Before the Minnesota Public Utilities Commission

Comments of the Minnesota Department of Commerce

Docket No. E002/CN-22-532

I. INTRODUCTION

Northern States Power Company, doing business as Xcel Energy (Xcel, the Company, or the Applicant), requests a certificate of need (CN) from the Minnesota Public Utilities Commission (Commission) to construct the Mankato – Mississippi River Transmission Project (Project). The proposed Project would consist of a new, approximately 130-mile 345 kilovolt (kV) transmission line between the Wilmarth Substation in Mankato, Minnesota and the Mississippi River. The Project would also include a new, approximately 20-mile 161 kV transmission line between the North Rochester substation near Pine Island, Minnesota and an existing transmission line northeast of Rochester, Minnesota. The Project is part of a larger project approved by Midcontinent Independent System Operator, Inc.'s (MISO) Board of Directors, known as Long-Range Transmission Planning (LRTP) project 4.

It is anticipated that portions of the proposed Project will either be individually or jointly owned by Xcel, Dairyland Power Cooperative (Dairyland), Southern Minnesota Municipal Power Agency (Southern Minnesota), and the City of Rochester, Minnesota, acting through its Public Utility Board (City of Rochester) (jointly, Utilities). The proposed Project was studied, reviewed, and approved as part of the LRTP Tranche 1 Portfolio by the Midcontinent Independent System Operator, Inc. (MISO) in July 2022 as part of its *2021 MISO Transmission Expansion Plan* (MTEP21) report.

Xcel states that the proposed Project is needed to address loading and congestion issues on the existing 345 kV system across southern Minnesota toward Wisconsin, and, along with the LRTP Tranche 1 projects known as LRTP5 and LRTP6, will provide transmission outlets for renewable energy in Minnesota, North Dakota, and South Dakota.

II. PROCEDURAL BACKGROUND

October 17, 2023	Xcel filed two petitions. The first was a request for exemptions from certain content requirements for an upcoming CN petition.[1] The second was a notice plan pursuant to Minn. Rule 7829.2550.[2]

[1] *In the Matter of the Application of Xcel Energy for a Certificate of Need for the Mankato to Mississippi River 345 kV Transmission Line Project,* Xcel, Exemption Petition, October 17, 2023, Docket No. E002 E002/CN-22-532, (eDockets) 202310-199659-01, 202310-199659-02 (hereinafter "Exemption Petition").

[2] *In the Matter of the Application of Xcel Energy for a Certificate of Need for the Mankato to Mississippi River 345 kV Transmission Line Project,* Xcel, Notice Petition, October 17, 2023, Docket No. E002/CN-22-532, (eDockets) 202310-199658-01, 202310-199658-02 (hereinafter "Notice Petition").

December 12, 2023	The Commission issued an order approving Xcel's Exemption Petition and the Notice Petition.[3]
April 2, 2024	Xcel filed a petition requesting approval of a CN for the Project.[4]
June 26, 2024	The Commission, after receiving comments, issued an order declaring the Petition to be substantially complete and establishing procedural requirements.[5]
January 10, 2025	The Commission issued a notice establishing due dates for comments on the merits of the Petition.[6]

According to the Notice the following topics are open for comment:

- Should the Commission grant a CN for the proposed Project?
- If granted, what additional conditions or requirements, if any, should be included in the CN?
- Are there other issues or concerns related to this matter?

III. DEPARTMENT ANALYSIS

Minnesota Statutes § 216B.2421, subd. 2(1) defines a large energy facility (LEF) as "any high-voltage transmission line with a capacity of 200 kilovolts or more and greater than 1,500 feet in length." Since the proposed Project is 345 kV and over 100-miles long, it qualifies as an LEF. Minnesota Statutes § 216B.243, subd. 2 states, in part, that "no large energy facility shall be sited or constructed in Minnesota without the issuance of a certificate of need by the Commission." Therefore, a CN application must be approved by the Commission before the proposed Project can be sited or constructed.

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[3] *In the Matter of the Application of Xcel Energy for a Certificate of Need for the Mankato to Mississippi River 345 kV Transmission Line Project,* Commission, Notice and Exemption Order, December 12, 2023, Docket No. E002/CN-22-532, (eDockets) 202312-201137-01.

[4] *In the Matter of the Application of Xcel Energy for a Certificate of Need for the Mankato to Mississippi River 345 kV Transmission Line Project,* Xcel, Petition, April 2, 2024, Docket No. E002 E002/CN-22-532, (eDockets) 20244-204919-01, 20244-204917-20, 20244-204917-18, 20244-204917-16, 20244-204917-14, 20244-204917-12, 20244-204917-10, 20244-204917-08, 20244-204917-06, 20244-204917-04, 20244-204917-02, 20244-204916-17, 20244-204916-15, 20244-204916-13, 20244-204916-03, 20244-204916-01 (hereinafter "Petition").

[5] *In the Matter of the Application of Xcel Energy for a Certificate of Need for the Mankato to Mississippi River 345 kV Transmission Line Project, Order Accepting Applications as Complete, Establishing Procedural Requirements, and Notice of and Order for Hearing*, June 26, 2024, Docket No. E002/CN-22-532, (eDockets) 20246-207975-02.

[6] *In the Matter of the Application of Xcel Energy for a Certificate of Need for the Mankato to Mississippi River 345 kV Transmission Line Project*, *Notice of Comment Period*, January 10, 2025, Docket No. E002/CN-22-532, (eDockets) 20251-213779-01 (hereinafter "Notice").

Minnesota Statutes and Minnesota Rules set forth a number of factors that an applicant must meet before the Commission can approve a CN. In an attempt to clarify its analysis, the Department addresses much of the applicable statutes and rules into five categories as discussed below.[7]

The Environmental Report (ER) is prepared by the Department-Energy Environmental Review and Analysis (Department-EERA) and analyzes the effects of the proposed Project, and the alternatives, upon the natural and socioeconomic environments.[8] The Department recommends that the Commission consider the ER in making its determination.

A. NEED ANALYSIS

Minnesota Rules 7849.0120 states that a CN "must be granted to the applicant on determining that" and proceeds to list 4 factors. Minnesota Rules 7849.0120A requires the Commission to determine "the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states." The rule then lists five specific considerations. The Department addresses each consideration separately.

A.1. Accuracy of the Forecast

A.1.1. Background

Minnesota Rules 7849.0120 A(1) states that, in assessing need, the Commission shall evaluate "the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility."[9] The Commission's September 23, 2021 *Order Granting Certificate of Need and Issuing Site Permit and Route Permit* (Plum Creek Order) in Docket Nos. IP6697/CN-18-699, IP6697/WS-18-700, and IP6697/TL-18-701 clarified this criterion:

> Plum Creek did not use data from a PPA [power purchase agreement], IRP [integrated resource plan], or biennial transmission project report to demonstrate demand for the Project. However, under Minnesota statute and rules, there is no requirement that Plum Creek present a PPA, IRP, biennial transmission project report, or any other specific data to demonstrate demand. The Legislature contemplated that independent power producers would construct such projects and did not require them to enter into power purchase agreements before obtaining a certificate of need. Rather, the Commission may evaluate demand using any data it finds persuasive, on a case-by-case basis. Furthermore, because Plum Creek is

[7] Need Analysis, Alternative Analysis, Socioeconomic Analysis, Other Permits, and Policy Analysis.
[8] In this case the ER is part of the Environmental Impact Statement prepared by the Department-EERA.
[9] *Minn. R. 7849.0120 A (1)* Note that Minn. Stat. § 216B.243 subd. 3(1) requires the Commission to evaluate the accuracy of the long-range energy demand forecasts on which the necessity for the facility is based.

> an independent power producer and not a utility, the Commission granted it certain variances to provide alternative data when more appropriate, and the data provided is sufficient to demonstrate demand.
>
> In this case, Plum Creek showed that utilities and commercial and industrial customers have reported strong clean energy goals above and beyond RES [Renewable Energy Standard] requirements, and additional renewable energy sources will be needed to meet that demand. Furthermore, utilities plan to retire coal-based generating units across the region in the coming years, and renewable energy sources are expected to fill some of the resulting capacity needs. These established goals and plans are strong evidence of a utility's intention for future energy development and can be used to demonstrate demand, especially when consistent with stated public policy goals. Citation omitted.

The Department considered this guidance in formulating the analysis of the Applicant's forecast of demand for the type of energy that would be supplied.

A.1.2. MISO's Analysis

In developing the proposed Project, MISO used three 'Futures'. MISO explains the Futures in the *MISO Futures Report* (Futures Report), provided in Appendix G-3 of the Petition, as follows:

> Assumptions within the three Future scenarios vary to encompass reasonable bookends of the MISO footprint over the next twenty years. Future 1 represents a scenario driven by state and members' plans, with demand and energy growth driven by existing economic factors. Future 2 builds upon Future 1 by fully incorporating state and members' plans and includes a significant increase in load driven by electrification (discussed in the Electrification section of this report). In the final scenario analyzed, Future 3 advances from Future 2, evaluating the effects of large load increases due to electrification, 50% penetration of wind and solar, and an 80% carbon reduction across the footprint by 2039.[10]

The Futures Report describes the forecasts for the three Futures as follows:

> Future 1 assumed a load growth[9] consistent with recent trends; 0.48%, including currently low electric vehicle adoption as modeled by Lawrence Berkeley National Laboratory's (LBNL) 'Low' scenario projection.

[10] Petition, Appendix G-3 at 9.

> Future 2 assumed an annual energy growth[9] rate of 1.09% to reach a targeted 30% energy increase by 2040, largely driven by electrification.
>
> Future 3 assumed an annual energy growth[9] rate of 1.71% to reach a targeted 50% energy increase by 2040, driven by additional electrification.
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> [9] Net annual energy and demand growth rates result from reducing the hourly load shape by the energy from energy efficiency (EE) programs.[11]

For specific growth rates, the Futures Report shows that MISO used different growth rates for energy and demand, before energy efficiency selected by MISO's resource planning model, as follows:[12]

- Future 1: 0.63 percent compound annual growth rate (CAGR) for energy, 0.75 percent CAGR for demand;
- Future 2: 1.22 percent CAGR for energy, 1.11 percent CAGR for demand; and
- Future 3: 1.91 percent CAGR for energy, 1.60 percent CAGR for demand.

The Futures Report shows that the growth rates used in the three Futures for energy and demand, after energy efficiency selected by MISO's resource planning model, are as follows:[13]

- Future 1: 0.48 percent CAGR for energy, 0.60 percent CAGR for demand;
- Future 2: 1.09 percent CAGR for energy, 0.97 percent CAGR for demand; and
- Future 3: 1.71 percent CAGR for energy, 1.41 percent CAGR for demand.

MISO used high and low forecasts, not just the base forecast, when analyzing the proposed Project and the alternatives. Appendix G-1 of the Petition contains MISO's *MTEP21 Report Addendum: Long Range Transmission Planning Tranche 1 Executive Summary, Report, and Appendix A* (LRTP Report). The LRTP Report at Table 5-1 shows the load parameters for seven models used by MISO in developing the LRTP portfolio of projects:

- models 1 and 2 use a high forecast (90th percentile summer day/night peak);[14]
- models 3 and 4 use a low forecast (50 to 70 percent of summer day/night peak);
- model 5 uses a moderate forecast (70 to 80 percent of the summer day peak); and
- models 6 and 7 use a high forecast (90th percentile winter day/night peak).

[11] *Id*., at 21.
[12] Petition, Appendix G-3, Figure 21 at 26.
[13] *Ibid.*
[14] The standard forecast is based upon the 50th percentile. Thus, using the 90th percentile is using a forecast far above the standard forecast.

The rationale for the proposed project is described in the LRTP Report:

> The transmission system in southern Minnesota is a nexus between significant wind and renewable resources in Minnesota and North and South Dakota, the regional load center of the Twin Cities, and transmission outlets to the East and South. In a future with significant renewable energy growth, MISO sees strong flows West to East across Minnesota to Wisconsin and a need for outlet for those renewables in times of high availability to deliver that energy to load centers in MISO. The Minnesota to Wisconsin projects relieve constraints in the Twin Cities metro area due to high renewable flow towards and past the Twin Cities load center. The projects also reinforce the outlet towards load centers in Wisconsin, providing relief of congestion as well as easing both thermal loading and transfer voltage stability. The Minnesota – Wisconsin series of projects work together to relieve a number of related issues. Table 6-5 summarizes overloads seen in the Future 1 models which are relieved by the LRTP Tranche 1 Portfolio attributed to the Minnesota – Wisconsin set of projects.[15]

Thus, the transmission needs addressed by the proposed Project are not necessarily related to a summer peak demand. Instead, the rationale revolves around shoulder and winter peak load levels combined with renewable energy output. The use of several different load levels lessens the importance of the base case forecast. Instead—similar to resource planning—it is performance over the range of forecasted loads that is of importance.

The need case also discusses the importance of the quantity of generation. To forecast the future generation fleet MISO uses a fairly complicated process. However, the results are summarized in Figures 44, 54, and 64 of the Futures Report. The changes to the generation fleet can be summarized as follows:

- Future 1: For LRZ1—25.1 GW added, 15.2 GW retired, net increase 10.0 GW.
- Future 1: For MISO—120.8 GW added, 77.1 GW retired, net increase 43.7 GW.
- Future 2: For LRZ1—40.0 GW added, 15.5 GW retired, net increase 24.5 GW.
- Future 2: For MISO—170.3 GW added, 80.4 GW retired, net increase 90.0 GW.
- Future 3: For LRZ1—65.0 GW added, 16.3 GW retired, net increase 48.7 GW.
- Future 3: For MISO—305.9 GW added, 112.3 GW retired, net increase 193.3 GW.

[15] Petition, Appendix G-1 at 44-45.

A.1.3. Department Analysis

The Department analyzed demand and energy forecasts from Xcel, along with Great River Energy (GRE), Minnesota Power (MP), and Otter Tail Power Company (OTP) in several ways. First, the Department calculated the CAGR from 2024 to 2038 for both the peak demand and annual energy forecasts filed by Xcel, GRE, MP, and OTP in Docket No. E999/PR-24-11. The CAGRs for each utility were then weighted by the forecasted 2024 energy and demand to calculate weighted average CAGR for energy and demand for the four main regulated utilities as a whole.

The utilities' weighted average CAGR for energy is 1.61 percent, which is lower than the MISO Future 3 CAGR. The utilities' weighted average CAGR for peak demand is 0.75 percent, which is lower than the MISO Future 2 CAGR for peak demand.

Second, the Department reviewed the Commission's orders in the utilities' most recent resource plan, as of the date the analysis was performed, for forecast-related information.

In GRE's most recent IRP the Commission's order states:

> First, the Commission concurs with the Department that the shortcomings in GRE's demand forecast may not require the Commission to reject GRE's plan outright, but they render the forecast insufficient to support any claim for a Certificate of Need—so the Commission will make that finding. Second, the Commission will recommend that GRE, when it models scenarios for its next resource plan, include a range of demand forecasts for electric vehicles. Finally, the Commission will recommend that GRE work with the Department to address forecasting issues before GRE develops its next resource plan."[16]

In turn, the Department's August 8, 2023 comments on GRE's forecasting stated and concluded that:

> The Department conducted its review of GRE's IRP with the understanding that the Commission's Order is advisory in this proceeding. […] Given that GRE does not need any new resources and the surplus that it expects through 2030, in this IRP the Department neither reviewed the technical details of GRE's forecast nor tested the Company's current statistical models. The Department also did not develop an alternative forecast. As a result, GRE's forecasts in this proceeding should not be used in any future certificate of need (CN) proceedings.[17]

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[16] In the Matter of Great River Energy's 2023-2037 Integrated Resource Plan, *Order Accepting 2023 – 2037 Resource Plan and Setting Future Filing Requirements*, June 11, 2024, Docket No. ET2/RP-22-75, (eDockets) 20246-207588-01.
[17] *In the Matter of Great River Energy's 2023-2037 Integrated Resource Plan*, Department of Commerce, Comments, August 3, 2023, Docket No. ET2/RP-22-75, (eDockets) 20238-198066-01.

Note that GRE had substantially changed forecasting methods since the 2017 IRP.

In MP's most recent IRP proceeding, the Commission's order did not discuss the forecast in detail.[18]

In MRES's most recent IRP, the Commission agreed with and adopted the Department's recommendations.[19] In turn, the Department had no recommendations regarding MRES's forecast.[20] In summary, this review did not reveal any substantial forecasting issues, other than concerns noted above regarding GRE's demand and energy forecasts.

Third, to analyze the generation forecast the Department reviewed the expansion plans from the utilities' most recent IRPs. In GRE's most recent IRP proceeding, the Commission's order accepted GRE's 2023-2037 resource plan.[21] GRE's preferred plan did not include any new supply-side resources. However, with regards to GRE's prior IRP, the Commission accepted GRE's 2018-2032 resource plan[22] and noted that GRE's preferred plan included one GW of new supply-side resources.

In MP's most recent IRP, the Commission required 600 to 700 MW of supply-side additions as part of the five-year action plan. The Order did not require any particular supply-side additions beyond five years.[23]

In MRES's most recent IRP the Commission agreed with and adopted the recommendations of the Department.[24] In turn, the Department showed MRES's plan to contain 200 MW of supply-side additions in MISO.[25]
In OTP's most recent IRP the Commission approved a five-year action plan containing 370 to 575 MW of supply-side additions.[26]

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[18] *In the Matter of Minnesota Power's 2021- 2035 Integrated Resource Plan*, *Order Approving Plan and Setting Additional Requirements*, January 9, 2023, Docket No. E015/RP-21-33, (eDockets) 20231-191970-01.
[19] *In the Matter of Missouri River Energy Services (MRES) 2022-2036 Integrated Resource Plan*, *Order,* February 15, 2022, Docket No. ET10/RP-21-414, (eDockets) 20222-182786-01.
[20] *In the Matter of Missouri River Energy Services (MRES) 2022-2036 Integrated Resource Plan*, Department of Commerce, Comments, November 1, 2021, attached to *Order, supra* note 19.
[21] *In the Matter of Great River Energy's 2023– 2037 Integrated Resource Plan*, *Order Accepting 2023 – 2037 Resource Plan and Setting Future Filing Requirements*, June 11, 2024, Docket No. ET2/RP-22-75, (eDockets) 20246-207588-01.
[22] *In the Matter of Great River Energy's 2018– 2032 Integrated Resource Plan*, *Order Accepting 2018 – 2032 Resource Plan and Setting Future Filing Requirements,* November 28, 2018, Docket No. ET2/RP-17-286, (eDockets) 201811-148088-01.
[23] *In the Matter of Minnesota Power's 2021- 2035 Integrated Resource Plan*, *Order Approving Plan and Setting Additional Requirements,* January 9, 2023, Docket No. E015/RP-21-33, (eDockets) 20231-191970-01.
[24] *In the Matter of Missouri River Energy Services (MRES) 2022-2036 Integrated Resource Plan*, *Order,* February 15, 2022, Docket No. ET10/RP-21-414, (eDockets) 20222-182786-01.
[25] *In the Matter of Missouri River Energy Services (MRES) 2022-2036 Integrated Resource Plan*, Department of Commerce, Comments, November 1, 2021, attached to *Order, supra* note 19.
[26] *In the Matter of Otter Tail Power's 2023– 2037 Integrated Resource Plan*, *Order Modifying Otter Tail Power's 2023-2037 Integrated Resource Plan,* July 22, 2024, Docket No. E017/RP-21-339, (eDockets) 20247-208805-01 .

Table 4-7 of the Petition shows that Xcel's IRP[27] adds 16.6 GW of resources by 2040. However, in the current Xcel IRP, the preferred plan calls for an additional 2.3 GW of resources from the same five-year (2026-2030) period between the 2019 Xcel IRP and the 2024 Xcel IRP.[28] The Commission's Order in Docket 24-67 is currently pending, and the Commission has verbally approved a settlement agreement between the parties.[29]

Overall, the Commission's most recent IRP orders require or accept additions of at least 18 GW; note that many of the orders did not address additions beyond five years and thus the actual required additions will likely be larger. In summary, it is reasonable to conclude that the utilities' additions alone will approach the 25.1 GW of additions for all of LRZ1 under MISO Future 1.

The Department concludes that the MISO Futures reasonably encompass the future demand and energy requirements of the utilities' customers. Also, the Department concludes that the MISO Futures reasonably encompass the future generation additions necessary to serve the utilities' customers.

A.2. Conservation Impacts

Minnesota Rules 7849.0120 A (2) states that the Commission must consider "the effects of the applicant's existing or expected conservation programs and state and federal conservation programs."[30]

The Department finds two pieces of evidence that support the Petition's satisfaction of Minnesota Rules 7849.0120 A (2). First, Xcel claims that the added capacity of the Project will improve congestion and reliability, rather than address peak demand:

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[27] *In the Matter of the 2020–2034 Upper Midwest Integrated Resource Plan of Northern States Power Company d/b/a Xcel Energy*, *Order Approving Plan with Modifications and Establishing Requirements for Future Filings,* April 15, 2022, Docket No. E002/RP-19-368, (eDockets) 20224-184828-01

[28] *In the Matter of Xcel Energy's 2024-2040 Upper Midwest Integrated Resource Plan*, *Staff Briefing Papers*, February 5, 2025, Docket No. E002/RP-24-67, 20252-215012-01 at 115-116.

[29] *In the Matter of Xcel Energy's 2024-2040 Upper Midwest Integrated Resource Plan*, Joint Settlement Agreement ,October 3, 2024, Docket No. E002/RP-24-67, (eDockets) 202410-210672-01.

[30] *Minn. R. 7849.0120 A (2)*. Also, note that Minnesota Statutes § 216B.243, subd. 3 states that "No proposed large energy facility shall be certified for construction unless the applicant can show that demand for electricity cannot be met more cost effectively through energy conservation and load-management measures," Minnesota Statutes § 216B.243 subd. 3(2) requires the Commission to evaluate the "effect of existing or possible energy conservation programs under sections 216C.05 to 216C.30 and this section or other federal or state legislation on long-term energy demand." Minnesota Statutes § 216B.243 subd. 3(6) requires the Commission to evaluate "possible alternatives for satisfying the energy demand or transmission needs including but not limited to potential for increased efficiency and upgrading of existing energy generation and transmission facilities, load-management programs, and distributed generation." Minnesota Statutes § 216B.243 subd. 3(8) requires the Commission to evaluate "any feasible combination of energy conservation improvements, required under section 216B.241, that can (i) replace part or all of the energy to be provided by the proposed facility, and (ii) compete with it economically."

> The Project is needed to provide additional transmission capacity, to mitigate current capacity issues, and to improve electric system reliability throughout the region as more renewable energy resources are added to the electric system in and around the region. Given that the need for this Project is not driven by increases in peak demand the Commission granted the Applicant's request for exemption from certain forecasting data for Applicants' service areas and systems as required by Minn. R. 7849.0270, subp. 2.[31]

Thus, the impact of energy efficiency (EE) programs on the peak demand forecast is of lesser importance since peak demand is not necessarily the issue to be addressed.

Second, some of the effect of EE is subsumed into the MISO forecast. Xcel describes MISO's process for developing the LRTP portfolio of projects wherein a certain amount of EE is built into the forecast.[32] In addition to that EE level, MISO studied the technical potential for EE, created packages of EE programs, and input the EE packages into MISO's resource planning model (EGEAS). Then EGEAS was run to determine the amount of supply-side and demand-side resources that would be added under each of the Futures. The LRTP projects were then designed in transmission models with the EGEAS-determined amount of supply-side units built in. Thus, the MISO process already included the effects of expected EE (built into the forecasts) and new EE (as expansion units) programs.

The Department concludes that the analytical process included the effects of the Applicant's existing or expected conservation programs as well as conservation programs across the MISO footprint.

A.3. Promotional Practices

Minnesota Rules 7849.0120 A (3) states that the Commission must consider "the effects of promotional practices of the applicant that may have given rise to the increase in the energy demand, particularly promotional practices which have occurred since 1974."[33]

Regarding this criterion, the Petition states that:[34]

> Xcel Energy has not conducted any promotional activities or events that have triggered the need for the Project. As discussed above, the Project is needed to address regional reliability issues across MISO's Midwest subregion.

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[31] Petition Appendix I at 4.
[32] *Id* at 4-7.
[33] *Minn. R. 7849.0120 A (3)*. Note that Minnesota Statutes § 216B.243 subd. 3(4) requires the Commission to evaluate promotional activities that may have given rise to the demand for this facility.
[34] Petition, at 85.

The Department agrees with this assessment. The Applicant ascribes the need to the assumed retirement of existing fossil fuel baseload units and the addition of new, renewable generation:

> The transmission system in southern Minnesota is the nexus between significant renewable resources in Minnesota and the Dakotas and the regional load center of the Twin Cities and load centers to the east in Wisconsin. The Project is needed to provide additional transmission capacity, to mitigate current capacity issues, reduce congestion, and to improve electric system reliability throughout the region as aging coal plants retire and more renewable energy resources are added to the electric system in and around the region. […] As discussed in Chapter 3, the electric system is undergoing a transition as aging fossil-fueled baseload generation is retired and new renewable generation is being added to the system. As more renewable generation is put on the system, there is a need for additional transmission capacity to deliver this renewable energy to load centers. This Project, along with LRTP5 and LRTP6, provide this additional capacity and relieve transmission constraints in the Twin Cities metro area that is due to the transfer of renewable energy toward and past the Twin Cities. These projects also strengthen existing generation outlet towards load centers in Wisconsin and areas to the south. Additionally, benefits include reduced congestion, reduced thermal loading, and improved transfer voltage stability.[35]

The Department concludes that promotional practices of Xcel have not created the reliability issues to be addressed by the proposed Project.

A.4. Non-CN Facilities Analysis

Minnesota Rules 7849.0120 A (4) states that the Commission is to consider "the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand."[36] MISO's model development practice is to include in MISO's transmission models all existing facilities and all projects that have been approved by MISO. Therefore, "the ability of current facilities and planned facilities not requiring certificates of need to meet the future demand" has been considered, since all current facilities would be in MISO's transmission models and all planned facilities that have been approved by MISO would also be included in MISO's transmission models.

The Department concludes that current facilities and planned facilities not requiring certificates of need have been considered and will not be able to meet the future demand.

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[35] Petition, Appendix D at 11 and Petition, at 48.

[36] *Minn. R. 7849.0120 A (4)*. Also note that Minnesota Statutes § 216B.243 subd. 3(6) requires the Commission to evaluate alternatives for satisfying the energy demand or transmission needs including but not limited to upgrading of existing energy generation and transmission facilities and distributed generation.

A.5. Efficient Use of Resources

Minnesota Rules 7849.0120 A (5) states that the Commission is to consider "the effect of the proposed facility, or a suitable modification thereof, in making efficient use of resources.[37]"

The Department finds three reasons that the proposed facility will make efficient use of resources. First, Xcel states that the Project will use existing transmission corridors:[38]

> Given the amount of existing transmission lines in the Project Area, routing for the Project focused on taking advantage of these existing corridors to the greatest extent practicable, which limited the overall total number of routes that were analyzed during the routing process.
>
> There are some portions of the Project where the new 345 kV transmission line is proposed to be double circuited on existing structures (i.e., Segment 3 and part of Segment 2) which were permitted and constructed as part of the CapX2020 Hampton – La Crosse Project. These represent significant opportunities, and in those locations additional alternatives are not proposed in this Application because the Commission already evaluated route alternatives in that proceeding.

The use of existing corridors is an efficient use of resources because it does not burden additional land rights.

Second, MISO states that the use of existing corridors was a factor in the selection of the Tranche 1 effort:[39]

> Several alternatives have been considered for the Tranche 1 effort. The final portfolio represents those solutions that provided the best fit solution. It is also important to note that the ability to efficiently use existing corridors in developing transmission is a key element. As final solutions were developed, the ability of those solutions to use existing system right of way was a key consideration. Ultimately though final routing will be determined by the applicable state and/or local authorities.

Third, the proposed Project would reduce demand losses by 42.73 MW on average[40]. Note that such losses will change over time, based upon various conditions. For example, a joint petition from GRE and MP discusses how to translate peak demand losses into energy losses as follows:[41]

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[37] *Minn. R. 7849.0120 A (5).*
[38] Petition, at 114.
[39] Petition, Appendix G-1 at 36.
[40] Petition, Table 4-16 at 83.
[41] *In the Matter of In the Matter of the Application of Minnesota Power and Great River Energy for a Certificate of Need and Route Permit for an Approximately 180-mile, Double Circuit 345-kV Transmission Line from Itasca County to Benton County,*

> Because losses change over time, there is no precise method to calculate average annual loss reductions. One common method is to use the loss savings at peak demand to estimate the average annual loss savings based on the following formula:
>
> *Loss Factor = (0.3 x Load Factor) + (0.7 x Load Factor^2)*
> *Annual Loss Savings (MWh) = (Loss Factor x Peak Loss Savings) x 8760 hours/year*
>
> Assuming a load factor of 55 percent and using the calculated loss savings at peak demand…

The Department applied this formula to the data in this proceeding: the 42.73 MW in peak demand loss savings translates into 141,023 MWh annually in energy savings. This reduction in demand and energy losses allows Xcel to make more efficient use of existing generation resources.

The Department concludes that the proposed facility will make efficient use of resources.

A.6. Department Conclusion[42]

Based upon the above analysis, the Department concludes that the Applicant's Petition satisfies the requirements of relevant rules. Furthermore, the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the Applicant, to the Applicant's customers, and to the people of Minnesota and neighboring states.

B. ALTERNATIVES ANALYSIS

Minnesota Rules 7849.0120 B requires the Commission to determine "a more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record."[43] The rule then lists four specific considerations. The Department addresses each consideration separately below.

B.1. Size, Type, and Timing

Minnesota Rules 7849.0120 B (1) states that the Commission must consider "the appropriateness of the size, the type, and the timing of the proposed facility compared to those of reasonable alternatives."

Minnesota , Combined Certificate of Need and Route Permit Application, August 4, 2023 Docket No. E015, ET2/CN-22-416, (eDockets) 20238-198009-03

[42] *Minn. R. 7849.0120 (A) (1-5).*

[43] *Minn. R. 7849.0120 B*.

B.1.1. Size

Regarding size, the Department discussed the definition of size (as well as type and timing) in the context of transmission in the Department's January 28, 2013, comments in Docket No. E002/CN-11-826[44]. In that proceeding, the Department defined "size" as referring to "the quantity of power transfers that the transmission infrastructure improvement enables." The Department maintains this interpretation.

Table 5-1 of the Petition shows a comparison of capacity by voltage level, assuming the same current of 3,000 Amps. A single circuit, 345 kV line has a capacity of 1,792.7 MVA. Adding a second circuit to an existing 345 kV line also adds an incremental 1,792.7 MVA of capacity. In comparison, a 230 kV line has a capacity of 1,195.1 MVA. The capacity of a 345 kV line is substantially higher than that of a 230 kV line. However, the Applicant explains that the overall goal of the project is to relieve current capacity issues and to improve electric system reliability throughout the region as more renewable energy resources are added to the transmission system in and around the region.[45] Therefore, the Department concludes that the size of the proposed Project is not excessive and therefore is reasonable.

The goal of the proposed Project is to improve reliability. As discussed above, the Applicant's Petition considered several alternatives such as generation, demand-side management, different voltages, non-CN alternatives, DC lines, and a no-build alternative. Based upon review of the Petition, the Department concludes that generation alternatives are not reasonable. The proposed Project will address transmission congestion. The Department agrees with the Applicant that transmission congestion generally occurs when there is not enough transmission capacity to support all generation output at a particular time. Thus, regardless of the type of the generation facility evaluated, "construction of additional generation facilities is not a feasible and prudent alternative to the Project because such generation would: (1) further exacerbate the congestion already present on the system; (2) result in underutilization of existing generation resources; and (3) likely be more costly than the proposed Project."

B.1.2. Type

As noted above, the Department discussed the definition of type in the context of transmission lines in the Department's January 28, 2013, comments in Docket No. E002/CN-11-826.[46] In that proceeding, the Department interpreted "type" as referring to "the transformer nominal voltages, rated capacity, surge impedance loading (SIL), and nature (AC or DC) of power transported." The Department maintains this interpretation.

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[44] *In the Matter of the Application of Xcel Energy and Great River Energy for a Route Permit for the Southwest Twin Cities Chaska Area 115 kV Transmission Line*, Department of Commerce, Comments, January 28, 2013, Docket No. E002/CN-11-826, (eDockets) 20131-83242-01

[45] Petition at 5 and 87.

[46] *In the Matter of the Application of Xcel Energy and Great River Energy for a Route Permit for the Southwest Twin Cities Chaska Area 115 kV Transmission Line*, Department of Commerce, Comments, January 28, 2013, Docket No. E002/CN-11-826, (eDockets) 20131-83242-01

Regarding nominal voltages, 345 kV is the standard high voltage used in Minnesota for long-distance transfer projects. Over the past two decades several 345 kV projects have been approved by the Commission and constructed.[47] The only exceptions to the use of 345 kV for long-distance transfer are two 500 kV lines connecting Minnesota to Manitoba. The Petition discusses 500 kV alternatives as follows:

> Xcel Energy considered higher voltage 765 kV and 500 kV transmission lines as alternatives to the proposed 345 kV transmission line. There are currently no 765 kV transmission lines in Minnesota and, although there are two 500 kV transmission lines in Minnesota, neither 500 kV line is located in the Project area. […] For comparison, a single-circuit 500 kV line would generally cost approximately $4.1 million per mile and would require, at a minimum, a 500 kV/345 kV transformer at each substation connection at a cost of approximately $20 million per transformer. In contrast, the indicative cost estimate for a double-circuit 345 kV line is approximately $3.5 million to $4.5 million per mile. In addition, portions of Segment 3 of the Project involve converting an existing 161 kV line to 345 kV operation or stringing a new 345 kV circuit on existing double-circuit structures. These existing double-circuit structures were not built to accommodate a 500 kV or 765 kV circuit and would need to be removed and replaced if a 500 kV of 765 kV circuit were to be installed, resulting in significant additional costs and environmental impacts compared to the currently proposed 345 kV Project. A higher voltage line could also be constructed adjacent to these existing structures but would also result in significantly higher costs and impacts as compared to the proposed Project.
>
> A 500 kV or 765 kV transmission line would also require a wider right-of-way than the proposed 345 kV transmission line. A 500 kV or a 765 kV transmission line would require at least 200 feet of right-of-way while a 345 kV transmission line only requires 150 feet of right-of-way.

While it is clear that using any voltage other than 345 kV on Segment 3 is not warranted due to the existence of an open position on existing towers for a 345 kV line, the increased cost and right-of-way width on Segments 1, 2, and 4 may be justified by other factors. Therefore, the Department concludes that an alternative using 345 kV on Segments 1 through 3 with 161 kV relocation on Segment 4 is reasonable.

[47] For examples see Docket Nos. E002, ET6675/CN-17-184 for the Huntley –Wilmarth 345 kV Transmission Line Project; ET6675/CN-12-1053 for the Minnesota-Iowa 345 kV Transmission Line Project; E002, ET2/CN-06-1115 for the CapX 345-kV Transmission Projects; and E002/CN-01-1958 for Four Large High Voltage Transmission Line Projects in Southwestern Minnesota.

Regarding the nature of power transported, alternating current (AC) is to be used for the proposed Project. The Petition states the following about the advantages of AC over high voltage direct current (HVDC) in this case:

> An HVDC transmission line is generally employed to deliver generation over a considerable distance, more than 300 miles, to a load center. HVDC systems typically do not allow for cost-effective interconnections along the line […]
>
> HVDC lines also require expensive converter stations at each end point of the line to convert power from AC to DC and DC to AC […]
>
> Converter stations for 500 to 600 kV HVDC lines can range from approximately $400 million to $500 million.

Based upon the converter station cost, the Department agrees with the Applicants' conclusion that AC is preferable to HVDC in this case.

In summary, the Department concludes that the Applicants' proposed type is reasonable.

B.1.3. Timing

As noted above, the Department discussed the definition of timing in the context of transmission lines in the Department's January 28, 2013, comments in Docket No. E002/CN-11-826.[48] In that proceeding, the Department interpreted "timing" as referring to "the on-line date for the transmission infrastructure improvements." The Department maintains this interpretation.

The in-service dates are summarized in Table 1 below.

Table 1: In-service Date Estimates

Segment	In-service Date
1-4	First Quarter 2030

The Petition also notes that the MISO-approved in-service date is June 1, 2028[49]. The overall need is to provide additional transmission capacity, to mitigate current capacity issues, and to improve electric system reliability throughout the region as more renewable energy resources are added to the electric system in and around the region. In essence, the sooner the need can be addressed, the better.
The Department concludes that the Applicant's proposed timing is reasonable.

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[48] *In the Matter of the Application of Xcel Energy and Great River Energy for a Route Permit for the Southwest Twin Cities Chaska Area 115 kV Transmission Line*, Department of Commerce, Comments, January 28, 2013, Docket No. E002/CN-11-826, (eDockets) 20131-83242-01

[49] Petition at 11, 27, and 68.

B.1.4. Size, Type, and Timing Summary

Overall, the Department agrees with the Applicant that the size, the type, and the timing of the proposed Project is reasonable when compared to those of the available alternatives.

B.2. Cost Analysis

Minnesota Rules 7849.0120 B (2) states that the Commission is to consider "the cost of the proposed facility and the cost of energy to be supplied by the proposed facility compared to the costs of reasonable alternatives and the cost of energy that would be supplied by reasonable alternatives."[50]

The Petition concludes that, "As the only feasible alternative to meet the identified need is a transmission alternative and the proposed Project is the best performing alternative, there is no reasonable combination of alternatives that would be a more reasonable and prudent alternative to the Project."[51]

Overall, the Department agrees with the Applicant's analysis that there is no reasonable alternative or combination of alternatives that would be more reasonable and prudent. Therefore, no cost analysis of alternatives is necessary.

B.3. Natural and Socioeconomic Environments Analysis

Minnesota Rules 7849.0120 B (3) states that the Commission is to consider "the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of reasonable alternatives."[52]
As discussed above, the Applicants concluded that there is no reasonable alternative or combination of alternatives. Overall, the Department agrees with the Applicants analysis that there is no reasonable alternative or combination of alternatives that would be more reasonable and prudent. Therefore, no analysis of the impact of alternatives on the natural and socioeconomic environments is necessary.

B.4. Reliability Analysis

Minnesota Rules 7849.0120 B (4) states that the Commission is to consider "the expected reliability of the proposed facility compared to the expected reliability of reasonable alternatives."[53]

As discussed above, the Applicants concluded that there is no reasonable alternative or combination of alternatives. Overall, the Department agrees with the Applicants analysis that there is no reasonable alternative or combination of alternatives that would be more reasonable and prudent. Therefore, no reliability analysis of the alternatives is necessary.

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[50] *Minn. R. 7849.0120 B*.
[51] Petition at 106.
[52] *Minn. R. 7849.0120 B*.
[53] *Id*.

B.5. Department Conclusion

Based upon the above analysis the Department concludes that a more reasonable and prudent alternative to the proposed facility is not demonstrated by a preponderance of the evidence in the record.

C. PROTECTING THE NATURAL AND SOCIOECONOMIC ENVIRONMENTS

Minnesota Rules 7849.0120 C requires the Commission to determine "by a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health."[54] The rule then lists four specific considerations. The Department addresses each consideration separately below.

C.1. Overall State Needs

Minnesota Rules 7849.0120 C (1) states that the Commission shall evaluate "the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs."[55]

First, the Department agrees with the Applicants that the proposed Project was designed by MISO as part of a package of projects (LRTP Tranche 1) to address reliability needs all across the MISO footprint. In addition, it is clear that the proposed Project will benefit state energy needs. In particular it will facilitate output from existing generation facilities, renewable and non-renewable, by addressing reliability issues known to be associated with power flows during certain conditions. Since wind and solar have been experiencing increasing levels of curtailment, the congestion relief provided by the Project means that Minnesota's overall energy needs will be more likely to be met by renewable energy.[56, 57, 58]

Second, Map 4-3 of the Petition, provided below, shows the location of the reliability issues that MISO determined were addressed by the proposed Project. Map 4-3 shows that the thermal and voltage issues addressed are on transformers and transmission lines in western Minnesota and eastern North

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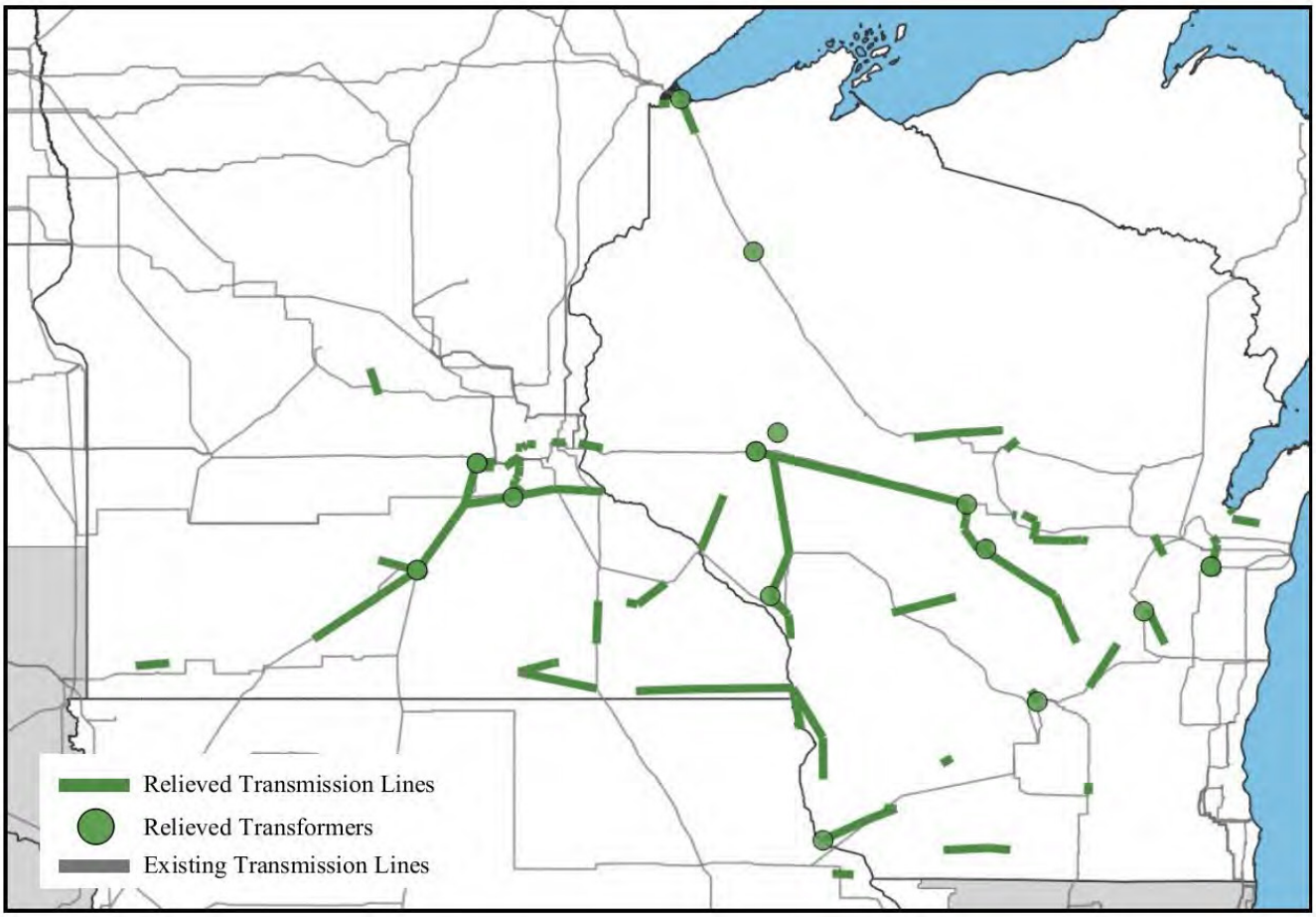
[54] *Minn. R. 7849.0120 C*.
[55] Note that Minn. Stat. § 216B.243 subd. 3(3) requires the Commission to evaluate the relationship of the proposed facility to overall state energy needs.
[56] *In the Matter of an Investigation into Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities*, MP, Annual Compliance Filing, March 3, 2025, Docket No. E999/CI-19-704, (eDockets) 20253-216006-04.
[57] *In the Matter of an Investigation into Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities*, OTP, Annual Compliance Filing, February 27, 2025, Docket No. E999/CI-19-704, (eDockets) 20252-215820-02, 20252-215820-04, and 20252-215820-06.
[58] *In the Matter of an Investigation into Self-Commitment and Self-Scheduling of Large Baseload Generation Facilities*, Xcel, 2024 Annual Report, March 3, 2025, Docket No. E999/CI-19-704, (eDockets) 20253-216008-01, 20253-216008-03, 20253-216008-05, and 20253-216008-08.

Dakota and South Dakota. Therefore, the proposed Project is an important part of meeting overall state energy needs in a reliable manner.

Map 4-3 of the Petition



The Petition also discusses the CO_2 emissions reduction impact of the proposed Project by stating "Xcel Energy's analysis estimated that the Project will reduce CO2 emissions within MISO by 2.42 to 5.25 million metric tons over the first 20 years that the Project is in service and by 0.56 to 8.26 million metric tons over the first 40 years that the Project is in service.[59]" Therefore, the proposed Project clearly will contribute towards meeting the state's goal to reduce statewide greenhouse gas emissions from the electricity sector.[60]

In summary, the Department concludes that the proposed Project will have substantial benefits for meeting overall state energy needs in terms of enhanced regional reliability and lowering electricity sector emissions.

[59] Petition at 80.
[60] *See* Minn. Stat. § 216H.02, subd. 1.

C.2. Effects on Natural and Socioeconomic Environments

Minnesota Rules 7849.0120 C (2) states that the Commission shall evaluate "The effects of the proposed facility, or a suitable modification thereof, upon the natural and socioeconomic environments compared to the effects of not building the facility."[61]

The ER provides information related to the effects of the proposed facility upon the natural and socioeconomic environments compared to the effects of not building the facility. These effects will be addressed in the ER and considered by the Commission when making a final determination regarding the proposed Project.

C.3. Induced Development

Minnesota Rules 7849.0120 C (2) states that, in assessing need, the Commission shall evaluate "the effects of the proposed facility, or a suitable modification thereof, in inducing future development."

Induced development will be addressed in the ER and considered by the Commission when making a final determination regarding the proposed Project.

C.4. Socially Beneficial Uses

Minnesota Rules 7849.0120 C (4) states that, in assessing need, the Commission shall evaluate "the socially beneficial uses of the output of the proposed facility, or a suitable modification thereof, including its uses to protect or enhance environmental quality."[62]

Socially beneficial uses of the output will be addressed in the ER and considered by the Commission when making a final determination regarding the proposed Project.

D. OTHER PERMITS

Minnesota Rules 7849.0120 D requires the Commission to determine "the record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments."[63] This rule does not list any specific considerations.

Table 10-1 of the Petition lists numerous permits, approvals, consultations, and reviews that may be required for the proposed Project. The Department reviewed the information on potentially required permits. Regarding the permits required by other agencies, the Department presumes that the various

[61] *Minn. R. 7849.0120 C*.
[62] Note that Minn. Stat. § 216B.243 subd. 3(5) requires the Commission to evaluate benefits of this facility, including its uses to protect or enhance environmental quality, and to increase reliability of energy supply in Minnesota and the region.
[63] *Minn. R. 7849.0120 D*. Also note that Minnesota Statutes § 216B.243 subd. 3(7) requires the Commission to evaluate the policies, rules, and regulations of other state and federal agencies and local governments.

agencies will review and confirm that the Applicant is in compliance prior to granting their permits. The Department relies upon the agencies to enforce their requirements. Also, it is the Applicant's responsibility to ensure it has the necessary permits and approvals prior to construction. Of course, should any necessary permits be denied, the proposed Project will not be constructed, regardless of the Commission's decision regarding the Petition.

E. POLICY ANALYSIS

There are several remaining criteria in statutes and rules applicable to a CN that do not closely fit into the rule decision criteria discussed above. These criteria are grouped into a final category of policy considerations.

E.1. Robustness of the Transmission System

Minnesota Statutes § 216B.243, subd. 3 (9) states that the Commission shall evaluate "with respect to a high-voltage transmission line, the benefits of enhanced regional reliability, access, or deliverability to the extent these factors improve the robustness of the transmission system or lower costs for electric consumers in Minnesota."[64]

Table 4-4 of the Petition shows the result of an analysis conducted by Xcel, based on the year 2027, for the Local Resource Zone (LRZ) 1 and portions of LRTP project 4 based on the MISO MTEP22 transmission system model assuming no additional generation is added to the system. The purpose of that analysis was to show improvements to system reliability related to the construction of the LRTP4. The result was that "LRTP 4 as a standalone project has major reliability benefits on the 345 kV system in southern Minnesota."[65]

In addition to a near-term model, Xcel also provide reliability results based on the MISO MTEP21 Future 1 (at year 20). The purpose of the analysis was to show improvements to system reliability related to the construction of the proposed Project in the future when additional generation is online. Information regarding issues resolved by the Project is shown in Table 4-5 of the Petition. The Department agrees with the Applicant's assessment of Table 4-5 that "major reliability benefits of the Project can be seen on the 345 kV system in southern Minnesota."[66]

In addition, the reliability improvements the proposed Project will create economic benefits, which are summarized in Tables 4-8, 4-9, and 4-10 of the Petition and show 20-year and 40-year Adjusted Production Cost (APC) savings benefits.[67] The specific amounts vary considerably by the scenario in

[64] *Minn. Stat. § 216B.243, subd. 3*.
[65] Petition at 71.
[66] Petition at 72.
[67] At page 73 the Petition explains APC savings: "These savings are calculated as the difference in total production costs of energy for a generation fleet adjusted for import costs and export revenues with and without the proposed transmission project."

question and the length studied (20 years versus 40 years). However, the amounts range from hundreds of millions (PV) to billions (PV). The low-end estimates from Table 4-8, which uses MISO Future 1, understate the benefits, because Table 4-8 is based on the generation additions and retirements announced in utility Integrated Resource Plans at the time the MISO MTEP21 Futures were developed in the first quarter of 2021.[68] Table 4-9, which shows high-end estimates, is also based on MISO Future 1, but includes Commission-approved generation from Xcel's Upper Midwest IRP.[69]

In summary, the Department concludes that the proposed Project will provide benefits through enhanced regional reliability and lower costs for electric consumers in Minnesota.

E.2. Renewable Preference

There are two sections of Minnesota Statutes that provide a preference for renewable resources in resource planning and resource acquisition decisions. First, Minnesota Statutes § 216B.243, subd. 3a[70] states that:

> The Commission may not issue a certificate of need under this section for a large energy facility that generates electric power by means of a nonrenewable energy source, or that transmits electric power generated by means of a nonrenewable energy source, unless the applicant for the certificate has demonstrated to the Commission's satisfaction that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source. For purposes of this Subdivision, "renewable energy source" includes hydro, wind, solar, and geothermal energy and the use of trees or other vegetation as fuel.

Second, Minnesota Statutes § 216B.2422, subd. 4 states that:

> The Commission shall not approve a new or refurbished nonrenewable energy facility in an integrated resource plan or a certificate of need, pursuant to section 216B.243, nor shall the Commission allow rate recovery pursuant to section 216B.16 for such a nonrenewable energy facility, unless the utility has demonstrated that a renewable energy facility is not in the public interest.[71]

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[68] Petition at 75.
[69] This approval occurred after MISO determined the generation to be included in MISO's three Futures.
[70] *Minn. Stat. § 216B.243, subd. 3a*. Note that Minnesota Statutes § 216B.243 subd. 3(11) also requires the Commission to evaluate whether an applicant has made the demonstrations required under this subdivision.
[71] *Minn. Stat. § 216B.2422, subd. 4*.

The proposed Project is not intended to interconnect any particular generation resource. Moreover, the proposed Project is not needed to transmit power from a particular new generation resource. Rather, the proposed Project would transmit electricity on the existing high-voltage grid generally. Therefore, these renewable preference statutes do not apply.

In addition, the Petition states:

> During periods when there is high renewable generation output in southwestern Minnesota and northwestern Iowa, there are overloads on several 345 kV transmission lines and substation transformers in southern Minnesota. This Project provides additional transmission capacity to relieve these overloads.[72]

In general, the Department agrees with the Applicant's assessment. Thus, the Department concludes that renewable generation is not a reasonable alternative and this statutory criterion has been met.

E.3. Distributed Generation Analysis

Minnesota Statutes § 216B.2426 states that:

> The Commission shall ensure that opportunities for the installation of distributed generation, as that term is defined in section 216B.169, Subdivision 1, paragraph (c), are considered in any proceeding under section 216B.2422, 216B.2425, or 216B.243.[73]

Minnesota Statutes § 216B.169 states:

> For the purposes of this section, the following terms have the meanings given them […] (c) "High-efficiency, low-emission, distributed generation" means a distributed generation facility of no more than ten megawatts of interconnected capacity that is certified by the commissioner under Subdivision 3 as a high efficiency, low- emission facility.[74]

Any distributed generation (DG) certified by the Commissioner of the Minnesota Department of Commerce (Commissioner) in the past would be reflected in the Applicant's and MISO's models used to analyze the project. Any DG certified by the Commissioner in the future and sited in the local area would impact the rate of local load growth the Applicant would need to serve. However, there is no reason to believe the impacts of Commissioner-certified DG would be significant. Therefore, the Department concludes that this statutory criterion has been met.

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[72] Petition, at 5.
[73] *Minn. Stat. § 216B.2426*.
[74] *Minn. Stat. § 216B.169, subd. 1*.

E.4. Innovative Energy Project Analysis

Minnesota Statutes § 216B.1694, subd. 2 (a) (4) states that an innovative energy project:

> […] shall, prior to the approval by the commission of any arrangement to build or expand a fossil-fuel-fired generation facility, or to enter into an agreement to purchase capacity or energy from such a facility for a term exceeding five years, be considered as a supply option for the generation facility, and the commission shall ensure such consideration and take any action with respect to such supply proposal that it deems to be in the best interest of ratepayers.[75]

This statute does not apply since the proposed facility in question is a transmission line rather than a generating facility.

E.5. Renewable Energy Standard Compliance

Minnesota Statutes § 216B.243, subd. 3 (10) states that the Commission shall evaluate "whether the applicant or applicants are in compliance with applicable provisions of sections 216B.1691."[76] In turn, Minnesota Statutes § 216B.1691, subd. 2a (a) states that each electric utility shall provide retail customers in Minnesota the following percentages of total retail electric sales from energy generated by renewable energy technologies:

1) 2012 12 percent;
2) 2016 17 percent;
3) 2020 20 percent;
4) 2025 25 percent; and
5) 2035 55 percent.[77]

In addition, Minnesota Statutes § 216B.1691 subd. 2f requires that public utilities such as Xcel generate or procure solar energy equal to at least 1.5 percent of Minnesota retail sales by the end of 2020. At least ten percent of the 1.5 percent goal must be generated by or procured from solar photovoltaic devices with a nameplate capacity of 40 kW or less. The solar energy standard (SES) statute (Minn. Stat. § 216B.1691, subd. 2(f)) excludes certain retail sales to iron mining, paper, and wood products manufacturers from the calculation of the SES requirement.[78]

The Department reviews compliance with the RES statute in a biennial report to the legislature. The most recent report was the *Minnesota Renewable Energy Standard: Utility Compliance* (RES Report),

[75] *Minn. Stat. § 216B.1694, subd. 2*.
[76] *Minn. Stat. § 216B.243, subd. 3*.
[77] *Minn. Stat. § 216B.1691, subd. 2a*.
[78] *Minn. Stat. § 216B.1691, subd. 2f*.

filed January 15, 2025.[79] Table 1 of the RES Report shows that Dairyland, Southern Minnesota, and Xcel all complied for 2023.[80]

Regarding future compliance the Department notes that the RES Report estimates the Utilities can comply into the future as follows:

- Dairyland—2034;
- Southern Minnesota—2037; and
- Xcel—2040.

Finally, regarding the SES, the RES Report at Table 2 showed that Xcel met the overall SES and the small-scale solar section of the SES in 2021.[81] In addition, the RES Report states that "Xcel states it will be in compliance with the small solar carve-out through 2036, if actual solar installations meet Xcel's forecasted levels."[82] Finally, the RES Report states that "the currently approved and proposed/planned solar resources will be sufficient to meet the 10 percent (10%) by 2030 goal and will furthermore be sufficient to satisfy the SES requirements through year 2035 without the use of banked RECs."[83]

Overall, the Department concludes that this statutory criterion has been met.

E.6. Environmental Cost Planning

Minnesota Statutes § 216B.243, subd. 3 (12) states that the Commission shall evaluate "if the applicant is proposing a nonrenewable generating plant, the applicant's assessment of the risk of environmental costs and regulation on that proposed facility over the expected useful life of the plant, including a proposed means of allocating costs associated with that risk."[84]

Because Xcel is proposing a transmission line, not a generating plant this statute does not apply.

E.7. Statewide Carbon Dioxide Emissions

Minnesota Statutes § 216H.03, subd. 3 states that "Unless preempted by federal law, until a comprehensive and enforceable state law or rule pertaining to greenhouse gases that directly limits and substantially reduces, over time, statewide power sector carbon dioxide emissions is enacted and in effect, and except as allowed in Subdivisions 4 to 7, on and after August 1, 2009, no person shall construct within the state a new large energy facility that would contribute to statewide power sector carbon dioxide emissions."[85]

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[79] The report is available at: https://www.lrl.mn.gov/docs/2025/mandated/250202.pdf (Hereinafter, "RES Report").
[80] Southern Minnesota includes the City of Rochester in the RES Report.
[81] RES Report at Table 2.
[82] *Id*., at 8.
[83] *Ibid*.
[84] *Minn. Stat. § 216B.243, subd. 3*
[85] *Minn. Stat. § 216H.03, subd. 3*.

Note that Minnesota Statutes § 216H.03, subd. 3 has, as a precondition: "until a comprehensive and enforceable state law or rule pertaining to greenhouse gases that directly limits and substantially reduces, over time, statewide power sector carbon dioxide emissions is enacted and in effect." With the passage of the state's carbon free energy targets in Minnesota Statutes § 216B.1691 subd. 2g (Carbon-free standard)[86] the Commission has determined that this section is no longer applicable as the state has an enforceable law that limits statewide power sector carbon dioxide emissions.[87]

E.8. Local Job Impacts

Minnesota Statutes § 216B.2422, subd. 4a states:

> The commission must consider local job impacts and give preference to proposals that maximize the creation of construction employment opportunities for local workers, consistent with the public interest, when evaluating any utility proposal that involves the selection or construction of facilities used to generate or deliver energy to serve the utility's customers, including but not limited to an integrated resource plan, a certificate of need, a power purchase agreement, or commission approval of a new or refurbished electric generation facility. The commission must, to the maximum extent possible, prioritize the hiring of workers from communities hosting retiring electric generation facilities, including workers previously employed at the retiring facilities.[88]

At this time there are no alternative proposals to consider, only the proposed Project. The Petition states that the workforce required for construction of the proposed Project is estimated to be about 50 to 100 construction workers and will last approximately 2 to 3 years.[89] In addition, one to two workers are required to perform aerial inspections, and three workers are required to perform the ground inspections. Xcel will perform aerial inspections of the 345 kV and 161 kV transmission line and inspect the line from the ground every four years.[90]

The Department concludes that Xcel has adequately addressed this statutory requirement.

E.9. Domestic Content Preference

Minnesota Statutes § 216B.2422, subd. 4b states "The commission may give preference in resource selection to projects utilizing energy technologies produced domestically by entities who received an

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[86] Laws of Minnesota 2023, chapter 7; available at: https://www.revisor.mn.gov/laws/2023/0/Session+Law/Chapter/7/
[87] *See*, *In the Matter of Xcel Energy's Competitive Resource Acquisition Process for up to 800 Megawatts of Firm Dispatchable Generation*, *Order Approving Petition and Requiring Compliance Filing*, November 3, 2023, Docket No. E002/CN-23-212, (eDockets) 202311-200215-01, at Order Point 3.
[88] *Minn. Stat. § 216B.2422, subd. 4a*.
[89] Petition at 186.
[90] Petition at 348.

advanced manufacturing tax credit for those technologies under section 45X of the Internal Revenue Code, as allowed under the federal Inflation Reduction Act of 2022, Public Law 117-169."[91]

Section 45X of the Internal Revenue Code applies to generation projects rather than transmission projects. Therefore, the Department concludes that this statute does not apply.

E.10. Inflation Reduction Act Compliance

The Commission has ordered utilities to maximize the benefits of the Inflation Reduction Act:

> The utilities shall maximize the benefits of the Inflation Reduction Act in future resource acquisitions and requests for proposals in the planning phase, petitions for cost recovery through riders and rate cases, resource plans, gas resource plans, integrated distribution plans, and Natural Gas Innovation Act innovation plans. In such filings, utilities shall discuss how they plan to capture and maximize the benefits from the Act, and how the Act has impacted planning assumptions including (but not limited to) the predicted cost of assets and projects and the adoption rates of electric vehicles, distributed energy resources, and other electrification measures. Reporting shall continue until 2032.[92]

The Petition states:

> Xcel Energy has evaluated the Inflation Reduction Act for applicability to activities to be undertaken in the planning, procurement, and construction of this Project in an effort to reduce the rate impact of this Project. However, at this time, Xcel Energy has not identified any opportunities under the Inflation Reduction Act to reduce the cost of the Project for customers.[93]

With this information the Department concludes that Xcel has adequately discussed how the Company plans to capture the benefits from the Inflation Reduction Act.

F. CONDITIONS

The Petition at section 2.9.3.1 explains that MISO has determined that the costs of the entire LRTP Tranche 1 portfolio, which includes the proposed Project, will be allocated to all transmission

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[91] *Minn. Stat. § 216B.2422, subd. 4b*.
[92] *In the Matter of a Joint Investigation into the Impacts of the Federal Inflation Reduction Act, Order Setting Requirements Related to Inflation Reduction Act*, September 12, 2023, Docket No E,G-999/CI-22-624, (eDockets) 20239-198869-01

[93] Petition at 32.

customers in the MISO Midwest Subregion.[94] The allocation will result in all ratepayers in MISO Midwest Subregion paying the proposed Project's annual revenue requirement based on actual monthly energy consumption. Based upon this allocation method, Minnesota customers' allocated share of the annual revenue requirement is determined by the percent of total MISO energy used by Minnesota utilities, which Xcel estimates to be approximately 15 to 20 percent.[95]

This allocation process means that all Minnesota ratepayers whose utility is a MISO member (and not just the members/ratepayers of the Utilities) will pay for a share of the proposed Project's costs. The *2022 MISO Energy and Peak Demand Forecasting for System Planning* prepared for MISO by Purdue University's State Utility Forecasting Group, at Table 57, estimates that MISO accounts for about 98 percent of Minnesota MWh sales.[96] Therefore, it is important to protect Minnesota ratepayers' interests in this proceeding.

Utility cost estimates are used extensively in CN and other regulatory proceedings and provide a strong basis for the Commission to hold utilities accountable to the costs they represent for facilities, particularly since CNs consider alternatives to proposed projects. In its role to ensure that rates are reasonable, the Commission has generally not allowed approval of projects in CN proceedings to constitute a "blank check" for cost recovery in riders when actual costs are greater than the estimated costs the utilities represented in regulatory approval proceedings.[97]

The Department recommends that the Commission limit the Xcel's authority to recover capital expenditures to the amount estimated in the Petition. Table 2-4 of the Petition shows the capital expenditures to be between $524.7 million and $577.2 million; the mid-point of the range is $551.0 million.[98] The Petition notes that MISO's cost estimate for LRTP4, the Minnesota and Wisconsin portions, was $689 million (2022$). Xcel Energy determined, based on Appendix A of MTEP21, that MISO's estimate of Xcel Energy's portion of LRTP4 in Minnesota was approximately $457.4 million in nominal dollars. Xcel explains the difference in the estimates as follows:

- MISO's estimates did not take into account the route proposed by Xcel, which is longer;
- MISO's did not account for the full scope of the substation work required:

[94] The MISO Midwest Subregion includes Minnesota, Montana, North Dakota, South Dakota, Iowa, Wisconsin, Missouri, Illinois, Indiana, Michigan, and Kentucky.
[95] Petition at 31.
[96] This report is available at:
https://www.purdue.edu/discoverypark/sufg/docs/publications/MISO/MISO%20forecast%20report%202022.pdf
[97] *In the Matter of the Application of Xcel Energy and ITC Midwest LLC for a Certificate of Need for the Huntley-Wilmarth 345-kV Transmission Line Project*, Department of Commerce, Direct Testimony and Attachments of Mark A. Johnson, November 7, 2018, Docket No. E002, ET6675/CN-17-184, (eDockets): 201811-147664-02
[98] Petition at 29. Also, the Petition states that Table 2-4 includes cost estimates escalated to nominal dollars to reflect expected final cost at completion for each component of the Project.

  - MISO did not include possible modifications to the Eastwood Substation;
  - MISO did not account for the full scope of work needed to expand the Wilmarth and North Rochester substations;
- MISO's assumed a June 1, 2028 in-service date while Xcel assumed a 2030 in-service date; and
- commodity prices in general (material and labor) have increased since the MISO cost estimate was developed.[99]

Based upon Commission precedent, the Department recommends the cost cap be based upon the low end of the range ($524.7 million)[100]. The Department also recommends the Commission clarify that Xcel bears the burden of proof in any future regulatory proceeding related to the recovery of costs above this estimate.

These conditions mean that Xcel should be allowed to recover costs up to the level of the cost estimate in the Petition pending further Commission action. Xcel has an incentive to set the cap as high as possible without putting the proposed Project in jeopardy, but other MISO members—along with the other Utilities—have an incentive to keep their transmission costs as low as possible. This conflict should also provide a check on the cost estimate.

G. RESPONSE TO COMMISSION NOTICE

G.1. Grant the CN?

The first topic open for comment is "Should the Commission grant a CN for the proposed Project?"

Based upon the above analysis, should the Commission find, after consideration of the ER, that the proposed facility "will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health," the Department recommends that the Commission issue a CN to the Applicant.

G.2. Conditions?

The second topic open for comment is "what additional conditions or requirements, if any, should be included in the CN?"

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[99] Petition at 29-30.
[100] *In the Matter of In the Matter of the Application of Minnesota Power and Great River Energy for a Certificate of Need and Route Permit for an Approximately 180-mile, Double Circuit 345-kV Transmission Line from Itasca County to Benton County, Minnesota , Order Granting Certificate of Need and Issuing Route Permit*, February 28, 2025, Docket No. E015, ET2/CN-22-416, (eDockets) 20252-215918-01

The Department recommends the following condition:

- The cost cap be based upon the low end of the range ($524.7 million).
- The Commission clarify that Xcel bears the burden of proof in any future regulatory proceeding related to the recovery of costs above this estimate.

G.3. Other Issues?

The third topic open for comment is "Are there other issues or concerns related to this matter?"

The Department does not have any other issues or concerns.

IV. DEPARTMENT RECOMMENDATIONS

Based on analysis of the information in the record, the Department has prepared recommendations, which are provided below. The recommendations correspond to the subheadings of Section III above.

A. NEED ANALYSIS

The Department concludes that the Applicant's Petition satisfies the requirements of relevant rules. Furthermore, the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply to the Applicant, to the Applicant's customers, and to the people of Minnesota and neighboring states.

B. ALTERNATIVES ANALYSIS

The Department concludes that a more reasonable and prudent alternative to the proposed facility is not demonstrated by a preponderance of the evidence in the record.

C. PROTECTING THE NATURAL AND SOCIOECONOMIC ENVIRONMENTS

C.1. Overall State Needs

The Department concludes that the proposed Project will have substantial benefits for meeting overall state energy needs in terms of enhanced regional reliability and lowering electricity sector emissions.

E. POLICY ANALYSIS

The Department concludes the Petition has met the requirements of Minnesota Statutes § 216B.243.

F. CONDITIONS

The Department recommends the cost cap be based upon the low end of the range ($524.7 million). The Department also recommends the Commission clarify that Xcel bears the burden of proof in any future regulatory proceeding related to the recovery of costs above this estimate.

G. RESPONSE TO COMMISSION NOTICE

G.1. Based upon the above analysis, should the Commission find, after consideration of the ER, that the proposed facility "will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health," the Department recommends that the Commission issue a CN to the Applicant.