

**BEFORE THE MINNESOTA OFFICE OF  
ADMINISTRATIVE HEARINGS**

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**FOR THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF MINNESOTA**

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In the Matter of the Application of Minnesota  
Power for a Certificate of Need for the HVDC  
Modernization Project in Hermantown, Saint  
Louis County

MPUC Docket No. E-015/CN-22-607

In the Matter of the Application of Minnesota  
Power for a Route Permit for a High Voltage  
Transmission Line for the HVDC  
Modernization Project in Hermantown, Saint  
Louis County

MPUC Docket No. E-015/TL-22-611

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**POST-HEARING BRIEF OF THE  
LARGE POWER INTERVENORS**

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## TABLE OF CONTENTS

	PAGE
<b>I. INTRODUCTION.....</b>	<b>1</b>
<b>II. BACKGROUND .....</b>	<b>2</b>
<b>A. Proposed Project and Estimated Costs .....</b>	<b>2</b>
<b>B. Procedural Posture .....</b>	<b>4</b>
<b>III. ANALYSIS .....</b>	<b>6</b>
<b>A. Minnesota Power Has Failed to Meet Its Burden of Proof that the Capacity Expansion of the Proposed Project Is Reasonable. ....</b>	<b>6</b>
<b>B. Depending on the Circumstances, It Could Be Reasonable for the Company to Refurbish the HVDC System at Its Existing 550 MW Capacity at an Estimated Cost of \$317 Million.....</b>	<b>7</b>
<b>C. There is No Demonstrated Need to Expand the Capacity of the System to 900 MW, 1500 MW or 3000 MW. ....</b>	<b>7</b>
<b>D. Until Minnesota Power Proves the Customer Benefit of Expanding to 900 MW Pursuant to its Transmission Service Requests, It Should Bear the Costs of that Expansion. ....</b>	<b>8</b>
<b>E. Until Minnesota Power Proves the Customer Benefit of Expanding to 1500 MW in Coordination with MISO It Should Bear the Costs of that Expansion.....</b>	<b>10</b>
<b>F. If the HVDC System Is Not Included in MISO’s Final LRTP Tranche 2, the Company and Commission Should Have the Flexibility to Reevaluate the Proposed Project. ....</b>	<b>11</b>
<b>1. MISO has not Incorporated Transmission Solutions Utilizing the Company’s HVDC Project in its Initial Proposal.....</b>	<b>11</b>
<b>2. If the Square Butte HVDC System Is Not Included in MISO’s LRTP Tranche 2, the Proposed Project and Expansion Could Be Unnecessary.....</b>	<b>12</b>
<b>3. The Company and the Commission Should Consider Alternatives if the Square Butte HVDC System Is Not Included in Tranche 2.....</b>	<b>13</b>

<b>G.</b>	<b>Any Project Approval Should Contain Conditions to Protect the Company’s Ratepayers.....</b>	<b>14</b>
1.	If the Commission Approves the Proposed Project, It Should Require the Company to Secure Cost Sharing.....	14
2.	If the Commission Approves the Project or a Portion Thereof, It Must Ensure Customer Rates Are Just and Reasonable.....	16
3.	If the Commission Approves the Proposed Project, It Should Impose Conditions to Protect Customers from Undue Risk.....	17
<b>IV.</b>	<b>CONCLUSION .....</b>	<b>18</b>

The Large Power Intervenor (“LPI”)<sup>1</sup> submit the following brief regarding Minnesota Power’s Application for a Certificate of Need and Route Permit to modernize and expand its 465-mile Square Butte High-Voltage Direct-Current (“HVDC”) Line and associated facilities (“Proposed Project” or “Modernization Project”). LPI respectfully requests the Administrative Law Judge (“ALJ”) find that Minnesota Power (or “the Company”) has not met its burden to prove the expansion of the line is necessary and at most the line should be refurbished at its existing capacity. If the Minnesota Public Utilities Commission (“Commission”) approves the Proposed Project and scope, LPI requests the Commission impose conditions on the Project to ensure the Company bears the risk for building in excess of existing need. LPI requests the ALJ’s recommendations to the Commission reflect LPI’s concerns on the basis of these findings and arguments below.

## **I. INTRODUCTION**

It is well known that the Midwest and other parts of the nation are proposing billions of dollars of electric transmission investment and expansion. For example, the Midcontinent Independent System Operator (“MISO”) is proposing up to a \$23 billion expansion in its initial draft portfolio of Tranche 2 of its Long-Range Transmission Planning (“LRTP 2”).<sup>2</sup> Although LPI understands and appreciates the need for additional transmission investment in the region, LPI cannot, on this reason alone, support *carte blanche* authority for Minnesota Power’s proposed investments in this matter. The ALJ and the Commission must fully evaluate the need for, and size and timing of, this Proposed Project.

The Company has proven the need for a portion of the Proposed Project, but it has not demonstrated the need to expand the capacity of the Square Butte HVDC System. The Proposed Project includes capacity expansion to accommodate future, not existing, need, and the cumulative effect of the Company’s infrastructure investments would further existing rate shock concerns, and potentially result in unjust and unreasonable rates for LPI. It appears the Company is expecting

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<sup>1</sup> LPI is an *ad hoc* consortium of Large Power and Large Light and Power customers of Minnesota Power consisting for purposes of this filing of Blandin Paper Company; Boise White Paper, L.L.C., a Packaging Corporation of America company, formerly known as Boise, Inc.; Cleveland-Cliffs Minnopa Mine Inc.; Enbridge Energy Limited Partnership; Gerdau Ameristeel US Inc.; Hibbing Taconite Company; Northern Foundry, LLC; Sappi Cloquet, LLC; USG Interiors, Inc.; United States Steel Corporation (Keetac and Minntac Mines); and United Taconite, LLC.

<sup>2</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 16.

that this HVDC System will benefit the surrounding region, not just Minnesota Power's customers. To the extent the Project is being constructed for future needs and to benefit other regions, the Company and other regions should bear a portion of the Project costs. If the Project is approved, the Company should bear the risk as to whether the expanded capacity will be used and useful, and the ALJ should recommend the Commission impose conditions to ensure the Company not recover costs of the capacity expansion until customer benefits are realized. In other words, Minnesota ratepayers should not be solely responsible for the upfront and high costs of the HVDC Project that would enable regional solutions. Finally, Minnesota Power should be directed to pursue all available cost sharing that may become available as the regional and national transmission planning framework develops.

## **II. BACKGROUND**

### **A. Proposed Project and Estimated Costs**

Minnesota Power seeks approval to upgrade and modernize its 465-mile Square Butte HVDC 550 MW transmission system.<sup>3</sup> In the combined application for a Certificate of Need and Route Permit ("Application") submitted on June 1, 2023, Minnesota Power proposes to upgrade both HVDC terminals for the Square Butte HVDC System and interconnect the upgraded HVDC terminals to the existing alternating current transmission system. These HVDC terminals are currently located near the Arrowhead Substation in Hermantown, Minnesota and the Center Substation in Center, North Dakota.<sup>4</sup> In this regard, the CON application states the following:

- In Minnesota, to connect the new HVDC terminal to the existing AC system, the Project would require the construction of a new St. Louis County 345 kV/230 kV substation located less than one mile west of the current Arrowhead Substation. The new HVDC terminal would be connected to the St. Louis County Substation by less than one mile of 345 kV LHVTL and the new St. Louis County Substation would be connected to the existing Arrowhead Substation by two parallel 230 kV LHVTLs less than one mile in length. Additionally, a short portion of the existing  $\pm 250$

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<sup>3</sup> Minnesota Power currently holds all capacity rights on the HVDC Line, and the Line is under its full functional control. The Company has held the full capacity of the line since it acquired full ownership of the HVDC Line. Minnesota Power coordinates with MISO on control of the HVDC Line under an Agency Agreement. Under the terms of this Agency Agreement, MISO performs, as agent for Minnesota Power, certain core transmission provider responsibilities without requiring Minnesota Power to commit those facilities to MISO's full functional control. Ex. LPI-300 [Maini Direct](#), p. 9-10.

<sup>4</sup> Ex. LPI-300 [Maini Direct](#), p. 5.

kV HVDC Line in Minnesota will need to be reconfigured to terminate at the new HVDC terminal.

- In North Dakota, the Project will consist of an expansion of the separately proposed Nelson Lake 230 kV Substation to add a 345 kV/230 kV transformer and 345 kV line entrance, a new HVDC Converter Station, a new 345 kV line from the Converter Station to the Nelson Lake Substation, and a  $\pm 250$  kV HVDC Line Extension from the new Converter Station to tie into the existing  $\pm 250$  kV HVDC Line.<sup>5</sup>

Minnesota Power indicates that the HVDC Modernization Project is needed to modernize the aging assets that have operated beyond their design life. The Company highlighted aging equipment and indicated that it has experienced HVDC terminal outages due to HVDC converter station component failures, which appear to be accelerating.<sup>6</sup> In addition to the replacement of the existing HVDC terminal, the Company designed the Project to provide reliability attributes including voltage regulation, frequency response and blackstart capability. The Company indicates that the Voltage Source Converter (“VSC”) HVDC technology implemented for the Project will be designed to provide bidirectional power transfer and other capabilities, and bidirectional power transfer capability.<sup>7</sup> Minnesota Power has also incorporated options for future expansion to enable staged development of additional HVDC capacity to meet future regional needs.<sup>8</sup>

The Proposed Project is anticipated to cost approximately \$660 to \$940 million and take three to five years to complete. The Project is currently scheduled to be placed in service between 2028 and 2030.<sup>9</sup> The Project is in negotiations with the Department of Energy (“DOE”) to receive funding through the Grid Resilience and Innovation Partnerships (“GRIP”) Program and it has also received a \$15 million grant and \$10 in matching proceeds from the Minnesota legislature and the Minnesota Department of Commerce.<sup>10</sup>

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<sup>5</sup> Ex. MP-104 [Combined Application](#), p. 8.

<sup>6</sup> Ex. MP-121 [Winter Direct](#), p. 9.

<sup>7</sup> Ex. MP-104 [Combined Application](#), p. 20.

<sup>8</sup> Ex. MP-104 [Combined Application](#), p. 32.

<sup>9</sup> Ex. MP-104 [Combined Application](#), p. 4.

<sup>10</sup> See Ex. DOC DER-602 [Zajicek Rebuttal](#), p. 19-20.

## B. Procedural Posture

The Company filed its Certificate of Need and Route Permit Application on June 1, 2023. The matter came before the Commission on July 27, 2023, and the Commission accepted the applications as complete and referred the matter to the Office of Administrative Hearings for record development and a summary report.<sup>11</sup> In its Order, the Commission expressly agreed with LPI's suggestions and found that "certain issues relating to project size, type and timing referenced in LPI's initial comments are relevant to the analysis of the need for the HVDC Modernization Project," and therefore the Commission required "record development on such topics."<sup>12</sup>

Shortly thereafter, on August 9, 2023, American Transmission Company LLC ("ATC"), filed to intervene and proposed Minnesota Power interconnect at its Arrowhead Substation instead of a new substation in Saint Louis County.<sup>13</sup> The matter once again went before the Commission on November 9, 2023. Because of the "limited record concerning the workability of ATC's proposal," the Commission discontinued the informal Certificate of Need process and ALJ summary proceedings and referred this matter to the Office of Administrative Hearings for contested case proceedings.<sup>14</sup> In referring the matter, the Commission requested the ALJ focus record development on the viability of ATC's alternative, and Minnesota Power's concerns therewith and also noted that it "expects that in the course of this case the parties will develop a full record addressing the issues that are relevant to the Commission's certificate of need and

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<sup>11</sup> Ex. PUC-700 [Order Accepting Application as Complete, Authorizing Joint Review Under Informal Procedure, and Requesting Summary Proceeding](#), p. 7. Specifically, the Commission requested: that the Office of Administrative Hearings assign an ALJ to preside over the summary proceeding process described above and will request that the ALJ (1) establish the types of filings necessary to facilitate proper record development; (2) develop a schedule for those filings through a prehearing conference; and (3) prepare a full report setting forth findings, conclusions, and recommendations on the merits of the proposed project, applying the routing criteria set forth in statute and rule, as well as any comments and recommendations on the conditions and provisions of a route permit.

<sup>12</sup> Ex. PUC-700 [Order Accepting Application as Complete, Authorizing Joint Review Under Informal Procedure, and Requesting Summary Proceeding](#), p. 9.

<sup>13</sup> *In the Matter of the Application of Minnesota Power for a Certificate of Need for the HVDC Modernization Project in Hermantown, Saint Louis County*, Docket No. E-015/CN-22-607; *In the Matter of the Application of Minnesota Power for a Route Permit for a High Voltage Transmission Line for the HVDC Modernization Project in Hermantown, Saint Louis County*, Docket No. E-015/TL-22-611, [ATC Petition to Intervene](#) (August 9, 2023).

<sup>14</sup> Ex. PUC-701 [Order Identifying Alternative Proposal for Environmental Assessment Scope, Granting Variance, and Notice of and Order for Hearing](#), p. 5.

permit decisions.”<sup>15</sup> The Commission noted it would “address whether the project is ultimately necessary and whether to establish conditions on the project’s construction and operation in future proceedings.”<sup>16</sup>

LPI intervened in the proceeding and submitted expert Direct and Rebuttal Testimony.

LPI now submits this brief, respectfully requesting the ALJ to find and recommend to the Commission that:

1. At most, the Company has demonstrated the need to refurbish the existing 550 MW capacity of the Square Butte HVDC System at a cost of \$317 million.
2. The Company has not demonstrated the incremental 350 MW capacity secured by the new TSRs to increase the HVDC System Capacity to 900 MW at a cost of \$372 million is needed at this time and the Company should bear the risk of pursuing this capacity buildout until it can demonstrate the capacity is needed to serve Minnesota customers.
3. If MISO ultimately utilizes the HVDC Project expandability up to 1500 MW in LRTP Tranche 2, the Company needs to pursue either the current method of assigning costs to TSRs or the development of a new tariff to allocate the converter size capability costs to those who will benefit from the HVDC Project. The upgrade of the HVDC Line to accommodate the capability up to 1500 MW would be cost shared as per MISO’s Tariff provisions if MISO includes it in its portfolio. Alternatively, if the expandability is not utilized, and notwithstanding the grant funding, it would not be appropriate to build this capability if the HVDC line does not get upgraded accordingly for regional solutions in Tranche 2 or used by others that benefit.
4. If the Commission approves the Proposed Project, or a portion thereof, it should impose conditions to protect customers from undue risk.

Though LPI has no objection to the HVDC Modernization Project, the Company has not met its burden to demonstrate by a preponderance of evidence that the Project as proposed, including a capacity expansion of up to 1500 MW, more than a 60% increase, is reasonable and needed. If the ALJ disagrees and ultimately recommends approval of the Project as proposed, LPI requests the ALJ recommend the Commission 1) reexamine the Project and alternatives after

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<sup>15</sup> Ex. PUC-701 [Order Identifying Alternative Proposal for Environmental Assessment Scope, Granting Variance, and Notice of and Order for Hearing](#), p. 6.

<sup>16</sup> Ex. PUC-701 [Order Identifying Alternative Proposal for Environmental Assessment Scope, Granting Variance, and Notice of and Order for Hearing](#), p. 4, n. 4.



MISO's Tranche 2 is finalized; and 2) impose conditions to ensure the risk that expanding the capacity to fulfill the estimated future use falls exclusively on the Company, and to limit the Company's ability to recover costs in excess of those incurred to construct the Project at 550 MW until the Company demonstrates customers are benefitting from the expanded capacity.

### **III. ANALYSIS**

#### **A. Minnesota Power Has Failed to Meet Its Burden of Proof that the Capacity Expansion of the Proposed Project Is Reasonable.**

Under Minnesota law, Minnesota Power bears the burden of demonstrating that its certificate of need application satisfies the criteria set forth in Minnesota Statutes section 216B.243 and Minnesota Rules Chapter 7849. Section 216B.243 specifically places the burden of demonstrating need upon the applicant, Minnesota Power. The certificate of need requirements guide the evaluation of the Application along certain factors, including:

- A. The probable result of denial would be an adverse effect upon the future adequacy of reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states;
- B. A more reasonable and prudent alternative to the proposed facility has not been demonstrated by a preponderance of the evidence on the record;
- C. By a preponderance of the evidence on the record, the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health; and
- D. The record does not demonstrate that the design, construction, or operation of the proposed facility, or a suitable modification of the facility, will fail to comply with relevant policies, rules, and regulations of other state and federal agencies and local governments.<sup>17</sup>

Based on the Commission's orders and statutory requirements the Company bears the burden of proof to demonstrate that the size, type, and timing of its Proposed Project is reasonable. The Proposed Project is not simply replacing aging infrastructure to ensure continued access to 550 MW of transmission capacity, but instead, the Proposed Project is designed to upgrade the capacity to 1500 MW. For the reasons explained further in this brief, LPI believes the Company has not

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<sup>17</sup> Minn. R 7849.0120.

met its burden because for the full 1500 MW of transmission capacity because it has failed to demonstrate that the capacity expansion associated with the Proposed Project is needed. The Company, not ratepayers, should bear the risk if the Commission approves an expansion of the Square Butte HVDC System greater than the existing 550 MW.

**B. Depending on the Circumstances, It Could Be Reasonable for the Company to Refurbish the HVDC System at Its Existing 550 MW Capacity at an Estimated Cost of \$317 Million.**

At present, the HVDC Line capacity is 550 MW and Minnesota Power utilizes the HVDC Line to deliver up to 550 MW of power from North Dakota to its load in Northeast Minnesota. Minnesota Power indicates that the HVDC Modernization Project is needed to 1) modernize the assets that have operated beyond their design life; and 2) to install new HVDC technology designed to provide reliability attributes including voltage regulation, frequency response and blackstart capability.<sup>18</sup> LPI estimates that the cost of proceeding with refurbishment of the HVDC System to maintain its existing capacity of 550 MW is approximately \$317 million.<sup>19</sup> Depending on the circumstances that will transpire over the next year in terms of long-range transmission planning and decisions at MISO, as discussed further herein, it could make sense for the Company to scale back the scope its Proposed Project and simply refurbish and modernize the HVDC System to maintain, and not expand, its existing capacity.

**C. There is No Demonstrated Need to Expand the Capacity of the System to 900 MW, 1500 MW or 3000 MW.**

Instead of proposing to refurbish the System at its current capacity, Minnesota Power proposes to incorporate options for expansion to enable staged development of additional HVDC capacity to meet future regional needs.<sup>20</sup> As shown in Table 1 below, the Company proposes three incremental capacity components associated with the Proposed Project: 1) the Company has acquired, through the MISO process, an incremental 350 MW of transmission service requests (“TSR”), which will expand the HVDC System Capacity to 900 MW; 2) the Company proposes to increase the capability of the new HVDC converter terminals to transfer up to 1500 MW from the current 550 MW, for an incremental capacity of 600 MW; and 3) the Company also proposes

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<sup>18</sup> Ex. MP-104 [Combined Application](#), p. 20.

<sup>19</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 11.

<sup>20</sup> Ex. MP 104 [Combined Application](#), p. 32.

to design the HVDC converter stations to be able to add another converter to operate a second 1500 MW HVDC pole, similar to the way the current bipole system operates, creating the potential to increase the total capacity up to 3000 MW.<sup>21</sup>

**Table 1:**

**Existing 550 MW Converter Station Capacity v. Proposed 1500 MW Capacity**

<b>Existing Converter Station Capacity</b>	<b>Proposed Converter Station Capacity</b>
550 MW	550 MW Existing
Incremental Addition	350 MW Incremental Capacity via 3 New TSRs
	Subtotal 900 MW
Incremental Addition	600 MW Incremental Capacity for MISO Regional Coordination
Total 550 MW	Total 1500 MW

**D. Until Minnesota Power Proves the Customer Benefit of Expanding to 900 MW Pursuant to its Transmission Service Requests, It Should Bear the Costs of that Expansion.**

Minnesota Power has submitted three TSRs to MISO with an incremental capacity of 350 MW, increasing the total capacity on the HVDC System to 900 MW.<sup>22</sup> At present, Minnesota Power intends to wholly utilize the 900 MW of capacity and therefore the costs of the Project will be borne wholly by Minnesota Power's customers. Approximately 41% of the costs to upgrade the converter station costs are associated with the 350 MW of TSRs.<sup>23</sup> The Company is asking the Commission to approve \$314 million in Project costs to expand the capacity of the HVDC System to 900 MW, with an additional \$58 million necessary in line upgrades to be approved in a future proceeding. In sum, as part of the Proposed Project, Minnesota Power is seeking to upgrade the capacity of the HVDC System by 350 MW to 900 MW for a total incremental cost of \$372 million.<sup>24</sup>

<sup>21</sup> Ex. LPI-300 [Maini Direct](#), Schedule 3.

<sup>22</sup> Ex. LPI-300 [Maini Direct](#), p. 13, n. 26, Schedule 2 (the specific TSRs are 95418167 (100 MW), 90481026 (100 MW), and 91365462 (150 MW) for a total of 350 MW respectively).

<sup>23</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 8-9.

<sup>24</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 8-9.

Though the converter station costs for the 350 MW are included in this proceeding, the incremental 350 MW TSRs secured by the Company are not tied to a specific wind generation acquisition. Instead, it appears the Company assumes the additional capacity will be needed to connect new North Dakota wind generation. In the 2021 Integrated Resource Plan the Commission ordered Minnesota Power to procure 400 MW of new wind, and on December 15, 2023, Minnesota Power filed its Request for Proposal package to procure up to 400 MW of wind (“Wind RFP”).<sup>25</sup> The Company anticipates receiving several bids for wind projects, some of which will likely be located around Center, North Dakota, near the western HVDC terminal. But until those bids are received and analyzed, it is premature to assume the incremental 350 MW TSR capacity on the HVDC System will actually be needed to transmit incremental new load. In other words, the Company is asking for approval of capacity it does not need, and it appears the Company’s forecasted demand for the HVDC System assumes wind generation is secured from North Dakota in lieu of Minnesota wind generation or other alternatives. Such assumptions cannot form the basis for a finding that the Company has met its burden of proof in this proceeding to establish need. LPI therefore asserts the Company has not demonstrated the need to expand the capacity of the HVDC System by 350 MW and it should bear the risk of doing so.

The Company has not identified a specific resource acquisition to use the incremental 350 MW associated with the TSRs, and the Commission should recognize the cost to expand the capacity by 350 MW is substantial. If the Company, as part of its Wind RFP, proposes to build or acquire wind in North Dakota that would need to utilize the TSR-related capacity to meet the needs of Minnesota Power customers, then Minnesota Power’s business case in the Wind RFP docket should incorporate these TSR costs to reflect the total costs of interconnecting that proposed wind acquisition. That way, the TSR related cost assignments are considered in conjunction with the wind project that will use those 350 MW of TSRs. Only by combining the consideration of these interrelated components of generation and transmission can the Commission fully understand whether it is more cost effective for Minnesota Power to acquire wind generation in North Dakota to fulfill Minnesota ratepayer needs or instead assign the TSRs to another party to pay to utilize the line and provide offsetting revenue for Minnesota Power’s customers.

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<sup>25</sup> *In the Matter of Minnesota Power’s 2021- 2035 Integrated Resource Plan*, Docket No. E015/RP-21-33, [Order Approving Plan and Setting Additional Requirements](#), p. 13 (January 9, 2023).

If the ALJ nonetheless recommends approval of the incremental 350 MW expansion, he should recommend that the Commission require the Company to evaluate and report on whether customers would benefit more from assignment of this capacity to another party, with reimbursement in accordance with current MISO tariff provisions, or if it is more cost effective for Minnesota Power to acquire wind generation in Minnesota to fulfill Minnesota ratepayer needs.<sup>26</sup>

**E. Until Minnesota Power Proves the Customer Benefit of Expanding to 1500 MW in Coordination with MISO It Should Bear the Costs of that Expansion.**

The expandability from 900 MW to 1500 MW is likely meant to be coordinated with MISO to enable regional solutions.<sup>27</sup> Although Minnesota Power has not clearly spelled this out, based on the Company's coordinated efforts with MISO's long-range planning, LPI believes that the incremental 600 MW is designed to enable regional transmission solutions. The Company has stated that it anticipates significant increase in need for interregional transfer capacity in MISO,<sup>28</sup> and it aims to establish the Square Butte transmission corridor as an "essential building block for reliably moving energy across the Upper Midwest."<sup>29</sup> The proposed convertor station expandability from 900 MW to 1500 MW would make it feasible for future expansion of the HVDC Line itself (with additional upgrades) to enable the line to accommodate transfers for regional solutions.<sup>30</sup>

LPI has a number of concerns with the Company's incorporation of expandability components in the Proposed Project when that expandability is completely conjectural. During the evidentiary hearing the Company's witness Mr. Gunderson stated that the Company has incorporated this expandability component into the project at a cost of \$100 million to incorporate future transmission projects even though no future transmission projects have been identified or introduced into the record.<sup>31</sup> As the Department notes "it is not strictly necessary for the Project

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<sup>26</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 12-13.

<sup>27</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 9-10.

<sup>28</sup> Ex. LPI-300 [Maini Direct](#), Schedule 5, Attachment 5.03, p. 6.

<sup>29</sup> Ex. LPI-300 [Maini Direct](#), Schedule 5, Attachment 5.04, p. 6.

<sup>30</sup> Ex. LPI-301 [Maini Rebuttal](#), Schedule 1R.

<sup>31</sup> Hearing Transcript, March 19, 2024, Gunderson, p. 30-32.

to be designed to accommodate future 345 kV expansion in the area...as MISO seems to have no plans at the time to expand the local 345 kV system.”<sup>32</sup>

**F. If the HVDC System Is Not Included in MISO’s Final LRTP Tranche 2, the Company and Commission Should Have the Flexibility to Reevaluate the Proposed Project.**

**1. MISO has not Incorporated Transmission Solutions Utilizing the Company’s HVDC Project in its Initial Proposal.**

MISO’s LRTP initiative is meant to identify multi-state regional transmission expansion solutions to address future reliability needs due to a changing resource mix and renewable integration. MISO’s LRTP effort consists of portfolios of transmission projects in four Tranches: Tranches 1 and 2 are to consist of portfolio of projects in the North/Central part of MISO’s footprint (or Midwest subregion); Tranche 3 portfolio of projects would be focused on MISO South; and Tranche 4 portfolio is expected to address the North/South interface limit respectively.<sup>33</sup> MISO has designated the LRTP portfolio of projects as Multi Value Projects or MVPs. To be designated as an MVP portfolio, MISO’s tariff (attachment FF, II.C.2) requires that the regional transmission solutions support one or more of the following three criteria: enable regional public policy needs in a reliable and economic manner; provide multiple types of economic value across multiple pricing zones; and/or provide a combination of reliability and economic value across multiple pricing zones. In accordance with the MISO tariff, the MVP portfolio of projects in Tranches 1 and 2 would be eligible for 100% cost sharing across the Midwest subregion.<sup>34</sup>

The MISO Board of Directors approved Tranche 1 portfolio of projects in summer 2022. This portfolio consisted of 17 projects with an estimated investment of \$10.3 billion.<sup>35</sup> On March 4, 2024, MISO unveiled its initial draft proposal for a set of Tranche 2 transmission solutions. The figure below shows the initial draft proposal of the Tranche 2 portfolio.

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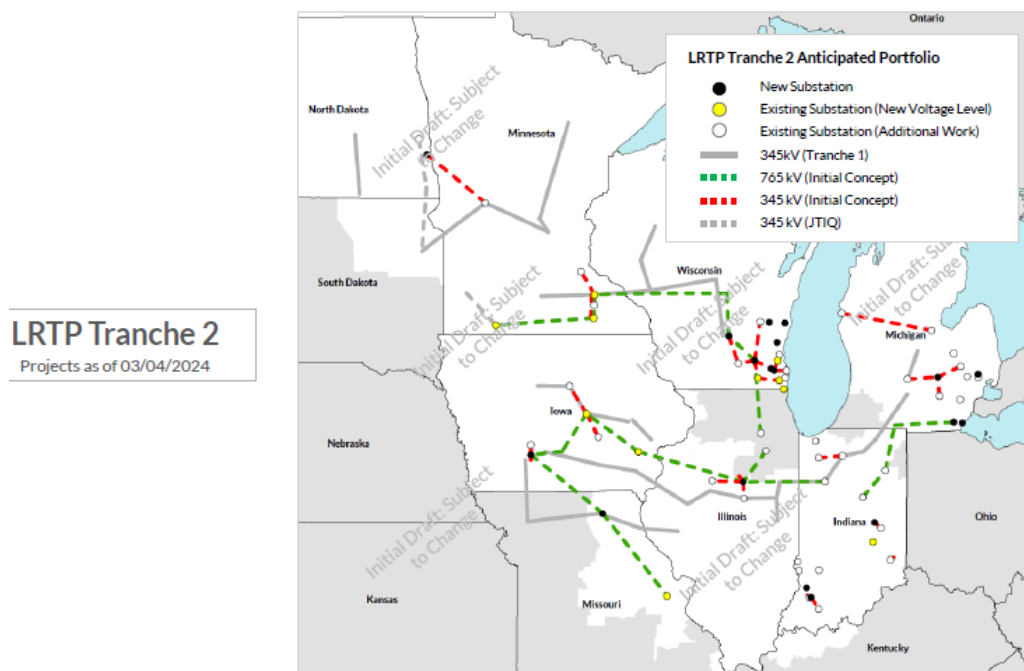
<sup>32</sup> Ex. DOC DER-602 [Zajicek Rebuttal](#), p. 32, Attachment 10.

<sup>33</sup> Ex. LPI-300 [Maini Direct](#), p. 16.

<sup>34</sup> Ex. LPI-300 [Maini Direct](#), p. 17.

<sup>35</sup> Ex. LPI-300 [Maini Direct](#), p. 16.

**Figure 1: MISO Initial Draft LRTP Tranche 2**



Though this proposal is a draft and subject to change, MISO has not incorporated transmission solutions utilizing the Company’s HVDC Project in its initial proposal.

**2. If the Square Butte HVDC System Is Not Included in MISO’s LRTP Tranche 2, the Proposed Project and Expansion Could Be Unnecessary.**

Given that MISO did not incorporate the HVDC Project in its initial proposal, the Commission should consider the real possibility that the Company’s infrastructure as proposed in its Certificate of Need Application may not be utilized as Tranche 2 is currently configured. Minnesota Power’s system peak demand is 1600 MW and therefore, increasing the converter capability to 1500 MW seems far in excess of what Minnesota ratepayers need, considering the Company’s other generation resources. Furthermore, it is likely Minnesota Power is not intending to use the entire 1500 MW solely to serve Minnesota Power customers because it would make sense to diversify the acquisition of future resources from a siting perspective instead of “putting all eggs in one basket” by relying solely on this HVDC Line especially because the buildout of MISO’s LRTP Tranches 1 and 2 will provide more optionality than currently exists today.

In light of these facts, the ALJ should recommend the Company and the Commission reevaluate whether the Proposed Project is needed in the event it is not included in MISO Tranche 2. LPI requests the ALJ include the following recommendations to the Commission:

3. **The Company and the Commission Should Consider Alternatives if the Square Butte HVDC System Is Not Included in Tranche 2.**

If the HVDC related projects are not included in the MISO Tranche 2 portfolio, the following may warrant further investigation:

- a. ***Market Participant Funding Project with Partners.*** Aside from the Tranche 2 effort, Minnesota Power should explore innovative partnerships to share the costs with other entities that may also realize benefits as a result of the HVDC Modernization Project.
- b. ***Revised Project Scope.*** Because the design and related features of this Project are configured with a bigger picture in mind to facilitate regional benefits, it is not clear what the impact would be of the change in design and scope, and therefore, costs, if this project did not lay the foundation to facilitate or enable solutions with regional benefits. If the project will not be used for regional benefits, it is likely feasible to scale back the project and utilize less expensive technology with less spatial requirements to fulfill the need for Minnesota Power's ratepayers.
- c. ***Increased Optionality with Tranche 1 and 2 Buildouts.*** The Tranche 1 MVP portfolio, approved by the MISO Board of Directors in July 2022, has in-service dates between 2028 and 2030. MISO is in the process of identifying transmission solutions for Tranche 2 to further integrate substantive amounts of renewable generation, and one likely outcome of this effort would be more optionality to get wind energy delivered to Minnesota Power's system. Further, since one of the major benefits of the LRTP initiative is congestion and fuel cost savings, there would be less congestion price risk due to the increased optionality compared to the Company's historical perspective.

From an overarching perspective and once again, if the HVDC related solutions are not included in the MISO Tranche 2 portfolio of projects, LPI encourages the Company to explore if it could minimize costs for its ratepayers by relying on the regional solutions developed in Tranche 2 instead of constructing expensive infrastructure that is solely to be utilized by Minnesota Power and funded by its customers. If the HVDC Modernization Project goes forward in addition to the transmission resources to be built in Tranches 1 and 2, Minnesota Power ratepayers will end up bearing the high costs associated with modernizing and expanding the capability of the HVDC line



as well as necessarily being responsible for paying for their share of the socialized MVP costs associated with the Tranche 1 and 2 portfolios.<sup>36</sup> As noted earlier, the Tranche 1 portfolio investment was estimated at \$10.3 billion. It is anticipated that the Tranche 2 portfolio related investment will likely cost more than double the investments included in Tranche 1. Thus, the impact to Minnesota Power ratepayers would be more significant than the already high revenue requirements associated with the Company's proposal in the Application, and the approval of this Project could lead to unjust and unreasonable rates.

**G. Any Project Approval Should Contain Conditions to Protect the Company's Ratepayers**

**1. If the Commission Approves the Proposed Project, It Should Require the Company to Secure Cost Sharing.**

Minnesota Power has touted the “regional” benefits the Project will provide, but the Company proposes that only customers of Minnesota Power, and not the greater region, are to pay for the Project. Similarly, though the Project is incorporating “future expandability” options, Minnesota Power is asking its customers to pay for future optionality from which they might not benefit.<sup>37</sup> This proposed cost assignment is not consistent with Minnesota Power's own view that those who reap the benefits should pay the cost. For example, Minnesota Power witness Daniel Gunderson states in his Direct Testimony when asked about the proposed upgrade to the ATC Arrowhead 345kV Substation, that the upgrades to that substation “should have costs allocated appropriately to all those who receive benefits from the upgrades and surrounding facilities have been appropriately jointly studied and agreed upon by stakeholders.”<sup>38</sup> The Company has stated that the ATC Arrowhead Alternative would result in greater power transfers to Wisconsin, even though the Alternative would be funded by Minnesota Power customers. “Wisconsin ratepayers

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<sup>36</sup> Ex. LPI-300, [Maini Direct](#), p. 22, n. 42 (“If the premise is that this HVDC Modernization Project is going to be the gateway for Minnesota Power to accomplish its clean energy goals, then presumably, it would be accessing the congestion free wind energy from North Dakota via the upgrades on the HVDC line for the benefit of its ratepayers in lieu of accessing other options made possible by the implementation of the Tranche 2 portfolio.”)

<sup>37</sup> See Ex. MP-121 [Winter Direct](#), p. 15 (stating the Company has endeavored to ensure its investment incorporates consideration for the “long-term needs of the local and regional” transmission network, and the Project is designed with “future local and regional transmission system needs in mind”).

<sup>38</sup> Ex. MP-119 [Gunderson Direct](#), p. 9.

would receive the benefit of this increased transfer capability at the expense [of] Minnesota Power's customers, who would be solely responsible to pay for it.”<sup>39</sup>

Minnesota Power's system peak demand is 1600 MW and therefore, increasing the converter capability to 1500 MW seems far in excess of what Minnesota ratepayers need, considering the Company's other generation resources.<sup>40</sup> Furthermore, it is likely Minnesota Power is not intending to use the entire 1500 MW solely to serve Minnesota Power customers because it would make sense to diversify the acquisition of future resources from a siting perspective instead of “putting all eggs in one basket” by relying solely on this HVDC Line especially because the buildout of MISO's LRTP Tranches 1 and 2 will provide more optionality than currently exists today. The Company has indicated that the physical equipment expandability from 900 MW to 1500 MW related to the converter stations accounts for approximately \$100 million.<sup>41</sup> Given that the proposed expansion is laying the groundwork for regional solutions, the costs associated with the expandability beyond the capability needed for Minnesota Power's customers should be subject to cost sharing and assigned to those that benefit. The Department of Commerce agrees with LPI that it “is unfortunate that [Minnesota Power] has not been able to obtain any cost sharing opportunities for this Project.”<sup>42</sup> The Department further notes that if MISO or another utility wishes to expand the HVDC line beyond the 900 MW, or if Minnesota Power chooses to sell capacity rights to some of that 900 MW capacity, then MP would be paid for those system upgrades by either MISO or the utility.<sup>43</sup> The Department encourages Minnesota Power to pursue opportunities for cost sharing based on the regional benefits that become available.<sup>44</sup>

If the Commission approves this portion, the costs associated with the expandability beyond fulfilling the size capability needed for Minnesota Power's customers should be subject to cost sharing and assigned to those that benefit.

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<sup>39</sup> Ex. MP-119 [Gunderson Direct](#), p. 27.

<sup>40</sup> Ex. LPI-301 [Maini Rebuttal](#), p. 10.

<sup>41</sup> See Ex. MP-121 [Winter Direct](#), p. 40, footnote 18.

<sup>42</sup> Ex. DOC DER-602 [Zajicek Rebuttal](#), p. 7.

<sup>43</sup> Ex. DOC DER-602 [Zajicek Rebuttal](#), p. 7.

<sup>44</sup> Ex. DOC DER-602 [Zajicek Rebuttal](#), p. 7.

**2. If the Commission Approves the Project or a Portion Thereof, It Must Ensure Customer Rates Are Just and Reasonable.**

Every rate made, demanded, or received by any public utility, or by any two or more public utilities jointly, shall be just and reasonable and any doubt as to reasonableness should be resolved in favor of the consumer.<sup>45</sup> Merely showing that the utility incurred expenses does not meet the utility's burden of demonstrating that it is just and reasonable for ratepayers to bear those expenses.<sup>46</sup>

If implemented, the HVDC Modernization Project could potentially add close to one billion dollars to Minnesota Power's rate base. It appears that, as a result of the identified planned investments including the HVDC Modernization Project, Minnesota Power's rate base could triple over a twenty-year period from roughly \$1 billion in 2010 to approximately \$3 billion in 2030, all while the peak demand on its system drops from roughly 1800 MW to 1600 MW or less.<sup>47</sup>

The first-year revenue requirements provided by Minnesota Power in its Certificate of Need Application range from \$86.4 million to \$101.86 million respectively – on a system wide basis, this range represents a substantive increase of 11.6% to 13.7% respectively, when compared to present rate revenues.<sup>48</sup> To provide context, the Company's 2024 proposed base rate case increase (excluding roll-in of riders) is \$89.1 million (or 12.1%).<sup>49</sup> The estimated rate increase for the HVDC Modernization Project to LPI's members ranges from 9.82% to 14.01%.<sup>50</sup>

In addition to the cost of the Proposed Project, the Company is making significant investment in other transmission projects within the state and MISO has projected a cost range of \$17 billion to \$23 billion for its Tranche 2 Portfolio. Therefore, Minnesota Power ratepayers will bear cost responsibility for a portion of this significant investment, in addition to bearing exclusive cost responsibility for the HVDC Project. The proposed rate impacts, while highly substantial, do

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<sup>45</sup> Minn. Stat. 216B.03; Minn. Stat. § 216B.16, subd. 4.

<sup>46</sup> *In re N. States Power Co.*, 416 N.W.2d 719, 723 (Minn. 1987).

<sup>47</sup> Ex. LPI-300 [Maini Direct](#), p. 10, Schedule 2.

<sup>48</sup> Ex. MP-104 [Combined Application](#), p. 15, Table 2.2.3-1.

<sup>49</sup> *In the Matter of the Application of Minnesota Power for Authority to Increase Rates for Electric Utility Service in Minnesota*, Docket No. E015/GR-23-155, [Direct Testimony of Jennifer Cady](#), p. 2 (November 1, 2023).

<sup>50</sup> Ex. MP-104 [Combined Application](#), p. 15.

not fully reflect all of the rate increases that Minnesota Power ratepayers will be expected to bear in the future.

Minnesota Power is a small utility, serving only approximately 150,000 customers. The projected investments, if approved, could result in rate shock and unjust and unreasonable rates. The Company and the Commission must be cognizant of this risk and control the rate at which investments can be approved to ensure that Minnesota Power's rates are just and reasonable.

**3. If the Commission Approves the Proposed Project, It Should Impose Conditions to Protect Customers from Undue Risk.**

If the Commission approves the Proposed Project or a portion thereof, the Commission should impose conditions to ensure the risk of expanding the capacity of the HVDC System is actually used and useful and that Minnesota Power customers do not bear costs that should be borne by other regional beneficiaries. First, the Commission should impose a cap on costs incurred, such that Minnesota Power can recover cost in excess of its cost estimates only if it demonstrates those costs were prudently incurred. To prove prudence in this context, the Company should have to show ratepayer benefit and it should not be allowed to recover those costs until the ratepayer benefits have materialized. A cost cap will ensure that Minnesota Power is accountable for the cost of the Project and properly incentivized to control costs.

Second, the Company should submit quarterly compliance filings that provide updates on the construction of the upgrades to the Square Butte HVDC System.

Third, the Company should submit quarterly compliance filings that explain what Project milestones are met, and whether the Company is on track to secure all awarded and available state and federal funding, and if not, why not.

Fourth, once the upgrades are installed, Minnesota Power should provide quarterly reports on the use of the HVDC System to demonstrate the capacity has been fully utilized and the revenues and benefits to customers have been maximized. As part of this reporting the Company should include what power was transmitted, where it was generated, and who was served by that power.

## IV. CONCLUSION

The following is a summary of recommendations for the Commission's consideration:

1. At most, the Company has demonstrated the need to refurbish the existing 550 MW capacity of the Square Butte HVDC System at a cost of \$317 million.
2. The Company has not demonstrated the incremental 350 MW capacity secured by the new TSRs to increase the HVDC System Capacity to 900 MW at a cost of \$372 million is needed at this time and the Company should bear the risk of pursuing this capacity buildout until it can demonstrate the capacity is needed to serve Minnesota customers.
3. If MISO ultimately utilizes the HVDC Project expandability up to 1500 MW in LRTP Tranche 2, the Company needs to pursue either the current method of assigning costs to TSRs or the development of a new tariff to allocate the converter size capability costs to those who will benefit from the HVDC Project. The upgrade of the HVDC Line to accommodate the capability up to 1500 MW would be cost shared as per MISO's Tariff provisions if MISO includes it in its portfolio. If, however, the expandability is not utilized, and notwithstanding the grant funding, it would not be appropriate to build this capability if the HVDC line does not get upgraded accordingly for regional solutions in Tranche 2 or used by others that benefit.
4. If the Commission approves the Proposed Project, or a portion thereof, it should impose conditions to protect customers from undue risk.

Dated: May 3, 2024

Respectfully submitted,

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