

Staff Briefing Papers

Meeting Date: October 11, 2018

Agenda Item **6a

Company: Blazing Star Wind Farm 2, LLC

Docket No. IP6985/WS-17-700

In the Matter of the Application of Blazing Star Wind Farm 2, LLC for a Site Permit for the 200 MW Blazing Star 2 Wind Project in Lincoln County, Minnesota

Issues: Should the Commission adopt the Administrative Law Judge's Summary of Public Testimony, Findings of Fact, Conclusions of Law, and Recommendation? Should the Commission issue a site permit for the up to 200 megawatt Blazing Star 2 Wind Project in Lincoln County, Minnesota?

Staff: Tricia DeBleeckere Tricia.DeBleeckere@state.mn.us 651-201-2254

Relevant Documents

Date

Blazing Star 2 - Application for a Site Permit (22 parts)	November 16, 2017
Commission - Order Finding Application Complete...	January 29, 2018
Commission - Order Issuing Draft Site Permit	May 11, 2018
OAH – Summary of Testimony, Findings of Fact, Conclusion of Law and Recommendation (ALJ Report)	August 6, 2018
Blazing Star 2 – Exceptions to ALJ Report	August 21, 2018
DOC EERA – Exceptions to ALJ Report	August 21, 2018

These 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.

To request this document in another format such as large print or audio, call 651.296.0406 (voice). Persons with a hearing or speech impairment may call using their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

I. Statement of the Issues

1. Should the Commission adopt the Administrative Law Judge's Summary of Public Testimony, Findings of Fact, Conclusions of Law, and Recommendation?
2. Should the Commission issue a site permit for the up to 200 megawatt (MW) Blazing Star 2 Wind Project in Lincoln County, Minnesota?

II. Project Description

Blazing Star 2 Wind Farm, LLC, (Blazing Star 2 or Applicant) has filed a site permit application with the Minnesota Public Utilities Commission (Commission) for an up to 200 MW large wind energy conversion system (LWECS). The proposed LWECS is to be comprised of 57 to 100 wind turbines ranging from 2 to 3.5 MW in size with associated facilities that include a project substation, an operation and maintenance building, access roads, meteorological towers, light range or sonic range detecting units, underground and aboveground communication and electrical collection and feeder lines, and a temporary laydown area. Associated with this facility, but not part of the wind site permit application, is a 7-mile 115-kV High Voltage Transmission Line (HVTL) and a 1,000-ft 345-kV HVTL. These facilities are part of a HVTL Route Permit Application submitted under Docket TL-17-701, which is being processed by the Commission concurrently. The proposed project footprint would occupy approximately 57,800 acres of land located in Ash Lake, Diamond Lake, Drammen, Hendricks, Marble, Royal, and Shaokatan townships in Lincoln County, Minnesota.

Blazing Star 2 is an independent power producer owned by Geronimo Energy, LLC, a utility-scale wind and solar energy developer, based in Edina, Minnesota. As indicated by Blazing Star 2 in its application, the proposed project is needed to fulfill Xcel Energy's 1,550 MW wind generation portfolio approved by the Commission in September 2017. The projects are proposed to meet Xcel's requirements under the Renewable Energy Standards. This project is one of four projects Xcel Energy intends to build, own, and operate. Xcel will acquire the project prior to construction.

The original anticipated in-service date for the project was the end of 2018, which was dependent upon completion of regulatory approvals and the Midcontinent Independent System Operator (MISO) interconnection process. At this time, due to delays in the interconnection process, staff is not aware of the current planned in-service date (as the end of 2018 is no longer feasible). Additionally, MISO queue delays may further extend the timeline for in-service as the Blazing Star 2 study group has not yet been completed.¹

¹ Staff notes that Commission Site Permits have conditions that require notification to the Commission of delays in construction of greater than two-years. Therefore, notification of a lengthy delay either on the part of Blazing Star

III. Statutes and Rules

Site Permit. Under Minn. Stat. § 216F.04, no person may construct an LWECS without the issuance of a site permit by the Commission.²

Large Wind Energy Conversion System (LWECS). The proposed project is defined as an LWECS under Minn. Stat. § 216F.01, subd. 2, because it is a wind energy conversion system with nameplate capacity of 5 megawatts or more.

Issuing a Site Permit. In deciding whether to issue a site permit for a LWECS, the Commission must determine that the project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minn. Stat. § 216F.03 and Minn. R. 7854.1000, subp. 3.

Procedural Treatment of Application. Review of LWECS site permit applications generally follow the procedural requirements under Minnesota Rules Chapter 7854.

Timing. Under 7854.1000, subp. 2, the Commission shall approve or deny a site permit for an LWECS within 180 days after acceptance of the application, unless the applicant agrees to an extension or the Commission extends the deadline for cause.

IV. Procedural History

On November 16, 2017, Blazing Star 2 filed a site permit application for the project.

On January 29, 2018, the Commission accepted the application as substantially complete, delegated administrative authority to the Executive Secretary, designated Charley Bruce as the Public Advisor, and varied certain timing requirements.

On February 20, 2018, staff from the Commission and the Department of Commerce Energy Environmental Review and Analysis (DOC-EERA) held a public information meeting at the Hendricks Public School in Hendricks, Minnesota. A comment period following the public meeting was open until March 7, 2018 to receive comments on the project and possible permit conditions.

2 or of the MISO queue will be provided to the Commission.

² See also Minn. R. 7854.0300, subp. 1.

On May 11, 2018, the Commission issued an order that authorized the issuance of a draft site permit pursuant to Minn. R. 7854.0800 and included the DOC EERA's recommended site permit language as part of the issued order.

On June 28, 2018, Administrative Law Judge Eric L. Lipman (ALJ) presided over a public hearing on the site permit application at the Hendricks Public School in Hendricks, Minnesota. A comment period following the public hearing and was open until July 9, 2018.

On August 6, 2018, the ALJ filed the Summary of Public Testimony, Findings of Fact, Conclusions of Law, and Recommendation (ALJ Report).

On August 21, 2018, Blazing Star 2 and DOC EERA filed exceptions to the ALJ Report.

V. Administrative Law Judge Report

On August 6, 2018, the ALJ Report was filed. The ALJ Report addressed the site permit application of Blazing Star 2 for the construction and operation of its proposed 200 megawatt Blazing Star 2 Wind Farm. The report did not address the pending HVTL docket or record.

The ALJ Report included 316 findings of fact which included a summary of public comments; 11 conclusions of law; and a recommendation. In accordance with Minn. Stat. § 216F.02, the ALJ presented findings on the criteria set forth under Minn. Stat. § 216E.03, subd. 7, that must be considered when issuing a site permit for a LWECs. The ALJ also documented the actions taken to comply with the procedural requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854.

The ALJ recommended the Commission issue a site permit to Blazing Star 2 to construct and operate the up to 200 megawatt Blazing Star 2 Wind Farm Project in Lincoln County, Minnesota, and that the site permit include the amended conditions identified in Conclusion of Law paragraph 8.

In making the recommendation, the ALJ, concluded that:

1. The Commission has the jurisdiction to consider the application.
2. Blazing Star 2 has substantially complied with all procedural requirements required by Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854.

3. A public hearing was conducted in a community near the proposed Project. Proper notice of the public hearing was provided, and members of the public had the opportunity to speak at the hearing and to submit written comments.
4. The Commission has the authority under Minn. Stat. § 216F.04 to place conditions in a LWECs site permit.
5. The Draft Site Permit contains a number of reasonable mitigation measures and conditions that address the potential impacts of the Project on human and natural environments.
6. It is reasonable to amend the Draft Site Permit to include proposed revisions to Sections 3.1 and 6.1 (as discussed further below).
7. The Project complies with the criteria in Minnesota Statutes chapter 216F and Section 216E.03, subp. 7, and Minnesota Rules Part 7854 .
8. The Project, with the permit conditions discussed above, satisfies the site permit criteria for an LWECs in Minn. Stat. § 216F.03 and meets all other applicable requirements.
9. The Project, with the permit conditions discussed above, is not likely to pollute, impair, or destroy natural resources located within the state as those terms are used in the Minnesota Environmental Rights Act.
10. The Project, with the permit conditions discussed above, is not likely to pollute, impair, or destroy natural resources located within the state as those terms are used in the Minnesota Environmental Policy Act.
11. Any of the foregoing Findings more properly designated Conclusions of Law are hereby adopted as such.

VI. Summary of Public Comment

Only one comment was made at the public hearing and it was in support of the project. No written public comments were received during the public hearing comment period. One comment was received by the Minnesota Department of Natural Resources (MN DNR).

The MN DNR noted it had not yet been able to confirm the existence of impacts to native prairie as it had not yet received updated project shapefiles. Blazing Star 2 provided a response to the MNDNR in its post-hearing comments, explaining that the issue with the DNR had been largely resolved, as the project layout had not been modified since the MN DNR's original project review back in March 2018.³

During the writing of this briefing paper, staff reached out to the MN DNR to clarify whether its concerns were resolved. The MN DNR indicated that it had spoken with Blazing Star 2 and it had

³ See Blazing Star 2 Wind Farm, LLC, Post-Hearing Comments, July 19, 2018 (Document ID [20187-145048-01](#)).

received confirmation that Blazing Star 2 intended to continue to work with the MN DNR. Additionally, MN DNR noted that any open issues could be managed with conformance to existing permit conditions that require coordination or plan development with their agency and therefore it did not have additional concerns with the proposed project (that wouldn't be further addressed).

VII. ALJ Report, Outstanding Issues, and Staff Discussion

A. Administrative Law Judge Report

Staff has examined the record in this case and agrees with the findings, conclusions, and recommendation reached by the ALJ, with a few modifications proposed by DOC EERA and Blazing Star 2. The ALJ Report is comprehensive and is reflective of the rather non-complicated case record. The report documented that the procedural requirements were followed and presented findings of fact for each of the decision criteria that must be met for a site permit for an LWECS to be issued. Therefore, staff recommends that the Commission adopt the ALJ Report with modifications as noted below.

Generally, two main issues arose in the exceptions period: 1) the request to include a few modifications to findings relating to Site Permit Condition 3.1 – relating to any future turbine type and layout modifications (which are non-contested modifications); and 2) disagreement regarding use and evaluation of use of Aircraft Detection Lighting Systems (ADLS).

B. Turbine Modifications and Layout Changes (Permit Condition 3.1)

During the hearing process, DOC EERA recommended, and the ALJ agreed that a proposed site permit condition 3.1 relating to Blazing Star 2's potential use or selection of a different turbine layout or model than evaluated in this record. While the ALJ included DOC EERA's revised permit condition 3.1, the ALJ did not adopt DOC EERA's associated findings. The DOC EERA's recommended Site Permit Condition 3.1 (which is included in the ALJ Report) reads as follows:

3.1 Turbine Model and Layout

The preliminary wind turbine and associated facility layouts are shown on the official site maps attached to this permit. The preliminary layout represents the approximate location of wind turbines and associated facilities within the project boundary and identifies a layout that seeks to minimize the overall potential human and environmental impacts of the project, which were evaluated in the permitting process.

The final layout depicting the location of each wind turbine and associated facility shall be located within the project boundary. The project boundary serves to provide the Permittee with the flexibility to make minor adjustments to the preliminary layout to accommodate requests by landowners, local government units, federal and state agency

requirements, and unforeseen conditions encountered during the detailed engineering and design process. Any modification to the wind turbine model or the location of a wind turbine and associated facility depicted in the preliminary layout shall be done in such a manner to have comparable overall human and environmental impacts and shall be specifically identified in the site plan pursuant to Section 10.3.

DOC EERA recommends for consistency, and in order to ensure that the record is clear, that the Commission adopt DOC EERA's proposed finding modifications to the three findings that provide the underpinnings for the change to Site Permit Condition 3.1. Specifically, DOC EERA recommends edits to the following proposed findings of fact [Footnotes omitted]:

FOF 6. The turbines Blazing Star 2 is considering for installation can produce between 2.0 MW to 3.5 MW of electricity. Depending on the model that is installed turbine hub heights would range from 80 to 95 meters (from the ground to the top of the nacelle) and the rotor diameter (RD) would range from 110 to 132 meters. The Application evaluated environmental impacts of four representative turbine types and layouts. The Draft Site Permit specifies preliminary layouts associated with these four turbine types.

FOF 7. Blazing Star 2 has not yet finalized the specific turbine choice for the Project. It will select a particular model based upon design and cost factors, after the Project Area and permit conditions have been established by the Commission. In its submissions, Blazing Star 2 evaluated impacts that are typical of the turbines within its stated nameplate range. The decision will be finalized prior to construction in order to create the most viable, cost-effective and optimal design for the Project given the known conditions of the Project Area and the turbines that are commercially available when the Project is constructed, provided that the specific turbine choice results in human and environmental impacts that are comparable to impacts associated with the four turbine types evaluated in the Application.

FOF 7B. The LWECS site permitting process requires consideration of human and environmental impacts. Therefore, modifications to the project, including changes in turbine model must be accompanied by consideration of human and environmental impacts.

Blazing Star 2 noted in its exceptions that it did not oppose the DOC EERA's proposed modified permit condition 3.1, and therefore staff believes the associated findings are likely not objectionable to Blazing Star 2 (as they are consistent with the modified permit condition).

Therefore, staff agrees with DOC EERA's proposed modified findings 6 and 7 and new 7b and has included them in staff's recommendation.

C. Aircraft Detection Lighting System (ALJ Findings 205-216)

ADLS Discussion Pre-Hearing (Public Meeting, Draft Site Permit)

The other issue that remains unresolved in this record, is whether the Commission should require the use of an ADLS for the project. The issue first arose in this record during the public meeting, where a member of the public proposed the use of ADLS as a measure to mitigate nighttime light pollution (caused by aircraft warning lights which flash at night - as required by the FAA). During the public meeting, information was submitted on North Dakota laws and regulations regarding use of ADLS on wind farms, information on the technology, among other documents.⁴ During the public meeting, representatives for Blazing Star 2 noted that an ADLS was not included in the initial financial projections for the project and ADLS was not proposed for the project.⁵

Following the public meeting, DOC EERA recommended to the Commission in its comments on a Draft Site Permit (DSP) that Blazing Star 2 be required to use ADLS at the project site and recommended the requirement be included as a condition in the DSP. The Commission agreed and included the mitigation measure (to reduce nighttime light pollution impacts) in its Order issuing a DSP (included as a relevant document to this paper). The Commission-issued DSP condition required:

6.1 Aircraft Detection Lighting System

Lighting installed pursuant to Section 5.2.27 of this permit shall comply with Aircraft Detection Lighting System standards specified in Federal Aviation Administration (FAA) Circular AC 70/7460-IL CHG 1 Chapter 14.

ADLS Discussion During the Hearing Process and the ALJ Report

Following issuance of the DSP, Blazing Star 2 in Direct Testimony, provided additional information on ADLS technologies and how and when these systems were typically utilized.^{6,7} Blazing Star 2 noted that the standard FAA approval process for use of ADLS was conducted on a project-specific basis and its understanding of the estimated cost (potentially \$500,000 to \$2 million for other wind projects). Blazing Star 2 noted that it did not intend to use ADLS for the project as it was not an available technology during the development of the project, the FAA had not reviewed the use of an ADLS at the Blazing Star 2 site, and there were claimed issues with ADLS providers; therefore Blazing Star 2 noted it was unknown whether the project would be approved for use of an ADLS by the FAA and whether implementation was feasible.

⁴ See Doc ID. 20182-140871-01 (Public Meeting Submittals)

⁵ See Doc ID. 20183-140913-01 (Public Meeting Transcript)

⁶ ADLSs are “sensor-based systems designed to detect aircraft as they approach an obstruction or group of obstructions; these systems automatically activate the appropriate obstruction lights until they are no longer needed by the aircraft.”⁴ In more simple terms, ADLS involves the installation of radar around the perimeter of a wind project; when the radar detects aircraft in the vicinity, the radar activates wind turbine lighting. At other times, wind turbine lighting remains off. ADLS is a fairly new technology and is still developing. ADLS may not be used at a wind project without approval from the Federal Aviation Administration (“FAA”).

⁷ See Doc ID. [20186-144048-02](#)

Blazing Star 2 and DOC EERA continued to disagree during the hearing process on whether ADLS should be a required site permit condition. Both provided suggested permit condition language to the ALJ during the hearing process.

Blazing Star 2 Proposal to the ALJ

Blazing Star 2 proposed language to the ALJ that committed to an ADLS Feasibility Study at the project site (included cost and evaluation of FAA approval potential). Blazing Star 2 argued that ADLS is a relatively new technology, that use of ADLS may require additional radar towers at the project and additional associated infrastructure. Blazing Star 2 argued that there is sufficient uncertainty around the technology in general, and specific application to this project (cost, available suppliers, etc.), and therefore, it proposed conducting a Feasibility Study (outlined below). Blazing Star 2's proposed condition 6.1:

6.1 Aircraft Detection Lighting System

The Permittee shall conduct a study to determine the feasibility of installing a lighting system at the Project that is consistent with the Aircraft Detection Lighting System standards specified in Federal Aviation Administration (FAA) Circular AC 70/746—IL CHG 1 Chapter 14 (ADLS Feasibility Study). The ADLS Feasibility Study shall include, at a minimum, coordination with the FAA and an analysis of the cost of installing ADLS at the Project.

The Permittee must file the ADLS Feasibility Study with the Commission. The Permittee may not commence construction of wind turbine towers until the Commission reviews the ADLS Feasibility Study and considers whether ADLS should be imposed as a condition of this Permit.

If the ADLS Feasibility Study demonstrates that the FAA will not approve the use of ADLS at the Project, the Permittee shall notify the Commission of such FAA decision. The Permittee may commence construction within 30 days of providing such notice to the Commission without further Commission review under this section.

DOC EERA Proposal to the ALJ

DOC EERA argued in comments to the ALJ, that given the industry move toward ADLS as a mitigation measure (in other jurisdictions) and the commitment of other developers in Minnesota to implement the technology, DOC EERA believes ADLS is a reasonably available technology. DOC EERA argued that Blazing Star 2's proposal, to conduct a feasibility study (which would include estimation of ADLS costs and the likelihood of FAA approval) is unnecessary as Blazing Star 2 has already provided estimated costs and that a study on the feasibility of the FAA approval is best obtained by actually seeking FAA

approval for use of an ADLS at the project site.⁸ DOC EERA continued to recommend use of an ADLS which is consistent with DOC EERA recommendations in other site permit dockets. DOC EERA provided further modified language from the DSP condition to allow additional flexibility to the developer if the FAA does not approve the use of ADLS at the project site or in a timely manner.

6.1 Obstruction Marking and Lighting

Lighting installed pursuant to Section 5.2.27 of this permit shall comply with Aircraft Detection Lighting System standards specified in FAA Circular AC 70/7460-IL CHG 1 Chapter 14. Permittee may install an FAA approved lighting system without ADLS if the Permittee demonstrates that, despite its reasonable efforts to secure FAA approval for an ADLS, one of the following conditions exists:

- 1) The FAA denies the Permittee's application for an ADLS system, or
- 2) Permittee is unable to secure FAA approval in a timely manner.

If either of these two conditions occur, the permittee's reasonable efforts to secure FAA approval of the ADLS must be described and filed with the Commission 14 days before the pre-construction meeting.

ALJ Report

Ultimately the ALJ recommended additional study on feasibility of use of ADLS and consultations with the FAA. However, due to what appears to be a fundamental misunderstanding by the ALJ on the purpose of ADLS (as ADLS is aesthetic/night-time light pollution impact mitigation and *not* collision risk-mitigation)⁹ both Blazing Star 2 and DOC EERA provided exceptions to the ALJ's findings and suggested permit condition language. The ALJ Findings related to this topic are 205-216 and are attached to the end of this paper.

Exceptions – DOC EERA and Blazing Star 2 and Staff Discussion

Both Blazing Star 2 and DOC EERA provided exceptions to the ALJ report and findings relating to use of the ADLS. Neither compromised on their positions or proposed permit condition language to the ALJ (and which were summarized above). The proposed modified findings provided by each support their (earlier) proposed permit conditions.

⁸ Active dockets before the Commission include: 1) Flying Cow Wind Farm, Docket 17-749, Flying Cow Exceptions in which the developer has voluntarily agreed to implement ADLS; 2) Nobles 2 Wind Farm, Docket 17-597, Nobles 2 Exceptions in which the ALJ agreed with the DOC EERA's recommendation to include the ADLS permit condition and the developer agreed to abide by the condition, but reserved the right to petition the Commission if delays or issues were encountered; and 3) Lake Benton 2 Repowering Project, Docket 13-205/18-179, PUC Order in which the DOC EERA included the ADLS requirement as a permit condition, but that recommendation has not yet received input as a comment period is open.

⁹ The FAA required red-lighting IS a collision risk mitigation technique, but the radar aircraft detection light system is a method to reduce impacts from the FAA red-lighting nighttime light pollution.

DOC EERA suggested modifications to:

- 1) Finding of Fact 107 (which provides a correction to the intended use of ADLS), 212 (which clarifies DOC EERA's position);
- 2) to strike 213-216 (which are based on the ALJ's misunderstanding); and,
- 3) add a new 213 (which provides support for requiring ADLS) and includes the recommendation of their permit condition **6.1 Obstruction Marking and Lighting** (as noted above).

Blazing Star 2 requested modification to:

- 1) Findings of Fact 214 (clarifying the purpose of an ADLS);
- 2) 215 to clarify the basis for an ADLS and to support their position that a feasibility study should be required in lieu of a requirement to use ADLS; and,
- 3) 216 to include Blazing Star 2's proposed site permit condition 6.1.

Blazing Star 2 argued that a feasibility study would allow the Commission to consider whether to require ADLS when it is better understood what the environmental impacts of the ADLS-associated facilities may be (i.e. additional radar towers).

However, staff believes the record shows, consistent with the recommendations of the DOC EERA, that ADLS is reasonable to implement (that environmental and human impacts are lessened on balance) and it is a reasonable option to mitigate night-time light pollution. Staff is concerned that if, as Blazing Star 2 argues, the full impact (on balance) of use of the ADLS is not yet known, then the application and record may be incomplete and further process may be useful to more thoroughly investigate ADLS as a mitigation measure before a permit is issued.

ADLS was broached as a potential mitigation measure to night-time light pollution early in the permitting process for this project. Limited information was provided by the developer on the feasibility at the project site during the permitting process (for either outcome – either the likelihood of implementation or the site having characteristics unfavorable for ADLS). Staff agrees that the technology is sufficiently mature, in that other states require its use for all new projects and other developers active before the Commission are already proposing implementation of these systems. Further, the DOC EERA has drafted standard permit condition language that provides protections to developers in the instance that a project site is not suitable and/or the FAA is untimely in its review (as to not hinder a project's development). In this instance, with the delayed (and currently unknown) projected in-service date, staff believes there is likely sufficient time to seek FAA approval.

Largely, staff believes that either permit condition (either DOC EERA or Blazing Star 2's) achieves similar outcomes, an evaluation of whether ADLS would be approved for the project site, and potential implementation. Blazing Star 2's approach would delay that consideration and evaluation upon the submittal of a feasibility study and further

consideration by the Commission, whereas, DOC EERA's proposal would follow the same process – but would require implementation of the system if authorized by the FAA.

While staff recommends the DOC EERA permit language, decision options are available for either option (Blazing Star 2's or DOC EERA's). Staff believes whichever permit condition is selected, the proposer's modified and related findings are reasonable and should also be considered by the Commission in drafting of an issuance order.

D. Correction to Finding of Fact 114

Blazing Star 2 noted that a correction is needed to Paragraph 114. Staff agrees with this modification as it is a clarification and has included it in the staff recommendation.

114. Geronimo ~~operates~~ developed two other renewable energy projects ~~that it developed~~ in Southwest Minnesota: The Prairie Rose Wind Farm and Odell Wind Farm. Geronimo earlier held ownership interests in these projects, but ~~today, only serves as the operator~~ no longer owns these developments.

VIII. Staff Recommendation

Staff recommends that the Commission accept the following non-controversial suggested edits to the Findings of Fact, consistent with the discussion above and grant the modification to Site Permit Condition 6.1, as recommended by the DOC EERA (including the DOC EERA related, proposed edits to the findings of fact).

While staff recommends the DOC EERA's modifications to Permit Condition 6.1, the two permit language options (and associated findings) are outlined in the Decision Options in items #2 and #3.

IX. Commission Decision Alternatives

Administrative Law Judge Report

1. Adopt the Administrative Law Judge's Summary of Public Testimony, Findings of Fact, Conclusions of Law, and Recommendation for the up 200 megawatt Blazing Star 2 Large Wind Energy Conversion System in Lincoln County, Minnesota as modified:
 - a. Include DOC EERA Edits to Findings of Fact Relating to Permit Condition 3.1: Modify or add Findings of Fact 6, 7, and New 7B, as outlined by DOC EERA in its August 21, 2018 Exceptions.
 - b. Correct Finding 114 Regarding Geronimo/Blazing Star 2 Related Projects Ownership: Modify Findings of Fact 114, as outlined by Blazing Star 2 in its August 21, 2018 Exceptions.

ADLS Requirements

Require ADLS - DOC EERA Recommendation

2. Modify or add Findings of Fact 107, 212, 213-216 (strike), New 213 as outlined by DOC EERA in its August 21, 2018 Exceptions.

OR

Require ADLS Feasibility Study – Blazing Star 2 Recommendation

3. Modify Findings of Fact 213, 215 and 216 as outlined by Blazing Star 2 in its August 21, 2018 Exceptions.

Site Permit

4. Issue the Draft Site Permit authorized by the Commission in its May 11, 2018 Order as the site permit for the up 200 megawatt Blazing Star 2 Large Wind Energy Conversion System in Lincoln County, Minnesota.
5. Issue the Draft Site Permit authorized by the Commission in its May 11, 2018 Order and incorporate the permit amendments recommended by the Administrative Law Judge and consistent with the Findings modified by the Commission herein for the up to 200 megawatt Blazing Star 2 Wind Large Wind Energy Conversion System in Lincoln County, Minnesota.
6. Do not issue a site permit for the up 200 megawatt Blazing Star 2 Large Wind Energy Conversion System in Lincoln County, Minnesota.
7. Take some other action deemed appropriate.
8. Authorize Commission staff to make further refinements to the findings of fact and permit conditions as necessary to ensure consistency with the record, the language of recently issued permits, and the Commission's decision on this matter.

Staff recommends Options 1, 2, 5, and 8.

202. The Project's permanent meteorological towers will be freestanding with no guy wires. Temporary meteorological towers will have supporting guy wires, but those wires will be marked with colored safety shields for increased visibility.²⁰²

203. Non-turbine facility lighting for the Project will be minimized by various means, including lighting the facilities only when necessary and using downward facing lights.²⁰³

204. The record demonstrates that Blazing Star 2 has taken steps to minimize and mitigate impacts to aviation. It is not anticipated that the construction and operation of the Project will have a significant impact on aviation.²⁰⁴

ii. Aircraft Detection Lighting System (ADLS)

205. Draft Site Permit Condition 6.1, requires that "lighting installed pursuant to . . . this permit shall comply with Aircraft Detection Lighting System standards specified in FAA Circular AC 70/7460-IL CHG 1 Chapter 14."²⁰⁵

206. ADLS involves the installation of a radar system around the perimeter of a wind project. When the radar detects an aircraft in the vicinity, it would activate wind turbine lighting. At other times, wind turbine lighting would remain off.²⁰⁶

207. ADLS was not an available technology when Blazing Star 2 began development efforts on this project.²⁰⁷

208. FAA reviews the use of ADLS on a case-by-case basis. There is no guarantee that the FAA will approve the use of ADLS for any specific project.²⁰⁸

209. Both Blazing Star 2 and EERA proposed revisions to the text of the Draft Site Permit regarding ADLS.²⁰⁹

210. Blazing Star 2 urges the Commission to rewrite the Draft Site Permit Condition 6.1, so as to include a study analyzing the feasibility of using ADLS at the Project. It proposes to analyze the cost of using ADLS, as well as the potential for Federal Aviation Administration (FAA) approval.²¹⁰

211. Blazing Star 2 maintains that because ADLS is an emerging technology, and because of the small number of potential suppliers, there is substantial uncertainty

²⁰² *Id.*

²⁰³ *Id.* at 28-29.

²⁰⁴ *Id.* at 28-29, 54-55.

²⁰⁵ Draft Site Permit at § 6.1.

²⁰⁶ Ex. 4 at 5 (Smith Direct).

²⁰⁷ *Id.*; Blazing Star 2's Post-Hearing Comments, *supra*.

²⁰⁸ *Id.*

²⁰⁹ Blazing Star 2's Post-Hearing Comments, *supra*; EERA's Post-Hearing Comments, *supra*.

²¹⁰ Ex. 4 at 5 (Smith Direct).

regarding the cost of ADLS. Blazing Star 2 states, preliminarily, that the costs of ADLS range widely – from \$500,000 to more than \$2 million.²¹¹

212. EERA argues that deployment of aircraft detection technology is appropriate in this instance. As it reasons, because ADLS is an approved mitigation measure in other jurisdictions, there are developers able to deploy such a system, and the added costs of an ADLS are small in comparison to the total installed capital cost for the entire project, installation should be required. EERA estimates that the additional costs of ADLS is between two tenths of a percent, to just over one-half a percent, of the total installed capital cost. Further, EERA contends that there is sufficient cost information in the record, such that an additional cost study is not needed. EERA urges the Commission to require Blazing Star 2 to promptly submit an application to the FAA for approval of a qualifying system.²¹²

213. Blazing Star 2 and EERA disagree as to the circumstances when Blazing Star 2 could appropriately avoid purchasing and deploying an ADLS. Blazing Star 2 proposes that it should be relieved of the duty to field an ADLS if its feasibility study “demonstrates that the FAA will not approve the use of ADLS at the Project.” EERA argues for a more stringent set of conditions: It maintains that not deploying an ADLS is only appropriate if: (1) The FAA denies Blazing Star 2’s application for an ADLS, or, (2) Blazing Star 2 cannot obtain FAA approval in a timely manner.²¹³

214. Importantly, it is not clear from this record how much the risk of an aerial collision will be reduced if Blazing Star 2 deploys an ADLS, but other, nearby turbines do not include such a system.²¹⁴

215. In the view of the Administrative Law Judge, neither party offers a sufficient solution to balancing the costs and safety risks. EERA, for its part, will not directly bear of any of the burdens of higher project costs and thus is freer to emphasize the safety benefits of an ADLS. Blazing Star 2, uncertain as to how a new regulatory requirement might impact the cost figures it has shared with investors and others, does not want a significant, unanticipated cost upsetting its investment-backed expectations. In such a circumstance, the Commission should decide how much added protection should be purchased, when it should be introduced, and at what price.²¹⁵

²¹¹ *Id.*; Blazing Star 2’s Post-Hearing Comments, *supra*, at 2.

²¹² EERA’s Post-Hearing Comments, *supra*, at 5-7.

²¹³ *Id.*; Blazing Star 2’s Post-Hearing Comments, *supra*, at 2-5.

²¹⁴ See Blazing Star 2’s Post-Hearing Comments, *supra*, at 2-5; see also Environmental Report at 58, *In the Matter of the Application of Nobles 2 Power Partners, LLC for a Certificate of Need for the up to 260 MW Nobles 2 Wind Project and Associated Facilities in Nobles County, Minnesota*, MPUC Docket No. CN-16-289 (May 31, 2018) (eDocket No. 20185-143452-01) (noting that it is unclear how ADLS for a particular project “would be effective if only a portion of the turbines . . . utilize this technology and the surrounding wind projects do not. ADLS may be a more effective mitigation measure for new projects in areas with few to no LWECs or when all turbines in a given area . . . use the same technology”).

²¹⁵ See Ex. 4 at 5 (Smith Direct); Blazing Star 2’s Post-Hearing Comments, *supra*, at 3; Minn. R. 7854.0200 (The permitting powers of Minn. R. ch. 7854 are “intended to provide for the siting of large wind energy conversion systems in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources”).