



AN ALLETE COMPANY

30 West Superior Street
Duluth, MN 55802-2093
www.mnpower.com



August 4, 2025

VIA E-FILING

Mike Bull
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

Re: In the Matter of the Petition of Minnesota Power for Approval of Investments and Expenditures in the Longspur Wind Project for Recovery through Minnesota Power's Renewable Resources Rider under Minn. Stat. § 216B.1645

Docket No. E015/M-25-XXX
INITIAL FILING – PETITION

Dear Mr. Bull:

Minnesota Power ("the Company") is pleased to present this Petition to the Minnesota Public Utilities Commission ("Commission") pursuant to Minn. Stat. § 216B.1645, subd. 1 and Minn. Rule 7829.1300. Minnesota Power is seeking Commission approval for investments, expenditures, and costs related to the Longspur Wind Project ("Project") through Minnesota Power's Commission-approved Rider for Renewable Resources ("Renewable Resources Rider").

The Longspur Wind Project is a 200 MW alternating current ("AC") wind facility to be constructed in Morton County, North Dakota and will cost approximately \$790.9 Million to build. The Project complies with the Commission's 2021 IRP Order, through which the company was directed to "[a]cquire at least 300 MW and up to 400 MW of wind with at least 200 MW in service by 2026, as practicable."¹ The Project will generate carbon-free energy for customers and help Minnesota Power make progress on the Carbon Free and Renewable Energy Standards. Furthermore, the Longspur Wind Project will leverage the Company's HVDC transmission line to provide high quality wind generation to Minnesota customers and take advantage of Inflation Reduction Act ("IRA") tax incentives, including the impacted Energy Community Tax Credit Bonus.

Please contact me at (218) 355-3178 jmccullough@mnpower.com with any questions related to this matter.

¹ Docket No. E015/RP-21-33

Mr. Bull
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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Jess McCullough". The signature is written in a cursive style with a large, sweeping initial "J".

Jess McCullough
Public Policy Advisor

JAM:ah
Attach.

STATEMENT REGARDING JUSTIFICATION FOR EXCISING TRADE SECRET INFORMATION

Pursuant to the Commission's revised Procedures for Handling Trade Secret and Privileged Data in furtherance of the intent of Minn. Stat. 13.37 and Minn. Rule Part 7829.0500, Minnesota Power has designated portions of the attached Petition and exhibits thereto as Trade Secret.

The Petition contains terms and conditions that are materially sensitive to Minnesota Power and contains Minnesota Power's unique methods, techniques and process for new wind resources and the Wind Request for Proposal bidding information. Minnesota Power follows strict internal procedures to maintain the secrecy of this information in order to capitalize on the economic value of the information. Potential competitors and vendors would gain a commercial advantage if this information was publicly available, with severe competitive implications resulting.

Minnesota Power believes that this statement justifies why the information excised from the attached report should remain a trade secret under Minn. Stat. §13.37. Minnesota Power respectfully requests the opportunity to provide additional justification in the event of a challenge to the trade secret designation provided herein.

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SUMMARY OF FILING

The Longspur Wind Project is a 200 megawatt ("MW") alternating current ("AC") wind facility to be constructed in Morton County, North Dakota. A 34.5 kV collector line system will connect the facility to a new 34.5 kV / 230 kV project substation, and an approximately 2.5 mile 230 kV generator-tie line will connect the project substation back to Minnesota Power's existing 230 kV Tri-County Substation in Mercer County, North Dakota. The Project will generate carbon-free energy for customers and help Minnesota Power make progress on the Carbon Free and Renewable Energy Standards. Furthermore, the Longspur Wind Project will leverage the Company's modernized HVDC transmission line to provide high quality wind generation to Minnesota customers and take advantage of Inflation Reduction Act ("IRA") tax incentives, including the impacted Energy Community Tax Credit Bonus.

The Project complies with the Commission's 2021 IRP Order, through which the company was directed to "[a]cquire at least 300 MW and up to 400 MW of wind with at least 200 MW in service by 2026, as practicable."¹ Minnesota Power requests that the Commission approve the following requests set out in this Petition:

- Approval for investments and expenditures related to the Longspur Wind Project pursuant to Minn. Stat. § 216B.1645. Minnesota Power's development of this 200 MW wind project will facilitate compliance under the requirements established in Minn. Stat. § 216B.1691.
- Approval to include associated costs in the existing Renewable Resources Factor under its Renewable Resources Rider ("RRR").
- An expedited review of this petition to facilitate a Public Hearing by April 30, 2026 and final approval by June 30, 2026 to facilitate project qualification for IRA tax incentives.

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I. INTRODUCTION

Minnesota Power (“Company”) respectfully submits this Petition to the Minnesota Public Utilities Commission (“Commission”) pursuant to Minn. Stat. § 216B.1645, subd. 1 and Minn. Rule 7829.1300. Minnesota Power is seeking Commission approval for investments, expenditures, and costs related to the Longspur Wind Project (“Longspur” or the “Project”) through Minnesota Power’s Commission-approved Rider for Renewable Resources (“Renewable Resources Rider”).

Due to recent federal changes affecting the availability of Production Tax Credits (“PTCs”) and Investment Tax Credits (“ITCs”), the Company also requests expedited review of this petition to protect the project’s economic competitiveness and ensure lowest cost for customers. The Company respectfully asks that the Commission approve its request to expedite these proceedings to facilitate a Public Hearing by April 30, 2026 and Final Approval by June 30, 2026 so that Minnesota Power may begin construction of Longspur in time to secure these critical tax credits.

In total, Minnesota Power requests that the Commission approve the following requests set out in this Petition:

- Approval for investments and expenditures related to the Longspur Wind Project pursuant to Minn. Stat. § 216B.1645. Minnesota Power’s development of this 200 megawatt (“MW”) wind project will facilitate compliance under the requirements established in Minn. Stat. § 216B.1691.

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- Approval to include associated costs in the existing Renewable Resources Factor under its Renewable Resources Rider.
- An expedited review of this petition to facilitate a Public Hearing by April 30, 2026 and final approval by June 30, 2026.

Minnesota Power’s commitment to diversifying its power supply and supporting renewable energy options is guided by the Company’s approved 2021 Integrated Resource Plan¹ (“2021 IRP”) and its climate related goals in its *EnergyForward* resource strategy. In 1906, Minnesota Power got its start by harnessing the clean, emission-free hydro energy generated by the St. Louis River near Duluth, Minnesota. Today, Minnesota Power utilizes a diverse combination of resources and has transitioned from a portfolio that was 5 percent renewable in 2005 to one that is delivering between 50 and 60 percent renewable energy to its customers today. The Company is continuing its leadership in the renewable energy space and ALLETE is the largest investor in renewable energy of any investor-owned utility in the country for its size. The Longspur Wind Project is an integral part of Minnesota Power’s progress towards meeting both the Carbon Free Standard (“CFS”) and Renewable Energy Standard (“RES”), and an example of its ongoing commitment to reinvest in energy-impacted communities and utilizing existing infrastructure to deliver economic wind energy to customers.

¹ Docket No. E015/RP-21-33, In the Matter of Minnesota Power’s Application for Approval of its 2021-2035 Integrated Resource Plan

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In the Commission’s January 9, 2023 Order *In the Matter of Minnesota Power’s 2021-2035 Integrated Resource Plan*, Minnesota Power was directed in Order Point 1a to acquire “at least 300 MW of wind ... as practicable.” Additionally, Order Point 4 laid out a bidding process for resource acquisitions for projects in the 2021 IRP, which is described in more detail in section III.C.

Minnesota Power filed a Request for Proposal (“RFP”) for up to 400 MW of wind resources regionally located within MISO Local Resource Zone 1 for the Commission’s review on December 15, 2023, and issued the RFP on February 15, 2024. This RFP was issued in response to 2021 IRP Order Points 1a and 4. The RFP closed at 5 p.m. CST on April 11, 2024 and sought to maximize the economic benefits of wind development by including preferences for diverse bidders and domestically sourced materials, project labor resource requirements for construction and permanent staffing, and the development of apprenticeship programs.² Quantitative and qualitative evaluations on received bids were performed by Minnesota Power and Independent Evaluator (“IE”) Levelized Consulting; the IE report can be found in Appendix A. The result of this process was the selection of the Longspur Wind Project. The Longspur Wind Project is an important project for Minnesota Power, as it will generate carbon-free energy for customers and help the Company to reach the CFS and RES requirements.

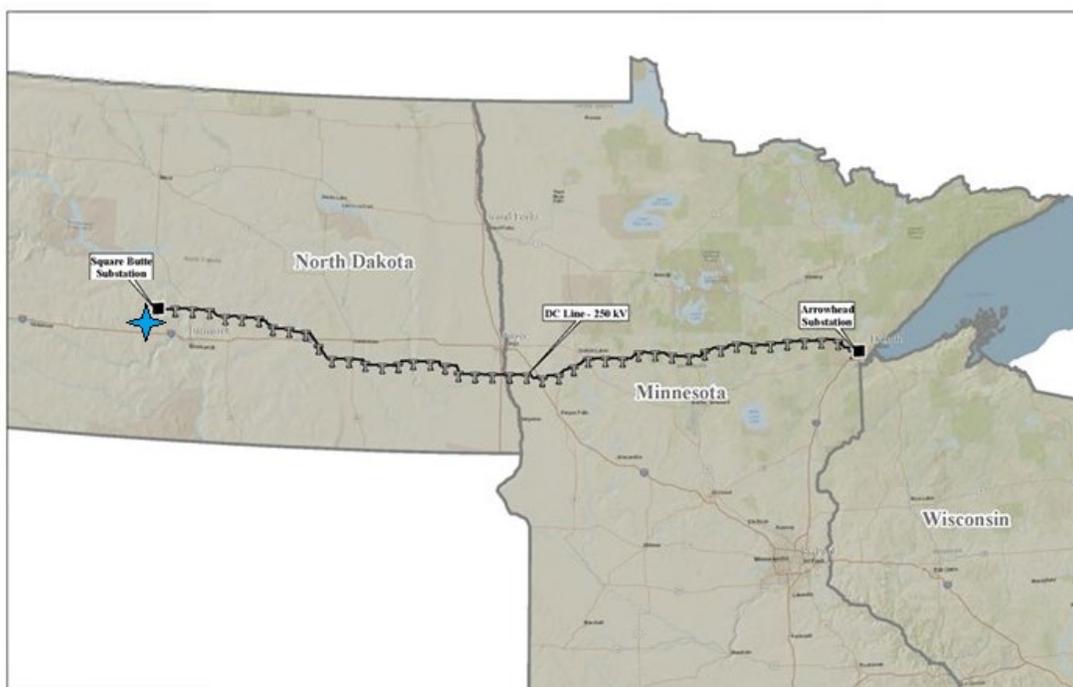
² <https://investor.allete.com/news-releases/news-release-details/minnesota-power-advances-energyforward-request-proposals-400>

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Figure 1: Minnesota Power's HVDC Line with approximate location of Longspur



The Longspur Wind Project will utilize Minnesota Power's unique position with its High Voltage Direct Current ("HVDC") Line and associated modernization project that increases delivery capability, which allows customer access to the premium, lowest-cost wind resources available in North Dakota.³ The Company's modernized HVDC Transmission system, which increases reliability and minimizes customers exposure to

³ Docket No. E015/CN-22-607 and E015/TL-22-611, Combined Application for a Certificate of Need and a Route Permit

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delivery cost (i.e. Midcontinent Independent System Operators (“MISO”) Locational Marginal Price (“LMP”) congestion costs), will be utilized by the project.

Furthermore, the Project intends to utilize the Energy Community Tax Credit Bonus incentive from the Inflation Reduction Act (“IRA”) to provide additional cost reduction benefits for customers, but as discussed further below, the current federal regulatory and economic environment is very dynamic.

A. Overview of the Project

The Longspur Wind Project is a 200 MW alternating current (“AC”) wind facility to be constructed in Morton County, North Dakota near Minnesota Power’s existing Bison operations with a planned in-service of late 2027. The project will utilize the recently approved upgrade of the Company’s HVDC system to deliver wind energy efficiently to customers. The Longspur Wind Project was submitted as a self-build project into the Minnesota Power Wind RFP on April 9, 2024, and was - and remains - the lowest cost project bid into the RFP. Minnesota Power is currently securing required North Dakota state permits and will complete the application process by the end of 2025. Additionally, the project is currently being evaluated in the MISO Definitive Planning Phase 3 process (“DPP3”) as part of the 2021 West Study Group and the Company is evaluating options for further optimizing its interconnection by participating in the MISO Expedited Resource Addition Study (“ERAS”). The most recent cost estimate for the project is \$790 Million (See Section IV), and the project has been updated to address the uncertainty around materials, interconnection costs, and tariff impacts currently impacting the renewable

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implementation arena. The Project is proposed to consist of approximately 50 modern wind turbines that will economically optimize the wind production potential in the region.

B. *EnergyForward* Strategy

The Company's renewable resource development is guided by its approved 2021 IRP and *EnergyForward* resource strategy, which incorporates a diverse renewable and carbon-free strategy including hydroelectric, solar, biomass, wind, and energy storage resources. Under this strategy, Minnesota Power is currently delivering over 50 percent renewable energy to customers and is the first Minnesota utility to achieve this milestone. Minnesota Power's most recent 2025 IRP recommends adding additional wind to meet energy needs of customers and the CFS requirements and move actions to increase our supply to be 90% renewable portfolio, reaffirming wind is continuing to be a least cost renewable energy source for customers to meet this wide set of requirements.

Over the past two decades to reach these leading levels, the Company has taken significant actions to increase its deployment of renewable energy including adding more than 1350 MW of renewable electricity to the Company's generation portfolio. In 2006 and 2007, Minnesota Power began purchasing the entire output of the Oliver County Wind Energy Center 1 and 2 (just under 100 MW), wind farms built and operated by NextEra Energy in North Dakota. In 2008, Minnesota Power constructed the 25 MW 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

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carbon-free energy via the Company’s HVDC Line directly to the Company’s customers. After record rainfall and flooding resulted in damages to Minnesota Power’s Thompson hydroelectric facility in June 2012, Minnesota Power’s Thompson hydroelectric restoration project restored production, maintaining a key 72 MW hydroelectric resource on its system. In 2016, Minnesota Power completed the 10 MW Camp Ripley solar project. In 2018, the Company’s 1.04 MW Community Solar Garden program officially started. 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 in MN and 383 MW of hydroelectric energy through PPAs with Manitoba Hydro and the completion of the international 500 kV Great Northern Transmission Line. In 2020, the Minnesota Public Utilities Commission asked the state’s utilities to accelerate planned projects to help kick-start local economies affected by the pandemic. The Company’s three resulting solar projects (totaling 22.4 MW) generate carbon-free energy for customers, boost the tax base of local economies, created local union jobs, contracted with local and diverse suppliers whenever possible, and were built with solar panels from regional manufacturers.

Most recently, the Commission approved the Company’s Regal Solar Project (approximately 119.5 MW) and Boswell Solar Project (approximately 85 MW).⁴ The Company is currently meeting the RES requirement in the near term. Additionally, the

⁴ Docket Nos.E-015/M-24-343 & E-105/M-24-344

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Company's proposed 2025 IRP assesses a wide range of power supply resources and pathways to meet the Minnesota CFS requirements.

C. Customer Benefits

Longspur will provide an additional renewable resource to Minnesota Power's system that will provide substantial long-term benefits for customers. The project will reduce carbon emissions and criteria pollutants in the power supply, by displacing fuel cost and market purchases while leveraging PTCs and existing infrastructure. The EnCompass planning evaluation shows adding Longspur to the company's renewable portfolio reduces power supply cost by over \$1 billion (NPV, 2025-2050) through 2050 when factoring in the energy and environmental benefits. These strong results reaffirm the approved actions in the Company's 2021 IRP, that wind energy is a least cost resource to help meet customer energy and reliability requirements, while at the same time making progress on renewables and the Minnesota CFS requirements. The analysis also highlighted the economic importance of the PTC benefits for customers and the Company appreciates the Commission's consideration of an expedited review of the petition to help position the project to be eligible for these benefits.

D. Cost Uncertainties

The current development market, interconnection, and Federal regulatory environments are increasing long-term uncertainty and producing inflationary pressures on both equipment and services costs. Relative to the other projects considered, the Longspur Wind Project has been best able to address those challenges, but it is not immune to them. During the development of this project, the Company has encountered several

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areas in which costs remain uncertain. The primary remaining uncertainties pertain to interconnection costs, the evolving tariff landscape, continued inflation, and the ultimate fate of PTCs at the federal level. Minnesota Power remains committed to advancing wind energy alternatives to secure the needed renewable energy while recognizing these remaining uncertainties will exist as the final implementation progresses.

Interconnection Costs

Like other evaluated projects, Longspur’s generator interconnection request is still under evaluation by MISO as part of the 2021-Cycle West Study Group in the MISO DPP process. Originally scheduled for release in the second quarter of 2024, MISO released the DPP2 System Impact Study (“SIS”) results for generation projects in Longspur’s study group on June 24, 2025, following cascading delays with other DPP study groups. Based on these preliminary results, Longspur has been assigned approximately **[TRADE SECRET DATA BEGINS [REDACTED] TRADE SECRET DATA ENDS]** in additional interconnection costs beyond the DPP1 costs that were included in the original RFP bid.

Longspur entered phase 3 of the MISO DPP process (DPP3) on July 16, 2025. In DPP3, MISO will re-evaluate the interconnection impacts of each project that chose to be included in MISO DPP3. As this next phase of the MISO process will fully incorporate the now approved HVDC upgrade project⁵ into the evaluation for the Longspur project, the

⁵ Docket No. E-015/CN-22-607, “Order” October 25, 2024.

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company expects that the MISO DPP3 results will indicate a reduction in interconnection costs for Longspur from the previously estimated MISO DPP2 results. In parallel with the MISO DPP3 process to further work to optimize interconnection costs for customers, the Company intends to submit Longspur into MISO’s Expedited Resource Study Addition (“ERAS”) interconnection process on August 6, 2025. Longspur received approval from the MPUC on July 24, 2025 to submit the project into the ERAS process and received a signed relevant electric retail regulatory authority (“RERRA”) verification letter from the MPUC on July 26, 2025, demonstrating that building Longspur meets a resource adequacy and/or reliability need of the Company.

Once MISO completes their evaluation of the projects submitted into ERAS, accepted projects will be assigned to study groups of 10 projects per quarter until the MISO receives a total of 68 projects. If Longspur is selected for the ERAS process, the Company will evaluate whether to continue with the current DPP process. Entering the ERAS process could, depending on placement in the queue provide accelerated insight and certainty of final interconnection costs and the assigned study group.

Tariffs

The Company has been proactively working to contain costs and minimize disruptions caused by the dynamic tariff environment at the federal level. The wide-ranging and unpredictable impact of tariffs on the cost of components and materials necessary for the construction of Longspur have caused uncertainty. The Company has been diligently monitoring and has budgeted **[TRADE SECRET DATA BEGINS** [REDACTED] **TRADE SECRET DATA ENDS]** for a potential tariff-driven cost increase based on the most recent

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information available. The Company has remained in regular contact with key suppliers and contractors for this project to identify country specific tariff exposure and include clear cost adjustment and transparency mechanisms for tariffs in major equipment contracts. The procurement process has been initiated earlier than in past projects to secure critical electrical components due to increased lead times, compared to previous years, and has also made use of competitive bidding processes with high-end suppliers for major components and labor contracts for secure the most competitive offers possible. The Company will continue to monitor changes in tariff policy.

Inflation

The Company continues to closely monitor inflationary pressures as they impact the development of Longspur. Rising costs for raw materials, labor, and transportation-exacerbated by global supply chain disruptions-pose challenges to maintaining project budgets and timelines. The Company aims to ensure the long-term viability and competitiveness of Longspur while supporting its broader sustainability goals.

Tax Credits

The passage of H. Con. Res. 14, Title II Reconciliation ("H.R. 1") passed on July 4, 2025 has impacted the availability of PTCs and ITCs which are critical not only to the Longspur project but for the renewables industry in general. Projects that begin construction after one year from enactment of H.R. 1 must be in service by December 31, 2027 to receive

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PTCs or ITCs. Expediting regulatory review of this project will allow Minnesota Power to initiate construction as soon as possible to take advantage of the available tax credits.

The Company is taking a proactive advocacy role in these areas of cost uncertainty and if this request is approved, will remain in close communication with the Commission and relevant stakeholders as these situations evolve during project implementation.

II. PROCEDURAL MATTERS

A. General Filing Information

Pursuant to Minn. Stat. § 216B.16, subd. 1 and Minn. Rule 7829.1300, Minnesota Power provides the following required general filing information.

1. Summary of Filing (Minn. Rule 7829.1300, subp.1)

A one-paragraph summary accompanies this Petition.

2. Service on Other Parties (Minn. Rule 7829.1300, subp. 2)

Pursuant to Minn. Stat. § 216.17, subd. 3 and Minn. Rule 7829.1300, subp. 2, Minnesota Power eFiles the Petition on the Department of Commerce - Division of Energy Resources ("the Department") and the Minnesota Office of the Attorney General - Antitrust and Utilities Division. A summary of the filing prepared in accordance with Minn. Rule 7829.1300, subp. 1 is being served on Minnesota Power's general service list.

3. Name, Address and Telephone Number of Utility (Minn. Rule 7829.1300, subp. 3(A))

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Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 722-2641

4. Name, Address and Telephone Number of Utility Attorney (Minn. Rule 7829.1300, subp. 43B))

Sarah Whiting
Attorney
ALLETE, Inc.
30 West Superior Street
Duluth, MN 55802
(218) 355-3033
swhiting@allete.com

5. Date of Filing and Date Proposed Rate Takes Effect (Minn. Rule 7829.1300, subp. 3(C))

This Petition is being filed on August 4, 2025. The effective date is the date of the Commission's Order or such other date as directed in the Commission's Order.

6. Statute Controlling Schedule for Processing the Filing (Minn. Rule 7829.1300, subp. 3(D))

This Petition is made pursuant to Minn. Stat. § 216B.1645, subd. 1. Minn. Rule 7825.3200 requires that utilities serve notice to the Commission at least 90 days prior to the proposed effective date of modified rates. Furthermore, Minnesota Power's Petition falls within the

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definition of a "Miscellaneous Tariff Filing" under Minn. Rules 7829.0100, subp. 11 and 7829.1400, subp. 1 permitting comments in response to a miscellaneous filing to be filed within 30 days and reply comments to be filed no later than 10 days thereafter.

This Petition is also made pursuant to Minn. Rules 7825.2400, 7825.2500 and 7825.2600, which permit public utilities to adjust rates to reflect changes in the cost of energy delivered to customers by utilizing an adjustment to recover costs for fuel used in the generation of electricity.

7. Utility Employee Responsible for Filing (Minn. Rule 7829.1300, subp. 3E)

Jess McCullough
Public Policy Advisor II
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3178
jmccullough@mnpower.com

8. Impact on Rates and Services (Minn. Rule 7829.1300, subp. 3(F))

This filing will have no effect on Minnesota Power's base rates. However, since this is a request for current cost recovery eligibility that, if approved by the Commission, Minnesota Power will seek to include, in the future, the costs as part of its Renewable Resources Rider. The anticipated rate implications are provided in Section IV.

9. Service List (Minn. Rule 7829.0700)

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Sarah Whiting
Attorney
ALLETE, Inc.
30 West Superior Street
Duluth, MN 55802
(218) 355-3033
swhiting@allete.com

Jess McCullough
Public Policy Advisor II
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3178
jmccullough@mnpower.com

Information Request Service List:

Sarah Whiting
Attorney
ALLETE, Inc.
30 West Superior Street
Duluth, MN 55802
(218) 355-3033
swhiting@allete.com

Jess McCullough
Public Policy Advisor II
Minnesota Power
30 West Superior Street
Duluth, MN 55802
(218) 355-3178
jmccullough@mnpower.com

Minnesota Power Discovery Manager
discoverymanager@mnpower.com

Minnesota Power Regulatory Compliance
MPRegulatoryCompliance@mnpower.com

B. Trade Secret Designation (Minn. Rule 7829.0500)

Pursuant to Minn. Stat. §§ 13.01 et seq. and Minn. Rule 7829.0500, Minnesota Power has designated portions of the Petition as containing Trade Secret information and these have been redacted as appropriate to reflect the Trade Secret nature of the documents. Trade Secret and Public copies of the Petition are being eFiled in accordance with the Commission's Rules and Minn. Stat. § 216.17, subd. 3. A statement regarding justification for excising Trade Secret information accompanies this Petition.

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for Approval of Investments and Expenditures
in the Longspur Wind Project for Recovery
through Minnesota Power's Renewable Resources
Rider under Minn. Stat. § 216B.1645

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**III. THE PROJECT – RENEWABLE RESOURCES RIDER
AUTHORIZATION**

Minn. Stat. § 216B.1645 allows the Commission to approve a schedule that provides for the automatic adjustment of charges to recover prudently incurred investments, expenses, or costs associated with facilities constructed, owned, or operated by a utility to satisfy the requirements of Minn. Stat. § 216B.1691.

The wind energy generated by the Longspur Wind Project qualifies as eligible energy technology and carbon free technology under Minn. Stat. § 216B.1691, subd. 1b and 1c. Minnesota Power requests Commission approval of this Petition pursuant to Minn. Stat. § 216B.1645, subd. 2a for eligibility to include cost recovery of incurred investments and costs for the Longspur Wind Project, including interconnection facilities, through Minnesota Power's Commission-approved Renewable Resources Rider.

A. Project Description and Overview (Minn. Stat. § 216B.1645, subd. 2a(b)(1))

The Longspur Wind Project is an approximately 200 MW wind energy facility that will be located near Glen Ullin in Morton County, North Dakota. The Project will use approximately 50 [TRADE SECRET DATA BEGINS ██████████ ██████████ TRADE SECRET DATA ENDS] wind turbines and is anticipated to add approximately 896,000 MWh of renewable energy annually, and current cost estimates of approximately \$790.9 million to build. Longspur will interconnect to the existing transmission system at the nearby Tri-County Substation. Minnesota Power intends to construct an approximately 2.5-mile gen-

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tie line to interconnect the project. Longspur is scheduled to begin construction in 2026 and be fully operational before year-end 2027. The Company anticipates the issuance of North Dakota Public Service Commission permits for the project in Q2 2026.

B. Project Location

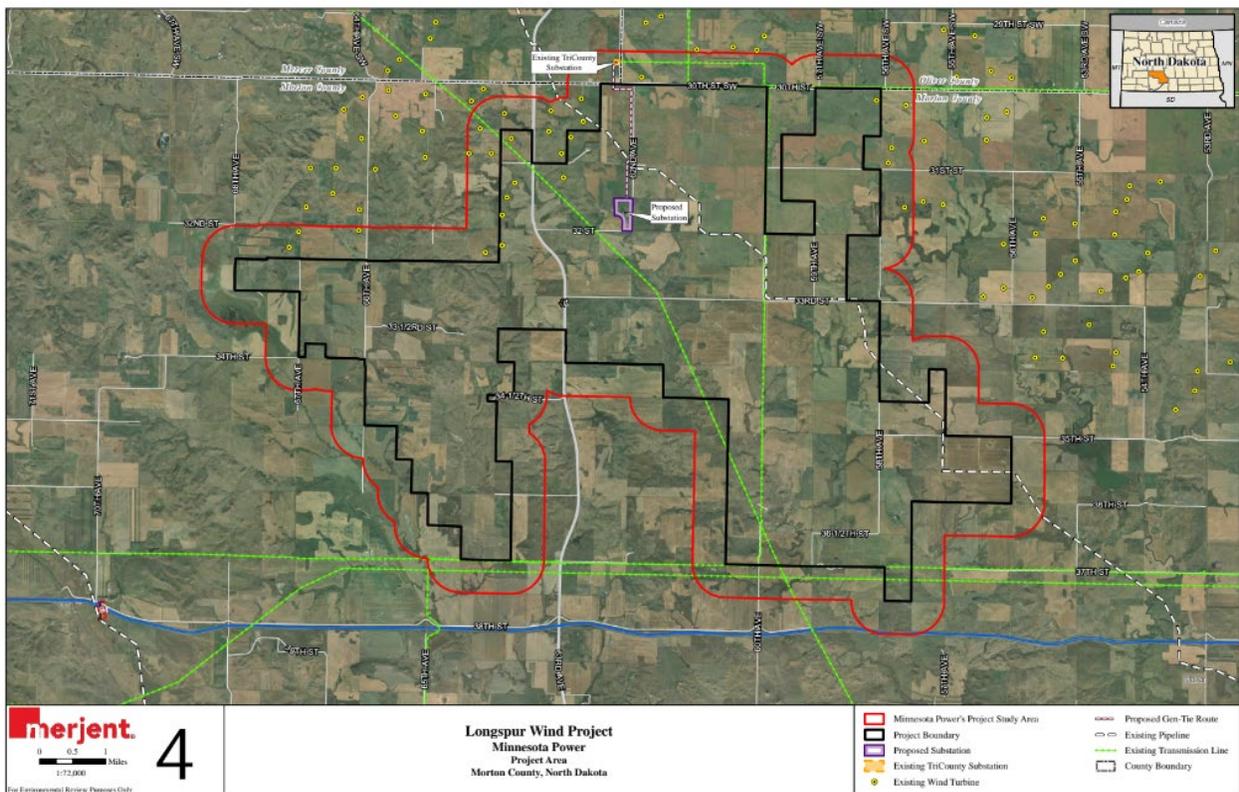
The Longspur Wind Project is located in Morton County, North Dakota, as shown in Figure 2. It is sited on land that is currently under easement agreement or lease option, the latter of which may be converted to easement agreements with a term of 50 years. The land necessary for site control has been secured. The site was selected in part due to its close proximity to Minnesota Power's Bison wind facility, enabling the sharing of some resources including site personnel, tools, and heavy equipment. Additionally, Longspur is in a census tract identified by the US Department of Energy as adjoining a tract containing a coal-fired electric generation unit retirement. This should qualify the project for the 10 percent Energy Community Tax Credit Bonus, bringing the total tax credit potential to 110 percent PTC.

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Figure 2: Location of Longspur Wind Project



C. Request for Proposal Process and Project Award

In July 2023, Minnesota Power retained an independent evaluator to oversee the RFP process for Minnesota Power’s Regional Wind Request for Proposals and provide an independent evaluation of bids. This was undertaken as required by order point 4e in the Order Approving Plan and Setting Additional Requirements for Minnesota Power’s 2021 IRP in Docket No. E-015/RP-21-33 (“2021 IRP Order”), issued January 9, 2023, “In instances where Minnesota Power or an affiliate proposed a project, engage an

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independent evaluator to oversee the bid process and provide a report for the Commission.” An independent evaluator was obtained through a competitive bidding process because Minnesota Power was interested in proposing wind projects into the bidding process as the Company has extensive experience developing, implementing, and operating utility scale energy generation facilities and had existing assets that could enable efficiencies for ongoing maintenance and operations of the site.

On December 15, 2023, Minnesota Power filed the RFP for the Commission’s review. With no issues identified through the review process, on February 15, 2024, Minnesota Power issued the RFP, which requested up to 400 MW of regionally located wind generation. The RFP was advertised in a press release on the Minnesota Power website on February 15, 2024, notifying the public and industry members of the RFP opportunity. The RFP was open to all developers. On March 7, 2024, Minnesota Power held an online seminar that allowed prospective bidders to ask clarifying questions regarding the RFP that was issued.

The projects sought in the RFP could be comprised of PPAs, Build-Own-Transfer (“BOT”) agreements, and/or self-build projects. The RFP received proposals for six projects, including one self-build project, one partnership BOT project, three PPAs and one project with both a PPA and BOT option. All proposals were submitted directly to the independent evaluator, who provided the first initial screening of the proposals to determine compliance with the requirements set out in the RFP. After initial review, the six projects were moved forward to the next phase of the evaluation, which included qualitative and quantitative (cost) evaluations.

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Consistent with the Commission’s 2021 IRP Order and FERC Code of Conduct requirements, since Minnesota Power was expecting to receive self-build proposals, and under the guidance of legal counsel, the Company instituted a procedural “wall” prior to submitting the RFP. The wall separated its RFP Team, which was responsible for developing, issuing, and implementing the Wind RFP, from the Wind Development Team, which was responsible for developing the self-build proposals, and prevented project-related data sharing between the two teams. This separation ensured both the integrity of the process and value for Minnesota Power’s customers. The wall was removed after the projects were shortlisted.

The Company received bids for build/own/transfer (“BOT”), power purchase agreement (“PPA”), and self-build options ranging from approximately **[TRADE SECRET DATA BEGINS** [REDACTED] **TRADE SECRET DATA ENDS]**. As a reference, the 2021 IRP assumed a range of **[TRADE SECRET DATA BEGINS** [REDACTED] **TRADE SECRET DATA ENDS]**. The initial bids received generally reflected what was modeled in the IRP, but are largely dependent on supply chain certainty, workforce availability, tariff uncertainty, MISO interconnection costs and general inflation risk.

Through the shortlisting process, Minnesota Power’s Longspur Wind Project proposal was deemed the lowest cost option by the initial assessment performed by the independent evaluator. In the RFP shortlisting process, three other projects, including a build-own-transfer proposal in conjunction with **[TRADE SECRET DATA BEGINS**

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[REDACTED] **TRADE SECRET DATA ENDS]** from Minnesota Power and two PPA proposals were selected to continue to the next phase of evaluation.

Through the final selection process, Minnesota Power worked with the shortlisted bidders to assess the risk of the projects, requested updated pricing to meet Minnesota Power technical specifications and reevaluated the projects where the costs were increased from the initial bids received. The updated cost resulted in the upper range of bids from the shortlisted projects to increase to **TRADE SECRET DATA BEGINS** [REDACTED]

[REDACTED] **TRADE SECRET DATA ENDS]**. Tariffs, supply chain delays, and uncertain MISO interconnection costs increased the price of projects significantly. After several months of negotiating delays on other projects, Minnesota Power selected Longspur to move through to the final phase of execution – petitioning for Commission approval of investments and expenditures related to the project, as well as approval to include costs to the existing Renewable Resources Factor under its Renewable Resources Rider.

The original intent of the Company was to conclude negotiations with selected bidders by the 4th Quarter of 2024 and apply for regulatory approval in the 1st Quarter of 2025. Unfortunately, the timeline was delayed due to several significant local and national factors. The Company initially intended to announce multiple selected projects as a portfolio, however, negotiations stalled and material changes occurred in the project list including inability to provide certain assurances on labor and cost protections to maintain that project’s compliance with fundamental requirements of the approved RFP terms. unique transmission challenges that could not be easily solved which resulted in some

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changes in estimated online dates being well beyond the 2028 date required by the wind RFP. Minnesota Power removed this project from further consideration in the shortlist negotiation process. A third project posed potentially significant congestion concerns that required additional evaluation and negotiations. These extended negotiations delayed project selection significantly and resulted in one project being removed from the shortlist.

Additionally as the Company was managing the uncertainty in the current environment, many of the evaluated projects, including Longspur, are still in the MISO Definitive Planning Phase ("DPP") study process in pursuit of a Generator Interconnection Agreement (or, "GIA"). The DPP process has been delayed many times and impacted interconnection cost estimates across all of the MISO study groups. During this same time, the announcement of steel, aluminum, and country-specific tariffs introduced more cost uncertainty for the projects in the RFP. The tariff announcements along with the uncertain future of PTCs for wind projects required careful analysis and evaluation to assess the potential impact to customers. With significant changes emerging during the shortlisting negotiations process, the Company is re-engaging with non-shortlisted bidders checking on availability of projects and requesting price updates. Minnesota Power will continue to pursue negotiations and evaluate procuring up to an additional 200 MW of wind generation from the remaining bids still available. Minnesota Power will update the Commission if the Company recommends selection of additional projects from bids received in this RFP.

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D. Utilization of Federal Legislation & Tax Matters

The passage of the IRA brought both change and opportunity for renewable energy projects. Longspur is well positioned to capture these benefits as it is located in a community impacted by the energy transformation that is occurring locally and nationally.

The Company is evaluating all possible methods to take advantage of the extended Production Tax Credit availability for Longspur to qualify for a 110 percent PTC. Longspur is in a census tract identified by the US Department of Energy as adjoining a tract containing a coal-fired electric generation unit retirement, which would qualify Longspur for the 10 percent Energy Community Tax Credit Bonus. The choice between PTCs and ITCs is project specific and depends upon the wind resource in the area. The Longspur Wind Project is expected to have a high capacity factor due the efficient wind resources of its location coupled with advanced wind turbine technology. For Longspur, a PTC based on megawatt hours produced is more beneficial than an ITC based on project cost. The Company will continue to monitor the economic benefits of both PTCs and ITCs during construction to ensure the lowest cost to ratepayers. The Project plans to utilize labor resources complying with the IRA's wage and apprenticeship requirements to secure the full base tax credit.

Minnesota Power is currently evaluating the implications of the accelerated phase-out of Wind and Solar ITCs and PTCs under H.R. 1. Wind projects that commence construction by July 4, 2026 or are placed in service by December 31, 2027 are expected to remain eligible for these credits. The President issued an executive order on July 7, 2025 directing the U.S. Treasury to release guidance on acceptable strategies for establishing

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the start of construction. The guidance is required to be issued within 45 days of H.R. 1’s enactment. In the meantime, Minnesota Power is actively exploring multiple approaches to initiate construction within the required timeframe and secure eligibility for the credits.

Longspur has an anticipated in-service date of Q4 2027 and is anticipated to qualify for the federal PTC. The Project will comply with prevailing wage and apprenticeship requirements and expects to qualify for 110 percent of the PTC value. The Company estimates that the Project will result in a total gross PTC benefit of approximately **TRADE SECRET DATA BEGINS** [REDACTED] **TRADE SECRET DATA ENDS** which will reduce the revenue requirement as the credits are earned during the first 10 years the Project is in service. The expedited review process requested in this petition will assist in capturing these benefits.

The construction of Minnesota Power’s four Bison Wind projects, as well as the construction and repowering of Taconite Ridge Energy Center, generated significant PTCs starting in 2009. The PTCs reduced the Company’s revenue requirement in the years in which they were generated, but because the Company was in a Net Operating Loss (“NOL”) position for those years, the PTCs could not be applied to reduce the Company’s federal tax liability and were instead carried forward as an Accumulated Deferred Income Tax Asset (“ADITA”). The PTC ADITA was incorporated into base rates in the 2016 Rate Case. In 2020, the Company fully utilized its federal NOL and began utilizing the PTC ADITA to offset its federal tax liability.

The IRA currently allows PTCs generated after 2022 to be transferred (sold) to an eligible taxpayer in exchange for cash, which the company intends to do for Longspur- generated

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PTCs. Transferring credits is a benefit to customers because the ADITA will remain unchanged; the credits earned will increase the ADITA, but the cash received will immediately reduce the ADITA. This will allow the ADITA to decrease faster than if the Company retained the credits for its own use. Minnesota Power expects to transfer the PTCs at a discount which is necessary to incentivize eligible transferee taxpayers to purchase the credits. The discount will reduce the net benefit of the PTCs to customers, but the cumulative benefit of immediately reducing the ADITA through the sale of PTCs and customers seeing those benefits sooner will outweigh the detriment of the discount. The benefits will flow through the Renewable Resource Rider.

The current federal regulatory uncertainty makes definitive planning more challenging, and economic uncertainty further compounds this challenge but further delays are not likely to improve the Project economics. However, as noted above, the Company is actively seeking to capture PTCs to maximize benefits to customers through thoughtful planning and seeking expeditious approval of the project at multiple levels.

E. Wind Array Construction

The Project intends to utilize approximately 50 [TRADE SECRET DATA BEGINS] [REDACTED] [TRADE SECRET DATA ENDS] wind turbines across 27,000 acres of Morton County prairie and farmland that is currently under lease option agreement. Final turbine selection has not been determined. The Project will consist of approximately 50 turbines. The Company intends to install towers approximately 115 meters high, which come with lifts to access the nacelles for maintenance. Each turbine will also include an automatic

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lubrication system for the main bearing and generator bearings and an onboard condition monitoring system.

A 34.5 kV collector line system will tie the turbines back to a new 34.5 kV / 230 kV project substation, and an approximately 2.5 mile 230 kV generator-tie line will connect the project substation back to Minnesota Power’s existing 230 kV Tri-County Substation in Mercer County, North Dakota. Interconnection service will be conditional until all network upgrades required by the GIA are complete.

In constructing Longspur, the Company plans to utilize local union labor and businesses as much as possible to ensure that the North Dakota local and regional community benefits from the project. The project team will work with an engineering, procurement, and construction (“EPC”) contractor to secure local union labor and diverse suppliers as much as possible. All labor should meet the prevailing wage and apprenticeship requirements outlined in the IRA.

F. Socioeconomic Impact

The Longspur Wind Project represents an approximately \$790.9 million investment in wind energy in North Dakota. The project brings economic benefits in the form of both tax revenues and local employment, with preliminary estimates indicating 200-300 workers involved in construction. While the project is not physically located in Minnesota, it does provide benefits for Minnesotans. Expanding the Company’s fleet of highly efficient and economic renewable generation will support the Company’s carbon free energy transition while keeping costs reasonable for Minnesota Power customers, and increase the ability of Minnesotans share in the benefits of clean and renewable energy and the opportunity

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to participate in the clean energy economy and associated economic development expansions.

G. Transmission and Interconnection

Longspur will have a nameplate of approximately 200 MW at the point of interconnection and has an advanced staged interconnection underway with MISO. A 34.5 kV collector line system will connect the wind turbines back to a new central collector substation located at the project site. This collector substation will connect to a 230 kV gen-tie line that will deliver energy back to the point of interconnection at the existing Minnesota Power Tri-County 230 kV substation. The collector substation will contain two 230/34.5 kV transformers with a top rating of 150 MVA each.

The HVDC Line is an efficient asset for lowering the delivery costs of Minnesota Power energy generated in North Dakota. The ability to transfer bulk power from energy-rich North Dakota to the Company’s customers in Northeastern Minnesota remains extremely advantageous. The HVDC Line reduces costs associated with congestion and line losses when delivering energy over long distances, removing market variability in between the two locations and creates efficiency in the MISO interconnection process. Ultimately, the unique HVDC Line allows customers throughout Minnesota Power’s service territory – regardless of income level or customers class – to access the Company’s cost-effective renewable resources where they are produced most economically.

On October 25, 2024, the Commission approved Minnesota Power’s combined certificate of need and high-voltage transmission line route permit application for the HVDC

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Modernization Project in Docket No. E-015/CN-22-607.⁶ The MP HVDC Line is a 465-mile, ±250 kilovolt (kV), 550-megawatt (MW) High-Voltage Direct-Current (HVDC) transmission line. The HVDC Modernization Project involves upgrading the two HVDC terminals connected to Minnesota Power's HVDC Line. The primary need for the Project is to update aging electric infrastructure that has reached the end of its life.

The design for the new HVDC terminals includes an opportunity to leverage existing infrastructure to allow for additional energy transfer capability. The Company currently is implementing an additional 350 MW of capacity above the 550 MW present capability. Once the HVDC Modernization Project is completed, which is expected between 2029 and 2030, the HVDC Line will be used to transmit the wind energy generated by Longspur back to Minnesota without relying upon the North Dakota AC transmission system, which subjects wind resources to curtailment and congestion costs when unable to leave North Dakota's system. During the short period between the in-service date of Longspur (estimated Q4 2027) and that of the modernized HVDC line (2029-2030), energy from Longspur will flow through the North Dakota AC system.

H. Ensuring Reasonable Project Costs (Minn. Stat. § 216B.1645, subd. 2a(b)(4))

Minnesota Power has employed multiple steps to help ensure the procurement of cost-effective resources to meet its customer and renewable product needs, including for the

⁶ Ibid.

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Longspur Wind Project. As described previously, Minnesota Power engaged in an RFP process for the selection of Longspur to ensure the lowest costs for customers.

Contracts for the engineering, procurement, and construction of the project will be issued based on competitive bidding when possible. In some cases, contracts may be awarded on a single source basis to qualified contractors based on utilizing existing partnering agreements or to those who have specific expertise. Equipment selection will not only include price, but also reliability, operability, adaptability to northern climates, equipment lead times, product availability, and overall integration into Minnesota Power's wind fleet equipment selection with the intent to deliver the highest value to customers.

In addition to keeping project costs reasonable, contractors on this project will be asked to enroll in Minnesota Power's Tier 2 reporting program, which facilitates doing business with diverse and small companies (as subcontractors). Contractors in the program will report their diverse and small business spend quarterly to Minnesota Power.

The Longspur Wind project will leverage existing land options, transmission infrastructure, and workforce in the central North Dakota area, providing cost-effective generation for Minnesota Power customers, and will take advantage of IRA tax incentives, including the impacted Energy Community Tax Credit Bonus.

I. Renewable Energy Credits

Between 2006 and 2023, Minnesota Power executed PPAs, constructed, or rebuilt over 1350 MW of wind, solar, and hydro facilities to increase its Minnesota-eligible renewable energy supply. In 2023, the renewable portion of Minnesota Power's retail energy supply

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was greater than 50 percent of its projected 2025 retail and wholesale electric sales. As approved by the Commission in the 2021 IRP, Minnesota Power’s renewable portfolio is expected to increase by up to 400 MW of new wind and up to 300 MW of new regional solar, as practicable. As stated above, Minnesota Power continues to negotiate with shortlisted wind project proposals to meet these directives. These anticipated additions, including Longspur, will put Minnesota Power on a action focused path to complying with the CFS. Minnesota Power’s customers will receive all the renewable energy credits (“RECs”) and carbon free benefits from the Project.

The Company has maintained compliance with the RES and is well positioned for the recently expanded standard of 55 percent renewable generation by 2035. Minnesota Power has submitted plans for further expansion of renewable power supply alternatives in its proposed 2025 IRP as it works towards a sustainable path to meeting the broader CFS requirements by 2040.

J. Project Schedule and Permitting (Minn. Stat. § 216B.1645, subd. 2a(b)(2))

Minnesota Power strives to develop the Longspur Wind Project at the best value to customers. The proposed project schedule is shown in Table 1. This schedule assumes that the Company receives a Commission Order by the first week of June 2026 and receives the necessary permits by Q2 2026.

Table 1. Longspur Wind Schedule

Activity	Anticipated Date
Secure Site Control	Complete

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Secure Long Lead Electrical Equipment	Complete
MISO Definitive Planning Phase 2 Results	Complete and exploring MISO ERAS approach
Secure Wind Turbine Equipment	Q3 2025
Execution of EPC Contract	Q4 2025
MISO Definitive Planning Phase 3 Results	Q4 2025
Execute Generator Interconnect Agreement (GIA)	Q1 2026
Issuance of NDPSC Permits	Q2 2026
Start of Construction	Q3 2026
Commercial Operations	Q4 2027

The Company will pursue a Morton County, North Dakota, Special Use Permit as well as a North Dakota Public Service Commission (PSC) Certificate of Site Compatibility for Longspur. The Company will also obtain driveway and utility in road right-of-way permits from applicable road authorities, as required. The Company does not currently anticipate Longspur impacting jurisdictional wetlands. However, the Company will assess the need for wetland impact permitting from both the US Army Corps of Engineers and the North Dakota Department of Environmental Quality as the Project design and layout progresses. The Project will work with the EPC contractor to develop a Storm Water Pollution Prevention Plan and to receive coverage under the Company’s statewide general National Pollutant Discharge Elimination System construction stormwater permit from the North Dakota Department of Environmental Quality.

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**IV. SUMMARY OF INVESTMENTS, EXPENDITURES, AND CUSTOMER
IMPACTS**

A. Estimated Project Costs (Minn. Stat. § 216B.1645, subd. 2a(b)(3))

The Longspur Wind Project will help the Company comply with 2021 IRP Order Point 1a, requiring the Company to acquire up to 400 MW of wind. The Project's cost was initially estimated at approximately [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]. However, as shown in Table 2, the current Project estimate is \$790.9 million. This amount includes previously unforeseen expenses such as tariffs on critical materials and additional MISO interconnection costs, as discussed above in Section III. C. This estimate assumes that the Company receives a Commission order by the first week of June 2026 and current cost recovery begins July 2026.

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Table 22. Minnesota Power’s Capital Costs for the Longspur Wind Project

Capital Costs (dollars in millions)	
[TRADE SECRET DATA BEGINS]	
Wind Project Construction	[REDACTED]
Generator Interconnection	[REDACTED]
Anticipated Tariffs	[REDACTED]
[TRADE SECRET DATA ENDS]	
Total Project	\$790.9

The total annual revenue requirements over the 35-year life of the Project are shown below in Table 3. The revenue requirements are calculated using the total capital costs and anticipated PTCs, including Allowance for Funds Used During Construction (“AFUDC”) and internal capitalized costs. PTCs may only be collected for the first 10 years of the Project resulting in a revenue requirement increase in the generation project in the year 2038. The Company will appropriately exclude internal capitalized costs and AFUDC on internal capitalized costs from the revenue requirements once the project is included in a subsequent Renewable Resources Rider filing.

Minnesota Power and its contractors will be responsible for project management, permitting, licensing and approvals, design, procurement, site preparation, balance of plant construction, and ancillary facilities. Minnesota Power intends to procure long lead electrical equipment, such as main power transformers and high voltage breakers, while the remaining balance of plant equipment will be furnished by the EPC contractor. This

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approach will help maintain the planned schedule and decrease risk in the pricing for the project. Minnesota Power will have owner representatives on site during construction verifying the condition of equipment and adherence to design.

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Table 33. Total Annual Revenue Requirements for the Longspur Wind Project

(dollars in thousands)

Year	Longspur Generation	Longspur TriCounty Upgrades	Longspur TriCounty 230kV	Longspur Substation	Total Project
	TRADE SECRET DATA BEGINS				
2026 1/					
2027					
2028					
2029					
2030					
2031					
2032					
2033					
2034					
2035					
2036					
2037					
2038					
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2067					
2068					
2069					
2070					
2071					
2072					
2073					
	TRADE SECRET DATA ENDS				

1/ Assumes Commission approval of Petition by June 2026 and project in-service on March 31, 2028.

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B. Operations and Maintenance

Minnesota Power plans to enter into a Long-Term Service Agreement (“LTSA”) with the wind turbine OEM for up to 10 years. The LTSA will include the cost to procure and replace all defective parts, including major components such as blades, gearboxes, and generators for the term of the LTSA. Minnesota Power will support the turbine OEM service provider with all non-wind turbine operational duties, including snow removal, road maintenance, and electrical switching. At the end of the LTSA term, Minnesota Power will evaluate operating strategy options for the remainder of the project life, including an extension of the LTSA and operating Longspur with Minnesota Power renewable technicians.

Due to Longspur’s close proximity to Minnesota Power’s Bison wind site, some resources will be shared, including site personnel, tools, and heavy equipment. This unique attribute of the Project will enable an efficient approach to the ongoing maintenance and operational tasks required for the wind facility. Minnesota Power anticipates base O&M expense for Longspur to be approximately **[TRADE SECRET DATA BEGINS]** **[REDACTED]** **[TRADE SECRET DATA ENDS]** per year and include both preventative and corrective maintenance. This amount is in 2028 dollars and is projected to escalate at approximately 2.5 percent annually. Additional ongoing costs include insurance costs, taxes and land lease payments.

Base O&M activities include cleaning and inspecting wind turbines, planned and unplanned maintenance, major component replacements (blades, gearboxes, generators), snow removal, road maintenance, electrical collection and substation

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support, and vegetation management. The estimate also accounts for necessary replacements of parts needed within the 35-year expected life of the Project.

C. Estimated Net Customer Impact

Table 4 summarizes the estimated rider impact by customer class assuming the Project is approved by the Commission by early June 2026, with rider recovery starting in July of 2026 and the Project fully in-service by March 31, 2028. The rider impacts are based on Table 3. The rider increases in cents per kWh shown below are the incremental changes expected in subsequent Renewable Factors due to adding the Project compared to current average rates. Note that this analysis does not factor in the benefits of adding zero fuel cost energy into the Fuel and Purchased Energy Adjustment Clause ("FAC"), displacing either market energy and capacity purchases and fuel cost (i.e. coal and/or natural gas). The values discussed below are not a complete picture of the cost impact to customers, it only shows the change in the rider used to recover renewable project cost. The total rate and bill impact when factoring in the reduction in the FAC will be much lower than the values discussed below. Furthermore, when factoring in the carbon regulation and environmental cost impact, the analysis shows over \$1 billion (NPV 2025-2050) in power supply cost benefits with Longspur. Section 5C includes more information on estimated customer cost impacts when factoring in the reduction to the FAC, which shows a less than a \$1/MWh impact to customer cost on average through 2050.

Based on the above assumptions, all non-Large Power classes would have a gradual increase in rates in 2026 through 2028 of about 0.758 cents per kWh by 2029, the first full in-service year. For an average residential customer this would be about a 5.04

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percent increase or about \$5.21 more per month in 2029. The Large Power average class rate would see a gradual increase in 2026 through 2028 of about 0.578 cents per kWh by 2029. This would be an increase of about 6.44 percent in 2029. Note that this analysis does not factor in the benefits of adding zero fuel cost energy into the Fuel and Purchased Energy Adjustment Clause ("FAC"), displacing either market purchases or fuel cost (i.e. coal and/or natural gas). The total rate and bill impact when factoring in the reduction in the FAC will be lower than the values discussed above. Section 5C includes more information on rate impacts when factoring in the reduction to the FAC and carbon

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Table 4: Estimated Average Rate Impacts

**MINNESOTA POWER
Longspur Wind Plan Filing
Estimated Average Rate Impacts
(Assuming March 31, 2028 In-Service)**

<u>Rate Class Impacts /1</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>
Annual MN Jurisdictional Revenue Requirements	6,932,807	44,571,755	58,248,070	50,077,633
Residential (average current rate, cents/kWh)	15.031	15.031	15.031	15.031
Increase/Decrease (cents/kWh) /2	0.105	0.676	0.882	0.758
Increase/Decrease (%)	0.70%	4.50%	5.87%	5.04%
Average Impact (\$ / month)	\$0.72	\$4.64	\$6.06	\$5.21
General Service (average current rate, cents/kWh)	15.070	15.070	15.070	15.070
Increase/Decrease (cents/kWh) /2	0.105	0.676	0.882	0.758
Increase/Decrease (%)	0.70%	4.49%	5.85%	5.03%
Average Impact (\$ / month)	\$2.69	\$17.28	\$22.55	\$19.37
Large Light & Power (average current rate, cents/kWh)	11.628	11.628	11.628	11.628
Increase/Decrease (cents/kWh) /2	0.105	0.676	0.882	0.758
Increase/Decrease (%)	0.90%	5.81%	7.59%	6.52%
Average Impact (\$ / month)	\$245	\$1,576	\$2,057	\$1,767
Large Power (average current rate, cents/kWh)	8.973	8.973	8.973	8.973
Increase/Decrease (Demand & Energy Combined) (cents/kWh) /2	0.080	0.514	0.672	0.578
Increase/Decrease (%)	0.89%	5.73%	7.49%	6.44%
Average Impact (\$ / month)	\$39,739	\$255,322	\$333,807	\$287,113
Lighting (average current rate, cents/kWh)	45.579	45.579	45.579	45.579
Increase/Decrease (cents/kWh) /2	0.105	0.676	0.882	0.758
Increase/Decrease (%)	0.23%	1.48%	1.94%	1.66%
Average Impact (\$ / month)	\$0.14	\$0.89	\$1.16	\$0.99

Notes:

1/ Average current rates are 2024 Final General base rates without riders per MPUC decision (E-015/GR-23-155) adjusted to include current rider rates. Current rider rates included Renewable Resources Rider rates, Transmission Cost Recovery Rider rates, Solar Adjustment rates, Conservation Program Adjustment rates, and Fuel and Purchased Energy with True-Up. Average \$/month impact based on 2024 budgeted billing units.

2/ Increase/Decrease (cents/kWh) shown is the estimated average rate based on annual revenue requirements of the new project.

V. THE LONGSPUR PROJECT IS IN THE PUBLIC INTEREST

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Longspur is a key component of continuing the Company’s *EnergyForward* resource strategy. The Project will provide substantial benefits to Minnesota Power’s system and its customers through the addition of efficient renewable clean power that will continue to expand the Company’s wind, hydro, and distributed solar-centric renewable portfolio, provide energy during higher demand periods, and will reduce greenhouse gases and other criteria pollutants. Longspur will also ensure that the Company is making progress towards the RES and CFS requirements, while leveraging federal tax credits and existing and expanding energy infrastructure to efficiently add new renewable energy to the system.

Additionally, the Longspur Wind Project is consistent with Minnesota Power’s 2021 IRP Order. As stated earlier in this filing, Minnesota Power was directed in Order Point 1a to “[a]cquire up to 400 MW of regional/in-service territory or net-zero wind ... as practicable.”

Finally, the Longspur Wind Project will provide additional renewable resources to Minnesota Power’s system that will allow additional optimization with Minnesota Power’s remaining thermal power plants and market purchases. Thus, the Project would both reduce carbon emissions and criteria pollutants and increase access to clean energy resources for Minnesota Power’s customers.

A. Capacity and Energy

When fully operational, the Longspur Wind Project will add approximately 896,000 MWh of renewable energy and on average of approximately 20 MW of accredited capacity across the four planning seasons per year to Minnesota Power’s power supply. Minnesota Power anticipates the accredited capacity value for the Longspur Project to decline as

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additional wind is added to the broader system and as MISO continues to update its resource adequacy program. See Table 5 for anticipated seasonal capacity values.

Table 5. Longspur Seasonal Capacity

Longspur Seasonal Capacity Values				
	Spring	Summer	Fall	Winter
2028	12	27	24	23
2038	14	19	27	20

The Longspur Project generation is projected to supply approximately 8 percent of Minnesota Power’s customer demand.

B. Meeting the RES and CFS

As discussed earlier in this filing, the Longspur Wind Project will help the Company meet requirements established by the Commission in its 2021 IRP Order and continue to meet carbon-free generation goals of the CFS and]the RES. Additional actions being taken towards meeting the CFS include the Company’s Regal and Boswell solar projects, for which the Commission recently approved cost recovery, and seeking distributed solar through a competitive bidding process in compliance with the Distributed Solar Energy Standard (“DSES”).⁷ The Company’s first Request for Proposals For Distributed Solar

⁷ <https://www.mnpower.com/Environment/DSESRFP>

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Resources was approved by the Department of Commerce on December 2, 2024, was issued January 30, 2025, closed on May 29, 2025, and proposals are currently being evaluated.⁸

In its proposed 2025 IRP, Minnesota Power has continued to evaluate and recommends power supply actions in the Plan that works towards a sustainable path to meet the CFS by 2040.

C. Customer Impact Analysis

Timing of the Longspur Wind Project implementation should allow Minnesota Power to capture the benefit of Federal IRA legislation and associated tax incentives. To quantify these benefits and to ensure that the Project is cost effective as a wind energy resource for Minnesota Power's customers, a power supply analysis was performed. Longspur was added to the current Minnesota Power supply portfolio to determine the customer impact of the 2028 addition. For the cost impact analysis, the Company assumed a January 1, 2028 in-service date for Longspur in the EnCompass modeling. With PTC benefits intact, Longspur is projected to have a minimal impact on customer power supply cost, averaging less than \$1/MWh increase annually through 2050.

To evaluate the cost impact range of Longspur in Minnesota Power's long-term power supply, an incremental addition of the project was added to Minnesota Power's power

⁸ Docket No. E015/CI-23-403

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supply and evaluated in the EnCompass production cost modeling software. The EnCompass results quantified that Longspur will: 1) displace on-peak and off-peak wholesale market purchases and further optimize some fossil fuel based generation as the new wind energy is added to the Minnesota Power system; 2) reduce total carbon dioxide (“CO2”) emissions, as well as other emissions; and 3) result in a slight increase in total power supply cost for Minnesota Power’s customers.

To quantify the change in power supply cost when adding Longspur in 2028 the EnCompass production cost model was utilized by simulating a power supply dispatch. There were four EnCompass scenarios used to simulate the addition of Longspur, and all scenarios were run – with and without – the Commission-approved mid-CO2 regulation tax of \$40 per ton in 2028 and the mid-CO2 environmental cost of \$260 starting in 2025, and other mid-environmental costs. Minnesota Power also evaluated the power supply cost impacts for the other Commission-ordered carbon regulation cost and environmental cost scenarios (i.e., high and low scenarios). Those results are shown in Appendix B (Longspur High and Low Cost Futures) and a table of all the environmental cost scenarios evaluated is included in Appendix C (Modeling Assumptions).

- Scenario 1 – Baseline
- Scenario 2 – Baseline + Longspur Including Tariffs
- Scenario 3 – Baseline + Longspur Excluding Tariffs
- Scenario 4 – Baseline + Longspur Including Tariffs and 0% Production Tax Credits (PTCs)

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The Baseline scenario contains all Minnesota Power existing thermal and renewable energy resources as well as the Boswell and Regal solar projects. Scenario 2 incrementally adds the proposed Longspur Wind Project and associated project costs with tariffs to the Baseline scenario. Scenario 3 is identical to scenario 2 except with tariffs removed. Scenario 4 is identical to scenario 2 except with 0% PTCs. The four scenarios are compared to each other to identify the power supply and cost impacts of adding the Project.

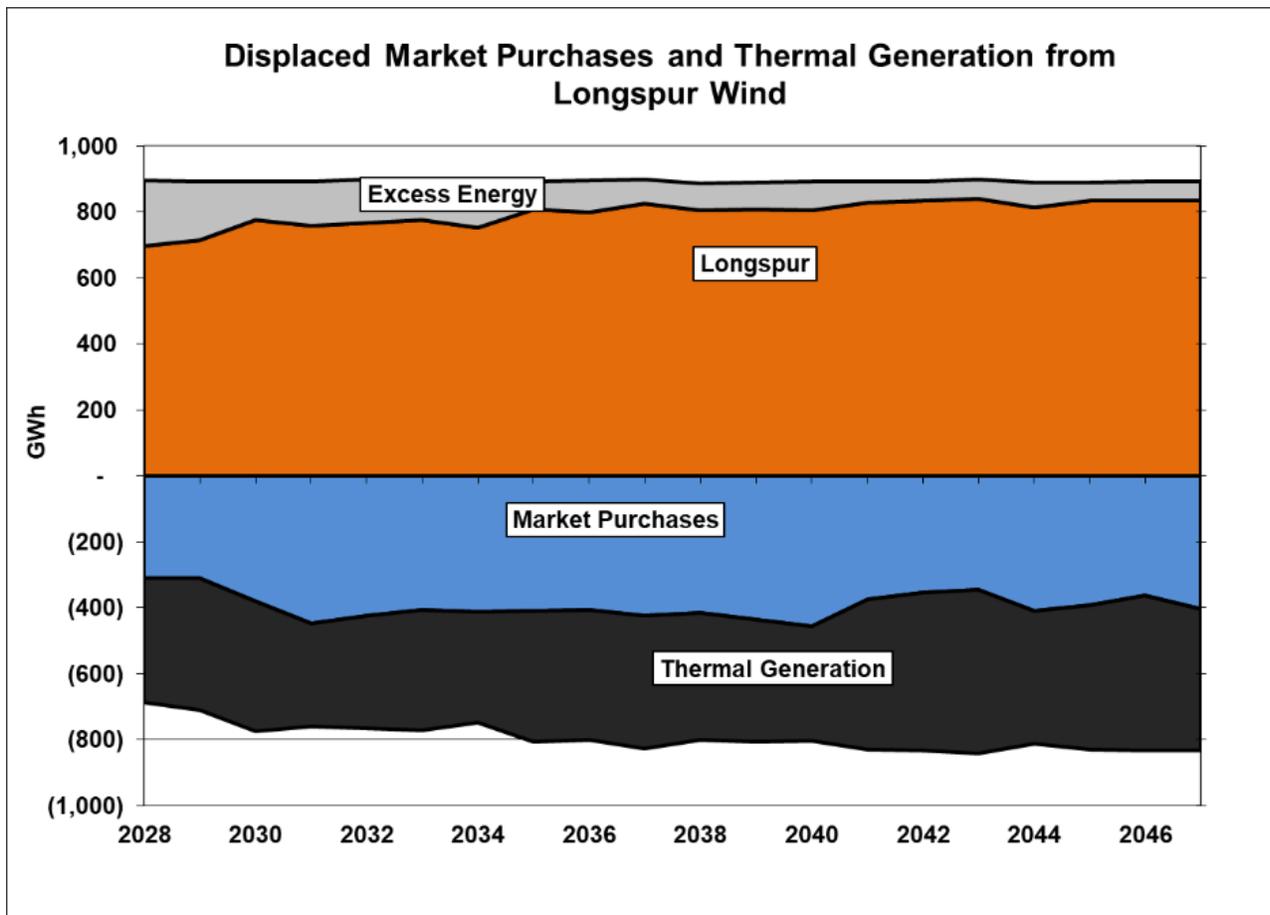
The 200 MW Longspur Wind Project is anticipated to increase the wind energy supply to Minnesota Power customers by approximately 896,000 MWh per year. As this energy is added to the Minnesota Power energy portfolio, existing market energy purchases and thermal generation that were projected to serve customer load are displaced. The chart in Figure 3 demonstrates the annual amount of market and thermal generation energy that is projected to be displaced over the first 20 years of the Project. Figure 3 identifies that on average, energy generated by Longspur will displace a mix of 49 percent market purchases and 51 percent existing thermal generation each year.

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Figure 3. Energy Displaced by Longspur



The reduction in market purchases and thermal generation from the addition of emission-free energy from Longspur to the power supply results in an associated reduction in emissions for Minnesota Power customers over the life of the Project. Table 6 below summarizes the average CO₂, sulfur dioxide (“SO₂”), nitrogen oxides (“NO_x”), and

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mercury (“Hg”) emissions that are estimated to be avoided annually as a result of generation from the Longspur Project over the study period. Carbon dioxide is projected to see the greatest reduction with an average of 752,891 tons of CO₂ removed per year from Minnesota Power’s existing fleet and carbon associated with market purchases. When environmental externality effects are included in the analysis, the reduction in emissions over the life of the Project results in a reduction in environmental cost of \$1 billion.

Table 6: Average Annual Avoided Emissions (2028-2050)

Effluent (Tons)	Average Annual Reduction when adding Longspur Wind
CO ₂	752,891
SO ₂	22
NO _x	341

The resource planning evaluations conducted in EnCompass identifies a range of outcomes that are dependent on environmental costs, carbon regulation costs⁹, tariffs, and production tax credits. For the Reference Case that considers the carbon regulation cost and environmental cost benefits required by planning statute in the State (the Mid

⁹ The Customer Billing case does not include environmental and carbon regulation cost benefit.

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Environmental case), the total customer power supply cost decreases by approximately \$1.2 billion with tariffs, and \$1.23 billion without tariffs, and \$907 million excluding PTCs demonstrating an overall net benefit for customers (See Table 8).

In the Customer Billing, where externalities required by the state planning statute are removed there is an increase in power supply costs by approximately \$103 million with tariffs, and approximately \$64 million without tariffs, and approximately \$402 million when excluding PTCs when adding Longspur (See Table 7).

Table 7: EnCompass Power Supply Cost Summary (\$2025, NPV 2025-2050)

Customer Billing Case				
(\$ in Millions, 2025 \$)				
	Base Scenario 1	Longspur Scenario 2 (Delta from Base)	Longspur Scenario 3 (Delta from Base)	Longspur Scenario 4 (Delta from Base)
Total Cost	\$9,569	\$103	\$64	\$402

Table 8: Reference Case - Mid Environmental and Carbon Regulation Planning

Reference Case - Mid Environmental and Carbon Regulation Case				
(\$ in Millions, 2025 \$)				
	Base Scenario 1	Longspur Scenario 2 (Delta from Base)	Longspur Scenario 3 (Delta from Base)	Longspur Scenario 4 (Delta from Base)
Base Cost	\$10,104	(\$33)	(\$86)	\$264

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Carbon Regulation	\$1,176	(\$134)	(\$132)	(\$134)
Environmental Cost	\$12,940	(\$1,033)	(\$1,015)	(\$1,037)
Total Cost	\$24,220	(\$1,200)	(\$1,233)	(\$907)

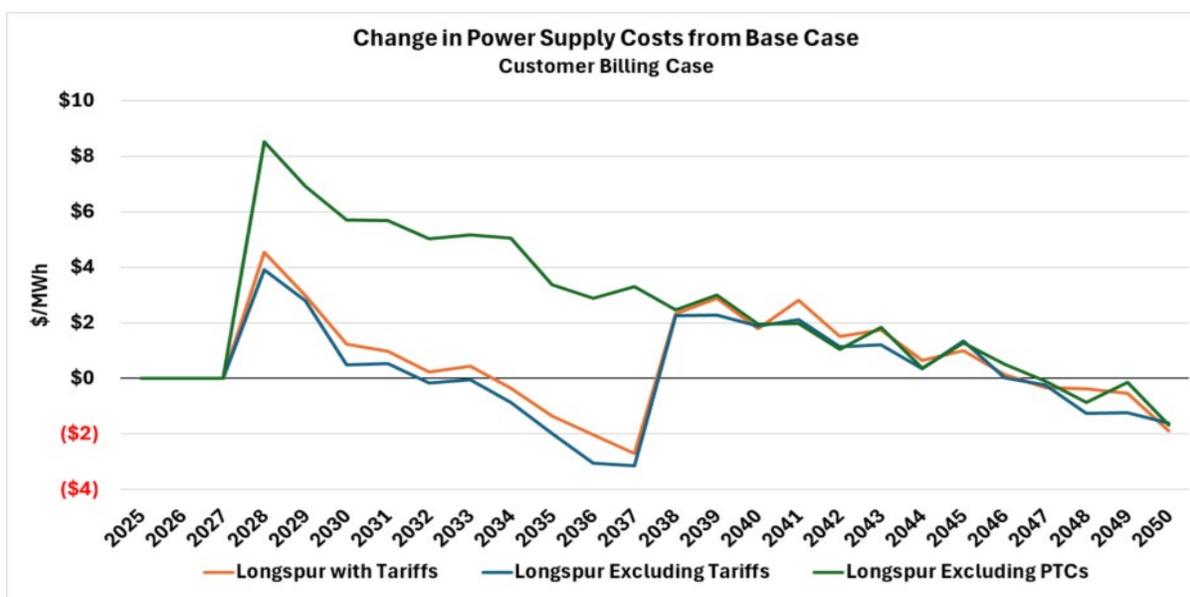
Figure 4 shows the \$/MWh customer impacts when adding Longspur to Minnesota Power’s power supply. With PTC benefits Longspur is projected to have a minimal impact on customer power supply cost, averaging less than \$1/MWh increase annually through 2050. This is not a detailed rate analysis that would be performed for a rate case, although it’s a reasonable approximation of the directional impact to rates Longspur is projected to have. The reason for the increase from 2037 to 2038 in the tariff/non-tariff look is due to PTCs rolling off starting in 2038. The figure captures the importance of the PTC benefits for customers and the Company appreciates the Commissions consideration of an expedited review of the petition

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Figure 4: Customer Billing \$/MWh Power Supply Cost Comparison (\$2025, NPV 2025-2050)



Longspur will further Minnesota Power’s initiative towards decarbonizing its generation portfolio and obtaining additional renewable energy as detailed in Minnesota Power’s *EnergyForward* strategy and determined as part of its 2021 IRP order. Longspur presents an opportunity to construct a unique and efficiently-located wind project that leverages Minnesota Power’s existing infrastructure like the HVDC line, reduces emissions and takes advantage of the federal tax incentives along with an average decrease to power supply costs for customers.

VI. CONCLUSION

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Minnesota Power respectfully seeks Commission approval of the following requests set out in this Petition:

1. Approval for investments and expenditures related to the Longspur Wind Project pursuant to Minn. Stat. § 216B.1645. Minnesota Power’s development of this approximately 200 MW wind project will facilitate compliance under the requirements under Minn. Stat. § 216B.1691.
2. Approval to include associated costs in the existing Renewable Resources Factor under its Renewable Resources Rider.
3. An expedited review of this petition to facilitate a Public Hearing by April 30, 2026 and final approval by June 30, 2026.

The Longspur Wind Project complies with the Commission’s 2021 IRP Order, through which the Company was directed in Order Point 1a to “[a]cquire up to 400 MW of regional/in-service territory or net-zero wind ... as practicable.” Additionally, Minnesota Power believes moving forward with the Longspur Wind Project has multiple benefits for its customers including helping the Company to meet the requirements established by the Carbon Free Standard and the Renewable Energy Standard, capturing the value of the IRA, leveraging existing utility assets, boosting the tax base of local economies, and creating regional jobs, all while reinvesting in a community impacted by the energy transition to a less carbon-intense, cleaner energy future. Minnesota Power looks forward to working with the Commission and other interested parties to implement the Longspur Wind Project.

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If you have any questions regarding this filing, please contact me at 218.428.9846 or jmccullough@mnpower.com.

Dated: August 4, 2025

Respectfully submitted,

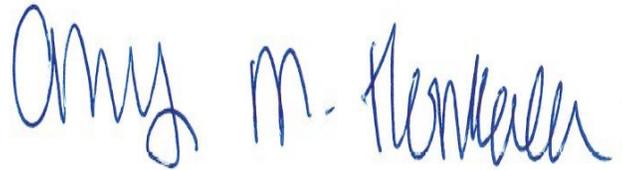


Jess McCullough
Public Policy Advisor
218.428.9846
jmccullough@mnpower.com

STATE OF MINNESOTA)
)ss
COUNTY OF ST. LOUIS)

AFFIDAVIT OF SERVICE VIA
ELECTRONIC FILING

I, Amy M. Honkala of the City of Duluth, County of St. Louis, State of Minnesota, hereby certify that on the 4th day of August, 2025, I electronically filed a true and correct copy of Minnesota Power's **Petition for Approval in Docket No. E015/M-25-XXX** on the Minnesota Public Utilities Commission and the Energy Resources Division of the Minnesota Department of Commerce via electronic filing. The persons on eDocket's Official Service List for this Docket were served as requested.



Amy M. Honkala

INDEPENDENT EVALUATION
REPORT FOR
MINNESOTA POWER'S
2024 WIND RFP SOLICITATION

*Submitted by:
Levelized Consulting, LLC
Boulder, Colorado*

July 31, 2025

Introduction and Background

On January 9, 2023, the Minnesota Public Utilities Commission (MPUC) issued its order approving Minnesota Power’s (MP) 2021 Integrated Resource Plan.¹ The order directed MP to procure cost-effective resources to meet its 2025-2030 customer and renewable product needs by acquiring at least 300 MW and up to 400 MW of wind with at least 200 MW in service by 2026, as practicable.

The order also required that MP use a bidding process for its resource acquisitions and retain an independent evaluator (IE) to oversee the bidding process in instances where MP or an affiliate proposes a project. In addition, in solicitations where an IE is retained, the IE is requested to specifically address the impact of material delays or changes of circumstances on the bid process. In July 2023, in compliance with the order, MP retained Levelized Consulting, LLC (Levelized Consulting) as the IE to oversee MP’s 2024 Wind Request for Proposals (RFP) and provide an independent evaluation of all proposals.

Since MP was expecting to receive self-build proposals, MP instituted a “wall” between its RFP Team responsible for developing, issuing, and implementing the Wind RFP and the MP Wind Development Team responsible for developing the MP self-build proposals. The “wall” was designed to manage communications with bidders and avoid any improper communications with, between, or among members of the RFP Team and the MP Wind Development Team. For the remainder of this report, these teams will be referred to as the RFP Team or the MP Wind Development Team, as necessary. The team wall was put in place in mid-2023 and the RFP Team shared the details of the teams and restrictions of the “wall” with Levelized Consulting as well as employees at MP.

On February 15, 2024, the RFP Team issued its 2024 Wind RFP for up to 400 MW of regionally located wind generation with online dates between January 1, 2026 and December 31, 2027.² The Wind RFP solicited proposals for wind generation supplies with installed capacity between 100 MW and 200 MW using one of three different types of contracts/resources:

- Power Purchase Agreements (PPAs),
- Build-Own-Transfer agreements (BOT), and
- MP self-build projects.

¹ Docket No. E-015/RP-21-33, ORDER APPROVING PLAN AND SETTING ADDITIONAL REQUIREMENTS, January 9, 2023

² While the Order specified acquiring by 2026, as practicable, Levelized Consulting and MP agreed that given likely development schedules and interconnection queue timelines, accepting proposals with online dates between January 1, 2026 and December 31, 2027 would increase the probability of receiving a competitive number of viable proposals.

This report provides an assessment of MP's wind resource solicitation from the initial phase of the solicitation through shortlisting with further economic evaluation conducted of updated offers in May, 2025.

Levelized Consulting undertook the following tasks as part of this engagement:

- Reviewed and commented on the RFP documents before the solicitation was launched,
- Attended the Wind RFP webinar hosted by the RFP Team on March 7, 2024 that provided an overview of the Wind RFP to potential bidders and allowed attendees to ask questions,³
- Participated in RFP Team planning calls/meetings to establish the screening procedures and evaluation methodologies (including congestion costs - the additional expense incurred when delivering electricity to a specific location on the power grid due to limitations in transmission capacity) that would be employed in the review and evaluation of all proposals,
- Acquired and archived important evaluation parameters and assumptions prior to the receipt of bids for use in Levelized Consulting's proprietary evaluation models,
- Received all proposals directly from bidders,
- Evaluated whether proposals met the requirements of the RFP through a complete and conforming check of all proposals,
- Conferred with the RFP Team in periodic calls/meetings to discuss proposal clarification, disqualification, and evaluation decisions,
- Reviewed and sent questions to bidders and was copied on all correspondence between the RFP Team and bidders,
- Independently reviewed all proposals and computed costs and sensitivities for the ranking of proposals,
- Completed comparisons of Levelized Consulting's and the RFP Team's quantitative evaluations. The performance of independent, parallel evaluations allowed for cross-checking and verification of proposal costs and ranking, and

³ The webinar was posted on the Wind RFP website afterwards, along with the list of Q&A.

- Participated in calls/meetings to discuss proposal reviews and Levelized Consulting's quantitative evaluation results and determine an appropriate short list of proposals.

Levelized Consulting was provided access to all necessary materials, received proposal information directly from bidders, and was able to perform an independent evaluation of all proposals.

This Independent Evaluation Report includes a Confidential Appendix describing each proposal and providing an overview of the evaluation results and sensitivity analyses. This material is being afforded confidential treatment to protect participants from having their project pricing and operational information provided to their competitors, and from making ranking and disqualification information public before contracts are completely negotiated and signed. Furthermore, MP's customers could be harmed if too much information was made publicly available, allowing some participants to game future solicitations rather than delivering the best renewable projects at the lowest possible prices.

Overview of Conclusions

Levelized Consulting developed an economic ranking of all proposals based on their levelized \$/MWh net costs, assessed the qualitative risks and benefits associated with the proposals, presented the results to the RFP Team, and discussed with the RFP Team the selection of an appropriate set of projects and counterparties to shortlist and with whom to commence negotiations. Levelized Consulting concluded that the RFP Team made the appropriate shortlisting decisions in its solicitation.

Activities Prior to the Receipt of Proposals

RFP Materials

Prior to the launch of the Wind RFP, Levelized Consulting reviewed and provided comments and recommendations on MP's RFP materials to the RFP Team. Per the requirements of the IRP, the RFP Team submitted a compliance filing with the MPUC within 30 days of developing the RFP detailing the RFP process that included a template of the RFP.

Qualitative Evaluation Matrix

Levelized Consulting assisted the RFP Team in developing a spreadsheet qualitative evaluation matrix that was used to track the qualitative review of proposals. This included a complete and conforming assessment and qualitative ranking metrics.

Quantitative Evaluation Model

The Levelized Consulting team had provided independent evaluation services in previous MP RFPs⁴, including MP’s 2023 Solar RFP, and was thus familiar with MP’s evaluation processes and available planning assumptions. Prior to the receipt of proposals, Levelized Consulting discussed appropriate components to include in the quantitative evaluation with the RFP Team. Levelized Consulting requested that the RFP Team provide as much information as possible prior to the receipt of proposals. This allowed Levelized Consulting to lock down and archive the basic evaluation parameters for the process. These assumptions were incorporated into Levelized Consulting’s own evaluation models and formed the basis for independently assessing the costs of resources that were bid into the Wind RFP solicitation. As noted above, Levelized Consulting and the RFP Team in particular discussed and anchored congestion pricing assumptions prior to the receipt of bids. Indeed, in recent years, congestion pricing associated with zonal transfers from regional wind resource areas has been a significant cost for MP’s customers and both the RFP Team and Levelized Consulting considered it to be an important consideration in the shortlisting evaluation.

RFP Schedule

Table 1 outlines the schedule for MP’s 2024 Wind RFP.

Table 1 Minnesota Power 2024 Wind RFP Schedule	
Event	Anticipated Date
Release of RFP	February 15, 2024
Proposal Submission Deadline	April 11, 2024
Proposal Evaluation	3 rd Quarter 2024
Negotiations with Selected Bidders	4 th Quarter 2024
Application for Regulatory Approval filed with MPUC	1 st Quarter 2025

Within its Integrated Resource Plan filed on March 3, 2025, MP notified the commission that final project selection and applications for regulatory approval “has been delayed by widespread price and schedule uncertainties that have emerged during the shortlist period and delays in market interconnection studies. Minnesota Power continues to monitor and engage with bidders, contractors, and market representatives to resolve these uncertainties and will announce project selection as soon as possible.”⁵ As described in more detail in the confidential

⁴ Levelized Consulting has assumed the prime consulting responsibilities over the same team of individuals that were included with Sedway Consulting, Inc. in that firm’s provision of IE services for several previous MP power supply solicitations.

⁵ Minnesota Power’s 2025-2039 Integrated Resource Plan, Section I. About Minnesota Power, p.4, 2nd paragraph. (filed on March 3, 2025 in MPUC Docket No. E015/RP-25-127)

appendix, Levelized Consulting concurs with Minnesota Power that project price and schedule uncertainty is currently high due to tariffs, changes to the Inflation Reduction Act, and lengthy interconnection processes. Developers are navigating a complex environment where incentives, supply chain dynamics, and regulatory frameworks are in flux making project development and timing more challenging and negotiations more complex than in prior RFPs. Therefore, it is understandable that there are delays in final contracts and decisions in the Wind RFP.

Receipt and Evaluation of Proposals

At Levelized Consulting's recommendation, the RFP Team requested that the MP Wind Development Team submit any self-build proposals early to prevent any potential allegation that MP could have used 3rd-party proposal information to adjust self-build proposals to be more competitive. Self-build proposals were submitted via email to the RFP Team and the IE on April 10, 2024, one day before the proposal due date. Then, on April 11, 2024, the RFP Team and Levelized Consulting received a number of third-party proposals in response to its Wind RFP. The response to the Wind RFP was reasonable, representing over three times the total MW solicited. A summary of the projects is depicted in Table A-1 in the Confidential Appendix.

Levelized Consulting completed a 'complete and conforming' review of the proposals received to track that all required information was submitted in the bidders' proposals. The qualitative evaluation process entailed a general review of all proposals to first identify any proposals that did not meet the basic requirements of the RFP. Proposals meeting the requirements were then passed on to the RFP Team subject matter experts to do a more thorough qualitative review. Those same proposals were also then included in the quantitative evaluation. Both the RFP Team and Levelized Consulting continued reviews of the submitted proposals through mid-2024, periodically discussing proposal deficiencies and sending requests to specific bidders for supplemental information.

The RFP Team and Levelized Consulting performed a qualitative assessment of those proposals that met the RFP requirements to assess their full costs and benefits (described below). Concurrent with that qualitative analysis, Levelized Consulting undertook the modeling of all proposals to assess their costs and benefits; specifically, Levelized Consulting performed detailed modeling to determine each proposal's net levelized \$/MWh cost (described below).

Description of Levelized Consulting's Quantitative Evaluation Process

The detailed economic evaluation entailed modeling the proposals using Levelized Consulting's spreadsheet-based tools that determine each proposal's present value of costs. The RFP Team and Levelized Consulting discussed including benefits such as Accreditable Capacity values, energy values, and REC values in the evaluation and agreed that the forecasts of those benefits are very uncertain and that whatever forecasts are used, the differences between projects, on a

levelized \$/MWh basis, would be minimal.⁶ For example, MISO is changing to accrediting capacity based on the wind generation levels during unserved energy hours with the unserved energy hours likely occurring when wind has little to no generation.

The components included in the net cost calculation depended on the type of proposal: PPA, BOT, or self-build.

For PPA proposals, the net cost calculation included:

- Contract payment costs for delivered energy,
- Debt equivalence (or imputed debt) costs. Debt equivalence costs are associated with a rebalancing of a utility's debt and equity ratios, considering credit rating agencies' policies that view PPAs as being partially equivalent to debt obligations, and
- Estimated transmission congestion costs from the delivery point to MP.MP.

For BOT and MP self-build proposals, the net cost calculation included:

- Revenue requirements for capital expenditures which were developed using standard rate base regulatory accounting principles and determined the annual costs that a utility must collect from customers to cover capital costs over the book life of a project, including income taxes and a reasonable return on investment. Inputs to the revenue requirements calculation included:
 - Contract payment costs for BOT proposals or schedule of capital expenditures for self-build proposals,
 - Accumulated Allowance for Funds Used During Construction (AFUDC),
 - Anticipated ongoing capital expenditures,
 - Real estate purchases,
 - Inflation Reduction Act (IRA) Investment Tax Credits (ITC) or Production Tax Credits (PTC),
 - Federal and state income taxes,
 - Deferred Taxes (and their impact on project rate base),
- Operation and Maintenance costs,
- Insurance costs,
- Land costs (lease and easement costs),
- Property taxes,
- Estimated transmission congestion costs from the delivery point to MP.MP, and
- Other costs (if any).

⁶ Levelized Consulting did complete an assessment of the proposals' generation profiles and the forecasted energy benefits associated with those profiles to determine if there were significant differences (in levelized \$/MWh) between the proposals. As expected, the energy benefits were similar across the proposals. The results of the assessment are provided in the Confidential Appendix.

Levelized Consulting's evaluation model normalized the net cost by dividing it by the present value of a project's expected energy deliveries, thereby yielding a levelized \$/MWh net cost. This levelized \$/MWh net cost metric was then used to rank the different proposals from lowest \$/MWh net cost to highest \$/MWh net cost.

Sensitivities were also completed on the quantitative analyses to determine if different assumptions would impact the ranking of proposals. These sensitivities included:

- Equalizing the terms of proposals. Since PPAs and BOT or self-build proposals have different terms (PPA terms of between 20 and 25 years were allowed in the RFP, while project lives of owned resources were more than 30 years), Levelized Consulting completed additional analyses that equalized the term of each proposal by adding a "tail" past the end of shorter-term proposals.
- Congestion cost sensitivities. Levelized Consulting completed low and high congestion cost sensitivities on each of the proposals. Estimates of future congestion costs at different wind areas were developed by MP based on a study that included historical congestion levels and modeling of future levels with PROMOD, a power generation and transmission modeling software.

Levelized Consulting cross-checked its estimates of net costs against the RFP Team's parallel quantitative evaluation to identify and address any differing inputs, assumptions, and calculations to ensure that the valuation and rankings of the proposals were correct. Any differences in calculations and assumptions were discussed and either adjusted or noted.

Shortlisting of Proposals

On July 1, 2024, Levelized Consulting and the RFP Team met to finalize shortlisting options. The teams recommended shortlisting several proposals, including both self-build proposals and third-party proposals. The RFP Team obtained shortlisting approval from MP executives on July 15, 2024 and shortlisting notifications were sent to bidders on July 18, 2024. The shortlisted projects then moved to the negotiations phase. More details on the shortlisting process and results are included in the Confidential Appendix.

Updated Economic Assessment

MP commenced negotiations with counterparties soon after shortlisting notifications were sent and bidders accepted their shortlisting status. While Levelized Consulting was not retained to monitor the negotiation process, MP requested that Levelized Consulting include an updated economic assessment of the shortlisted proposals based on updates provided by bidders in the Spring and Summer of 2025. Levelized Consulting completed the economic assessment under the caveat that the current pricing and schedule landscape for renewable energy is highly

uncertain, influenced by evolving tariffs, modifications to the IRA, and lengthy interconnection processes. Developers are navigating a complex environment where incentives, supply chain dynamics, and regulatory frameworks are in flux, making planning, financing, and project development more challenging. Therefore, the updated economic evaluation in the Confidential Appendix is based on estimates under a certain set of assumptions with changes likely as bidders gain more certainty around tariffs, federal tax changes, and interconnection costs. Nevertheless, the updated evaluation showed that MP's 200 MW self-build Longspur project represented a low-cost option during the shortlisting process and in the updated economic assessment.

Conclusion

Levelized Consulting was provided access to all necessary materials and meetings and was able to perform its own detailed evaluation of the proposals received in MP's 2024 Wind RFP. Levelized Consulting believes that the RFP Team selected an appropriate short list of proposals, representing over twice the amount solicited and thereby ensuring a level of competitiveness of the solicitation through the negotiation phase.

Based on the updated economic evaluation, Levelized Consulting also considers MP's plan to file a petition for MP's 200 MW Longspur self-build project now and continue negotiations with the remaining shortlisted bidders to be a reasonable approach for fulfilling the requirements of the RFP.

**PUBLIC DOCUMENT – NOT PUBLIC DATA HAS BEEN EXCISED
TRADE SECRET DATA EXCISED IN ITS ENTIRETY**

Appendix A – TS
Minnesota Power 2024 Wind RFP

Appendix B – Longspur Wind Project Encompass Results for High and Low Environmental Futures

This appendix shows the impact to power supply cost with the addition of Longspur for the high and low environmental and carbon regulation costs. Minnesota Power also evaluated the impact with and without tariff costs which are included in each table. Below is the definition of each Longspur scenario evaluated:

- Scenario 1 – Baseline
- Scenario 2 – Baseline + Longspur Including Tariffs
- Scenario 3 – Baseline + Longspur Excluding Tariffs
- Scenario 4 – Baseline + Longspur Including Tariffs and 0% Production Tax Credits (PTCs)

In the high environmental cost case, the base cost increases by approximately \$68 million with tariffs, and \$31 million without tariffs, and \$373 million excluding PTCs when adding Longspur to Minnesota Power’s power supply. When environmental costs are considered, an additional benefit of approximately \$1.6 billion is added on top of the base cost increase resulting in a decrease of total costs ranging by approximately \$1.2 - \$1.6 billion across the three scenarios.

High Environmental Cost (\$ in Millions, 2025 \$)				
	Base Scenario 1	Longspur Scenario 2 (Delta from Base)	Longspur Scenario 3 (Delta from Base)	Longspur Scenario 4 (Delta from Base)
Base Cost	\$9,593	\$68	\$31	\$373
Environmental Cost	\$22,045	(\$1,621)	(\$1,668)	(\$1,617)
Total Cost	\$31,638	(\$1,553)	(\$1,637)	(\$1,244)

In the high environmental and carbon regulation case, the base cost decreases by approximately \$130 million with tariffs, \$192 million without tariffs, and increases by \$154 million when excluding PTCs when adding Longspur to Minnesota Power’s power supply. Carbon regulation costs decrease by approximately \$250 million and environmental costs decrease by approximately \$1.5 billion resulting in a decrease of total costs ranging from \$1.5 - \$1.9 billion across the three scenarios.

High Environmental and Carbon Regulation Cost (\$ in Millions, 2025 \$)				
	Base Scenario 1	Longspur Scenario 2 (Delta from Base)	Longspur Scenario 3 (Delta from Base)	Longspur Scenario 4 (Delta from Base)
Base Cost	\$10,569	(\$130)	(\$192)	\$154
Carbon Regulation	\$2,119	(\$260)	(\$252)	(\$251)
Environmental Cost	\$17,806	(\$1,506)	(\$1,467)	(\$1,443)
Total Cost	\$30,493	(\$1,895)	(\$1,911)	(\$1,540)

In the low environmental cost case, the base cost increases by approximately \$72 million with tariffs, and \$38 million without tariffs, and \$380 million excluding PTCs when adding Longspur to Minnesota Power’s power supply. When environmental costs are considered, an additional benefit of approximately \$600 million is added on top of the base cost increase resulting in a decrease of total costs ranging by approximately \$200 - \$600 million across the three scenarios.

Low Environmental Cost (\$ in Millions, 2025 \$)				
	Base Scenario 1	Longspur Scenario 2 (Delta from Base)	Longspur Scenario 3 (Delta from Base)	Longspur Scenario 4 (Delta from Base)
Base Cost	\$9,586	\$72	\$38	\$380
Environmental Cost	\$8,296	(\$583)	(\$622)	(\$598)
Total Cost	\$17,882	(\$511)	(\$584)	(\$218)

In the low environmental and carbon regulation case, the base cost increases by approximately \$81 million with tariffs, \$19 million without tariffs, and \$377 million when excluding PTCs when adding Longspur to Minnesota Power’s power supply. Carbon regulation costs decrease by approximately \$17 million and environmental costs decrease by approximately \$630 million resulting in a decrease of total costs ranging from \$200 - \$600 million across the three scenarios.

Low Environmental and Carbon Regulation Cost (\$ in Millions, 2025 \$)				
	Base Scenario 1	Longspur Scenario 2 (Delta from Base)	Longspur Scenario 3 (Delta from Base)	Longspur Scenario 4 (Delta from Base)
Base Cost	\$9,631	\$81	\$19	\$377
Carbon Regulation	\$162	(\$17)	(\$17)	(\$16)
Environmental Cost	\$8,075	(\$637)	(\$627)	(\$628)
Total Cost	\$17,868	(\$573)	(\$624)	(\$267)

Appendix C – Base Economic Modeling Assumptions

Study Period

The study period of the Longspur wind Petition is 2025 through 2050. The power supply costs shown in the petition are the net present value of cost from 2025 through 2050 and are reported in 2025 dollars, unless noted otherwise.

General Model Assumptions

1. The modeling done for the Longspur wind project contains only Minnesota Power’s current energy portfolio and previously approved projects.
2. In the modeling, the Nemadji Trail Energy Center is not included.
3. Post Coal Operations at Boswell Energy Center:
 - a. For this petition, the post coal operations assumed both units were refueled with natural gas.
 - i. Boswell unit 3 refuels on natural gas beginning 1/1/2030
 - ii. Boswell unit 4 refuels on natural gas beginning 1/1/2035
4. A general escalation rate of approximately 2.25 percent was utilized, on average.

Environmental Costs, Pricing, and Wholesale Market

1. The Base forecasts utilized for environmental costs, natural gas prices, market energy prices, and market capacity prices over the study period. The Reference Case Scenario considers commission-approved mid-CO2 regulation tax of \$40 per ton in 2028 and the mid-CO2 environmental cost of \$260 starting in 2025. Beginning in 2028, the CO2 environmental cost is netted against the carbon regulation tax. These values are found in Docket No. E999/CI-07-1199; E999/DI-22-236 - October 2023.
 - A. Minnesota Power also ran models considering low and high CO2 regulation taxes and environmental costs.
 - i. In the low environmental and carbon regulation cases, the low CO2 regulation tax starts at \$5 per ton in 2028 and the low CO2 environmental cost starts at \$155 in 2025.
 - ii. In the high environmental and carbon regulation cases, the high CO2 regulation tax starts at \$75 per ton in 2028 and the high CO2 environmental cost starts at \$308 in 2025.
 - iii. Environmental and carbon regulation costs were escalated at approximately 2.25 percent annually on average.
2. The Base forecasts utilized for environmental costs, natural gas prices, market energy prices and market capacity prices over the study period¹:
 - A. Customer energy and demand requirements are based on the Expected Scenario in Minnesota Power’s AFR2024 (Docket No. E-999/PR-24-11). The energy and demand forecast is based on the AFR2024 econometric modeling results plus customer adjustments for energy sales to a new customer and transmission losses. The

¹ Values are in nominal dollars.

transmission losses of 6.4 percent are added to the Annual Energies to capture the power supply requirements for serving Minnesota Power’s customers.

- B. Natural gas forecast assumptions utilized in the base forecast.
- i. Natural gas for Minnesota: \$2.51/MMBtu in 2025 to \$10.65/MMBtu in 2050
 - ii. Natural gas supply reflects the projected spot market for Minnesota. In addition, a delivery charge is applied on a resource-specific basis. The delivery charges were escalated at approximately 2.25 percent annually, on average, after 2025.
 1. [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA END] for gas supply at Boswell Energy Center.
 2. [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA END] for the Laskin Energy Center.
- C. Delivered coal price forecast assumptions utilized represent the attributes of each of Minnesota Power’s facilities and include:
- i. [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]
- B. Delivered gas price forecast assumptions utilized:
- i. [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]
- D. Delivered biomass price forecast assumptions utilized:
- i. [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]
- E. Delivered gas price forecast assumptions utilized:
- i. [TRADE SECRET DATA BEGINS ██████████ TRADE SECRET DATA ENDS]
- F. Average wholesale Seasonal Market Capacity (Approximate): \$4,422/MW-month in 2025 to \$10,131/MW-month in 2050. The forecast includes a market capacity price for each season of the MISO Planning Year.

3. The Base case energy market interaction structure for Minnesota Power’s petition analysis assumed that the wholesale market was available throughout the study period. The wholesale energy market structure in the modeling represents the day-ahead interaction with the Midcontinent Independent System Operator (“MISO”) regional market and helps utilities optimize power supply for customers.

A conservative approach was taken when creating the wholesale energy market that would be made available as a power supply resource during the study period. While the regional market is a valuable and useful piece of a utility’s power supply, it should not be considered an “endless” resource. To help account for the increased risk and volatility that is present when purchasing incrementally larger amounts of energy from the short-term market, an

increasing price adder was included based on the level of energy purchased. As the volume of energy purchased from the market increased, so did the price adder. This is referred to as a “Tiered Energy Market” and includes the following pricing assumptions:

- i. 0 to 300 MW at base forecast price
- ii. 301 to 450 MW at 125% of base market price forecast
- iii. 451 to 600 MW at 150% of base market price forecast
- iv. 601 to 900 MW at \$600/MWh
- v. Greater than 900 MW at \$10,000/MWh