

October 21, 2019

ELECTRONIC FILING

Mr. Daniel P. Wolf, Executive Secretary
Minnesota Public Utilities Commission
127 Seventh Place East, Suite 350
Saint Paul, MN 55101-2147

RE: EERA Comments and Recommendations
Request for Site Permit Amendment – Xcel Reply Comments, Supplemental Reply Comments re:
Turbine Technology and Turbine Layout Changes
Blazing Star Wind Farm 2 Project
Docket No. IP-6985 / WS-17-700

Dear Mr. Wolf,

Attached are comments and recommendations of Department of Commerce, Energy Environmental Review and Analysis (EERA) staff in the above matter. Since EERA's July 23, 2019 submittal of Comments and Recommendations in this matter, the permittee has made revisions to their site permit amendment request. These recommendations supersede EERA's earlier comments in this matter.

Blazing Star Wind Farm 2, LLC originally requested an amendment to the site permit issued on November 6, 2018. The original permit amendment request was primarily driven by the permittee's selection of a combination of turbine technologies that was not included in the issued site permit, and the resulting modifications made to the project's turbine layout. In addition, the permittee requested amending the permit to address a new expanded project boundary. In a series of subsequent filings, the permittee indicated a number of revisions affecting their November 6th request. These comments and recommendations address EERA's understanding of the permittee's most recent iteration of changes to the project as articulated in the permittee's September 18, 2019 responses to Commission Staff's September 6 information requests as well as the permittee's supplemental reply comments filed on October 8, 2019.

Permittee contact information:

Bria E. Shea
Xcel Energy
Director, Regulatory and Strategic Analysis
414 Nicollet Mall
Minneapolis, MN 55401

Email:
bria.e.shea@xcelenergy.com

EERA staff is available to answer any questions you or the Commission may have.

85 Seventh Place East - Suite 280 - Saint Paul, MN 55101 | P: 651-539-1840 | F: 651-539-0109 | mn.gov/commerce

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Sincerely,

/s/ Louise I. Miltich

Louise Miltich
Environmental Review Manager

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

**Energy Environmental Review and Analysis
Comments and Recommendations**

Docket No. IP-6985 / WS-17-700

Date: October 21, 2019

Staff: Louise Miltich | (651) 539-1853 | louise.miltich@state.mn.us

In the Matter of the Application of Blazing Star Wind Farm 2, LLC for a Large Wind Energy Conversation System Site Permit for the up to 200 MW Blazing Star 2 Wind Project in Lincoln County, Minnesota.

Issues Addressed:

- Should the Minnesota Public Utilities Commission (Commission) amend the Blazing Star Wind Farm 2 site permit to change the number, type and layout of the project turbines, modify and expand project boundaries, and other changes, as filed in the following documents?
 - June 19, 2019 Petition for Permit Amendment: Part 1, Part 2, Part 3, Part 4, Part 5
 - August 20, 2019 Reply Comments: Reply Comments Summary, Att A, Att C, Att D
 - September 18, 2019 Response to Info Requests: IR-1, IR-2, IR-3, IR-4, IR-5, IR-6
 - October 8, 2019 Supplemental Reply Comments: Reply Comments - Supplemental
- Should any permit conditions be modified or added if the requested amendments are approved?

Additional documents and information, including the site permit application, can be found the Department of Commerce Energy Environmental Review and Analysis (EERA) website: <https://mn.gov/commerce/energyfacilities/Docket.html?Id=34757> as well as on eDockets by searching “17” for year and “700” for number: <https://www.edockets.state.mn.us/EFiling/search.jsp>.

This document can be made available in alternative formats, that is, large print or audio, by calling (651) 539-1530 (voice).

Introduction and Background

Blazing Star Wind Farm 2, LLC (the Permittee) received a Large Wind Energy Conversion System (LWECS) Site Permit from the Commission on November 6, 2018.¹ On June 19, 2019 the Permittee filed a request for an amendment of the original site permit.²

¹ Minnesota Public Utilities Commission (November 6, 2018) *Order issuing site permit with modifications*, eDockets No. [201811-147637-01](#).

² Xcel Energy, Request for Amended Site Permit (June 19, 2019) Request for Amended Site Permit, eDockets No. [20196-153686-01](#), [20196-153686-02](#), [20196-153686-03](#), [20196-153686-04](#), [20196-153686-05](#). (referred to hereinafter as “amendment request.”)

The permittee's June 19, 2019 amendment request reflected their selection of a different combination of turbine technologies than identified in the original site permit. The permittee requested to use 10 Vestas V-110 turbines and 90 Vestas V-120 turbines, a scenario that was not contemplated in the permit application and was not addressed in the site permit granted by the Commission in November, 2018. The permittee also proposed an amendment to the permitted turbine layout, which they modified to accommodate the new turbine technology selected for the project. Finally, the permittee requested amending the site boundary with changes that it indicated reflected expanded landowner participation.

The permittee's amendment request provided an analysis of anticipated impacts associated with the new turbine technology and site layout. In addition, the request identified a number of sections within the site permit and requested specific amendments to permit language to reflect the project changes.

On July 23, 2019 EERA Staff recommended that the Commission approve the permittee's requested amendments without modification or addition of any other permit conditions/sections. However, EERA staff noted that the materials submitted by the applicant did not adequately explain or justify the change in project boundary. EERA staff therefore suggested that the Commission obtain clarification from the permittee regarding the need for and benefits of the boundary change prior to granting this component of the amendment request.³

Concurrent with EERA's submittal of recommendations, comments on the amendment request were provided by a landowner in the project area.⁴ The landowner, Brian Lawburgh, expressed concerns about the impact of turbines T-101 and T-102 on the viewshed from his property and associated negative impacts to the event venue business he conducts at the property. Subsequent filings by both the permittee and Mr. Lawburgh indicated that the two parties were working toward a solution to address these concerns.⁵

In its August 20, 2019 filing⁶ Xcel suggested layout modifications to address Mr. Lawburgh's concerns. In addition, Xcel sought to provide clarification on the site boundary amendment request in order to address EERA's July 23, 2019 comments. Specifically, Xcel indicated their intent to remove T-101 from their proposed layout and instead place a V-110 turbine in an alternate location (Alt 4) as well as substituting a Vestas V-110 turbine for the Vestas V-120 turbine originally proposed at T-109. Xcel offered a summary document providing an overview of their assessment of the human and environmental impacts associated with this change as well as associated maps of the updated layout. Xcel also attempted to clarify the reason for their requested change in site boundary by providing a map depicting the requested boundary relative to the Blazing Star 1 project boundary and by explaining that the site boundary changes requested in the

³ MN Department of Commerce Energy Environmental Review and Analysis (July 23, 2019) *Energy Environmental Review and Analysis Comments and Recommendations* eDockets No. [20197-154618-01](#).

⁴ Minnesota Public Utilities Commission (July 23, 2019) *Public Comment – Brian Lawburgh* eDockets No. 20197-154242-01; Minnesota Public Utilities Commission (July 29, 2019) *Public Comment – Brian Lawburgh Addendum*, eDockets No. 20197-154721-01.

⁵ Xcel Energy (July 30, 2019) *Extension Variance Request – To File Reply Comments*, eDockets No. [20197-154814-01](#); Xcel Energy (August 13, 2019) *Extension Variance Request – To File Reply Comments*, eDockets No. [20198-155168-01](#); Minnesota Public Utilities Commission (August 14, 2019) *Public Comment – Brian Lawburgh*, eDockets [20198-155181-01](#)

⁶ Xcel Energy (August 20, 2019) *Reply Comments*, eDockets No. [20198-155334-02](#), [20198-155334-03](#), [20198-155334-04](#), [20198-155334-05](#), [20199-155913-06](#).

amendment excluded any landowners who had signed up for agreements or easements that were ultimately not used for infrastructure nor setbacks.

On September 5, 2019, Commission staff issued six information requests (IRs) to Xcel.⁷ The IRs included 1) a request for further clarification around the site boundary amendment request, because the response provided in Xcel's reply comments did not appear to be consistent with the associated maps; 2) confirmation of landowner list; 3) status update on negotiations regarding T-101; 4) additional information about Alt 4 collector lines; 5) additional detail on human and environmental impacts summarized in Xcel's reply comments; and 6) relevant information and analysis for Alt 1 (shown on the requested project layout, but not addressed in any of the written materials or analysis provided by the permittee).

On September 18, 2019 Xcel provided responses to Commission staff's IRs⁸. In their response to IR 1 Xcel modified their requested site boundary to achieve consistency with their stated reasons for requesting the modification – to reduce overlap with Blazing Star 1 site boundary and reflect boundary lines of participating parcels. In their response to IR 2 Xcel confirmed the landowner list. In response to IR 3 Xcel modified the layout changes they had requested during the reply period. Instead of dropping T-101 and placing a turbine at the Alt 4 location, Xcel's response to IR 3 proposes keeping T-101 in but shifting it 603 feet south, sticking with a V-110 at T-109, and switching T-111 from a V-110 to a V-120. Xcel provided a brief summary of their assessment of human and environmental impacts associated with these changes. In response to IR 4 Xcel clarified that Commission staff's concerns regarding collector lines to Alt 4 were caused by an error in the map included in the amendment request and they offered an updated, corrected map. In response to IR 5 Xcel declined to provide any additional detail beyond the summary table of environmental impacts submitted in their reply comments. Finally, in response to IR 6, Xcel suggested that information regarding environmental and human impacts associated with the inclusion of Alt 1 in their requested layout could be gleaned from the existing record. Specifically, they suggested that information for one of the layouts included in the original site permit application was adequate to address impacts of Alt 1.

Finally, on October 8, 2019⁹ Xcel submitted supplemental reply comments with a final map depicting the site layout for which they are requesting Commission approval. They indicated that all relevant information for this layout could be found in the record.

EERA Staff Analysis and Comments

EERA's analysis focuses on the final iteration of changes requested by Xcel. We believe the requested changes are reflected in the final map included in Xcel's supplemental reply comments. Although the final map does not indicate turbine type, we also understand that the final changes requested by Xcel include using a V-110 at the T-109 site and a V-120 at the T-111 site. EERA understands that the requested layout also includes two alternate turbine locations Alt 1 and Alt 4.

EERA staff has assessed the adequacy of the information in the record to support a Commission decision on the final version of requested amendments and has assessed the need for permit conditions to be modified or added if the requested amendments are approved.

⁷ Minnesota Public Utilities Commission (September 6, 2019), Information Requests – IR to Xcel on Amendment, eDockets No. [20199-155692-01](#).

⁸Xcel Energy (June 19, 2019) *Information Request Responses MPUC-001*, eDockets No. [20199-155913-01](#), [20199-155913-02](#), [20199-155913-03](#), [20199-155913-04](#), [20199-155913-05](#).

⁹Xcel Energy (October 8, 2019) *Reply Comments – Supplemental*, eDockets No. [201910-156434-01](#).

First, because the Commission must consider the human and environmental impacts of permitting decisions, EERA assessed whether and where the record addresses human and environmental impacts of this final site layout requested by Xcel. Because there have been several iterations of changes in this permit amendment request process and relevant information has been submitted in many different filings, EERA staff has attempted to summarize the adequacy of the information and point to the location of that information in the record using the table below.

Similarly, because the permittee must demonstrate that they can meet their permit conditions EERA assessed whether and where the record indicates that permit conditions can be met, or addresses the need for permit conditions be modified or added. Again, because there have been several iterations of changes in this permit amendment request process and relevant information has been submitted in many different filings, EERA staff has attempted to summarize the adequacy of the information and point to the location of that information in the record also using the table below.

	Location of relevant information in the record	Notes
Review of Environmental Impact information		
Demographics	Request for Amended Site Permit Part 1 (Section 8.1)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Land Use	Request for Amended Site Permit Part 1 (Section 8.2), Part 2 (Figure 5, Figure 6, Figure 13)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Noise	Request for Amended Site Permit Part 1 (Section 8.3) Part 2, (Figure 8) and Part 5 (Attachment F - 2019 Noise Analysis); Reply Comments Summary pages 5-7 (addresses 11 receptors nearest to Alt 4 only); IR Response Part 3 page 3.	Together these filings demonstrate that that the permittee projects sound levels – turbine only and turbines plus background - will be below standards at all receptors for all turbines modeled at each iteration. It appears that at each iteration, however, modeling was limited to 100 turbines. Modeling for the final layout does not appear to contemplate use of Alt 1 and Alt 4 along with the final proposed layout/turbine technology combination.
Visual Impacts (including shadow flicker)	Request for Amended Site Permit Part 1 (Section 8.4), Part 3 (Figure 10), and Part 5 (Attachment G - 2019 Shadow Flicker Analysis); IR Response Part 3 page 4-7.	The report provided in Part 5 of the amendment request (Attachment G - 2019 Shadow Flicker Assessment) indicates all turbines, including alternates were modeled. However visual representation of results in the corresponding map in Part 3 (Figure 10) of the amendment request does not appear to reflect modeling of alternate turbines Alt 1 and Alt 4. Because of this, it is difficult to tell whether the summary update included in the IR Response (which references back to the analysis included in the original amendment request) adequately addresses alternate turbines. The permittee has not identified any change in visual impacts between original amendment

	Location of relevant information in the record	Notes
		request and final layout. However, it stands to reason that if the final layout changes eliminated Mr. Lawburgh’s concerns about aesthetics and impact on his event venue business, there must be some shift in visual impacts. These impacts and any tradeoffs they may require have not been articulated by the permittee.
Public Infrastructure	Request for Amended Site Permit Part 1 (Section 8.5):	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Cultural and Archaeological Resources	Request for Amended Site Permit Part 1 (Section 8.6)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Recreation	Request for Amended Site Permit Part 1 (Section 8.7), Part 2 (Figure 7)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Public Health and Safety	Request for Amended Site Permit Part 1 (Section 8.8)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Hazardous Materials	Request for Amended Site Permit Part 1 (Section 8.9)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Land-based Economies	Request for Amended Site Permit Part 1 (Section 8.10)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Tourism	Request for Amended Site Permit Part 1 (Section 8.11)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Local Economies	Request for Amended Site Permit Part 1 (Section 8.12)	Permittee has not identified any change in economic impacts between original amendment request and final layout. However, it stands to reason that if the final layout changes eliminated Mr. Lawburgh’s concerns about aesthetics and economic implications for his event venue business, there must be some shift in impacts with the adjustments represented by the final layout. These impacts and any tradeoffs they may require have not been articulated by the permittee.
Topography	Request for Amended Site Permit Part 1 (Section 8.13)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Soils	Request for Amended Site Permit Part 1 (Section 8.14), Part 4 (Figure 14)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Geologic and Groundwater Resources	Request for Amended Site Permit Part 1 (Section 8.15), Part 4 (Figure 15)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Surface Water and Floodplain Resources	Request for Amended Site Permit Part 1 (Section 8.16), Part 4	Scope of analysis in original amendment request appears adequate to cover subsequent revisions

	Location of relevant information in the record	Notes
	(Figure 16, 17); Reply Comments – Summary page 1	
Wetlands	Request for Amended Site Permit Part 1 (Section 8.17), Part 4 (Figure 18); Reply Comments – Summary page 1	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Vegetation	Request for Amended Site Permit Part 1 (Section 8.18); Reply Comments – Summary page 1	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Wildlife	Request for Amended Site Permit Part 1 (Section 8.19)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Rare and Unique Resources	Request for Amended Site Permit Part 1 (Section 8.20), Part 3 (Figure 12)	Scope of analysis in original amendment request appears adequate to cover subsequent revisions
Review of Permit Conditions		
Section 2.0 - Project Description	Request for Amended Site Permit Part 1 (Page 16)	The proposed amendment language for Section 2.0 of the permit indicates the permittee is requesting to build 10 V-110 turbines and 90 V-120 turbines. It does not address two additional alternate turbines Alt 1 and Alt 4 shown on the final turbine layout map provided as Figure 3 in the supplemental reply comments (corresponding to Section 3.1 of the permit)
Section 3.1 - Turbine Layout	Request for Amended Site Permit Part 1 (Page 17), Supplemental Reply Comments (Figure 3)	
Section 4.1 Wind Access Buffer	Request for Amended Site Permit Part 1 (Page 17), Supplemental Reply Comments (Figure 3)	Note that wind access buffers extend outside of the project boundary onto participating landowner parcels. The record does not indicate why this is necessary, but it appears to be the result of prioritizing elimination of overlap with Blazing Star 1 in the delineation of Blazing Star 2's new boundary.
Section 4.2 Residences	Request for Amended Site Permit Part 1 (Page 17)	Information in original amendment request appears adequate to cover subsequent revisions, no additional changes or updates appear necessary.
Section 4.3 Noise	Request for Amended Site Permit Part 1 (Section 8.3, Page 18) Part 2, (Figure 8) and Part 5 (Attachment F - 2019 Noise Analysis); Reply Comments Summary pages 5-7 (addresses 11 receptors nearest to Alt 4 only); IR Response Part 3 page 3.	Together these filings demonstrate that that the permittee projects sound levels – turbine only and turbines plus background - will be below standards at all receptors for all turbines modeled at each iteration. It appears that at each iteration, however, modeling was limited to 100 turbines. Modeling for the final layout does not appear to contemplate use of Alt 1 and Alt 4 along with the final proposed layout/turbine technology combination.

	Location of relevant information in the record	Notes
Section 4.9 Wind Turbine Towers	Request for Amended Site Permit Part 1 (Page 18)	Information in original amendment request appears adequate to cover subsequent revisions, no additional changes or updates appear necessary.
Section 5.2.26 Tower Identification	Request for Amended Site Permit Part 1 (Page 18)	Information in original amendment request appears adequate to cover subsequent revisions, no additional changes or updates appear necessary.
Section 5.4 Electrical Feeder and Collector Lines	Request for Amended Site Permit Part 1 (Page 19)	Information in original amendment request appears adequate to cover subsequent revisions, no additional changes or updates appear necessary.
Section 7.1 Biological and Natural Resource Inventories	Request for Amended Site Permit Part 1 (Page 20)	Information in original amendment request appears adequate to cover subsequent revisions, no additional changes or updates appear necessary.
Section 7.2 Shadow Flicker	Request for Amended Site Permit Part 1 (Section 8.4, Page 20), Part 3 (Figure 10), and Part 5 (Attachment G - 2019 Shadow Flicker Analysis); IR Response Part 3 page 4-7.	The report provided in Part 5 of the amendment request (Attachment G - 2019 Shadow Flicker Assessment) indicates all turbines, including alternates were modeled. However visual representation of results in the corresponding map in Part 3 (Figure 10) of the amendment request does not appear to reflect modeling of alternate turbines Alt 1 and Alt 4. Because of this, it is difficult to tell whether the summary update to the shadow included in the IR Response (which references back to the analysis included in the original amendment request) adequately addresses alternate turbines.
Section 7.5.1 Avian and Bat Protection Plan	Request for Amended Site Permit Part 1 (Page 21)	Information in original amendment request appears adequate to cover subsequent revisions, no additional changes or updates appear necessary.
Section 10.3 Site Plan	Request for Amended Site Permit Part 1 (Page 21)	See notes above re: Section 2.0 and 3.1

On the issue of human and environmental impacts, EERA believes adequate information exists for the majority of the relevant impact areas and for the majority of the changes requested. However, 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 addresses noise and shadow flicker impacts of including 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.

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 the issue of permit conditions, EERA questions the adequacy of the demonstration for Alt 1 and Alt 4. As noted in the table above, if the permittee intends to include Alt 1 and Alt 4 in the permitted layout, language in Section 2.0 of the permit may need to be updated to reflect this intent. In addition, EERA believes that the information indicated above for noise and shadow flicker is needed in order to support a determination that all permit conditions can be met when Alt 1 and Alt 4 are included with the currently requested layout.

Finally, EERA has reviewed information in the record regarding the adjustments to the site permit boundary. EERA understands the explanation offered in Xcel's response to Commission IR 1 and it seems to make sense. EERA believes it is worth noting that wind access buffers for T-101 through T-104 extend beyond the project boundary, but it appears that this occurs because the permittee prioritized eliminating overlap between the Blazing Star 1 and Blazing Star 2 site boundaries in this area.

EERA Staff Recommendations

EERA recommends that, prior to approval of the permittee's requested amendments to the turbine technology and layout in the Blazing Star Wind Farm 2 Project site permit, the Commission request a comprehensive assessment of noise and shadow flicker demonstrating that the final requested site layout (including alternates) complies with permit conditions. EERA also recommends that the Commission request as an assessment of aesthetic and economic tradeoffs relevant to the final proposed layout. With the submittal of this information, EERA believes the record would be adequate to support the modification of Section 2.0 – Project Description of the site permit to reflect the change in turbine technology utilized for the project, and a modification of the maps identified in Section 3.1 – Turbine Layout of the site permit. At this time EERA does not recommend the modification or addition of any other permit conditions/sections.

As indicated above, EERA understands the explanation offered in Xcel's response to Commission IR 1 regarding requested changes to the project boundary. EERA notes that where wind access buffers of T-101 through T-104 extend beyond the project boundary and overlap Blazing Star 1 project area, the

permittee has prioritized eliminating overlap with Blazing Star 1 in their delineation of the Blazing Star 2 project boundary. EERA has no particular objection to this approach, but suggests that the Commission may wish to consider whether this prioritization is comports with the Commission's intent in permitting of project boundaries.