

Staff Briefing Papers

Meeting Date December 5, 2019 Agenda Item 1**

Company Xcel Energy

Docket No. **IP-6875/WS-17-700**

In the Matter of the Application of Xcel Energy for a Site Permit Amendment for the up to 200 MW Blazing Star Wind Farm 2 Project in Lincoln County

Issues Should the Commission approve the amendments to the Blazing Star Wind Farm 2 Project as requested by Xcel Energy?

Staff Tricia DeBleekere Tricia.DeBleekere@state.mn.us 651-201-2254

 **Relevant Documents**

Date

Order Issuing Site Permit for a Large Wind Energy Conversation System	November 6, 2018
Site Permit Amendment (5 parts)	June 19, 2019
Order Authorizing Site Permit Transfer	July 8, 2019
PUC – Notice of Comment Period	July 9, 2019
Public Comment – Addendum, Brian Lawburgh	July 23, 2019
Xcel – Request for Extension	July 30, 2019
Xcel – Request for Second Extension	August 13, 2019
PUC – Public Comment, Brian Lawburgh	August 14, 2019
Xcel – Reply Comments (5 Parts – no Attachment B)	August 20, 2019

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The attached materials are work papers of the Commission Staff. They are intended for use by the Public Utilities Commission and are based upon information already in the record unless noted otherwise.

 **Relevant Documents**

Date

PUC – Public Comment, Brian Lawburgh	August 22, 2019
Xcel – Response to IRs (Parts 1-6)	September 18, 2019
Xcel – Reply Comments - Supplemental	October 8, 2019
PUC – Notice of Comment Period	October 11, 2019
DOC EERA – Comments	October 21, 2019
MNDOT – Comments	October 21, 2019
Xcel – Reply Comments	October 28, 2019
DOC EERA – Letter	November 18, 2019

I. STATEMENT OF ISSUES

Should the Minnesota Public Utilities Commission (Commission) approve the amendments to the Blazing Star Wind Farm 2 (Blazing Star 2) Site Permit as requested by Xcel Energy?

II. SUMMARY

Following several comment periods and supplemental filings, all parties are in agreement that the Commission should approve the amendments, as outlined below, to the Blazing Star 2 site permit. The amendment includes a modification to Permit Condition 2.0 – Project Description to reflect a the new turbine type and project turbine layout as well as the attachment of a revised project map reflecting the modified turbine layout (as provided in Xcel Energy’s October 8, 2019 filing). Staff agrees with parties and recommends approval of the site permit amendments.

III. PROJECT DESCRIPTION

The Blazing Star 2 Facility is currently permitted as a 200 megawatt (MW) large wind energy conversion system (LWECS) to be comprised of wind turbines ranging from 2 to 3.5 megawatts in size and located in Diamond Lake, Drammen, Ash Lake, Shaokatan, Royal, Hendricks and Marble townships in Lincoln County, Minnesota. Approval to begin full construction of the wind facility has not been authorized except for the project substation (including grading, preparation of storm water pollution prevention plan retention ponds, gravel placement, and concrete work).

IV. STATUTES AND RULES

Under Minn. Stat. § 216F.04(d) and Minn. R. 7854.1300, the Commission has specific authority to modify or amend a site permit for a wind project at any time if there is good cause to do so.

The Department of Commerce Energy Environmental Review and Analysis (DOC EERA) has generally used a four factor test for the review of permit amendment requests in the past. The four factor test considers whether the proposal shows that:

- 1) The new information would not substantially change the findings accompanying the Commission’s original permit decisions and potentially change the Commission’s determination that the project is compatible with the standards set out in Statute and Rule;
- 2) It remains in compliance with existing site permit terms and conditions;

- 3) It is consistent with current Commission standards; and,
- 4) There has been proper permit distribution and landowner notification.

These factors are considered in the staff analysis section of this paper, below.

V. SITE PERMIT AMENDMENT REQUEST

On June 18, 2019, Xcel Energy filed a letter with the Commission requesting amendments to the site permit to reflect turbine technology changes it is proposing for the facility.¹ Specifically, the final proposal is to use 10 Vesta V-110 turbines and 90 V-120 turbines, both 2.0 MW in size. As explained by Xcel in their initial amendment petition, the change in turbine types is expected to increase the capacity factor and result in higher annual energy production which is meant to mitigate economic impacts related to the 2017 Tax Cuts and Jobs Act. The nameplate capacity of the facility would remain 200 megawatts.

To address the proposed change in turbine technology, Xcel Energy has requested amendments to Section 2.0 of the site permit which identifies the turbine types originally authorized for the project and Section 3.1 which discusses the turbine layout and site permit maps originally approved for the project. The requested changes are to include an amended site permit map (attached to this briefing paper) and to modify the text of Section 2.0, as follows:

New Section 2.0: The Blazing Star Wind Farm will be a 200 MW nameplate capacity LWECS. The LWECS will consist of 10 Vestas V-110 and 90 Vestas V-120 turbines. Both turbine models are 2 MW in size.

~~Old Section 2.0: The Blazing Star Wind Farm 2 will be up to 200 MW LWECS, consisting of 67 to 100 wind turbines ranging in size from 2 to 3 MW. The LWECS will consist solely of one turbine model, or a combination of turbine models, selected from the following: Gamesa G126 (2.625 MW), GE 2.5-116 (2.5 MW), Vestas 110 (2.0 MW), and Acciona 3.0-132 (3.0 MW), as identified in the Permittee's Site Permit Application.~~

In its filing, Xcel Energy maintained that the new turbines and turbine layout would conform to all other current permit conditions related to: wind access buffer requirements, distance from residences, noise requirements, electrical collector and feeder line locations, and shadow flicker. Xcel Energy provided a revised constraint map and updated noise assessment and shadow flicker studies. Xcel Energy stated it would proceed with pre-

¹ See June 19, 2019 Site Permit Amendment Petition, pg. 2-3. Doc. ID: [20196-153686-01](#)

construction filings (*i.e.*, site plan, avian bat protection plan, native prairie protection plan, and biological and natural resource inventories) using the updated turbine layout and following the submission requirements currently outlined in the site permit.

VI. PROCEDURAL HISTORY, PARTY COMMENTS, AND PROCESS DEVELOPMENTS

On November 6, 2018, the Commission issued a site permit to Blazing Star Wind Farm 2, LLC for the Blazing Star Wind Facility.^{2,3}

On June 19, 2019, Xcel Energy filed a letter requesting that the Commission amend certain sections of the site permit to reflect changes to turbine technology, turbine layout, and a modified (expanded) site permit boundary.⁴

On July 9, 2019, the Commission issued a notice requesting comments on the proposed site permit amendments. Comments were received by members of the public (Brian Lawburgh) and DOC EERA. Mr. Lawburgh expressed concerns about on-going negotiations related to a turbine placement that may affect use of his property as a wedding venue (among other information).⁵ Xcel Energy requested two extensions (July 20 and August 13, 2019) to the reply comment period to provide time to respond to comments received. DOC EERA recommended the Commission approve the requested site permit amendments.

On August 20, 2019 Xcel filed reply comments which modified their initial site permit amendment request; first, the change of turbine T-109 from V120 to V110 model, second, Xcel noted a tentative agreement with Mr. Lawburgh regarding the adjustment of a turbine of concern (T-101). Xcel proposed the removal of T-101 and use of Alt-4, and the consideration of the potential to use T-101 location, (but shifted by several hundred feet).

The reply comments included an assessment of the environmental and human impact information on the Alt-4 location. The comments also attempted to clarify the modified site

² Commission Order Issuing Site Permit with Conditions, November 6, 2018. Doc ID: [201811-147637-01](#)

³ On April 12, 2019, Xcel Energy filed a letter notifying the Commission that it had acquired Blazing Star Wind Farm 2, LLC and filed a request with the Commission to transfer the Blazing Star 2 site permit from Blazing Star Wind Farm 2, LLC to Xcel Energy. Subsequently, on July 8, 2019, the Commission issued an order authorizing transfer of the site permit.

⁴ See June 19, 2019 Site Permit Amendment Petition, pg. 2-3. Doc. ID: [20196-153686-01](#)

⁵ See July 23, 2019 Public Comments. Doc ID: [20197-154623-01](#), [20197-154721-01](#), [20198-155181-01](#)

permit boundary and included revised site permit maps – Attachments A, C, and D.⁶

On September 18, 2019, Xcel provided responses to six information requests which were issued by Commission staff (on September 5, 2019) which sought to clarify the record on six questions:

- 1) How Xcel’s revised site permit boundary aligns with Xcel’s basis for the boundary modifications (to reduce overlap with the Blazing Star 1 project boundary and reflect changes in additionally signed participating residents) - **Response:** Xcel further clarified and modified its boundary;
- 2) Clarification that Xcel-provided landowner lists provided for the Commission’s notices included both properties that are in or adjacent to previous and newly proposed boundaries – **Response:** Xcel confirmed the lists did include landowners for both site boundaries;
- 3) Status of negotiations with Mr. Lawburgh – **Response:** Xcel provided an update, noted the turbine shift was the agreed upon approach between parties, and provided updated human and environmental information on the new turbine location;
- 4) Clarification of a collector line depicted as two lines on a map – **Response:** Xcel clarified this was in error and provided a revised map with only one collector line;
- 5) The location of human and environmental information in the record on turbine Alt-4 – **Response:** Xcel noted this information was included in its Reply Comment Summary dated 8/20/2019; and,
- 6) The location of human and environmental information in the record on turbine Alt-1 – **Response:** Xcel noted this information was included in the original Blazing Star 2 permit application as T-75 and ‘throughout the record’.

Further, on October 8, 2019 Xcel provided additional supplemental reply comments which included information contained in the IR-responses including maps and information depicting the finalization of a turbine location shift of T-101 by 630-feet and a (further) refined site permit boundary.⁷

Due to the additional amendment modifications, and information included in the information request responses, the Commission issued another comment period notice on October 11, 2019.

⁶ See Reply Comments, August 20, 2019. Doc ID: [20198-155334-02](#), [20198-155334-01](#), [20198-155334-05](#), [20198-155334-04](#) [20198-155334-03](#)

⁷ See Xcel Supplementa Reply Comments, October 8, 2019. Doc ID: [201910-156434-01](#)

Comments were received by DOC EERA and the Minnesota Department of Transportation (MnDOT). MnDOT reiterated previous concerns: requesting Xcel Energy coordinate with MnDOT on impacts related to The Kings of Trails Scenic Byway (US Hwy 75), the potential impact MnDOT construction projects could have on project plans to haul oversized loads, and the request to coordinate on the large number of crossings of US Hwy 75.⁸

DOC EERA provided a review and analysis of the threshold for site permit approval and indicated where in the site permit amendment application (and supplemental filings) the information was contained and whether DOC EERA deemed it sufficient.⁹ Ultimately, DOC EERA found that:

“there are two areas where EERA believes the information provided does not adequately inform decision-making. First, with respect to Alt 1 and Alt 4, EERA has not been able to confirm that the record adequately address noise and shadow flicker impacts of these two turbines together with the currently proposed layout/turbine type for the other 100 machines. Second, EERA believes there are aesthetic and economic tradeoffs associated with the adjustments Xcel has made to alleviate Mr. Lawburgh’s concerns that have not been addressed in the record. In order to fully understand the human and environmental impacts associated with the request before the Commission, EERA believes three additional items would be helpful to complete the record:

- A single comprehensive noise analysis that addresses all proposed and alternate turbines together (using the currently proposed layout/turbine type), provides comprehensive results in a single table for all receptors, a map with isopleths illustrating the results of this analysis.
- A single comprehensive shadow flicker analysis that addresses all proposed and alternate turbines together (using the currently proposed layout/turbine type), provides comprehensive results in a single table for all receptors, a map illustrating the results of this analysis.
- A qualitative summary of the aesthetic and economic tradeoffs that are relevant to the decision to shift turbine T-101, change turbine types at T-109 and T-111, and retain Alt 1 and Alt 4 as permitted alternates.

⁸ MnDOT Comment, See Doc ID: [201910-156744-01](#)

⁹ DOC EERA Comments, October 21, 2019. Doc ID: [201910-156783-01](#)

EERA understands that the permittee believes all relevant information exists in the record and acknowledges that among the many filings, EERA may have failed to identify and piece together information that would flesh out these areas. If this is the case, EERA nonetheless recommends, for clarity in the record, that the permittee pull together the relevant pieces in the record and compile a comprehensive assessment (addressing the proposed layout and both proposed alternate turbines together) for each of the areas identified above.”

On October 28, 2019 Xcel Energy provided reply comments which included an acknowledgement to work with the MnDOT regarding scenic byways and a response to DOC EERA’s request for three items.¹⁰ Xcel Energy provided a more comprehensive noise analysis, shadow flicker analysis, and its review of the aesthetic and economic tradeoffs of the various turbine options (T-101 relocation, T-109/T-111 turbine swap, and use of Alt-1 and Alt-4 locations).

On November 18, 2019, DOC EERA filed a letter indicating the reply comments filed by Xcel met DOC EERA’s expectations.¹¹

VII. STAFF ANALYSIS

Commission staff has reviewed all the documents and comments relevant to Xcel Energy’s site permit amendment request. With the supplemental filings, staff agrees with the recommendation of DOC EERA that the Commission should approve the permit amendments to sections 2.0 and 3.1. The changes in turbine models and turbine layout are comparable or less than the potential impacts considered at the time the original permit was issued. In addition, further evaluation of the changes will be conducted through the pre- and post-construction permit compliance process.

Additionally, staff believes that the following considerations in the four-factor amendment test have been met. The project modifications would not substantially change the findings accompanying the Commission’s original permit decisions and potentially change the Commission’s determination that the project is compatible with the standards set out in Statute and Rule. The project, with the supplemental information, and through compliance filings to date remains in compliance with existing site permit terms and conditions. The information filed and the amendments requested are consistent with current Commission

¹⁰ Xcel Reply Comments, October 28, 2019. Doc ID: [201910-156951-01](#)

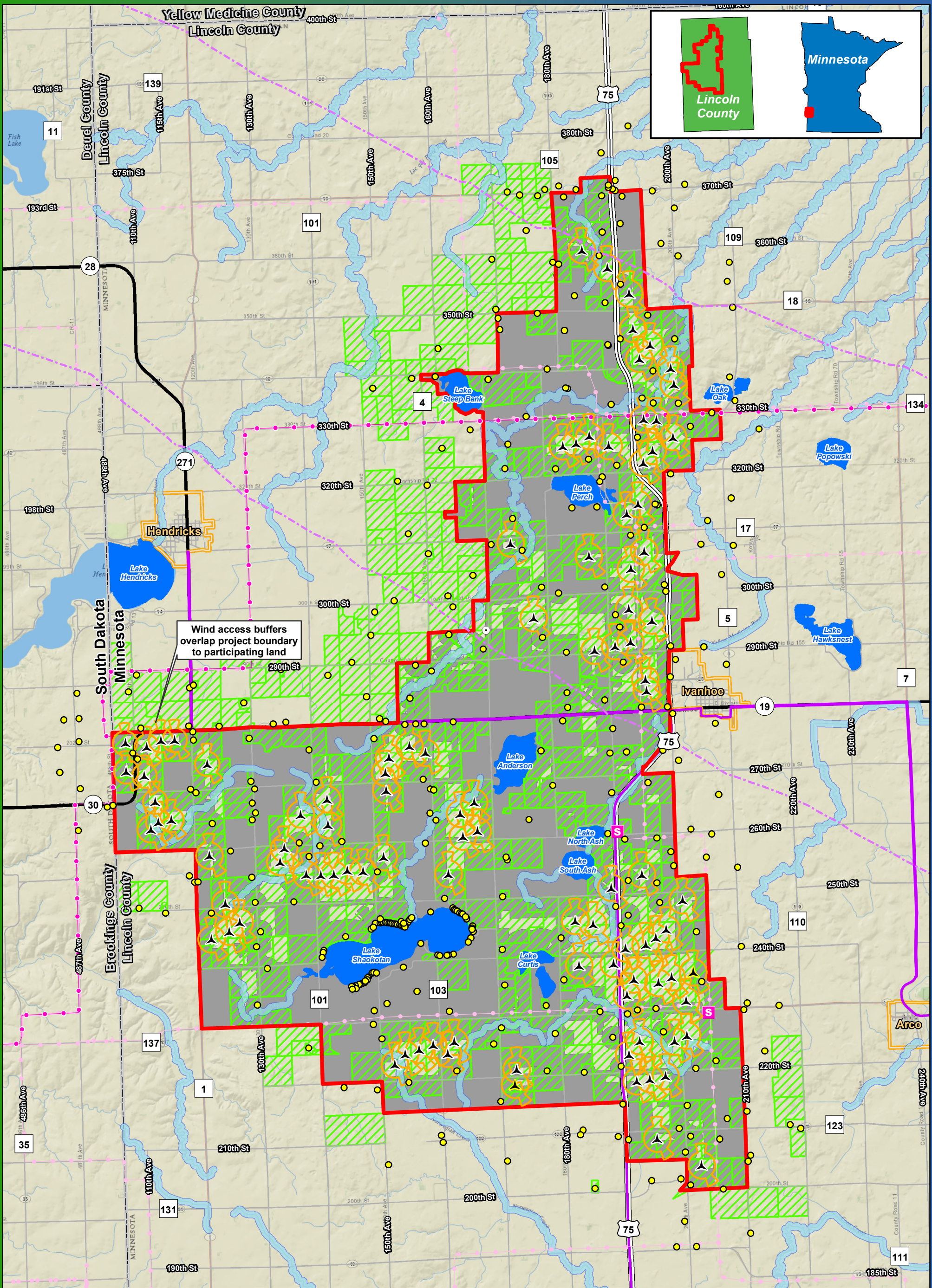
¹¹ DOC EERA Reply Comments, November 18, 2019. Doc ID: [201911-157624-01](#)

standards, and there has been proper permit distribution and landowner notification.

VIII. COMMISSION DECISION OPTIONS

1. Grant Xcel Energy's request to amend the Blazing Star Wind Farm Site Permit to reflect the change in turbine technology by amending Section 2.0 (as noted above and requested by Xcel) and replacing the maps identified in Section 3.1. Authorize staff to reissue the site permit reflecting these modifications.
2. Deny Xcel Energy's request to amend the Blazing Star Wind Site Permit.
3. Take some other action deemed appropriate.

Staff Recommendation: **1**



Wind access buffers overlap project boundary to participating land

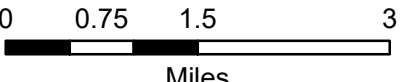
Figure 3
Turbine Layout and Constraints
Vestas V110/V120

Blazing Star Wind Farm 2
Lincoln County, MN

44.460125, -96.336861

- ▲ Preliminary Turbine Location
- ▲ Alternate Turbine Location
- ADLS Tower
- Residential Structures within 1 Mile (excluding cities of Hendricks and Ivanhoe)
- ▭ Project Area Boundary (Sept 2019)
- ▭ 3x5 Wind Access Buffer
- ▭ Setbacks
- ▭ Shoreland Management District
- ▭ Participants within 1 Mile
- Ⓢ Existing Substation
- Existing Transmission Line
- MVP 345kV Transmission Line
- Existing Pipeline
- Snowmobile Trail

* Turbines are not to scale



Imagery Source: National Geographic World Map
 Data Source: Geronimo Energy, MN DNR, Census, Lincoln Co.