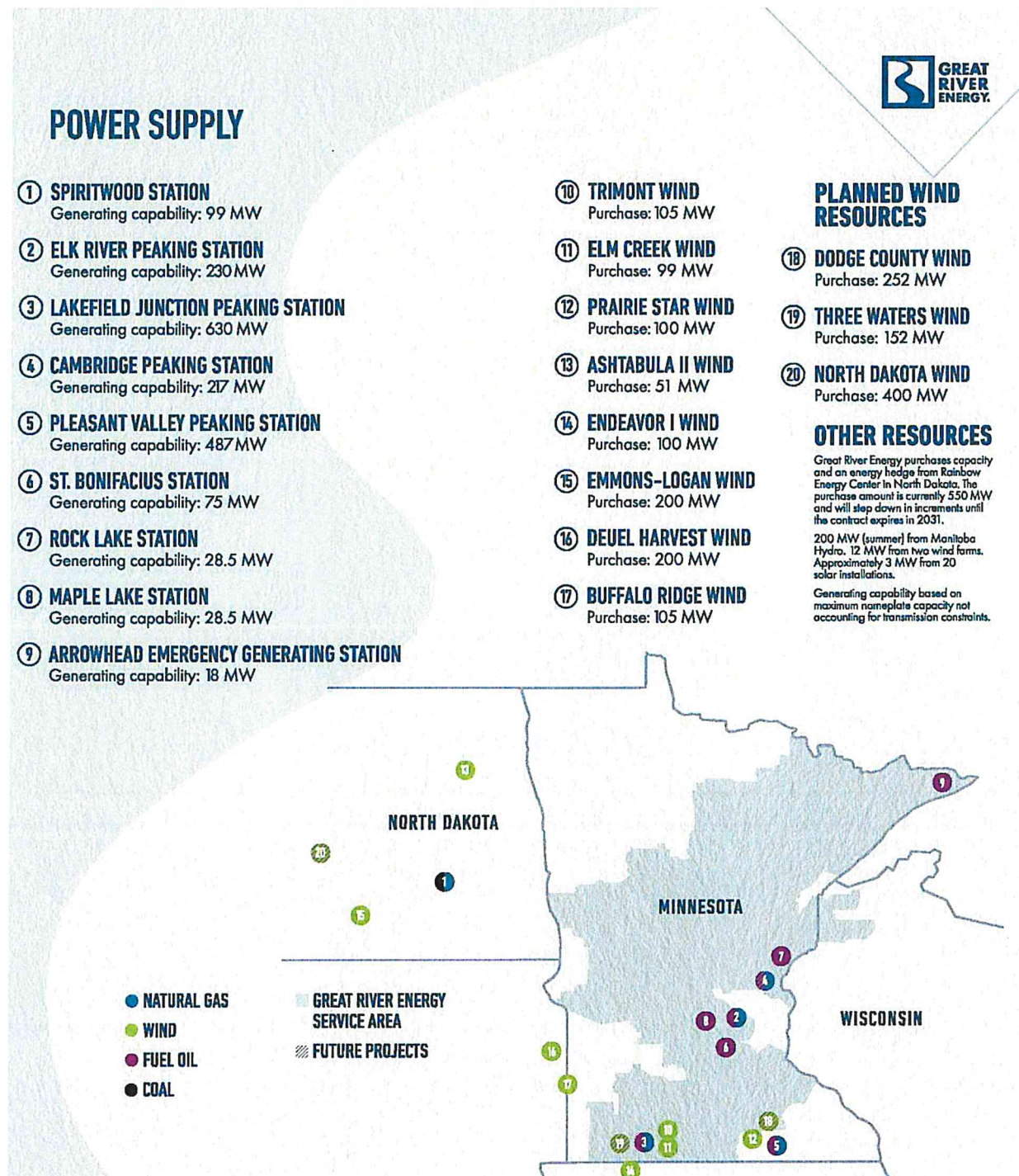
GRE's power supply portfolio is comprised of the following:

- Wind power purchase agreements (PPAs)
- Natural gas (NG) combustion turbines
- Fuel oil (FO) combustion turbines
- Fuel oil emergency reciprocating generators
- Hydroelectric PPAs
- Counterparty energy purchases
- Combined heat and power

Table 1. GRE's Owned Energy Conversion Facilities

Generation Facility	Location	Unit	Make	Model(s)	Primary Fuel	Secondary Fuel	Nameplate (MW)
Arrowhead Emergency Station	Colvill, MN	N/A	Cummins	9 reciprocating engine generators	FO	-	18
Cambridge Station	Cambridge, MN	1	GE	MS5001	FO	-	28.5
Cambridge Station	Cambridge, MN	2	Siemens	SGT6-4000F (V84)	NG	FO (2025)	188
Elk River Peaking Station	Elk River, MN	11	Siemens	SGT6-5000F4(A)	NG	FO	230
Lakefield Junction Station	Trimont, MN	1	GE	MS7001EA	NG	FO	105
Lakefield Junction Station	Trimont, MN	2	GE	MS7001EA	NG	FO	105
Lakefield Junction Station	Trimont, MN	3	GE	MS7001EA	NG	FO	105
Lakefield Junction Station	Trimont, MN	4	GE	MS7001EA	NG	FO	105
Lakefield Junction Station	Trimont, MN	5	GE	MS7001EA	NG	FO	105
Lakefield Junction Station	Trimont, MN	6	GE	MS7001EA	NG	FO	105
Lakefield Junction Station	Trimont, MN	D	Caterpillar	Caterpillar	FO	-	2
Maple Lake Station	Maple Lake, MN	1	GE	MS5001	FO	-	28.5
Pleasant Valley Station	Dexter, MN	11	Siemens	SGT6-4000F (V84.3A(2))	NG	FO	188
Pleasant Valley Station	Dexter, MN	12	Siemens	SGT6-4000F (V84.3A(2))	NG	FO	188
Pleasant Valley Station	Dexter, MN	13	Siemens	Westinghouse D501D5A	NG	FO	135
Rock Lake Station	Pine City, MN	1	GE	MS5001	FO	-	28.5
St. Bonifacius Station	Saint Bonifacius, MN	1	P&W	Twin FT4C3	FO	-	75
Spiritwood Station	Spiritwood, ND	1	Siemens	Combined Heat and Power	NG	coal	99

Figure 1. GRE's Energy Owned and Power Purchase Energy Conversion Facility Locations



GRE has two combustion turbine peaking facilities located in southern Minnesota (Pleasant Valley and Lakefield Junction), five combustion turbine peaking facilities located in central Minnesota (Cambridge, Rock Lake, Maple Lake, St. Bonifacius, and Elk River), and Arrowhead Emergency Station located near Colvill, Minnesota.

GRE's combined heat and power facility, Spiritwood Station, has been retrofitted to allow for 100% natural gas generation. This natural gas retrofit also provides additional fuel flexibility, including co-generation utilizing coal or potentially biomass, if a fuel source can be identified. This conversion maximizes multi-fuel optionality for the purpose of both economics and reliability.

GRE also works with its member-owner cooperatives to develop local renewable resources as well as deploy energy efficiency and demand response programs that make electricity more sustainable, affordable, and reliable. GRE and its member-owners have installed 20 solar installations across Minnesota, including a 250-kilowatt (kW) installation at GRE's Maple Grove, Minnesota, headquarters. Nineteen more GRE-owned 20-kW arrays were installed at our member-owned locations, and nine of those sites were expanded to include member-owner community solar projects. GRE has approximately 360 megawatts of demand response resources in its member portfolio.

Effective August 1, 2023, Members of GRE now have the right to self-supply up to 10% of their power supply requirements from Member Resources (MR) that are distribution interconnected within a Member's Assigned Service Area. There are two types of MRs, Renewable Member Resources (RMR) and Storage Member Resources (SMR).

GRE has not historically owned or operated any wind generation facilities. All wind has been procured through competitive PPAs with for-profit developers. After passage of the Inflation Reduction Act which made direct pay available, in combination with NewERA (empowering rural America), GRE is considering owning wind. The Empowering Rural America (NewERA) program assists rural Americans transition to clean, affordable, and reliable energy. More information on the Inflation Reduction Act and NewERA can be found at [usda.gov](https://www.usda.gov). GRE is not planning to remove any facilities from service during the 10-year period addressed in this plan.

SECTION 2: Energy Conversion Facilities and Transmission Under Construction

An identification of the location of the tentative preferred site for all electric energy conversion facilities and the tentative location of all electric transmission facilities on which construction is intended to be commenced within the ensuing five years and such other information as may be required by the commission. The site and corridor identification shall be made in compliance with the criteria published by the commission pursuant to section 49-22-05.1.

GRE's Energy Owned and Power Purchase Energy Conversion Facility Locations can be viewed in [Section 1](#). No additional energy conversion facilities are currently under construction by GRE. GRE continues to evaluate future needs as part of the resource planning process.

GRE regularly tests technologies and business strategies to improve the way it will serve members in the future. An example of this is the Form Energy Storage Pilot Project under development at GRE's Cambridge Station facility. The project consists of a multi-day storage resource with the potential to turn variable sources of renewable energy into dependable, dispatchable energy resources. A battery that discharges over several days could provide electricity long enough to outlast most periods of extreme

weather, which can pose challenges to the grid. The project is scheduled to be operational by the end of 2025.

On December 7, 2023, the Minnesota Public Utilities Commission approved a minor alternation to the site permit, allowing for the conversion of GRE's Cambridge Station unit 2 combustion turbine into a dual fuel capable energy conversion facility. Currently, this is GRE's only large frame combustion turbine without the ability to burn both natural gas and fuel oil. The addition of dual fuel at Cambridge Station is scheduled to be completed by the end of 2025 and will increase reliability and resiliency.

Summary information for GRE's North Dakota transmission facilities is provided in Table 2. Certain information concerning GRE's transmission facilities qualifies as Critical Energy Infrastructure Information (CEII). A map of transmission facilities owned and operated by GRE in North Dakota will be made available upon request as noted in Exhibit 1, subject to the requirements applicable to CEII. GRE transferred ownership of CU HVDC system to Nexus Line, LLC, in 2022. As such, those facilities are no longer being reported by GRE in Table 2.

Table 2. GRE's Existing Electric Transmission Facilities in North Dakota

Facility	Voltage	AC/DC	Install Year
Stanton – Leland Olds	230	AC	1966
Stanton – McHenry Tap	230	AC	1966
McHenry Tap – McHenry	230	AC	1966
McHenry – Balta	230	AC	1966
Balta – Ramsey	230	AC	1966
Ramsey – Prairie	230	AC	1966
Stanton – Square Butte	230	AC	1966
McHenry Tap – Coal Creek	230	AC	1979
Stanton – Coal Creek	230	AC	1979

As of 2024, GRE has no plans to retire or construct any new transmission facilities in North Dakota within the next 10 years. GRE intends to interconnect its existing Stanton-Square Butte 230-kV transmission line into Minnesota Power's proposed Nelson Lake Substation. GRE and other North Dakota Transmission Owners are actively engaged in the regional grid operator's ongoing Long-Range Transmission Plan which may identify the need for transmission expansion in North Dakota within the next 10 years.

SECTION 3: Coordinated Regional Plan for Meeting Utility Needs

A description of the efforts by the utility to coordinate the plan with other utilities so as to provide a coordinated regional plan for meeting the utility needs of the region.

The electric grid is heavily interconnected and must be evaluated, operated, and expanded in a coordinated manner to assure reliability and cost-effectiveness. GRE's generation and transmission planning are closely coordinated with other organizations. GRE is a member of — and directly participates in — several regional generation and transmission planning entities described below.

Midcontinent Independent System Operator (MISO)

MISO is an independent, not-for-profit, member-based organization responsible for operating the power grid across 15 U.S. states and the Canadian province of Manitoba. GRE works very closely with MISO, our region's grid operator, to ensure plans for the electric system reliably serve our members in an affordable manner via several ongoing efforts:

MISO Transmission Expansion Plan

This MISO plan is developed through an inclusive and transparent stakeholder process in which GRE is a stakeholder. MISO also conducts Sub-regional Planning Meetings to encourage an open and transparent planning process and to provide a forum for coordination and discussion of transmission issues and proposed projects among utilities and other interested stakeholders.

MISO Long-Range Transmission Plan (LRTP)

The LRTP enables MISO to address fleet change, extreme weather events, and other challenges facing the region. The LRTP is one of MISO's four elements in its reliability imperative and establishes a roadmap for long-term energy security. More information on MISO and its ongoing reliability initiatives can be found at misoenergy.org.

Minnesota Transmission Owners (MTO)

A consortium of 16 sponsoring utilities and three participating government agencies, MTO fulfills the utilities' statutory obligations for transmission planning in the state of Minnesota. These obligations include the development of the Minnesota Biennial Transmission Plan as well as studies associated with meeting the Minnesota Renewable Energy Standard requirements. Further information about the MTO group is available at minnelectrans.com.

Grid North Partners

Grid North Partners, an evolution of CapX2020, is a broad mix of 10 investor-owned, not-for-profit cooperative, and municipal utilities working together to ensure continued safe, reliable, and affordable electric service. All partners serve customers in the Upper Midwest and own and operate transmission infrastructure throughout their respective service territories. More information on Grid North Partners can be found at gridnorthpartners.com.

Midwest Reliability Organization (MRO)

The MRO is a nonprofit organization of regional utilities established to develop regional reliability standards and ensure compliance with standards of the North American Electric Reliability Corporation (NERC) as well as its own standards. Further information about MRO is available at mro.net. Further information about NERC can be found nerc.com.

Integrated resource plan (IRP)

GRE develops and updates an IRP every two- to-three years. This process utilizes GRE's member load forecasts and pairs load with generation capacity needs. While this process incorporates input from various additional stakeholders, the size, type, and timing of generation capacity need reflects the projected load growth of GRE's members. The IRP does not consider regional energy needs outside of GRE's service territory. GRE's latest IRP update was filed on March 31st, 2023, and was accepted by the

Public Utilities Commission on March 8th, 2024. More information on the IRP can be found at greatriverenergy.com.

MISO Regional Resource Assessment (RRA)

MISO is continuing its RRA effort that uses publicly shared IRPs and goals of the region's electric utilities to develop a 20-year view of the evolving resource mix across the MISO region. This collection of data will provide utilities, state regulatory agencies, and MISO with better insight into the expected resource changes over the coming years. This, in turn, will provide stakeholders with the critical information needed to plan the grid of the future and ensure the continued flow of reliable, low-cost electricity. GRE is a participant in MISO's RRA efforts.

Minnesota Resource Planners

GRE meets quarterly with resource planners from other regional utilities to discuss generation, transmission, planning, and policy.

SECTION 4: Environmental Protection and Land-Use Planning

A description of the efforts to involve environmental protection and land-use planning agencies in the planning process, as well as other efforts to identify and minimize environmental problems at the earliest possible stage in the planning process.

GRE employs a robust stakeholder process when planning new energy resources, and engages and complies with all applicable local, state, and federal agencies prior to siting any new resources or facilities. In addition, GRE engages both internal departments and external qualified services from environmental, engineering, land rights, and legal consulting firms.

SECTION 5: 10-Year Projected Demand for Service

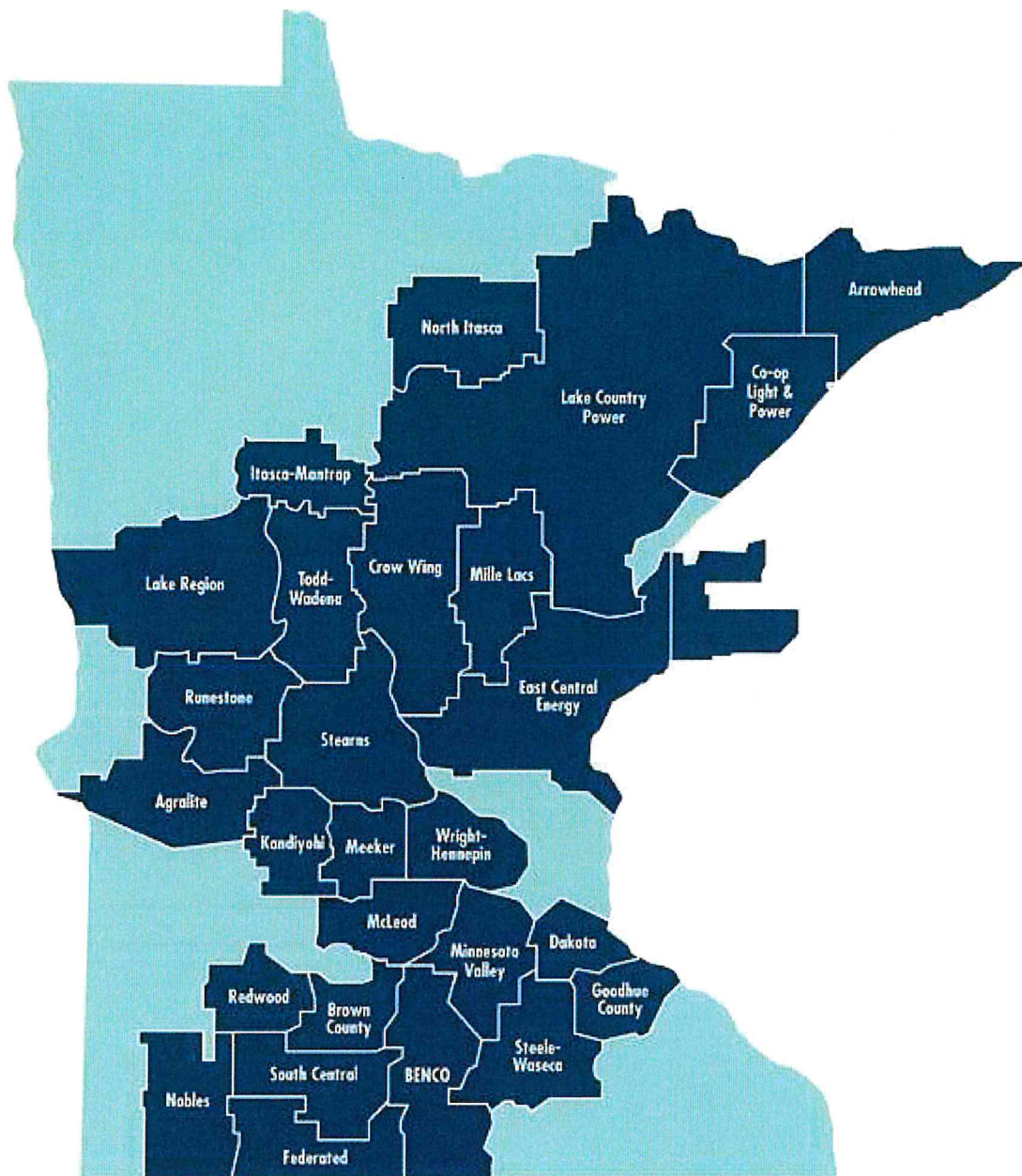
A statement of the projected demand for the service rendered by the utility for the ensuing 10 years and the underlying assumptions for the projection, with that information being as geographically specific as possible, and a description of the manner and extent to which the utility will meet the projected demands.

Projected demand

GRE's forecasted peak demands and energy requirements are provided in Exhibit 4.

Load centers

The service areas of GRE's 27 member-owners, shown in Figure 2, are located mainly in Minnesota with a small portion in Wisconsin. Nineteen cooperatives are all-requirements (AR) member-owners that purchase all their power from GRE, subject to limited exceptions. Eight cooperatives are fixed requirements member-owners that purchase a fixed amount of power from GRE and purchase all additional requirements from other power suppliers.

Figure 2 GRE's Member Service Territory

As part of GRE's capacity expansion modeling, load forecasts are developed and the need for future generation is assessed.

Manner and extent of meeting projected demand

In addition to GRE's current generation capacity, GRE has entered into bilateral transactions of various types and durations with other utilities. GRE is a transmission owner and market participant in MISO. MISO operates the short-term energy and ancillary services markets that provide economic dispatch of generation and transmission congestion management over a broad region. GRE arranges for its load service through the MISO markets and complies with the MISO resource adequacy requirements, which

are designed to ensure there is sufficient capacity available to meet expected demand requirements within its footprint.

GRE continues to evaluate capital improvements to existing generation facilities, other non-wind renewables, bilateral market purchases, demand response resources, and energy storage (both utility-side and customer-side). Evaluation is performed via capacity expansion modeling. GRE utilizes EnCompass power planning software to determine least-cost generation resource additions for future planning consideration.

GRE's most current Integrated Resource Plan can be found at [greatriverenergy.com](https://www.greatriverenergy.com)

SECTION 6: Other Relevant Information

Any other relevant information as may be requested by the commission. Upon receipt of the 10-year plans the commission shall proceed to assess the impact of the development proposed within the state to ensure that energy conversion facilities and transmission facilities will be sited in an orderly manner compatible with environmental preservation and efficient use of resources.

Provided upon request.

Exhibit 1

U.S. Department of Energy Form EIA-923

(Forms supplied upon request.)

Exhibit 2

Federal Energy Regulatory Commission Form FERC-714

(Forms supplied on request.)

Exhibit 3

GRE North Dakota Transmission Map

(Map supplied upon request.)

Exhibit 4

Projected Load Growth and Forecast Methodology

The forecasts shown below are econometric forecasts developed for GRE's 19 all-requirements members plus fixed amounts of demand and energy for the eight fixed members. GRE's fixed members purchase their supplemental requirements from suppliers other than GRE. In addition to GRE's member-owners' demand and energy, the forecasts include power supply sales to Dakota Spirit AgEnergy in Spiritwood, North Dakota, transmission losses, and GRE's own use.

The following figures show GRE's most current energy and demand forecasts from 2023 through 2033.

Year	50/50 All Requirement Member Forecast (=)	Transmission Losses (+)*	Alliant Load Southern Coops Forecasts (+)*	Fixed Member Requirements (+)*	Dakota Spirit Ag (+)*	Energy Requirement Forecast
	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)	(MWh)
2023	9,152,940	481,461	0	1,504,599	41,600	11,180,600
2024	9,223,822	484,651	0	1,504,599	41,600	11,254,672
2025	9,252,539	490,970	111,704	1,504,599	41,600	11,401,411
2026	9,292,086	492,749	111,704	1,504,599	41,600	11,442,738
2027	9,337,748	494,804	111,704	1,504,599	41,600	11,490,454
2028	9,396,239	497,436	111,704	1,504,599	41,600	11,551,577
2029	9,426,689	498,807	111,704	1,504,599	41,600	11,583,398
2030	9,461,632	500,379	111,704	1,504,599	41,600	11,619,913
2031	9,498,961	502,059	111,704	1,504,599	41,600	11,658,922
2032	9,553,222	504,501	111,704	1,504,599	41,600	11,715,625
2033	9,583,933	505,883	111,704	1,504,599	41,600	11,747,717

* All Forecasts share these components regardless of sensitivities

5-Year CAGR**	0.69%
10-Year CAGR	0.52%

Year	50/50 All Requirement Member Forecast (=)	Transmission Losses (+)*	Alliant Load Southern Coops Forecasts (+)*	Fixed Member Requirements (+)*	Dakota Spirit Ag (+)*	Coincident Peak Demand Requirement
	(MW)	(MW)	(MW)	(MW)	(MW)	(MW)
2023	1,877	94	-	205	6	2,182
2024	1,875	94	-	205	6	2,180
2025	1,881	95	28	205	6	2,215
2026	1,886	96	28	205	6	2,221
2027	1,892	96	28	205	6	2,227
2028	1,899	96	28	205	6	2,234
2029	1,905	96	28	205	6	2,241
2030	1,911	97	28	205	6	2,246
2031	1,917	97	28	205	6	2,253
2032	1,924	97	28	205	6	2,260
2033	1,930	98	28	205	6	2,267

* All Forecasts share these components regardless of sensitivities

5-Year CAGR** 0.51%

10-Year CAGR 0.39%

CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that a true and correct copy of the following document:

NOTICE OF FILING TEN-YEAR PLAN: 2024-2034

was served on the 1st day of July 2024 by placing the same in the United States mail, postage prepaid, properly addressed to the following:

North Dakota Office of Attorney General
600 E. Boulevard Ave.
Dept. 125
Bismarck, ND 58505

North Dakota Aeronautics Commission
P.O. Box 5020
Bismarck, ND 58502-5020

North Dakota Department of Agriculture
600 E. Boulevard Ave.
Dept. 602
Bismarck, ND 58505-0020

North Dakota Department of Health
600 E. Boulevard Ave.
Bismarck, ND 58505-0200

North Dakota Department of Human Services
600 E. Boulevard Ave.
Dept. 325
Bismarck, ND 58505-0250

North Dakota Department of Labor and Human Rights
600 E. Boulevard Ave.
Dept. 406
Bismarck, ND 58505-0340

North Dakota Department of Career and Technical Education
State Capitol, 15th Floor
600 E. Boulevard Ave., Dept. 270
Bismarck, ND 58505-0610

North Dakota Department of Commerce
1600 E. Century Ave., Suite 2
P.O. Box 2057
Bismarck, ND 58503

Energy Infrastructure and Impact Office
North Dakota Department of Trust Lands
1707 North 9th Street
P.O. Box 5523
Bismarck, ND 58506-5523

North Dakota Game and Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

North Dakota Industrial Commission
State Capitol, 14th Floor
600 East Boulevard Ave., Dept. 405
Bismarck, ND 58505-0840

Office of Governor Doug Burgum
State of North Dakota
600 E. Boulevard Ave.
Bismarck, ND 58505-0001

North Dakota Department of Transportation
608 E. Boulevard Ave.
Bismarck, ND 58505-0700

State Historical Society of North Dakota
612 E. Boulevard Ave.
Bismarck, ND 58505-0830

North Dakota Indian Affairs Commission
State Capitol Building
600 E. Boulevard Ave.
1st Floor - Judicial Wing, Rm. #117
Bismarck, ND 58505-0300

Job Service North Dakota
P.O. Box 5507
Bismarck, ND 58506-5507

North Dakota Department of Trust Lands
1707 North 9th Street
P.O. Box 5523
Bismarck, ND 58506-5523

North Dakota Parks and Recreation Department
Century Center
1600 E. Century Ave., Suite 3
PO Box 5594
Bismarck, ND 58506-5594

North Dakota State Soil Conservation Committee
c/o NDSU Extension Service
2718 Gateway Ave., Suite 304
Bismarck, ND 58503

North Dakota State Water Commission
900 E. Boulevard Ave., Dept. 770
Bismarck, ND 58505-0850

United States Department of Defense
1400 Defense Pentagon
Washington, DC 20301-1400

United States Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

United States Army Corps of Engineers
North Dakota Regulatory Office
3319 University Drive
Bismarck, ND 58504

Federal Aviation Administration
United States Department of Transportation
800 Independence Ave. SW
Washington, DC 20591

North Dakota Transmission Authority
c/o North Dakota Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405

North Dakota Pipeline Authority
c/o North Dakota Industrial Commission
State Capitol 14th Floor
600 E. Boulevard Ave. Dept. 405
Bismarck, ND 58505-0840