

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie J. Sieben	Commissioner
John A. Tuma	Commissioner

In the Matter of Freeborn Wind Energy, LLC  
for a Large Wind Energy Conversion System  
Site Permit for the 84 MW Freeborn Wind  
Farm in Freeborn County

ISSUE DATE: December 19, 2018

DOCKET NO. IP-6946/WS-17-410

ORDER ISSUING SITE PERMIT AND  
TAKING OTHER ACTION

**PROCEDURAL HISTORY**

On June 15, 2017, Freeborn Wind Energy LLC (Freeborn Wind or the Company) filed a site permit application to erect a collection of wind turbines and related facilities (a wind farm) in Freeborn County, capable of generating up to 84 megawatts (the Project).

On June 21, 2017, the Commission issued a request for comments on the matter, with initial comments to be filed by July 6, and reply comments to be filed by July 13.

By July 6, 2017, the Commission had received comments on the application from roughly 50 interested parties.

On August 2, 2017, Freeborn Wind amended its application to reflect a change in the list of landowners who had consented to the Project and those who had not.

On August 31, 2017, the Commission issued its Order Finding Application Complete and Varying Time Limits. In that order, the Commission found that Freeborn Wind substantially complied with the filing requirements for a site permit—even though the application had omitted the Company’s plans for decommissioning the Project and restoring the land to its prior condition. That order also referred this matter to the Office of Administrative Hearings for contested case proceedings and a public hearing to be conducted by an Administrative Law Judge (ALJ).

On September 20, 2017, the Minnesota Department of Commerce (Department) convened a public information meeting in Albert Lea. The Department solicited comments on issues and facts to be considered in the development of a draft site permit, including how the Project might affect people and the environment; how the parties might minimize, mitigate, or avoid those consequences; and the issues and facts the Department should address in the draft permit.

By October 9, 2017, the Commission had received multiple comments on the application. These included comments from various governmental agencies, including the Minnesota Department of Transportation (MnDOT), Minnesota Department of Natural Resources (MDNR), Shell Rock Township, and the London Township Town Board. And they included comments from the Association of Freeborn County Landowners (AFCL), a self-described “informal association of landowners in and adjacent to the site footprint of the [Project].”<sup>1</sup>

On December 5, 2017, the Department filed comments and a draft site permit. The Commission issued the draft site permit for comment on January 30, 2018.

On February 2, 2018, the Commission issued a notice of public hearing and draft site permit availability.

On February 20, 2018, ALJ LauraSue Schlatter convened the public hearing in Albert Lea; on February 21 and 22, the ALJ held evidentiary hearings with four parties: AFCL, the Department, Freeborn Wind, and KAAL-TV, LLC (KAAL-TV).

By April 4, 2018, the parties had filed briefs, reply briefs, or both.

On May 14, 2018, the ALJ issued her Findings of Fact, Conclusions of Law, and Recommendations (ALJ Report) recommending that the Commission deny the permit or, alternatively, grant Freeborn Wind time to submit a noise plan.

On June 8, 2018, the parties filed exceptions to the ALJ Report.<sup>2</sup> Non-parties also filed comments, generally supporting Freeborn Wind’s position that the ALJ mischaracterized the application of applicable noise standards to the Project.

On September 12, 2018, the MPCA filed comments regarding its position on the application of state noise standards (Minn. R. 7030.0040) to LWEC projects. On September 17, Freeborn Wind filed a motion to exclude MPCA’s comments as untimely. On September 18, 2018, AFCL filed comments regarding the late-filed comments and motion.

On September 19, 2018, Freeborn Wind filed proposed alternative Site Permit language addressing pre-construction noise modeling and post-construction noise monitoring.

On September 20, 2018, the Commission met to consider the matter.<sup>3</sup>

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<sup>1</sup> AFCL Petition for Contested Case; Comment on Contested Material Issues of Fact, at 1 (July 6, 2017).

<sup>2</sup> Minn. R. 7829.2700 does not provide for non-parties to file exceptions to the ALJ Report.

<sup>3</sup> The Commission also considered Freeborn Wind’s route permit application to build a transmission line for connecting the Project to the transmission grid. See Docket No. IP-6946/TL-17-322, *In the Matter of the Application of Freeborn Wind Energy LLC for a Route Permit for the Freeborn Wind Transmission Line in Freeborn County*.

## FINDINGS AND CONCLUSIONS

### I. Summary

In this order the Commission adopts the findings, conclusions, and recommendation of the ALJ Report with modifications.

The Commission will require Freeborn Wind to provide an updated pre-construction noise analysis demonstrating that the Project will comply with revised noise permit conditions. These conditions require the Company to propose a plan demonstrating that the Project will not cause or significantly contribute to an exceedance of the relevant noise standards, to monitor the noise generated by the Project, and to work with the Department to minimize and mitigate turbine noise as necessary.

The Commission has also made changes to the ALJ's proposed findings on shadow flicker, the complaint handling procedures for over-the-air television interference from turbines, and decommissioning, among other things.

Finally, the Commission will issue a site permit for the Freeborn Wind Large Wind Energy Conversion System based on a modified version of the Draft Site Permit authorized by the Commission in its January 30, 2018 order.

### II. The Proposed Project

Freeborn Wind proposes to erect a collection of wind turbines capable of generating up to 84 megawatts (MW) in Freeborn County, Minnesota, and up to 116 MW in the neighboring jurisdiction of Worth County, Iowa. In Minnesota, the Project boundary would encompass approximately 26,273 acres,<sup>4</sup> and would involve erecting up to 42 2.0-MW wind turbines, an electrical and fiber optic communication system, associated equipment, gravel access roads, an operations and maintenance facility, a substation, and a permanent high-voltage transmission line. The Company proposes to use a combination of Vesta V110 or V116 turbine models for this project.

The Project was selected through a Commission-approved bidding process; therefore, under Minn. Stat. § 216B.2422 subd. 5, it is exempt from the certificate of need requirements. In addition, Freeborn Wind has entered into a contract with Northern States Power Company d/b/a Xcel Energy (Xcel) whereby Xcel will purchase the Project after it receives a site permit, and then construct, own, and operate the Project.

### III. Legal Standard

Wind energy projects are governed by Minn. Stat. Ch. 216F and Minn. R. Ch. 7854. Minn. Stat. § 216F.01, subd. 2, defines a large wind energy conversion system (LWECS, or wind farm) as a combination of wind energy conversion systems with a combined nameplate capacity of five MW

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<sup>4</sup> Freeborn Wind stated that additional lands may be leased or an easement obtained as necessary to complete the Project.

or more. Minn. Stat. § 216F.03 requires that an LWECS be sited in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.

In addition, when deciding whether to issue a site permit for a LWECS, the Commission considers the factors set forth in Minn. Stat. § 216E.03, subd. 7, which specifies that the Commission shall be guided by, but not limited to, the following considerations:

- Evaluation of research and investigations relating to the effects on land, water, and air resources of large electric power generating plants and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials, and aesthetic values.
- Environmental evaluation of sites proposed for future development and expansion and their relationship to the land, water, air, and human resources of the state.
- Evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects.
- Evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants.
- Analysis of the direct and indirect economic impact of proposed sites including, but not limited to, productive agricultural land lost or impaired.
- Evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site be accepted.
- Evaluation of alternatives to the applicant's proposed site.
- Evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations.
- Evaluation of irreversible and irretrievable commitments of resources should the proposed site be approved.
- Consideration of problems raised by other state and federal agencies and local entities, when appropriate.<sup>5</sup>

To facilitate its review of proposed wind-farm projects, the Commission requires permit applicants to include an analysis of the project's potential consequences, proposed mitigation measures, and any environmental harms that cannot be avoided, with respect to the following categories:

- A. demographics, including people, homes, and businesses;
- B. noise;
- C. visual impacts;
- D. public services and infrastructure;
- E. cultural and archaeological impacts;
- F. recreational resources;
- G. public health and safety, including air traffic, electromagnetic fields, and security and traffic;

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<sup>5</sup> Minn. Stat. § 216E.03, subd. 7(b)

- H. hazardous materials;
- I. land-based economics, including agriculture, forestry, and mining;
- J. tourism and community benefits;
- K. topography;
- L. soils;
- M. geologic and groundwater resources;
- N. surface water and floodplain resources;
- O. wetlands;
- P. vegetation;
- Q. wildlife; and
- R. rare and unique natural resources.<sup>6</sup>

The Commission has the authority to establish conditions in a permit that the Commission determines are reasonable for protecting the environment, enhancing sustainable development, and promoting efficient use of resources.<sup>7</sup>

#### **IV. Comments**

##### **A. State Agency Comments**

Prior to Freeborn Wind filing its application for a site permit, the record shows that it communicated with MDNR several times. MDNR advised the Company on various state requirements, including avoidance areas, rare features, and avian and bat protection. MDNR filed comments on October 6, 2017, requesting a change to the draft site permit avian and bat protection section. After review of the draft site permit condition, MDNR declined to issue recommendations on the proposed turbine locations. MDNR also filed comments on March 15, 2018, encouraging Freeborn Wind to contact the U.S. Fish and Wildlife Service to discuss the occurrence of bald eagle fatalities in Minnesota.

MnDOT filed comments on the application on October 6, 2017. MnDOT included comments regarding the need to obtain permits or authorization from state road authorities, required setbacks to trunk highway right-of-way, and coordination with the agency to obtain any necessary permits during project construction.

The Minnesota Department of Health (MDH) communicated with Freeborn Wind on May 2, 2017. MDH recommended evaluating two issues that might bear on public health: noise and shadow flicker.

##### **B. Public Comments**

Approximately 100 written comments were received during the public comment period. The ALJ Report includes a summary of the public comments as Attachment A. The comments addressed visual impacts, shadow flicker, property values, wildlife impacts, effect on farmland, setback

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<sup>6</sup> Minn. R. 7854.0500, subp. 7.

<sup>7</sup> Minn. Stat. §. 216F.04 (d); Minn. R. 7854.1000, subp. 4.

distances, interference with communications, noise, procedural concerns about public outreach, and other matters.

At the public hearing, Freeborn Wind, the Department, and Commission staff were available to make presentations and address questions from members of the public. Approximately 163 members of the public attended the hearing and 45 individuals spoke on the record. Participants offered 34 exhibits, which the ALJ received in the record. The ALJ Report includes a summary of the public hearing comments as Attachment B.

All public comments in this matter were filed in the case record. A summary of the public comments on the Draft Site permit is appended to the ALJ Report as Attachment C.

## **V. The ALJ Report**

The ALJ held two days of formal evidentiary hearings and one public hearing. She reviewed the testimony of the parties' witnesses and related hearing exhibits. The ALJ issued the ALJ Report on May 8, 2018.

The ALJ received and reviewed initial and reply post-hearing briefs from the parties. She made 553 findings of fact, 11 conclusions of law, and a recommendation and alternative recommendation. She included a summary of public comments received, information about the proposed project, a procedural history of the matter, and an analysis of the siting criteria as applied to the proposed project. The ALJ Report stated that the draft site permit contains a number of mitigation measures and other conditions that adequately address the potential impacts of the Project on human and natural environments, and that it is reasonable to amend the draft site permit to incorporate additional permit conditions.

The ALJ analyzed each of the requirements in Minn. Stat. § 216E.03, subd. 7. The ALJ concluded that Freeborn Wind failed to demonstrate by a preponderance of the evidence that the proposed project would meet the requirements of the Noise Standards (Minn. R. 7030.0040); accordingly, she found that the Project does not comply with criteria set forth in Minnesota Statutes chapter 216F or Minnesota Rules, chapter 7854.<sup>8</sup>

The ALJ recommended that the Commission either deny Freeborn Wind's application for a site permit or, in the alternative, provide Freeborn Wind with time to submit a plan demonstrating how the Company will comply with the Noise Standards.

Finally, the ALJ recommended, should the Commission decide to issue a site permit, that the Commission make the following changes to the Draft Site Permit language:

1. Amend Section 5.2 (Construction and Operation Practices) to require Freeborn Wind to provide notice of the Project and its potential to interfere with over-the-air (OTA) television service to all "at risk" areas identified in Appendix D of the application and to each household in the

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<sup>8</sup> ALJ Report, Conclusion 5.

communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow. (Finding 544)

2. Amend Section 5.2.16 (Interference) to establish procedures for tracking, investigating, and reporting complaints and investigations about OTA TV, and for giving notice to landowners about potential transmission problems. (Finding 545)
3. Amend Section 7.2 (Shadow Flicker) as requested by the Department to require shadow flicker detection system utilization at reception locations, with a modification to require monitoring at houses expected to receive 27 or more hours of shadow flicker per year. (Finding 546)
4. Replace Special Condition 7.4 (Noise Studies) with a requirement for a post-construction noise study to be conducted during the first 12 months of operation. An independent engineer selected by the Department would be charged with developing the scope and conducting the study. In addition to incorporating the Department's Noise Study Protocol,<sup>9</sup> the study would require determining the extent to which turbine-only noise contributes to the overall decibel level, with emphasis on receptor locations expected to experience the highest turbine noise levels. The consultant would be charged with ensuring that there are no receptors (for example, homes) where ambient noise plus turbine noise exceed the relevant noise standards. Any exceedances would be required to be reported to the Commission within five working days, and a complete post-construction noise study filed with the Commission within 14 months after operations begin. (Finding 547) In addition, the ALJ recommended that the Company's study address low-frequency noise/infrasound. (Finding 243)
5. Amend Section 4.2 (Setbacks and Site Layout Restrictions – Residences) to require a 1500-foot setback to all landowners that have not consented to the Project. (Finding 548)
6. Amend Section 5.2.25 (Public Safety) to require the permittee to inspect all turbines located within 1,200 feet of structures, roads and trails during periods when ice accumulation is likely to occur. Turbines found with ice accumulation would be required to be deactivated until they are free from ice. (Finding 549)
7. Amend Section 11.1 (Special Conditions) with a requirement that the Project's successors or assigns bear the costs of decommissioning the Project. (Finding 550)

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<sup>9</sup> *Guidance for Large Wind Energy Conversion System Noise Study and Report*, Department comments (October 5, 2013).

8. Amend Section 11.1 (Special Conditions) with a requirement that the permittee demonstrate that it can guarantee resources sufficient for decommissioning and restoration at least 45 days prior to beginning construction of the Project. (Finding 551)

## **VI. Summary of Principal Contested Issues**

Parties proposed hundreds of changes to the ALJ Report. The following issues warrant further discussion:

- Setback standards
- Noise
- Public safety and ice throws
- Shadow flicker
- Interference with over-the-air television signals
- Decommissioning

## **VII. Turbine Setback Standards**

### **A. Introduction**

In its application, Freeborn Wind proposed to build its Project with a minimum setback of 1,000 feet from residences and 250 feet from public roads and trails. The Company claimed that the Project's layout follows the wind energy conversion facility siting criteria outlined in the Commission's Order Establishing General Wind Permit Standards (Wind Standards Order)<sup>10</sup> and Freeborn Wind's guidelines and best practices. With one limited exception (related to a wetland), the Project layout conforms to all applicable county ordinances, and where state and local setbacks differ for the same feature, the Company conforms to the more stringent setback standard.

### **B. The ALJ Report**

The ALJ noted that Freeborn County revised its zoning ordinance (Ordinance) to establish a variety of standards for wind turbines, including standards for setbacks. While the Ordinance has no applicability to site permits subject to Commission jurisdiction,<sup>11</sup> it expresses community standards. More directly, the ALJ observed, the County also passed a resolution asking the Commission to adopt a 1,500 foot setback for the Project.

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<sup>10</sup> See *In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*, Docket No. E,G-999/M-07-1102, Order Establishing General Wind Permit Standards (Jan. 11, 2008).

<sup>11</sup> By its terms, the Ordinance applies only to systems that are not otherwise subject to siting and oversight by the Commission. See also Minn. Stat. § 216F.07 (Commission siting jurisdiction preempts local land use regulations).



At Findings 301 and 302, the ALJ claimed that the Commission’s Wind Standards Order adopted a standard for keeping wind turbines “at least 500 feet plus the distance required to meet the state noise standard” from the nearest home. The ALJ then construed this language as requiring a setback of between 750 and 1,500 feet. On this basis, the ALJ adopted Finding 548, recommending that the language of Draft Site Permit Section 4.2 incorporate a requirement that the turbines be set back at least 1,500 feet from any landowner who has not consented to the Project.

**C. Positions of the Parties**

**1. AFCL**

AFCL supported honoring Freeborn County’s resolution seeking a 1,500 setback.

**2. Freeborn Wind**

Freeborn Wind noted that the Commission’s jurisdiction preempts local land use regulations. Nevertheless, the Company also noted that its Project is designed to comply with the new ordinance, with one minor exception: While the ordinance prescribes a setback equal to three times the length of a turbine’s rotor blades, and the Project meets that standard except with respect to one house—unoccupied and, according to the owners, not expected to be occupied—which is 2.9 rotor-blades distant from the Project. Consequently Freeborn Wind saw no need for additional setback requirements.

**3. Department**

The Department opposed the ALJ’s recommendations regarding setbacks, arguing that the ALJ misconstrued the Wind Standards Order.

**D. Commission Action**

The Commission concurs with the Department.

First, the Commission observes that the Wind Standards Order pertained to projects generating less than 25 MW, and thus is not directly applicable to the current docket.

Moreover, the ALJ misconstrues the order. That order provides a table summarizing the Commission’s wind turbine permit setbacks and standards for smaller wind projects, briefly stating (a) general permit setback standard and (b) minimum standards. In the row addressing setbacks from homes, the table lists the general standard as “At least 500 ft and sufficient distance to meet state noise standards.” (Emphasis in original). And because the space for listing the minimum standard is smaller, the Commission abbreviated that standard as “500 feet + distance required to meet state noise standard.” On its face, this minimum standard appears to be additive. But in context, it is apparent that the Commission used a “+” sign as a shorthand for “and.” In other words, the Commission intends wind turbine developers to honor both the state

Noise Standards and the minimum setback standards *by implementing the larger of the two standards*. This interpretation is consistent with the Commission's past decisions.<sup>12</sup>

Accordingly, the Commission will decline to adopt the ALJ's recommendation to revise the language of the Draft Site Permit Section 4.2. In addition, the Commission will adopt the ALJ's Findings 301 and 302 revised to reflect the correct understanding of the Commission's order.

## **VIII. Noise**

### **A. Introduction**

To protect public health and welfare from man-made noise pollution,<sup>13</sup> the MPCA promulgated the state's Noise Standards codified at Minn. R. 7030.0040. The standards establish time-weighted noise limits based on land use categories (Noise Area Classifications, or NACs) and times of day. Time-weighting allows for variation of sound intensities over time.

The MPCA Noise Standards set limits on total ambient sound levels, and regulate certain noise sources, including wind turbines, that contribute to this sound level. The MPCA Noise Guidance provides guidance on how to properly measure and isolate the contribution from the regulated source.

All permittees are required to comply with permit conditions, including those for noise. Permittees assume the risk of having to undertake any necessary mitigation measures, including curtailment, to ensure compliance with the applicable standards.

### **B. ALJ Report**

The ALJ Report explains that sound intensity is typically measured in units of decibels (dB). Human capacity to distinguish sound intensity diminishes as the intensity increases—thus, a person can “hear a pin drop” in a silent room, but not on a noisy street. Accordingly, dBs are measured on a logarithmic scale, with an increase of three dB reflecting a barely-audible increase in pressure. However, the human ear senses not only intensity, but also sound frequency, measured in Hertz (Hz). To measure noise in a way that corresponds to how the ear perceives loudness, a measuring device must give greater weight to frequencies around 1,000 Hz, and less to higher and lower frequencies. “A-weighting” describes a weighting scheme intended to emulate the perception of the human ear, and is denoted dB(A).

The MPCA's Noise Standards establish different standards for daytime and nighttime noise levels, with those standards measured over a one-hour testing period. Thus, the notation 65

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<sup>12</sup> See, for example, *In the Matter of the Application of Red Pine Wind Farm, LLC for a Site Permit for the 200.1 Megawatt Red Pine Wind Project in Lincoln County, Minnesota*, Docket WS-16-618, Order Issuing Site Permit for Large Wind Energy Conversion System at Site Permit § 4.2 (June 27, 2017); *In the Matter of the Application of Prairie Rose Wind, LLC for a Site Permit for a 200 Megawatt Large Wind Energy Conversion System in Rock and Pipestone Counties*, Docket WS-10-425, Order Approving Findings of Fact and Issuing Permit at Site Permit § 4.2 (September 16, 2011).

<sup>13</sup> Minn. Stat. Ch. 116D.

*dB(A) L<sub>50-one hour</sub>* would refer to a noise standard that limits noise to no more than 65 A-weighted decibels for 50 percent of the time during a one-hour testing period.

The ALJ read the Noise Standard to say that noise at a residential location should not exceed 65 dB(A) more than 10 percent of the time, nor 60 dB(A) more than 50 percent of the time, during daytime; at night, noise should not exceed 55 dB(A) more than 10 percent of the time, nor 50 dB(A) more than 50 percent of the time. And, significantly, the ALJ read this standard to apply to all noise, regardless of source.

Finally the ALJ cited evidence suggesting that in some locations, background noise already exceeds the nighttime noise standard.

Accordingly, the ALJ ultimately recommended rejecting Freeborn Wind's application because it would contribute to an environment in which aggregate nighttime noise levels at some homes would exceed the Noise Standards. In the alternative, the ALJ recommended giving Freeborn Wind the opportunity to submit a plan demonstrating how it would comply with the Noise Standards, and to address how it would address low-frequency noise/infrasound—that is, noise with frequencies between 1 Hz and 20 Hz.

### **C. Positions of the Parties**

#### **1. AFCL**

AFCL urged the Commission to declare that the Freeborn Wind Project must comply with the MPCA's Noise Standards, to adopt the ALJ's finding that the Project has not adequately demonstrated that it will comply with those standards, and thus to reject the Company's site permit.

AFCL argued that the Commission's past practices in analyzing and approving site permits for wind farms has been inadequate. Instead, AFCL asked the Commission to begin interpreting the Noise Standards to preclude a site permit for any project in any area where the Noise Standards might be exceeded—even when the noise comes from sources unrelated to the proposed project. AFCL claims that no wind farm in the state has been sited properly, because no wind farm has been sited consistent with AFCL's interpretation of the Noise Standards. Indeed, AFCL cited with approval the conclusion of Dan Lichfield, a senior manager for the Project, that AFCL's interpretation of the Noise Standards "is impossible to meet for a wind farm."<sup>14</sup>

Finally, AFCL argued that the communities concerns about infrasound had received insufficient attention.

#### **2. The Department**

The Department generally agreed with the ALJ that the MPCA's Noise Standards are designed to measure total noise levels, not just the level of the facility seeking a permit. But the Department

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<sup>14</sup> AFCL Exceptions, at 3.

rejected the manner in which the ALJ applied the standards, arguing that the ALJ's method was too rigid and unworkable, especially in naturally noisy environments.

Instead, the Department proposed Site Permit language establishing a "middle ground" approach intended to guard public health and welfare while avoiding unreasonable restrictions to development. This approach would permit a project to proceed, even where noise levels are at or above the Noise Standards, provided the Project contributed only an indiscernible amount (one decibel) to the total noise level. The Department's proposed approach is set forth below:

#### **7.4.1 Pre-Construction Demonstration of Compliance with Noise Standards**

Freeborn Wind Energy LLC shall file a plan, including modeling and/or proposed mitigation, at least 60 days prior to the pre-construction meeting that demonstrates it will not cause or significantly contribute to an exceedance of the state noise standards using the following two-part protocol:

1. If background sound levels are less than the applicable standard at nearby receptors, the modeled turbine-only noise levels cannot cause an exceedance of the applicable state standard at nearby receptors, inclusive of the measured background noise level. "Cause" means that the project turbine-only contribution is in excess of the applicable state standard.
2. If background sound levels are equal to or greater than the applicable state standard at nearby receptors, the windfarm shall not contribute more than 45 dB(A) to total sound levels at the nearby receptors. Therefore, for example, when nighttime background sound levels are at 50 dB(A), a maximum turbine-only contribution of 45 dB(A) would result in a non-significant increase in total sound of 1 dB(A).

#### **7.4.2 Post-Construction Noise Monitoring**

The Permittee shall file a proposed methodology for the conduct of a post-construction noise study at least 14 days prior to the pre-construction meeting. The Permittee shall develop the post-construction noise study methodology in consultation with the Department of Commerce. The study must incorporate the most current Department of Commerce Noise Study Protocol to determine total sound levels and turbine-only contribution at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee must conduct the post-

construction noise study and file with the Commission the completed post-construction noise study within 12 months of commencing commercial operation.

If the monitored turbine-only noise level is determined to be greater than the Minnesota State Noise Standard at nearby receptors or if the background sound levels exceed the Minnesota State Noise Standards and the turbine-only contribution exceeds 45 dB(A), the Permittee shall work with the Department of Commerce to develop a plan to minimize and mitigate turbine-only noise impacts.

In practice, the Department's standard would require Freeborn Wind to limit the noise from its wind farm to no more than 45 dBA.

During oral argument, however, the Department stated its support for Freeborn Wind's proposed special conditions (discussed below) and its willingness to work with the Company to develop noise testing protocols—and noise mitigation measures, if necessary. The Department envisions a study based on the current Noise Study Protocol to gauge both total sound levels and turbine-only contributions, analyzing various frequencies at various distances from the turbines at various wind speeds and directions.

Finally, the Department stated that the record developed in this case provided insufficient support to regulate infrasound.

### **3. Freeborn Wind**

Freeborn Wind argued that the ALJ Report incorrectly interpreted the Minnesota Noise Standards as placing a limit on total noise without distinguishing between project noise and background or ambient noise. The Company asserted that the Legislature granted the MPCA jurisdiction solely over man-made noise sources, and the ALJ Report ignores MPCA's guidance.

According to Freeborn Wind, the Commission's past practice has been to cite the Noise Standards as the basis to limit noise coming from permitted facilities, without addressing ambient noise. The Company argued that when measuring noise in the outdoors, the measuring device would inevitably record background noise as well as the noise from the source of concern.<sup>15</sup> Indeed, Freeborn Wind acknowledged that it actively seeks to put its turbines in windy locations—that is, locations that inevitably experience a relatively high degree of wind noise. The Company asserted that background noise must then be subtracted from the total recorded measurements to determine the noise from the measured source (here, wind turbines). Doing so would be consistent with MPCA guidance, past Commission practice, and common sense, Freeborn Wind argued.

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<sup>15</sup> Evidentiary Hearing Transcript Vol. 1B at 121 (Feb.21, 2018) (Hankard). Freeborn Exceptions at 7, fn 27.

Furthermore, Freeborn Wind argued that its noise modeling reflects the best evidence in the record, and incorporates conservative assumptions—for example, that no sound would be absorbed into the ground, and that all turbines would be operating at full capacity. Thus, the Company argued, residents would likely experience less noise than the model suggests.

But in an effort to better respond to comments and the ALJ Report, Freeborn Wind proposed two new special conditions to be added to the site permit that would take precedent over any conflicting permit provisions. Under these conditions, the Company would commit to designing and operating its wind farm in a manner that most of the time would generate no more than 47 dB(A), and would contribute less than 3 dB(A) to ambient noise levels—that is, contribute a smaller amount of additional noise than most humans can detect. The conditions are as follows:

### **6.1 Pre-Construction Noise Modeling**

Freeborn Wind Energy LLC shall file a plan, including modeling and/or proposed mitigation, at least 60 days prior to the pre-construction meeting that demonstrates it will not cause or significantly contribute to an exceedance of the MPCA Noise Standards.

To ensure that the turbine-only noise does not cause or significantly contribute to an exceedance of the MPCA Noise Standards, modeled wind turbine-only sound levels (NARUC ISO 9613-2 with 0.5 ground) at receptors shall not exceed 47 dB(A) L<sub>50</sub>-one hour. Given this, at no time will turbine-only noise levels exceed the MPCA Noise Standards, and when total sound does exceed the limits it will be primarily the result of wind or other non-turbine noise sources. Under these conditions, the contribution of the turbines will be less than 3 dB(A), which is the generally recognized minimum detectible change in environmental noise levels (non-laboratory setting). For example, when nighttime background sound levels are at 50 dB(A) L<sub>50</sub>-one hour, a maximum turbine-only contribution of 47 dB(A) L<sub>50</sub>-one hour would result in a non-significant increase in total sound of less than 3 dB(A).

### **6.2 Post-Construction Noise Modeling**

If the Noise Studies conducted under Section 7.4 document an exceedance of the MPCA Noise Standards where turbine-only noise levels produce more than 47 dB(A) L<sub>50</sub>-one hour at nearby receptors, then the Permittee shall work with the Department of Commerce to develop a plan to minimize and mitigate turbine-only noise impacts.

Finally, and like the Department, Freeborn Wind argued that the record provided insufficient grounds for regulating infrasound.

#### **4. MPCA**

During oral argument, MPCA stated that it regarded Freeborn Wind's proposed special permit conditions to be a reasonable and balanced means of implementing the Noise Standards, similar to how MPCA has implemented the standards in the past. While the Company's proposal could result in a small increase in total noise levels when background noise is at or above the prescribed standard, MPCA concluded that this increase would be less than most people could perceive, and MPCA would not expect the increase to pose any threat to human health.

#### **B. Commission Action**

While AFCL urges the Commission to require Freeborn Wind to comply with the MPCA's Noise Standards, this requirement has never been in dispute. Indeed, the Draft Site Permit already requires compliance with the Noise Standards:

#### **4.3 Noise**

The wind turbine towers shall be placed such that the Permittee shall, at all times, comply with noise standards established by the Minnesota Pollution Control Agency as of the date of this permit and at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with Minnesota Pollution Control Agency noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

#### **7.4 Noise Studies**

The Permittee shall file a proposed methodology for the conduct of a post-construction noise study at least 14 days prior to the pre-construction meeting. The Permittee shall develop the post-construction noise study methodology in consultation with the Department of Commerce. The study must incorporate the Department of Commerce Noise Study Protocol to determine the operating LWECS noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee must conduct the post-construction noise study and file with the Commission the completed post-construction noise study within 18 months of commencing commercial operation.

The parties' dispute has not been about whether to apply the Noise Standards, but how to do so.

Various commenters have asked the Commission to make a definitive finding on how the Noise Standards should apply to wind farms generally. And indeed, at Finding 206 the ALJ interpreted the Noise Standards as establishing fixed limits on noise from all sources, even sources not subject to regulation. However, the Commission concludes that this is not the appropriate forum, nor the appropriate record, for making such a broad interpretation. Rather, the Commission will address the Freeborn Wind project specifically, seeking to reconcile the competing interests at play in this docket. Accordingly, the Commission will decline to rule on how the MPCA's Noise Standards should be applied generally—and will decline to adopt the ALJ's Finding 206.

Nor is the Commission persuaded that additional permit conditions are needed to address low-frequency noise/infrasound. 20 Hz is widely regarded as the lowest frequency that humans can hear; it is possible for people to hear lower frequencies, but only at very high amplitude. Wind turbines produce infrasound at a similar level to ocean waves or wind blowing through vegetation, and far lower than the levels experienced riding in a farm tractor. No known hearing test nor tests involving functional magnetic resonance imaging (fMRI) demonstrate that humans can perceive the level of infrasound emanating from contemporary wind turbines. Consequently it is not surprising that the Noise Standards do not regulate infrasound directly. But in practice they regulate it indirectly: Because noise from wind turbines has a relatively consistent spectral (frequency) shape, regulation of noise in the audible range has the effect of regulating the rest of the spectrum as well.<sup>16</sup>

In brief, the ALJ concluded that Freeborn Wind had not yet provided a sufficient basis to ensure that it would fulfill the requirements of the Noise Standards and, as an alternative recommendation, proposed granting the Company additional time to fulfill this step. Both the Department and Freeborn Wind have proposed permit conditions requiring the Company to submit a plan demonstrating that it will not cause or significantly contribute to exceedance of the Noise Standards, and to then test to ensure that it fulfills this requirement. The Commission finds these proposals to provide a reasonable method to fulfill its requirement to abide by the Noise Standards.

Accordingly, the Commission will direct Freeborn Wind to provide an updated pre-construction noise analysis demonstrating that the Project will comply with the noise permit conditions proposed by the Department, subject to the conditions proposed by the Company. And the Commission will incorporate these provisions into the Project's Site Permit. But the Commission will decline the ALJ's recommendation to require the Company to provide a plan for regulating infrasound. Finally, the Commission will adopt the ALJ's findings on noise, modified to reflect the views expressed herein.

## **IX. Public Safety and Ice Throws**

### **A. Introduction**

Ice throw refers to ice congealing on a turbine blade, then falling off or being flung as the blade rotates.

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<sup>16</sup> Ex. FR-5 at 7 (Hankard Direct).



## **B. The ALJ Report**

Generally the ALJ found that Freeborn Wind has taken appropriate steps to avoid and minimize the Project's effects on public safety, and that the language of the Draft Site Permit, when supplemented with the ALJ's proposed amendments, would provide for appropriate monitoring and mitigation of public safety threats. But the ALJ expressed concern about ice throws.

The ALJ noted (a) public comments expressing general concern about ice throws, including concerns for threats to people using the nearby snowmobile trail, (b) a 2006 document from GE Energy recommending measures to mitigate the risks of ice throw from their turbines, and (c) an allegation that ice flung from a Bent Tree Wind Farm turbine on February 22, 2018 dented a truck 300 feet away. While Draft Site Permit Section 4.4 directs a permittee to refrain from building turbines within 250 feet of any public road right-of-way or designated public trail, the ALJ concluded that this condition provided insufficient protection.

Accordingly, the ALJ recommended amending the language of Draft Site Permit Section 5.2.25 to require the permittee to conduct ice inspections of any turbine within 1200 feet of structures, roads, or trails—and to deactivate any ice-encrusted turbines until the ice can be removed.

## **C. Positions of the Parties**

### **1. Freeborn Wind**

Freeborn Wind objected to the ALJ's recommendation, arguing that (a) that the record provides insufficient basis to establish conditions related to ice throws, and (b) the proposed condition would be onerous and unworkable.

According to the Company, the events of February 22, 2018, have not been verified. Regarding the statement of GE Energy, Freeborn Wind noted that it plans to use turbines from Vestas, not GE Energy, and that contemporary Vestas turbines have technology that monitors the turbines for icing conditions and shuts them down in situations where significant ice accumulation causes an imbalance on the turbine blades.

### **2. Department**

The Department stated that it judged the 250-foot setback standard in Draft Site Permit Section 4.4 to be an appropriate distance for significantly reducing the risk from ice throws. And while some commenters expressed concern for people on the nearby snowmobile trail, the Department noted that the nearest snowmobile trail is 538 feet from the turbine sites.

The Department could find no evidence in the record suggesting that turbines pose a threat to all structures, roads, or trails within 1,200 feet. In particular, the Department found no confirmation of the allegation that an ice throw dented a truck on February 22, 2018.

Accordingly the Department concluded that the reported ice throw and strike occurrence should not be used as evidence of turbine ice throw, and did not justify any new policy regarding turbine setbacks or ice accumulation monitoring.

## **D. Commission Action**

The Commission concurs with the ALJ's general finding that Freeborn Wind has taken, or will take, the necessary measures to avoid or minimize any threat to public safety. For example, Draft Site Permit Sections 10.10 and 10.11 require a permittee to provide educational materials about the permitted project and any restrictions or dangers associated with the project. Freeborn Wind will also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. And after construction is completed, Freeborn Wind will inform Gopher State One Call of the location of all underground facilities.

The record already identifies appropriate setback standards for the Project. For homes, the Commission's Wind Standards Order states that turbines must be setback at least 500 feet and a sufficient distance to comply with the Noise Standards, whichever is greater, and the Draft Site Permit provides a setback of not less than 1,000 feet. Regarding public road rights-of-way and designated public trails, the Draft Site Permit provides a setback of 250 feet. The Department concludes that these setbacks provide an appropriate measure of safety, and the Commission concurs.

The record regarding ice throws is insufficient to justify the adoption of novel policies regarding turbine setbacks or the need to monitor turbine blades for ice accumulation. Bent Tree Wind Farm staff investigated the events of February 22, 2018, and could not confirm that the damage to the truck resulted from an ice throw from the Bent Tree Wind Farm. Thus the reported ice throw and strike occurrence should not be used as evidence of turbine ice throw, and it should not be used to establish turbine setback distances or the need to establish turbine ice accumulation monitoring protocols.

Accordingly the Commission will decline the ALJ's recommendation to adopt additional safeguards related to ice throw, and will adopt the ALJ's findings of fact as amended to reflect the views presented in this order.

## **X. Shadow Flicker**

### **A. Introduction**

Shadow flicker from wind turbines occurs when rotating wind turbine blades move between the sun and the observer. Many members of the public expressed concern about the potential shadow flicker that may result from the Project's wind turbines. In addition to finding the flicker irritating, people feared adverse health effects. Freeborn County's Ordinance on shadow flicker contains a requirement to conduct a flicker analysis and states that flicker at a receptor should not exceed 30 hours per year.<sup>17</sup> While the Commission's jurisdiction pre-empts application of the Ordinance, the law provides evidence of local community standards.

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<sup>17</sup> Freeborn County, Minn. Code of Ordinances § 26-56 (2015), ALJ Report, Finding 253.

Over the course of the proceeding, the parties and the ALJ offered differing proposals for a site permit post-construction monitoring condition to include in the draft site permit.

## **B. The ALJ Report**

The ALJ generally agreed with the Department's recommendation to require post-construction measurements of shadow flicker at receptor locations that are anticipated to receive more than 30 hours of shadow flicker per year. And the ALJ found that Freeborn Wind conducted a good-faith analysis estimating the number of hours landowners will be exposed to shadow flicker. But the ALJ questioned the reliability of the results.

Noting that Freeborn Wind's analysis identified at least two locations predicted to receive between 27 and 30 hours of shadow flicker per year, the ALJ recommended revising the language of Draft Site Permit section 7.2 to require use of a flicker detection system at locations anticipated to come within 10 percent of the limit set by ordinance—that is, locations anticipated to receive 27 hours of flicker.

## **C. Positions of the Parties**

### **1. Freeborn Wind**

Freeborn Wind disputed the ALJ's findings challenging the reliability of the Company's estimates of shadow flicker exposure at various locations. The Company emphasized that it hired a consultant to address the issue of shadow flicker potential with the Project's turbine layout. The consultant used modeling software, turbine coordinates and specification, and the locations of 254 homes and businesses within two kilometers of any turbine to develop its shadow flicker model. The Company's modeling assumed all turbines would be the Vestas V116 model (in lieu of the smaller V110 option) to obtain more conservative results.

The Company conducted an additional assessment of each of the non-participating residences where its modeling indicated flicker could potentially exceed 30 hours per year. The Company concluded that visual obstructions (e.g. trees or buildings) would diminish the potential for shadow flicker to occur at the four residences at which modeling demonstrated higher than 30 hours of flicker could occur.

Finally, Freeborn Wind identified several potential mitigation measures it could implement for area residents, based on individual circumstances.

The Company argued that the Commission has never before required mitigation for a designated amount of shadow flicker. However, in recognition of the County Ordinance's 30-hour limit and the community's concerns, the Company agreed to adopt a limit of 30 hours per year. But Freeborn Wind asserted that the record provides no basis whatsoever for adopting a 27-hour standard.

## 2. AFCL

AFCL argued that Freeborn Wind's own modeling demonstrates more than 30 hours of flicker per year on some receptors, and asserted that there might be a greater number than acknowledged by Freeborn Wind. The AFCL also argued that the Company has the burden to demonstrate why it cannot comply with the County Ordinance.

## 3. The Department

While acknowledging that the record does not demonstrate that shadow flicker posed risks to human health, the Department did not oppose use of a 30 hour-per-year exposure standard from shadow flicker as contained in the County Ordinance. But the Department opposed the ALJ's proposal to amend this standard to 27 hours per year, finding no record support whatsoever for this change. In its June 8, 2018 filing, the Department recommended the use of post-construction shadow flicker detection systems during the operation of any receptors that are anticipated to experience that level of shadow flicker.

Finally, the Department recommended revising the language of Section 7.2 of the Draft Site Permit to add more procedural structure to the enforcement of shadow flicker limits, as follows:

### Section 7.2 Shadow Flicker

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize and mitigate shadow flicker exposure. The A Shadow Flicker Management Plan will be prepared by the Permittee, which will include the results of any shadow flicker modeling, assumptions made, levels of exposure prior to implementation of planned minimization and mitigation efforts, planned minimization and mitigation efforts, and planned communication and follow up with residence. The Shadow Flicker Management Plant shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

Should shadow flicker modeling identify any residence that will experience 30 hours, or more, of shadow flicker per year, the Permittee must specifically identify these residences in the Shadow Flicker Management Plan. If through minimization and mitigation efforts identified in the Shadow Flicker Management Plan the Permittee is not able to reduce a residence's anticipated shadow flicker exposure to less than 30 hours per year a shadow flicker

detection systems will be utilized during project operations to monitor shadow flicker exposure at the residence. at receptor locations that were anticipated to receive over 30 hours of shadow flicker per year. The Permittee will submit a Shadow Flicker Monitoring and Management Plan at least 14 days prior to the pre-construction meeting. The Shadow Flicker Monitoring and Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of any shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

Commission staff and EERA staff will be responsible for the review and approval of the Shadow Flicker Management Plan. The Commission may require the Permittee to conduct shadow flicker monitoring at any time during the life of this Permit.

#### **D. Commission Action**

While the ALJ questioned the reliability of Freeborn Wind's prediction of shadow flicker exposure at various locations, the Commission concludes that Freeborn Wind's testimony remains the best evidence in the record on this question. Accordingly, the Commission will decline to adopt the ALJ's Finding 260 to the extent that the finding challenges the reliability of the Company's analysis without proffering a more reliable substitute standard.

Also, the Commission finds no record support for adopting a shadow flicker standard of 27 hours per year. The Commission notes that it has not previously required any mitigation for a designated amount of flicker. The Company's shadow flicker analysis used readily measurable data and its predictive value appears sound. The assumptions Freeborn Wind used underlying its analysis provide a worst-case scenario, meaning homes in the area can reasonably expect to experience lower levels of shadow flicker. Further, should residents in the area experience excessive shadow flicker, the Site Permit will include a compliance procedure to initiate investigations and mitigation measures as appropriate. Accordingly, the Commission will not adopt the 27-hour standard set forth in Finding 261 or the proposed language for Site Permit Section 7.2.

The Commission finds that the Department's proposed revisions to the language of the Draft Site Permit contribute appropriate procedural rigor to the permit's requirements. Accordingly, the Commission will incorporate into the Project's Site Permit the language of Draft Site Permit 7.2 with the Department's modifications.

## **XI. Over-the-Air Television Interference**

### **A. Introduction**

KAAL is the licensee of television station KAAL in Austin, Minnesota. KAAL intervened in this proceeding to raise concerns regarding the potential for wind turbine operations to interfere with its microwave radio transmission and disrupt its over-the-air (OTA) broadcast operations. Dozens of comments in the record expressed concern about television interference, largely over the potential for signal interference during weather emergencies.

### **B. The ALJ Report**

The ALJ recognized the potential for the Project to interfere with OTA TV signals, especially in those areas where there is no line of sight to a television transmitter. While the ALJ concluded that KAAL did not provide sufficient support for its proposal to expand the scope of the designated “at-risk area,” the ALJ also determined that the Company’s proposal for an expanded “at-risk area” did not sufficiently address KAAL’s concerns.

The ALJ recommended expanding the number of people that Freeborn Wind would notify of its proposed project, and expanding the content of the proposed notice, as follows:

[Finding] 544. The Administrative Law Judge recommends that Section 5.2 of the Draft Site Permit should be amended, as follows:

Freeborn Wind must provide notice which includes a description of the Project’s potential to interfere with OTA TV service, Freeborn Wind’s mitigation program, and copies of the Site Permit and Complaint Procedure to households in the following areas:

- a. all households in “at risk” areas identified for all six local television stations, as identified in Appendix D of the Site Permit Application; and
- b. each household in the communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow.

Further, the ALJ recommended that the Commission require a permittee to investigate and document any non-frivolous claims of OTA TV interference, as follows:

[Finding] 545. The Administrative Law Judge recommends that Section 5.2.16 of the Draft Site Permit be amended as follows:

- Upon receiving a complaint from a household within the required Notice area regarding interference, Freeborn Wind shall evaluate the complaint to determine whether Freeborn Wind’s operations are the likely cause of the interference. In the event that the wind farm is determined to be the likely cause of

interference, Freeborn Wind should offer the mitigation measures it has proposed as listed in paragraph 378 of this Report.

- Freeborn Wind shall investigate any non-frivolous claims of OTA TV interference.
- Freeborn Wind shall not dismiss a complaint on the basis that it arises from a location further than 10 kilometers distant from any turbine, or because its location is not within an “at risk” area.
- Freeborn Wind shall file a report with the Commission on the first working day of each month. The report shall inform the Commission of the results of the previous month’s investigations of TV interference complaints, including the role of the wind farm in causing the interference, and whether Freeborn Wind’s remedial measures resolved the interference issues.
- Freeborn Wind shall maintain and submit with its monthly report, a map showing the location of the complainant households, their distance to the nearest turbine, and their locations in relation to the “at risk” areas. Freeborn Wind will report the date of each complaint, its response, and the date the complaint is closed.
- Freeborn Wind shall make these reports publicly available.

### **C. Positions of the Parties**

#### **1. Freeborn Wind**

Freeborn Wind filed numerous exceptions to the ALJ Report regarding OTA interference.

Freeborn Wind acknowledged that wind turbines located between a station transmitter and a digital antenna may interfere with OTA TV reception. But in defense of its Project, Freeborn Wind stated that (a) there is no practical way to anticipate the location of each impaired residence, given the number of residents and the imprecision in turbine siting at this stage of the proceedings, (b) the number is not likely to be large, and (c) the record reveals no unresolved complaints of transmission interference.

To better address the concerns raised by KAAL, however, the Company agreed to expand its notice area and diligently implement a program to promptly respond and mitigate any problems observed once operations commence, using the Commission’s standard procedures for addressing complaints arising from permitted energy facilities.

The Company challenged the suggestion that its wind turbines would have much likelihood to impair signals at locations more than 10 kilometers away. Nevertheless, the Company agreed to provide notice to people in an expanded “at risk” area depicted on Figure 7 of the TV Coverage Impact Study, included as Appendix D to its application, and proposed language to incorporate this commitment into the site permit.

## **2. KAAL and AFCL**

KAAL argued that the potential OTA interference could be problematic for homes and businesses in the areas identified by the ALJ, and argued that its viewers could be deprived not only of entertainment, but weather announcements which could have a significant impact on the lives of those in the area.

KAAL asserted that Freeborn Wind’s methodology to determine the geographic area of viewers who could potentially be affected by OTA interference is flawed, and that 20 kilometers (not 10) is the appropriate distance from which to measure turbine interference with signals. KAAL claimed that the number of potentially affected viewers is higher than Freeborn Wind estimated. And KAAL argued that the appropriate way to mitigate the threat to human life posed by this transmission interference is for Freeborn Wind to pay for a door-to-door survey of all residents within 20 kilometers of a wind turbine after the turbines begin operating.

KAAL generally agreed with the ALJ’s Findings on OTA Interference, with the exception of Finding 386, wherein the ALJ concluded that residents could rely on AM or FM radio signal rather than OTA television signals during weather events. This finding, KAAL argued, would relieve Freeborn Wind of its duty to restore “natural conditions” as required by Minnesota law.<sup>18</sup> Instead, KAAL recommended that the Commission require Freeborn Wind to conduct a survey, both before and after construction, to determine if there is any OTA interference from the Project that cannot be corrected with a new receiver, or to pay for the construction of a new transformer with translator.

Finally, KAAL proposed revising the Site Permit Complaint Handling Procedures attached to the Draft Site Permit. KAAL proposed expanding the definition of complaint to include expressions of dissatisfaction or concern about television or communication signals, or site restorations. And KAAL proposed clarifying that Freeborn Wind would have to continue reporting the level of customer complaints throughout the life of the site permit.

AFCL agreed with KAAL’s position generally, including its proposed modifications to the ALJ Report findings and Draft Site Permit language.

## **3. The Department**

The Department argued that the ALJ’s proposal to expand the number of households to receive notice and a copy of the complaint procedure is unwarranted in that it is unsupported by the record, and would impose costs out of proportion to any anticipated benefits. The Department also opposed requiring Freeborn Wind to serve notice on the viewers in the “at risk” area of

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<sup>18</sup> Minn. R. 7854.1000, subp. 4.



television stations other than KAAL, as they have not raised concerns about the Project causing OTA interference.

Nor did the Department support the ALJ's Finding 545, which recommended significant modifications to Section 5.2.16 of the Draft Site Permit. The Department argued that the ALJ appeared to disregard the Company's modeling effort with no evidence that the results were inaccurate. And the Department argued that the ALJ's proposed changes to 5.2.16 of the Draft Site Permit appear to create a separate complaint procedure for OTA television interference not supported by the record. The Department recommended retaining the Draft Site Permit's language at Section 5.2.16, and that complaints of OTA television interference be handled and reported using the Draft Site Permit's complaint procedures.

That said, the Department proposed one revision of its own to the Draft Site Permit regarding OTA signal interference: The Department recommended amending Draft Site Permit Section 5.2 to direct the Permittee to provide notice of its project, its mitigation program, and its complaint procedures, to all television stations with signal service in the Project area.

#### **D. Commission Action**

As an initial matter, the Commission observes that KAAL characterized the issue of OTA signal interference as a matter of life and death, due to the role of TV signals to inform people of impending weather conditions. The ALJ found this description to be overstated, and suggested that the public could listen to AM or FM radio instead. KAAL took exception to these findings. The Commission will decline to characterize KAAL's position on this issue, and will therefore refrain from adopting the ALJ's language—for example, at Finding 387—that does so. Nor will the Commission adopt language recommending reliance on one form of broadcast rather than another.

The Commission largely agrees with the ALJ's view that the most appropriate means to address a problem such as OTA signal interference is mitigation—addressing the few problem areas that may actually arise rather than trying to anticipate and address the many places where a problem could arise. Accordingly, the Commission accepts and adopts the ALJ Findings on OTA interference, but with certain modifications.

No party objected to KAAL's proposed additions to the Draft Site Permit's Complaint Handling Procedures, including modifications to the Definition and Reporting sections. The Commission believes adding this language is reasonable and consistent with the record, and will therefore incorporate it into its Site Permit.

Additionally, the Commission will generally adopt the ALJ's recommendations set forth at Finding 545 to amend and incorporate into the Site Permit a requirement that Freeborn Wind provide notice of its project's potential to interfere with OTA TV service and its program for mitigating these harms. Notwithstanding the Department's views, in this instance the Commission believes that providing people with greater notice about how to address potential problems, and more process for addressing those problems, reflects a reasonable strategy. Moreover, Freeborn Wind has agreed to expand the scope of the notices it would provide to

landowners—and the Commission will adopt a modified version of ALJ Finding 386 to recognize this fact.

But based on the parties’ comments, the Commission will adopt the ALJ’s recommendation at Finding 545 in a slightly altered form.

First, the Commission concurs with the ALJ’s recommendation that Freeborn Wind serve notice on all households in the “at risk” areas identified in its Site Permit Application. Indeed, the Commission will go further and direct the Company to also serve notice on each of the over-the-air broadcasters serving this area, so that they will be informed about how to address customer concerns. But the Commission is not persuaded that the Company should also serve notice on every household in Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow, which are further away and less likely to experience signal interference. It will suffice for Freeborn Wind to give notice to the local governmental offices in those municipalities instead.

Second, in giving notice, the Commission is not persuaded that Freeborn Wind should have to provide a physical copy of the entire site permit, including complaint procedures. It will suffice to notify people that copies are available upon request.

Finally, while the ALJ proposed amending the language of Draft Site Permit Section 5.2, the Commission prefers to codify this language as its own special condition within the site Permit, superseding the language of any conflicting conditions.

## **XII. Decommissioning, Turbine Abandonment, and Restoration**

### **A. Introduction**

According to the terms of the easements the Company has acquired, at the end of the Project’s useful life—anticipated to be 30 years—the Project would be decommissioned, the facilities removed, and the land restored to a condition reasonably similar to its original condition. Parties disagree about the steps Freeborn Wind should take to demonstrate its ability to fulfill these terms.

However, Freeborn Wind’s decommissioning plans stumbled over an initial procedural hurdle: Minn. R. 7854.0500, subp. 13, directs an applicant for a site permit for a wind farm to include decommissioning and restoration plans as part of its application, but the Company neglected to do so. The Department failed to detect this oversight when it recommended that the Commission find the application was complete. And the Commission failed to detect the oversight when it issued an order finding the application complete.

### **B. The ALJ Report**

Noting the defect in Freeborn Wind’s initial site permit application, the ALJ found this procedural shortcoming irrelevant for purposes of analyzing the merits of the Company’s petition.

The ALJ made a number of recommendations related to decommissioning. The ALJ recommended that Freeborn Wind demonstrate that it has the capacity to guarantee it can fund the decommissioning and restoration of its Project prior to commencing construction. She also recommended that when the Company complied with this recommendation, the Commission should provide public notice of Freeborn Wind's demonstration in accordance with Minn. R. 7854.0900. Finally, the ALJ recommended that the Commission clarify that any of Freeborn Wind's successors or assigns would have to adopt the Company's decommissioning obligations (unless the Company elected to retain the obligation).

## **C. Positions of the Parties**

### **1. Freeborn Wind**

Freeborn Wind acknowledged the responsibility it bears—and that its successor would assume—for decommissioning the Project. Freeborn Wind argued that the ALJ's recommendations are already reflected in the terms of the Draft Site Permit, but stated that it had no objection to providing a pre-construction submittal documenting that the Company will have resources available to fund decommissioning and restoration obligations. If the Commission wants Freeborn Wind to give public notice that it had made such a filing, as the ALJ recommended, then the Company would propose to consolidate this notice with the other forms of notice it would provide to landowners under Draft Site Permit Section 5.1.

### **2. AFCL**

AFCL argued that Freeborn Wind's failure to include its decommissioning plans as part of its initial Application deprived the public of a fair opportunity to scrutinize those plans.

AFCL argued that Freeborn Wind should have to provide additional documentation demonstrating its commitment and ability to decommission its Project. And because Freeborn Wind failed to provide decommissioning information in its initial application, AFCL argued that the Commission should ensure that there is extra time for scrutinizing the Company's filing.

### **3. Department**

The Department concurred with Freeborn Wind that the ALJ's proposals largely duplicate provisions already found in the Draft Site Permit. And where the ALJ goes beyond those provisions—for example, proposing that the Company guarantee it can fund the decommissioning—the Department argued that this language is unnecessary and creates the potential for needless disputes. The Department claimed that the Commission has not previously required a permittee to provide full financing for decommissioning before operations begin; rather, the Commission typically grants a permittee several years to amass the necessary funds, aided by the revenues generated by the permitted project. The Department found insufficient reason to adopt a different policy regarding Freeborn Wind's Project.

#### **D. Commission Action**

The Commission concurs with the ALJ that Freeborn Wind erred in omitting its decommissioning plan from its initial application, and that the Commission erred in overlooking this omission. However, the Commission's Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing (August 31, 2017) stated, "The Commission concurs with the [Department] that the application is substantially complete. The Commission will, however, direct Freeborn Wind to respond to all reasonable requests regarding the Project and to facilitate in every reasonable way the continued examination of the issues by the [Department] and Commission staff." Thus the Commission's order, though flawed, did not deprive any party of the opportunity of obtaining a copy of the plan from the Company. The Commission will adopt the ALJ's Finding 518 as amended to take note of this aspect of the Commission's order.

Draft Site Permit Section 11.1 provides language governing the decommissioning of a permitted project, and this language largely addresses the concerns raised. For example, this language provides for a permittee to submit a decommissioning plan—identifying all surety and financial securities available to finance the decommissioning—before the Project could begin operations.

Nevertheless, the Commission is persuaded that some revisions are warranted to address the unique circumstances of this case. In particular, given the late development of this issue, the Commission finds it reasonable to grant additional time for reviewing the decommissioning plan. Thus, while Section 11.1 directs a permittee to submit its decommissioning plan 14 days before the pre-operation meeting, the Commission will direct the Company to make its filing 60 days before the meeting. This will provide an additional 46 days to evaluate the plan.

And while the Commission will retain the ALJ's recommendation that the Company provide public notice when it submits its decommissioning plan, the Commission will grant Freeborn Wind's proposal to permit the Company combine this notice with its other forms of landowner notice set forth in Section 5.1 of the Draft Site Permit.

To avoid needless confusion, however, the Commission will decline to adopt language purporting to require Freeborn Wind to "guarantee" or "ensure" the funds for decommissioning—whether that language appears in the ALJ's findings (for example, Findings 527 and 530) or the Draft Site Permit.

Finally, the Commission will decline to adopt the ALJ's recommendation to modify the site permit to address the obligations of Freeborn Wind's successors and assigns. The Commission already has jurisdiction over the transfer of site permits under Minn. R. 7854.1400, and therefore need not address the issue of successors and assigns in the context of a site permit.

#### **XIII. Other Issues**

The ALJ made some 553 findings of fact and 11 conclusions of law, largely analyzing the site permit considerations identified in Minn. Stat. § 216E.03, subdivision 7, as well as a conclusion to deny the site permit, or to establish additional conditions.

Parties took exception to many aspects of the ALJ Report and proposed hundreds of changes. The Commission concurs with many of these arguments, and has articulated above its rationale for differing with the ALJ regarding noise, shadow flicker, interference with over-the-air transmission signals, and decommissioning. In other instances, the Commission finds that the parties' proposed language better articulates the state of the record than the ALJ's findings do. Those instances are set forth in Attachment 1.

But, having reviewed the record of the case, the Commission generally concludes that the ALJ's findings are thorough, well-reasoned, and well-supported, and that the remainder of the parties' proposed revisions should be declined on the grounds that –

- The record does not support the proposed change, or the party proposing a change offered no rationale or citation to the record supporting the change;
- The ALJ better articulated the state of the record;
- The proposed change reflects a non-substantive or *de minimis* change from the ALJ's language; or
- The proposed change is redundant of language elsewhere in the ALJ Report.

Accordingly, the Commission will adopt the ALJ's findings, conclusions, and recommendation, modified as discussed above and in Attachment 1. Based on these findings, and bolstered by additional Site Permit conditions discussed in this order, the Commission will issue the Site Permit set forth in Attachment 2.

### **ORDER**

1. The Commission approves and adopts the findings, conclusions, and recommendation of the Administrative Law Judge's July 26, 2018 Findings of Fact, Conclusions of Law, and Recommendations except as set forth in Attachment 1 or otherwise stated in this order.
2. Freeborn Wind Energy LLC shall provide an updated pre-construction noise analysis demonstrating that the Project will comply with the noise permit conditions recommended by the Department as modified by the conditions proposed by the Company.
3. The Commission hereby issues the Site Permit as set forth in Attachment 2, incorporating various changes to the Draft Site Permit language, including changes related to –
  - setback standards,
  - noise,
  - ice throw,

- shadow flicker,
- over-the-air signal interference, and
- decommissioning.

4. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



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## **Attachment 1: Modifications to the ALJ Report**

The Commission adopts the findings, conclusions, and recommendations of the Administrative Law Judge's Findings of Fact, Conclusions of Law, and Recommendations (May 14, 2018), except as modified below. Strike-outs indicate texts not adopted by the Commission; underscoring represent clarifying or supplementary text adopted by the Commission.

### **Finding 154**

There was conflicting testimony regarding the ability of agricultural pilots to conduct aerial spraying within the perimeter of a wind farm. ~~AFCL provided no expert testimony regarding the impact of wind turbines on neighboring agricultural property or practices. Freeborn Wind has committed to work with landowners on coordinating aerial spraying activities.~~<sup>1</sup>

#### **Footnote(s)**

1. 239 Ex. FR-1 at 60 (Application).

### **Finding 160**

Mr. MaRous also used the "matched pair" method to examine the effect of proximity to a wind turbine on a property's value. This method analyzes the ~~impact of a single feature on a property's value by finding the sale value of a nearly identical property but for the single feature importance of a selected characteristics—in this instance proximity to a wind turbine—to a property's value. This method compares the selling price of a property close to the selected characteristic to the sale value of a similar property in the same market area and under similar market conditions but without the selected characteristic.~~

### **Finding 164**

Mr. MaRous provided additional support for his conclusion that property values were not affected by proximity to a wind farm by examining similarly matched ~~properties pairs~~ in three counties in Illinois. Mr. MaRous found three matched property pairs in Mclean County, two in LaSalle County, and one in Livingston County.<sup>245</sup> The distances of the dwellings from the nearest wind turbine in feet were 1,865 feet, 2,210 feet, 1,573 feet, 3,160 feet, 2,325 feet, and 2,322 feet. There are just two matched pairs where the distance to the nearest turbine is less than the average distance for the Project Area. Mr. MaRous found no indication that proximity to a wind turbine lowered the value of non-participating properties.

### **Finding 175**

Several members of the public believe ~~maintained~~ that Freeborn Wind should be required to provide each non-participating landowner with a Property Value Guarantee (PVG) to ensure that they do not suffer losses in property values as a result of the Project.<sup>263</sup>

### **Finding 181**

It is generally accepted that if a wind farm complies with Minnesota noise regulations, people living and working near its turbines will not suffer direct physical damage to their hearing.<sup>274</sup> But, it is also

believed by some that “subaudible infrasound can be detected inside homes near operating wind turbines, and that such sound can be identified from up to 10 kilometers distant.”<sup>275</sup>

### **Finding 181**

While it has not been shown that wind turbines cause harm to human hearing, people’s reactions to wind turbine noise vary widely. Some people may not be bothered by the noise of the rotating turbines and some may only experience mild annoyance from time to time. But there may be others who are especially sensitive to the noise patterns and inaudible low frequency emissions of the turbines. ~~Their reactions to wind turbines may include nausea, sleeplessness, headaches, chest pains, and high levels of stress.~~<sup>276</sup>

### **Finding 185**

Wind turbines produce sound patterns which the ear and audio processing functions in the brain recognize.<sup>278</sup> The equipment inside a wind turbine’s nacelle produces some noise, but the more recent models of turbine nacelles produce very little noise. ~~The main subject of noise complaints is the “broadband ‘whooshing’ sound produced by interaction of turbine blades with the wind.”<sup>279</sup> There is also a concern that wind turbines generate “[r]hythmic, low frequency pulsing of higher frequency noise (like the sound of an amplified heart beat) ... one type of sound that can be caused by wind turbine blades under some conditions.”<sup>280</sup> Another pattern is “a tonal signal of sharply rising and falling pulses in the infrasound range.”<sup>281</sup>~~

### **Finding 189**

Human ears are not equally sensitive to all sound frequencies. “The human ear is sensitive primarily to the level (loudness) of a noise (sound), but also to its pitch (frequency).” The ear is more sensitive to frequencies ~~in the at~~ about 1,000 Hertz [Hz]<sup>286</sup> ~~to 4,000 Hz~~ than it is to lower or higher frequencies.<sup>287</sup>

### **Finding 191A**

20 Hz is widely regarded as the lowest frequency that humans can hear.<sup>1</sup> Humans’ sensitivity to sound at 20 Hz and at lower frequencies is so low that the amplitude has to be extremely high in order for humans to hear them.<sup>2</sup> Infrasound is generally defined as sound in the 1 Hz to 20 Hz frequency range.<sup>3</sup> Infrasound is produced by natural sources such as the wind blowing through trees and vegetation and against houses, ocean waves, and earthquakes<sup>4</sup>, and can also be experienced inside a moving car, or inside a house near an operating washing machine.<sup>5</sup> Infrasound is also produced by other man-made sources, such as conventional power plants, aircraft, and agricultural equipment.<sup>6</sup> Levels of wind turbine infrasound are similar to infrasound from natural sources such as the wind blowing through vegetation and ocean waves, and far lower than the levels of infrasound experienced riding inside a vehicle, such as a farm tractor.<sup>7</sup> The levels of infrasound produced by wind turbines are many orders of magnitude below all currently accepted thresholds of human hearing, including every major hearing threshold test dating back to the 1930s and recent fMRI-based hearing response tests.<sup>8</sup>

### **Footnote(s)**

1. Ex. FR-5 at 4 (Hankard Direct).
2. See Ex. FR-6, Sched. 4 at 4 (Roberts Direct).
3. Ex. FR-5 at 5 (Hankard Direct).
4. Ex. FR-5 at 5 (Hankard Direct).
5. Ex. FR-1 at 33 (Application).
6. Ex. FR-5 at 5 (Hankard Direct).
7. Ex. FR-5 at 6 (Hankard Direct).
8. Ex. FR-5 at 5 (Hankard Direct).



### Finding 192

~~Most available e~~Evidence suggests that reported health effects are related to inaudible (to most people) low frequency noise. Wind turbines generate a broad spectrum of low intensity noise.<sup>293</sup>

### Finding 193

A decibel is the unit in which the intensity of sound (sound pressure level) is typically measured. ~~A barely audible sound (near total silence) is assigned a measure of 0 decibels (dB). The decibel is a logarithmic unit in base 10. A sound that is 10 dB is 10 times louder than the just barely audible 0 dB sound.~~<sup>294</sup>

### Finding 195

An alternative to A-weighting is C-weighting. C-weighting does not filter out low frequency sound as the A-weighting does, making C-weighting better if the concern is to measure absolute sound pressure levels rather than loudness to the human ear.<sup>298</sup> ~~The C weighting is flat to within 1dB down to about 50 Hz and then attenuation commences, but not as rapidly as with A weighting.~~

### Finding 197

Sound levels measured in the environment are almost always the result of many sources being present at any one time, and contain ~~Most sound is~~ a mixture of frequencies. Sound meters ~~add~~ measure all of the sound pressure changes in the environment and display the corresponding A-weighted or C-weighted level ~~levels of the various frequencies across the audible spectrum to compute a single loudness metric.~~ When you have two noise sources of equal strength, you add them together for a total noise level that is three dB greater than either one alone.<sup>301</sup> An increase of three dB in the total noise level in an outdoor environment will not be noticeable to most people, and but just barely to others.<sup>302</sup> In an outdoor environment, 3 dB is the smallest change in noise level that most people will notice.<sup>1</sup>

### Footnote(s)

1. Tr. Vol. 1B at 115 (Hankard).

### Finding 198

Sounds from different sources can occur at the same time. If a 50 dB noise is added to an existing 50 dB noise, the resulting noise level is 53 dB, which is enough of an increase in sound pressure to be noticeable. Freeborn Wind provided the following rules of thumb for adding noise from a point source to ambient noise: when one source is 10 dB less than another, it is irrelevant. If a wind turbine is generating 50 dB and ambient noise is 45 dB, the total sound level is 51 dB.<sup>303</sup>

### Finding 205

[The Department] issued the “Guidance for LWECS Noise Study Protocol and Report” in 2012 to assist permittees in conducting post-construction noise compliance surveys; it does not provide detailed recommendations or guidance on pre-construction noise modeling analysis.<sup>1</sup> The MPCA’s interpretation of its rule is that, to estimate the effect of wind farm noise on total noise levels, the ambient level of noise must be known. In its Comment on the DOC’s Guidance for Large Wind Energy Conversion Systems Noise Protocol and Report, the MPCA noted:

Although the noise rules apply to total noise measured at a wind farm, the culpability of the wind turbines depends on attribution. If noise exceedances are recorded, it is necessary to determine the increment due to the turbine noise. Background noise information is very important to this effort.

This is where background data might be “subtracted.” Compliance is based on the inclusion of background total noise, whereas attribution depends on the use of the background information to adjust the measured noise to the source (turbines).<sup>314</sup>

#### Footnote(s)

1. Ex. EERA-9 (2012 Noise Protocol Guidance) and Evid. Hearing Tr. Vol 2 at 183, 186 (Feb. 22, 2018) (Davis).

#### Finding 206

~~The Administrative Law Judge agrees with [the Department]’s interpretation of the noise limits in Minn. R. 7030.0400 for a number of reasons. First, [the Department]’s interpretation is consistent with the MPCA’s interpretation of its own rule. Second, Freeborn Wind appears to equate the pre-construction environment with the “natural environment.” However, the Project Area has roads, vehicles, farm equipment, and other non-natural sources of sound and is not solely a “natural environment.” Third, subpart 1 explicitly provides that the standards in subpart 2 do not apply to impulsive noise. If the rule was intended not to apply to ambient noise, it would have similarly distinguished and excluded ambient noise. Fourth, the noise standards are “consistent with speech, sleep, annoyance, and hearing conservation requirements.” This implies a focus on the protecting the recipients of the noise and these goals are frustrated when total noise levels are exceeded. [the Department]’s analysis correctly identifies the total noise levels experienced by receptors when the wind turbines are operating as the regulated sound from “all sources.”~~

#### Finding 207A

The Noise Standards also contain specific measurement procedures to be used for accurately measuring the noise from the source only, while taking care not to include noise from “background noise”, which is defined as “any ambient noise other than the noise to be measured, including wind, precipitation, traffic, etc.”<sup>1</sup> The MPCA provides guidance on the implementation of its Noise Standards.<sup>2</sup>

The MPCA separately defines sound occurring in the natural environment. “Background, or ambient, noise” consists of “all noise sources other than the noise source of concern.”<sup>3</sup> Because wind is often a major source of background noise (particularly during full operation of a wind farm), it can frequently present problems when trying to isolate and monitor a specific source of noise.<sup>4</sup> Accordingly, MPCA’s measurement protocols and guidance state that high wind and rainy weather conditions should be avoided when measuring the noise source.<sup>5</sup> Further, when analyzing a specific noise source along with other noise sources, correction factors can be used to isolate the noise source being monitored and calculate its individual noise level. Specifically, total noise levels from all sources are to be measured and recorded. Then the noise source being measured should be turned off, and a noise level reading taken with all other existing noise sources in operation. Then, the background noise is subtracted from the total noise level to find the noise level of the source being measured.<sup>6</sup> It is the source noise that must meet the levels set in the Noise Standards.<sup>7</sup>

#### Footnote(s)

1. MPCA Guide at 11.
2. Id.
3. MPCA Guide at 11.
4. Id.
5. Minn. R. 7030.0060 and MPCA Guide at 11.
6. MPCA Guide at 12.

7. 348 See Minn. Stat. §§ 116.07, subd. 2(c), 116.06, subd. 15; Minn. R. 7030.0040 and 0060; MPCA Guide at 12.

### **Finding 207B**

The Legislature authorized the MPCA to regulate “noise”, as defined in the statute. MPCA’s guidance further confirms that the regulated noise source to be measured must be isolated from background noise when measuring sound at a given location. Accordingly, Freeborn Wind has correctly interpreted the Noise Standards to require that Project-related noise cannot exceed a nighttime L50 of 50 dB(A).

### **Finding 209**

~~While infrasound and LFN may not pose noise issues per se, that is an artifact of our hearing. Physically, infrasound and LFN are electromagnetic waves just like audible sounds, and they may have physical effects on humans, just like audible sounds.~~ The Minnesota Department of Health found that wind turbine-related noise complaints “appear to rise with increasing outside noise levels above 35 dB(A)” and “[t]he Minnesota nighttime standard of 50 dB(A) not to be exceeded more than 50% of the time in a given hour, appears to underweight penetration of low frequency noise into dwellings.”<sup>320</sup>

### **Finding 209A**

LFN from wind turbines, from 20 to 200 Hz, is audible, but at levels that are generally less than those produced by other sources, such as traffic, wind, and other methods of power generation.<sup>1</sup>

#### **Footnote(s)**

1. Ex. FR-1 at 33 (Application).

### **Finding 211**

Mr. Hankard affirmed that the primary source of LFN and infrasound is ambient noise such as “wind blowing through vegetation and against buildings such as houses.”<sup>323</sup> This is especially so when ground winds exceed 10 miles per hour, which is when wind turbines tend to operate. During periods of high ground winds (greater than approximately 10 mph), which occurs often during wind turbine operations, ambient LFN levels exceed those produced by wind turbines.<sup>1</sup> Mr. Hankard stated that ambient levels of LFN in the Project area “range from about 45 to 80 dBC under windy conditions.”<sup>324</sup> while LFN from the project is predicted to be 62dBC at one residence and less than 60dBC at all other residences.<sup>2</sup>

#### **Footnote(s)**

1. Ex. FR-5 at 8 (Hankard Direct).
2. 361 Id. at 8 (Hankard Direct); see also Ex. FR-1, Appendix B at 9 (Noise Analysis) (Application)

### **Finding 213**

~~Freeborn Wind did not follow this guidance “b~~ “Because the frequency spectrum of noise from wind turbines is relatively fixed, and once one part of the spectrum becomes limited, so does every ~~other~~ part of the audible spectrum.”<sup>326</sup> The 50 dB(A) limit for receptors was attained by placing the wind turbines at certain distances from the receptors. For the Project, the 50 dB(A) limit at residences controls Project LFN levels to about 60 dB(C) or less at residences, and limits infrasound to levels orders of magnitude below the human hearing threshold.”<sup>326</sup>

### **Finding 214**

The Minnesota Noise Standards indirectly regulate LFN and infrasound. While there are no dB(C) or other LFN noise limits, or any limits pertaining to infrasound, contained in Minnesota’s noise standards,

~~it is well understood that limiting wind turbine noise emissions using a dB(A) standard automatically limits LFN and infrasound. Because wind turbine noise has a relatively consistent spectral (frequency) shape, once one part of the spectrum is limited, the rest of the spectrum is limited as well. the record evidence legitimates concerns over the Project's potential to generate harmful LFN and infrasound, opponents of the Project are correct that Minnesota's noise standards do not address them.~~ [The Department] did not recommend the addition of any conditions or special conditions specific to infrasound or low frequency noise.<sup>328</sup> While the Department of Health, the Department of Commerce, and the Pollution Control Agency all acknowledge public complaints concerning wind turbine generated infrasound and LFN merit concern, in 2012, the MPCA Commissioner, in response to a rulemaking Petition, stated that "After consulting with colleagues at the Minnesota Departments of Health and Commerce, I have concluded that the current understanding of wind turbine noise and its potential effects is insufficient to support rule making at this time,"<sup>3</sup> and in 2016, that "the present knowledge of the potential health effects of infrasound does not lend itself to the development of an appropriate standard at this time."<sup>329</sup>

### **Finding 219**

Carol Overland requested that the MPCA develop rules governing wind turbine noise. In response, John Linc-Stine, Commissioner of the Minnesota Pollution Control Agency, stated: "After consulting with colleagues at the Minnesota Departments of Health and Commerce, I have concluded that the current understanding of wind turbine noise and its potential effects is insufficient to support rulemaking at this time."<sup>2</sup> However, as explained above, the Noise Standards indirectly regulate LFN and infrasound. It is well understood that limiting wind turbine noise emissions using a dB(A) standard automatically limits LFN and infrasound.<sup>1</sup> Because wind turbine noise has a relatively consistent spectral (frequency) shape, once one part of the spectrum is limited, the rest of the spectrum is limited as well.<sup>2</sup> Further, some experts agree that regulating wind turbine noise using acceptable A-weighted limits is appropriate.<sup>3</sup>

#### **Footnote(s)**

1. FR-5 at 7 (Hankard Direct).
2. FR-5 at 7 (Hankard Direct).
3. See FR-1 at 33-34 (Application).

### **Finding 220**

The Department of Commerce, Energy Facility Permitting is the author of Guidance for Developing and e-Filing the LWECS Noise Study Protocol and Report Submittals to the Minnesota Public Utilities Commission (Oct. 8, 2012) [LWECS Noise Study Protocol].<sup>337</sup> The Guidance document is intended to assist permittees in conducting post-construction noise compliance surveys; it does not provide detailed recommendations or guidance on pre-construction noise modeling analysis.<sup>1</sup> The document's purpose is:

to aid wind developers in the preparation and use of a noise study protocol that standardizes sound monitoring methodologies, analysis, and presentation. The purpose of the protocol and the resulting noise study report are to quantify sound generated by an operational Large Wind Energy Conversion System (LWECS) at receptors: sound that is present during the measurement, project-related and otherwise.<sup>338</sup>

#### **Footnote(s)**

1. See Evidentiary Hearing Tr. Vol 2 at 183, 186 (Feb. 22, 2018) (Davis) and Ex. EERA-9 (2012 Noise Protocol Guidance).

### Finding 222

The purpose of the pre-construction noise analysis is to inform the placement of wind turbines so as to comply with Minnesota noise regulations. ~~because, once built, a properly functioning wind turbine's noise output can only be changed by taking it out of service.~~

### Finding 223

Mr. Hankard prepared the Pre-Construction Noise Analysis Report included in Freeborn Wind's Site Permit Application as Appendix B.<sup>340</sup> He drew upon his familiarity with the noise emissions of Vestas wind turbines from previous work.<sup>341</sup> Hankard Environmental conducted an ambient noise measurement survey at the Project site in ~~April 2016~~ the spring of 2017 and modeled noise emissions from the Project to assist in designing the turbine layout so as to comply with Minnesota's noise standards.<sup>342</sup>

### Finding 224

Mr. Hankard used the International Organization for Standardization (ISO) standard 9613-2, Attenuation of Sound During Propagation Outdoors – Part 2: General method of calculation modeling method.<sup>343</sup> This method assumes “optimal acoustic propagation in all directions;” ~~– specifically, that a well-developed, moderate ground-based temperature inversion is present or, equivalently, that all receptors are downwind of all noise sources at all times.~~<sup>344</sup>

### Finding 227

Mr. Hankard measured ambient noise at three wind speeds: the speed at which the blades “cut-in” and begin to generate power; the speed at which the turbines generate full acoustic output; and the speed at which full power is generated. It appears that the five measurement sites chosen were in the Project Area. At three of five measuring locations, full power produced ambient sound levels of 50 or 51 dB(A).<sup>347</sup>

At 3 m/s, which represents calm conditions when turbines would be off or just beginning to operate, ambient noise levels are low (20 to 30 dB(A)). At 7 m/s, when the turbines would be operating at a moderate capacity, ambient noise levels range from about 30 to 40 dB(A). At 10 m/s the turbines would be producing full acoustic emissions, and ambient noise levels range from about 45 to 50 dB(A). LFN noise levels were also measured. Levels range from about 35 to 45 dB(C) under calm conditions, 45 to 65 dB(C) under moderately windy conditions, and 65 to 80 dB(C) under very windy conditions.<sup>1</sup>

### Footnote(s)

1. Ex. FR-1, Appendix B at 9 (Noise Analysis) (Application).

### Finding 236

The ISO 9613-2 methodology Mr. Hankard employed has a margin of error to its noise level measurements of plus or minus three dB.<sup>366</sup> An increase of three dB corresponds to a doubling of sound power but only a slightly noticeable increase in loudness. Mr. Hankard contends that, by using the most conservative values for the model's parameters, the margin of error with respect to underestimating sound levels is much smaller than three dB.<sup>366</sup>

### Finding 238

Another cause for uncertainty is the absence of certain empirical data. That is, sound measurements are not made when one would expect the loudest levels to occur. ~~As Mr. Hankard pointed out,~~ ~~†~~The American National Standards Institute (ANSI) “discourages measurements when the local wind speed is 11 miles an hour or greater. And that's because what you're actually measuring at that point is

distortion of the microphone and not actual sound in the air.”<sup>369</sup> Accordingly, Mr. Hankard did not include any noise monitoring results for wind speeds over 11 miles per hour (approximately 4.9 meters per second), measured at the microphone height (approximately 5 feet above the ground).<sup>1</sup> The average monthly mean annual wind speed in the Freeborn Project Area measured at 80 meters above ground level (hub height) is predicted to be greater than 11 miles per hour.<sup>370</sup> While the wind speed at the hub height of a turbine may differ from the wind speed near ground level for a variety of reasons,<sup>371</sup> Freeborn Wind’s Application stated that, at 80 meters above the ground, predicted wind speeds near the Project Area are 6.0 to 8.8 meters per second.<sup>372</sup> At 8.8 meters per second, this is just under 20 miles per hour. No expert testimony was presented to challenge the ANSI methodology.

#### **Finding 240**

~~The turbines have yet to be built. One or more of the sound estimation model’s assumptions or its data may be wrong. For example, the location of a turbine when finally erected could differ from its assumed location, or the location of a house could be incorrect. Or, post-construction measurements may not be made under identical atmospheric conditions as pre-construction measurements.~~

#### **Finding 241**

Table 2 in FR-18 shows that there are many instances where total noise will be quite close to, or could exceed, 50 dB(A). There are approximately 254 homes in the Freeborn Wind Project footprint.<sup>373</sup> The turbines have yet to be built. However, pre-construction, it is the modeling Freeborn Wind conducted that is relevant for determining whether the Project will comply with the Noise Standards once operational. The record here demonstrates that Freeborn Wind included very conservative assumptions in its modeling and calibrated its modeling with real world data to ensure that modeled estimates are conservatively high.<sup>1</sup> If changes are made to the turbine layout, number of turbines, or turbine type, the Noise Analysis will be updated accordingly. According to Table 2, any time the ambient noise level is 50 dB(A), added wind turbine noise results in 53 homes experiencing levels of 51 dB(A) and 25 homes at levels of 52 dB(A), for a total of 78 homes experiencing more noise than permitted by Minn. R. 7030.0040.<sup>374</sup> Two of the homes will experience 58 dB(A) if the ambient noise is 57 dB(A).<sup>375</sup> None of these homes was predicted to experience wind turbine noise alone above 48.9 dB(A). Many were predicted to experience wind turbine noise alone in the very low-to-mid 40’s range.<sup>376</sup> Thus, the addition of ambient noise is significant in that it raises the predicted nighttime noise exposure of more than 30 percent of the homes in the footprint of the Project beyond what is allowed in Minn. R. 7030.0040. Table 2 in Ex. FR-18 shows that when background noise levels are 45 dB(A) or less, total sound levels are 50 dB(A) or less regardless of the turbine-only noise level. When background noise levels are in the 45 to 50 dB(A) range, turbines contribute to the total when turbine-only noise levels are approximately 44 dB(A) or greater.

#### **Footnote(s)**

1. See evidentiary hearing transcript Volume 1B at 111-112 (February 21, 2018 (Hankard)).

#### **Finding 243**

Should the Commission choose to do so, it could provide Freeborn Wind with an opportunity to submit a plan demonstrating how it will comply with Minnesota’s noise standards at all times throughout the footprint of the Freeborn Wind Project. ~~The plan should include low-frequency noise measurements for evaluation in consultation with MDH.~~

#### **Finding 244**

The Administrative Law Judge further recommends that the plan be made available for public and agency comment and a hearing held with a summary report. The Commission should then review and

approve a pre-construction noise mitigation plan that best assures that turbine noise will not cause noise levels that exceed Minnesota's noise standards.<sup>377</sup>

#### **Finding 245**

Freeborn Wind cannot lawfully operate its turbines if their operation results in total noise at any receptor in ~~a violation excess a violation~~ of the standards in Minn. R. 7030.0400. Condition 4.3 of the Draft Site Permit requires turbines to be placed in appropriate locations to ensure compliance with the Noise Standards. If the Commission grants a Site Permit and post-construction measurements show that total noise levels exceed L50 dB(A) for any receptor, Freeborn Wind must adjust its operations, including shutting down one or more turbines, if doing so will result in complying with the standards.

#### **Finding 246**

~~Site Permit Condition 7.4 requires the Permittee to file its post-construction noise study within 18 months of commencing commercial operation. The Administrative Law Judge finds this condition is insufficient in light of the many instances in which the operation of the Project may exceed what Minn. R. 7030.0040 allows, and the lack of analysis of infrasound in light of the combined ambient and turbine sound totals.~~

#### **Finding 247**

Because of the many potential sources of inaccuracy in the pre-construction noise level measurements and post-construction noise level predictions, should the Commission decide to grant Freeborn Wind's Site Permit Application, the Administrative Law Judge recommends a special permit condition requiring that post-construction noise level measurements be made during the first year of operation by an independent consultant selected by [the Department] at Freeborn Wind's expense. The measurements should be taken at multiple locations including locations near receptors that are predicted to experience the highest turbine noise levels. ~~The consultant should be charged with ensuring that there are no receptors where levels of ambient noise plus turbine noise exceed L50-50 dB(A) during nighttime hours.~~

#### **Finding 260**

The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts from shadow flicker. ~~However, the shadow flicker exposure predictions may be incorrect to a greater or lesser extent because data used in the model is incorrect. The shadow flicker exposure estimates, for example, are based in part on measurements of wind direction and speed taken from "temporary meteorological towers located within the Project."<sup>400</sup> To the extent that "temporary" measurements of wind direction and speed differ from their long run values, the shadow flicker exposure estimates will be wrong. Similarly, the estimates do not reflect the impact of any longer term weather trends such as increased (or decreased) cloudiness.~~

#### **Finding 261**

The Administrative Law Judge finds Freeborn Wind has provided reasonable estimates for the hours landowners will be exposed to shadow flicker, but they are only estimates. ~~With one modification, the Administrative Law Judge agrees with [the Department]'s recommendation to require post-construction measurements of shadow flicker. [The Department] recommends measuring shadow flicker "at receptor locations that were anticipated to receive over 30 hours of shadow flicker per year." Because the exposure predications may be incorrect, it is possible that a location expected to receive under 30 hours of exposure, might receive over 30 hours. In particular, Shadow Receptors 303 and 401 are predicted to receive more than 27 hours of shadow flicker.<sup>401</sup> Because they are within 10 percent of exceeding the 30 hour limit, the Administrative Law Judge finds it reasonable to monitor their exposure as well.~~ [The Department] proposed, and the Administrative Law Judge recommends that, if

the Commission issues a Site Permit in this docket, section 7.2 of the Site Permit be revised as recommended by [the Department], with one modification:

Shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at receptor locations that were anticipated to receive over ~~27~~ 30 hours of shadow flicker per year. The Permittee will submit a Shadow Flicker Monitoring and Management Plan at least 14 days prior to the pre-construction meeting. The Shadow Flicker Monitoring and Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

### Footnote(s)

~~400. Ex. FR 1 at App. C at 28 (Shadow Flicker Assessment).~~

~~401. Ex. FR 1 at App. B (Shadow Receptor Coordinates & Realistic Shadow Hours).~~

### Finding 280

A number of AFCL members and other members of the public raised concerns about ~~threats that wind turbines pose to those who live close to them~~ potential health impacts. One landowner worried about her son who has autism and gets dizzy watching other children play baseball. She worries about his response to seeing the turbines turning every day.<sup>424</sup> Another landowner suffers from migraines, which she states are triggered by vibrations, and could be triggered by the whooshing and flicker of the turbines.<sup>425</sup> Similar concerns were raised by AFCL witness Hansen, who is a cancer survivor, on daily chemotherapy which causes her to be sensitive to motion and other stimuli.<sup>426</sup> A landowner who is a veteran with post-traumatic stress disorder and tinnitus wrote that the turbine noise and shadow flicker will trigger problems, both because of the noise and possible triggering of flashbacks.<sup>427</sup>

### Finding 284

Before submitting its application to the Commission in this proceeding, Freeborn Wind invited comments from MDH about the proposed Freeborn Wind project. MDH Assistant Commission Paul Allwood replied with a letter to Applicant (2017 MDH Letter).<sup>434</sup> Referring to the noise standards at Minn. R. 7030.0040, the MDH response warned “The MPCA nighttime standard for noise intensity of 50 dB(A), not to be exceeded more than 50% of the time in a given hour, appears to underestimate how much low frequency noise can enter into dwellings. Prior to site development, MDH recommends that low frequency noise and total noise from turbines be evaluated.”<sup>435</sup> The MDH response repeated the setback recommendations it made for shadow flicker in 2009. The MDH comments closed with the following recommendations:

- “Prior to development, low frequency noise and total noise from turbines should be evaluated by qualified acoustical engineers to determine measurable noise components from wind turbines that engender complaints and to assess noise impacts from proposed wind farms.” Low frequency noise and total noise from the proposed wind turbines were addressed by a qualified acoustical professional, Mr. Mike Hankard, in his Direct Testimony and in his Affidavit and Noise Tables.<sup>510</sup> The LFN from wind turbines is (1) effectively mitigated by the State of Minnesota’s 50 dBA limit, (2) similar in level to the LFN produced by traffic and wind, and (3) below other non-binding LFN standards. Total noise from turbines, meaning the A-weighted overall noise level from the combined operation of all turbines, was addressed in the Pre-Construction Noise Analysis and in Mr. Hankard’s Direct Testimony and Affidavit and Noise Tables.<sup>1</sup>



- “Wind turbine noise estimates should include cumulative impacts (40- 50 dB(A) isopleths) of all wind turbines.” The recommended isopleths (noise level contours) were provided in Figures A1 and A2 in the Pre-Construction Noise Analysis Report.<sup>2</sup>
- Isopleths for dB(C) – dB(A) greater than 10 dB should be determined to evaluate the low frequency noise component.
- The impacts of aerodynamic modulation noise and shadow flicker should be modeled and evaluated.
- “Evaluations of turbine noise generation and shadow flicker should be incorporated into decisions when determining the appropriate setback distances of homes from wind turbines.” In Sections 8.3 and 8.4 of the Application and in the Direct Testimonies of Mr. Litchfield and Mr. Hankard, Freeborn Wind considered noise and shadow flicker in developing the Project layout.
- Any noise criteria beyond current state standards used for placement of wind turbines should reflect priorities and attitudes of the community.
- Recognizing that it is unknown whether reported health impacts are direct health effects or indirect stress impacts from annoyance and/or lack of sleep resulting from turbine noise or shadow flicker, potential health impacts from wind turbine projects should be acknowledged, and provision should be made to mitigate these effects for residents within and near proposed project areas.

The project should be designed so that exposure to residents is minimized and inclusion of all potential residents as compensated participants should be considered.<sup>436</sup> As discussed extensively in the Application and in Mr. Litchfield’s Direct Testimony, Freeborn Wind designed the Project with setbacks and other measures that minimize impacts to area residents. Freeborn Wind also offered easements and Good Neighbor Agreements to landowners throughout the Project Area.

#### Footnote(s)

1. See Ex. FR-5 at 4-5, 7-8 (Hankard Direct); Ex. FR-13, Sched. 1 (Hankard Rebuttal; Ex. FR-18 (Hankard Affidavit and Noise Tables).
2. See Ex. FR-5 at 11 (Hankard Direct); Ex. FR-1, Appendix B (Noise Analysis) (Application); Ex. FR- 18 (Hankard Affidavit and Noise Tables).
3. Ex. FR-1, Appendix B at Figures A1 and A2 (Noise Analysis) (Application).

#### Finding 299

~~The Administrative Law Judge observes that the Project is predicted to exceed the 30-hour shadow flicker limit with regard to seven homes (three participating and four non-participating homeowners) under Freeborn County’s Ordinance, a limit to which Freeborn Wind stated it would adhere.<sup>460</sup> Based on these concerns, and on the public health concerns arising from evidence of chronic annoyance, sleeplessness, and headache, the Administrative Law Judge recommends that the Commission amend the Draft Site Permit regarding shadow flicker consistent with the recommendations made in Section XI.E. of this Report. The published literature has shown some association between wind turbine noise emissions and annoyance. While annoyance is at times associated with various symptoms, it is not a disease.<sup>1</sup>~~

## Footnote(s)

1. Ex. FR-6 at 3 (Roberts Direct).

## Finding 301

~~The Commission's January 11, 2008 Order Establishing General Wind Permit Standards states that turbines must be setback from homes at least 500 feet and sufficient distance to meet the State noise standard, whichever is greater. While Freeborn Wind's proposed project meets the setback requirements based on Freeborn County's ordinance, it is not clear that it meets the requirements of the Commission's 2008 Order Establishing General Wind Permit Standards.<sup>463</sup> Those standards call for a setback distance of 750-1,500 feet, "depending on turbine model, layout, and specific site conditions."<sup>464</sup> In addition, for homes, the required setback is "at least 500 feet plus the distance required to meet the state noise standard."<sup>465</sup>~~

## Footnote(s)

~~463. Ex. AFCL 8 (Order Establishing General Standards, PUC Docket No. E,G-999/M-07-1102 (Jan.11, 2008)).~~

~~465. Id. at 8.~~

## Finding 302

~~The Draft Site Permit issued for the project incorporated a residential setback of not less than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040, established by the Minnesota Pollution Control Agency, whichever is greater.<sup>1</sup> In light of the revised total noise predictions, and the lack of evidence that Freeborn Wind took the required 500 additional feet into account in establishing residential setbacks, the Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, the Draft Site Permit conditions be amended to require Residential setbacks of 1500 feet for all non-participating landowners.<sup>466</sup>~~

## Footnote(s)

~~466. There are four non-participating landowners with setbacks of less than 1500 feet. Ex. FR-4 at 19 (Litchfield Direct).~~

~~1. 562 562 DSP at Condition 4.2 (emphasis added); see also In the Matter of the Application of Red Pine Wind Farm, LLC for a Site Permit for the 200.1 Megawatt Red Pine Wind Project in Lincoln County, Minnesota, MPUC Docket WS-16-618, Order Issuing Site Permit for Large Wind Energy Conversion System at Site Permit § 4.2 (June 27, 2017) (eDocket No. 20176-133173-01); In the Matter of the Application of Prairie Rose Wind, LLC for a Site Permit for a 200 Megawatt Large Wind Energy Conversion System in Rock and Pipestone Counties, MPUC Docket WS-10-425, Order Approving Findings of Fact and Issuing Permit at Site Permit § 4.2 (September 16, 2011) (eDocket No. 20119-66430-01).~~

## Finding 304

The Administrative Law Judge finds, should the Commission issue a Site Permit to Freeborn Wind, that the ~~amended shadow flicker, noise, setback and monitoring, minimizing, and mitigating potential impacts~~ site permit conditions ~~once amended as supported by the record~~ will provide adequate public health protections, while still allowing for the public health benefits of the proposed Project.

### **Finding 308**

On February 22, 2018, the final day of the evidentiary hearing in this matter, a large piece of ice was thrown from a wind turbine on the Bent Tree Wind Farm, just to the northwest of Albert Lea. The ice struck and damaged a truck being driven on Highway 13 at the time. Freeborn County Commissioner Dan Belshan provided a public comment with information about the incident. Commissioner Belshan estimated that the ice traveled a distance of approximately 300 feet, based on the distance from the truck to the nearest wind turbine.<sup>474</sup> He provided a document from GE Energy titled, “Ice Shedding and Ice Throw – Risk and Mitigation.”<sup>475</sup> The GE document recommends that turbines be sited a safe distance from occupied structures, roads, and public use areas to mitigate ice throw risk. Another mitigation suggestion is that turbines be deactivated when site personnel detect ice accumulation on the blades.<sup>476</sup>

The reported incident of ice throw and strike at the Bent Tree Wind Farm was investigated by Bent Tree Wind Farm staff, and the vehicle strike occurrence was never confirmed to have occurred due to turbine ice throw. The reported ice throw and strike occurrence should not be used as evidence of turbine ice throw, and it should not be used to establish turbine setback distances or the need to establish turbine ice accumulation monitoring protocols.

### **Finding 310**

Draft Site Permit Condition 4.4, which provides for a setback of 250 feet from public road ROW and designated public trails (such as the identified snowmobile trail), ~~does not fully address adequately addresses~~ this concern.<sup>477</sup> The turbine closest to the snowmobile trail (turbine 20) is 538 feet away from the snowmobile trail, ~~far~~ exceeding the minimum setback in the Draft Site Permit (250 feet), as well as the setback required by Section 26-51 of the Freeborn County Ordinance (1.1 times the turbine height), ~~and the likely distance the ice was thrown from the turbine at the Bent Tree Wind farm on February 22, 2018.~~<sup>478</sup>

### **Finding 311**

~~The Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, the Site Permit Condition 5.2.25 be amended to require that site personnel inspect any turbines closer than 1200 feet to structures, roads or trails for ice when weather conditions are such that ice is likely to accumulate on turbine blades. To the extent that ice is accumulating on the blades of turbines located within 1200 feet of structures, roads, or trails, the turbines must be deactivated until such time as the turbine blades are free from ice.~~

### **Finding 312**

Aside from the above concern, if the Project is built, construction and operation of the Project is not anticipated to have a significant impact to public safety. The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to public safety. Further, the Draft Site Permit, with the recommended amendments, contains adequate conditions to monitor and mitigate the Project’s potential impacts on public safety.<sup>479</sup>

For example, in accordance with conditions of the Draft Site Permit, Freeborn Wind will provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the Project and any restrictions or dangers associated with the Project. Freeborn Wind will also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. In addition, Freeborn Wind will submit the location of all underground facilities to Gopher State One Call after construction is completed.<sup>1</sup>

### Footnote(s)

1. Draft Site Permit at 13 (January 30, 2018) (eDocket No. 20181-139549-01); see also Id. at 23 (Conditions 10.10 and 10.11).

### Finding 324

Commenter Allie Olson advised the Commission that the 34.5 kV transmission lines that would transmit the power generated by the Project could cause interference with the underground copper cables of the Sleepy Eye Telephone Company.<sup>500</sup> Commenter Kristi Rosenquist also expressed concern that the wind farm's sporadic electricity transmissions over its power lines would interfere with landline service over copper cables.<sup>501</sup> ~~Both Ms. Olson and Ms. Rosenquist refer to prior Commission proceedings where this issue has arisen.~~<sup>502</sup>

### Footnote(s)

~~502. In re AWA Goodhue Wind, LLC's Application for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County, PUC Docket No. IP-6701/CN-09-1186; Large Wind Energy Convers System Site In the Matter of the Application of AWA Goodhue Wind, LLC for a Site Permit for the 78 MW Goodhue Wind Farm in Goodhue County, PUC Docket No. IP-6701/WS-08-1233.~~

### Finding 338

The Administrative Law Judge concludes that there is no evidence to support the need for Freeborn Wind to relocate or remove additional turbines in order to minimize the potential for the Project to interfere with AM or FM radio reception.

~~Section 5.2.16 of the site permit prohibits In the event that the Commission issues a Site Permit in this docket, the Administrative Law Judge recommends that Section 5.2.16 be amended to require Freeborn Wind to investigate concerns about from operating the Project in a manner that causes radio interference in violation of Federal Communications Commission regulations or other laws and requires timely measure and mitigation if such caused by the Project. If the Project's operations contribute to the interference should occur, Freeborn Wind must undertake measures to mitigate the interference.~~

### Finding 379

If a resident complains of ongoing TV reception interference, Freeborn Wind proposed to do the following:

- a. It will review the Comsearch report to assess whether the impacts are likely Project-related.
- b. If Freeborn Wind believes the impacts are likely projected-related, it will send Mr. Veldman to visit the landowner and determine the current status of TV equipment and reception.
- c. If project-related interference is found, Freeborn Wind will give the landowner an option between having Freeborn Wind install a high gain antenna and/or a low-noise amplifier, or, providing monetary compensation "equal to the cost of comparable satellite TV services at the residence."
- d. If the new equipment restores reception to pre-wind farm operations, the matter will be closed.
- e. If interference remains an issue, Freeborn Wind will offer monetary compensation equal to the cost of comparable satellite TV service.
- f. If the landowner and Freeborn Wind cannot agree to resolve interference issues, Freeborn Wind will report the issue to the Commission's dispute resolution process.<sup>598</sup>

### Finding 386

The Administrative Law Judge does not entirely rule out the possibility that, if the Commission issues a Site Permit in this docket, significant numbers of households could experience OTA TV reception interference from the wind farm and concludes that all potentially affected households should receive notice of the wind farm, its potential effects on OTA TV service, Freeborn Wind's mitigation commitment, and a copy of the site permit and complaint procedure-. Freeborn Wind has agreed to expand the notice to include additional potentially affected KAAL viewers. After receiving adequate notice, viewers who experience interference can either initiate the complaint and mitigation procedures, or accept the interference as inconsequential.

### Finding 387

Given KAAL's estimated translator costs of up to \$450,000, and up to three times that amount if a new tower is required,<sup>606</sup> its demand for Freeborn Wind to incur these costs if a single household is not satisfied by antenna or receiver adjustments, replacements, or by satellite service, is unreasonable. ~~KAAL's insistence that its OTA TV reception is a matter of life and death because it provides news of weather and other emergencies is overstated.~~ The record demonstrates no problems with AM or FM radio service which can provide emergency weather information to households whose OTA TV and satellite service are both disrupted, one by the Project and the other by the weather.

### Finding 434

In public comments and at the public hearing, concerns were raised about the potential for the Project to impact agricultural aerial spraying operations. Commenters Linda Herman, Brian Olson, and Judy Olson expressed concern that farmers would be unable to perform aerial spraying because of the turbines.<sup>653</sup>

#### Footnote(s)

653. See Public Hearing Tr. at 82-83 (Feb. 20, 2018) (Rauenhorst) ("I just spray around those wind turbines."); Public Hearing Tr. at 90 (Feb. 20, 2018) (Thisius) ("[y]ou cannot safely fly within a wind farm.") Comments by Luke Steier (March 14, 2018) (eDocket No. 20183-140986-01) ("We are asked the question often it seems "do you fly around wind turbines?". The answer is yes, we work around the 18 wind turbines that make up the Big Blue wind farm near Blue Earth. The answer is no if asked to work in the Bent Tree wind farm or one similar too it.").

### Finding 436A

436.A While the installation of wind turbine towers, aboveground transmission lines and other associated aboveground facilities in active croplands adds the potential for collisions with crop-dusting aircraft, the turbines will be visible from a distance and lighted according to FAA guidelines.<sup>1</sup> Permanent meteorological towers will be freestanding with no guy wires, and temporary meteorological towers with supporting guy wires have been marked with alternating red and white paint at the top and colored marking balls on the guy wires for increased visibility.<sup>2</sup>

#### Footnote(s)

1. Ex. FR-1 at 59-60 (Application).
2. Ex. FR-1 at 60 (Application).

### Finding 437

~~In a previous position,~~ Freeborn Wind employee Mr. Dan Litchfield ~~had~~ has experience, from a previous position, with landowners and the operations team on issues related to aerial spraying. He explained that aerial spraying and seeding only occurs when wind speeds are low. At those speeds,

turbines barely operate, if at all.<sup>656</sup> Mr. Litchfield testified that best practices are for the wind farm operator and aerial sprayers to coordinate to improve safety for both the pilots and wind farm operations personnel that are working onsite.<sup>1</sup> Mr. Litchfield states that many farmers find aerial applications expensive and inaccurate and use other methods. On behalf of Freeborn Wind, he committed the Applicant would cooperate with landowners in the Project Area to coordinate ~~accommodate~~ aerial spraying ~~activities, which could involve shutting turbines down during spraying.~~<sup>657</sup>

#### Footnote(s)

1. Evidentiary Hearing Tr. Vol. Vol 1A at 18-19 (February 21, 2018) (Litchfield).

#### Finding 438

AFCL argues based on the testimony of John Thisus, a pilot actively in the business of aerial spraying, that Project will result in barring aerial spraying and seeding in the Project Area causing farmers to incur more expense to accomplish these tasks or the project eliminates the option of aerial spraying and seeding.<sup>658</sup> AFCL provided no testimony witness on the issue of aerial spraying and seeding.

#### Finding 442

Tier 1, 2, and 3 studies have been completed for the Project. The Tier 1 and 2 studies include preliminary site evaluation and site characterization to identify and characterize habitat and biological resources present within and surrounding the Project Area. These studies also summarize potential species of concern and sensitive ecological areas in the region.<sup>660</sup>

#### Finding 512

The Administrative Law Judge finds that the Easement Agreement requires that any future owners of any wind energy facilities built as part of the Freeborn Wind Project will be required to bear the costs of decommissioning, as defined in ~~the~~ any Site Permit the Commission grants to Freeborn Wind, to the same extent as Freeborn Wind is required to bear those costs.

#### Finding 515

AFCL objects to Freeborn Wind's proposal to develop its decommissioning and restoration plan after the Site Permit is issued. AFCL argues notes that Minn. R. 7854.0500, subp. 13 requires these plans be submitted with the application.<sup>793</sup> AFCL argues the Commission should deny the permit application because Freeborn Wind has not provided these plans.

#### Finding 518

The Commission issued its Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing [Order] on August 31, 2017.<sup>797</sup> In the Commission Action paragraph, the Order stated, "The Commission concurs with the [Department] that the application is substantially complete. The Commission will, however, direct Freeborn Wind to respond to all reasonable requests regarding the project and to facilitate in every reasonable way the continued examination of the issues by the [Department] and Commission staff." AFCL did not raise its decommissioning and restoration plan concerns in comments prior to the issuance of the Order. No one requested reconsideration of the Order. Accordingly, the Commission's Order is final.

#### Finding 527

The Administrative Law Judge concludes that the requirements of chapter 7854 are not met unless Freeborn Wind demonstrates its capacity to guarantee it can fund the decommissioning and restoration of its Project prior to commencing construction. Furthermore, the Draft Site Permit contains appropriate conditions to ensure proper decommissioning and restoration of the Project site, with the exception of demonstrating that it has the resources necessary to carry out decommissioning and restoration.<sup>809</sup>

### **Finding 528**

~~The Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, Section 11.1 be amended to require that any successors or assigns of Freeborn Wind be obligated to bear the costs of decommissioning to the same extent that Freeborn Wind is, unless Freeborn Wind retains those obligations for itself.~~

### **Finding 529**

Furthermore, if a Site Permit is issued, the Administrative Law Judge recommends that Section 11.1 be amended to require a pre-construction demonstration that the ~~applicant can guarantee that the~~ resources needed for decommissioning and restoration will be available. The Administrative Law Judge recommends that the Commission provide the public notice of Freeborn's submission ~~as required by Minn. R. 7854.0900. In future wind farm site permit proceedings, an applicant should provide this information in its initial filings along with the notice required by Condition 5.1 of the Site Permit.~~

### **Finding 544**

The Administrative Law Judge recommends that ~~Section 5.2 of~~ the Draft Site Permit should be amended to include a special condition, as follows:

Freeborn Wind must provide notice which includes a description of the Project's potential to interfere with OTA TV service, Freeborn Wind's mitigation program, and availability copies of the Site Permit and Complaint Procedure to households in the following areas:

- All households in "at risk" areas identified for all six local television stations, as identified in Appendix D of the Site Permit Application; ~~and~~
- Each local government office household in the communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow; ~~and~~
- Local over-the-air television broadcasters serving the Project area.

### **Finding 546**

~~The Administrative Law Judge recommends that~~ Special Condition Section 7.2 of the Site Permit should be revised adopted as recommended by [the Department], ~~with one modification~~:

#### Draft Site Permit Section 7.2 Shadow Flicker

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize and mitigate shadow flicker exposure. The results of any modeling shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

Shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at receptor locations that were anticipated to receive over ~~30~~ 27 30 hours of shadow flicker per year. The Permittee will submit a Shadow Flicker Monitoring and Management Plan at least 14 days prior to the pre-construction meeting. The Shadow Flicker Monitoring and Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how

turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

**Finding 548**

~~In light of the revised total noise predictions, and the lack of evidence that Freeborn Wind took the required 500 additional feet into account in establishing residential setbacks, the Administrative Law Judge recommends that Draft Site Permit Condition 4.2 be amended to require Residential setbacks of 1500 feet for all non-participating landowners.<sup>818</sup>~~

**Footnote(s)**

~~818. There are four non-participating landowners with setbacks of less than 1500 feet. Ex. FR-4 at 19 (Litchfield Direct).~~

**Finding 549**

~~The Administrative Law Judge recommends that Site Permit Section 5.2.25 be amended as follows: Site personnel shall inspect any turbines located closer than 1,200 feet to structures, roads, or trails for ice when weather conditions are such that ice is likely to accumulate on turbine blades. To the extent that ice is accumulating on the blades of turbines located within 1,200 feet of structures, roads, or trails, the turbines shall be deactivated until such time as the turbine blades have been re-inspected and found free from ice.~~

**Finding 550**

~~The Administrative Law Judge recommends that Special Conditions Section 11.1 be amended as follows: Any successors or assigns of Freeborn Wind will be obligated to bear the costs of decommissioning to the same extent that Freeborn Wind is, unless Freeborn Wind retains those obligations, in writing, to itself.~~

**Finding 551**

The Administrative Law Judge recommends that Special Conditions Section 11.1 be amended to require:

The Applicant must demonstrate, at least 45 prior to the scheduled start of construction, ~~that it can guarantee~~ that the resources needed for decommissioning and restoration will be available.

**Attachment B: Summary of Public Hearing Comments**

**I. Party Appearances and Opening Statements**

11. Kevin Parzyck appeared on behalf of Freeborn Wind. Mr. Parzyck, Vice President for Development for Invenergy an acoustical engineer, stated that he ~~conducted is responsible for Invenergy's renewable development in the Midwest including the Project studies on the project to demonstrate compliance with the Minnesota standards.~~<sup>10</sup>

13. Mark Roberts appeared on behalf of Freeborn Wind. Dr. Roberts, a physician and epidemiologist, stated he is a consultant regarding "various exposures to communities and industrial settings."<sup>12</sup> ~~Dr. Roberts is an environmental permit manager with Invenergy, who oversaw the wildlife and natural resources surveys in the project area.~~<sup>13</sup>



In the Matter of Freeborn Wind Energy LLC  
for a Large Wind Energy Conversion System  
Site Permit for the 84 MW Freeborn Wind  
Farm in Freeborn County

DOCKET NO. IP-6946/WS-17-410

ORDER ISSUING SITE PERMIT  
AND TAKING OTHER ACTION

**Attachment 2: Site Permit**

**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

**SITE PERMIT FOR A  
LARGE WIND ENERGY CONVERSION SYSTEM**

**IN  
FREEBORN COUNTY**

**ISSUED TO  
FREEBORN WIND ENERGY LLC**

**PUC DOCKET NO. IP-6946\WS-17-410**

In accordance with the requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854, this site permit is hereby issued to:

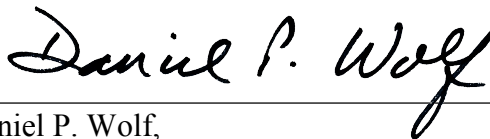
**FREEBORN WIND ENERGY LLC**

The Permittee is authorized by this site permit to construct and operate an up to 84 megawatt nameplate capacity Large Wind Energy Conversion System in Freeborn County, Minnesota. The Large Wind Energy Conversion System and associated facilities shall be built within the site identified in this permit and as portrayed on the official site maps, and in compliance with the conditions specified in this permit.

This site permit shall expire 30 years from the date of this approval.

Approved and adopted this 19th day of December, 2018.

BY ORDER OF THE COMMISSION



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Daniel P. Wolf,  
Executive Secretary

To request this document in alternative formats, such as large print or audio, call 651-296-0406 (voice). Persons with a hearing or speech impairment may call us through their preferred Telecommunications Relay Service or email [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us) for assistance.

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Official Site Permit Maps

Attachment A - Complaint Procedures for Permitted Energy Facilities

Attachment B - Compliance Filing Procedures for Permitted Energy Facilities

## **1.0 SITE PERMIT**

The Minnesota Public Utilities Commission (Commission) hereby issues this site permit to Freeborn Wind Energy LLC (Permittee) pursuant to Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854. This permit authorizes the Permittee to construct and operate the Freeborn Wind Farm (Project), an 84 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Freeborn County. The LWECS and associated facilities shall be built within the site identified in this permit and as identified in the attached official site permit map(s), hereby incorporated into this document.

### **1.1 Preemption**

Pursuant to Minn. Stat. § 216F.07, this permit shall be the sole site approval required for the location, construction, and operation of this project and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments.

## **2.0 PROJECT DESCRIPTION**

The Freeborn Wind Farm, when fully constructed and operational will have a nameplate capacity up to 200 MW, of which, 84 MW will be located in Freeborn County, Minnesota and the remaining 106 MW will be located in Worth County, Iowa. The Project will consist of 42 2-MW wind turbines, consisting solely of one turbine model or a combination of turbine models, which may include Vestas V110 and Vestas V116 as identified in the Permittee's Site Permit Application.

The project area includes approximately 26,273 acres of land, of which the Project currently holds leases on 17,435 acres. Upon completion, the project site will include no more than 100 acres of land converted to wind turbines and associated facilities approved by this site permit.

### **2.1 Associated Facilities**

Associated facilities for the Project will include access roads, an operations and maintenance (O&M) facility, project substation, permanent meteorological tower and associated weather collection data systems, electrical collection lines, and fiber optic communication lines.

The Project substation will interconnect to the Glenworth Substation with an approximately seven mile long 161 kilovolt (kV) high voltage transmission line (HVTL). The Freeborn Wind Transmission Line Project 161 kV HVTL is under PUC Docket No. IP6946/TL-17-322, and issuance of the HVTL Route Permit is independent of this site permit process.

## 2.2 Project Location

The project is located in the following:

County	Township Name	Township	Range	Section
Freeborn	Hayward	102	20	12-15, 22-26, 35, 36
Freeborn	London	101	19	13, 14, 19-24, 27-33
Freeborn	Oakland	102	19	7-9, 16-21
Freeborn	Shell Rock	101	20	1, 2, 8, 11-17, 21-28, 35, 36

## 3.0 DESIGNATED SITE

The site designated by the Commission for the Freeborn Wind Farm is the site depicted on the official site permit maps attached to this permit. Within the site permit boundary, the Project and associated facilities shall be located on lands for which the permittee has obtained wind rights. Wind rights or easements have been obtained by the Permittee and include approximately 17,435 acres of land under easement and with participation agreements.

## 3.1 Turbine 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 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.

#### **4.0 SETBACKS AND SITE LAYOUT RESTRICTIONS**

##### **4.1 Wind Access Buffer**

Wind turbine towers shall not be placed less than five rotor diameters on the prevailing wind directions and three rotor diameters on the non-prevailing wind directions from the perimeter of the property where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

##### **4.2 Residences**

Wind turbine towers shall not be located closer than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040, established by the Minnesota Pollution Control Agency, whichever is greater.

##### **4.3 Noise**

The wind turbine towers shall be placed such that the Permittee shall, at all times, comply with noise standards established by the Minnesota Pollution Control Agency as of the date of this permit and at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with Minnesota Pollution Control Agency noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

##### **4.4 Roads**

Wind turbines and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way and the nearest designated public trail.

##### **4.5 Public Lands**

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in publicly-owned lands that have been designated for recreational or conservation purposes, including, but not limited to, Waterfowl Production Areas, State Wildlife Management Areas, Scientific and Natural Areas or county parks, except in the event that the public entity owning those lands enters into a land lease and easement with the Permittee. Wind turbine towers shall also comply with the setbacks of Section 4.1.



#### **4.6 Wetlands**

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources and the United States Army Corps of Engineers, and local units of government as implementers of the Minnesota Wetlands Conservation Act.

#### **4.7 Native Prairie**

Wind turbines and associated facilities including foundations, access roads, collector and feeder lines, underground cable, and transformers shall not be placed in native prairie, as defined in Minn. Stat. § 84.02, subd. 5, unless addressed in a prairie protection and management plan and shall not be located in areas enrolled in the Native Prairie Bank Program. Construction activities, as defined in Minn. Stat. § 216E.01, shall not impact native prairie unless addressed in a prairie protection and management plan.

The Permittee shall prepare a prairie protection and management plan in consultation with the Minnesota Department of Natural Resources if native prairie, as defined in Minn. Stat. § 84.02, subd. 5, is identified within the site boundaries. The Permittee shall file the plan 30 days prior to submitting the site plan required by Section 10.3 of this permit. The plan shall address steps that will be taken to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee, the Minnesota Department of Natural Resources, and the Commission.

#### **4.8 Sand and Gravel Operations**

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner Wind Turbine Towers.

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 80 meters (262.5 feet) above grade measured at hub height.

#### **4.9 Turbine Spacing**

The turbine towers shall be constructed within the site boundary as shown in the official site maps. The turbine towers shall be spaced no closer than three rotor diameters in the non-

prevailing wind directions and five rotor diameters on the prevailing wind directions. If required during final micro-siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

#### **4.10 Meteorological Towers**

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or other development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration. There shall be no lights on the meteorological towers other than what is required by the Federal Aviation Administration. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

All meteorological towers shall be fitted with the necessary equipment to deploy/attach acoustic recording devices to monitor wildlife activity.

#### **4.11 Aviation**

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and private airports (as defined in Minn. R. 8800.0100, subp. 24(a) and 24(b)) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minn. R. 8800.1900, subp. 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation, Department of Aviation, and the Federal Aviation Administration. The Permittee shall notify owners of all known airports within six miles of the project prior to construction.

#### **4.12 Footprint Minimization**

The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, transformers, and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner.

## **5.0 GENERAL CONDITIONS**

The Permittee shall comply with the following conditions during construction and operation of the LWECS and associated facilities over the life of this permit.

### **5.1 Notification**

Within 14 days of permit issuance, the Permittee shall send a copy of the permit and the complaint procedures to any regional development commission, county auditor and environmental office, and city and township clerk in which any part of the site is located. Within 30 days of permit issuance, the Permittee shall provide all affected landowners with a copy of this permit and the complaint procedures. In no case shall the landowner receive this site permit and complaint procedures less than five days prior to the start of construction on their property. The Permittee shall contact landowners prior to entering the property or conducting maintenance within the site, unless otherwise negotiated with the affected landowner.

### **5.2 Construction and Operation Practices**

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the Freeborn Wind Farm Site Permit Application for a LWECS filed with the Commission on June 15, 2107, and the record of the proceedings unless this permit establishes a different requirement in which case this permit shall prevail.

#### **5.2.1 Field Representative**

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during construction of the project. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative 14 days prior to commencing construction. The Permittee shall provide the field representative's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commencing construction. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### **5.2.2 Site Manager**

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of the project. This person shall be accessible by telephone or other means during normal business

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the site manager 14 days prior to commercial operation of the facility. The Permittee shall provide the site manager's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commercial operation of the facility. The Permittee may change the site manager at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### 5.2.3 Employee Training and Education of Permit Terms and Conditions

The Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the LWECs of the terms and conditions of this permit.

#### 5.2.4 Topsoil Protection

The Permittee shall implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with the affected landowner.

#### 5.2.5 Soil Compaction

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the project's life and shall confine compaction to as small an area as practicable.

#### 5.2.6 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency Construction Stormwater Program.

If construction of the facility disturbs more than one acre of land, or is sited in an area designated by the Minnesota Pollution Control Agency as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit from the Minnesota Pollution Control Agency that provides for the development of a Stormwater Pollution Prevention Plan (SWPPP) that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage,

blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the facilities shall be returned to pre-construction conditions.

#### 5.2.7 Wetlands

Construction in wetland areas shall occur during frozen ground conditions to minimize impacts, to the extent feasible. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and managed in accordance with all applicable wetland permits. Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

Wetland and water resource areas disturbed by construction activities shall be restored to pre-construction conditions, in accordance with all applicable wetland permits. Restoration of the wetlands will be performed by the Permittee in accordance with the requirements of applicable state and federal permits or laws and landowner agreements.

#### 5.2.8 Vegetation Management

The Permittee shall disturb or clear the project site only to the extent necessary to assure suitable access for construction, safe operation and maintenance of the project. The Permittee shall minimize the number of trees to be removed in selecting the site layout specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation, to the extent that such actions do not violate sound engineering principles.

#### 5.2.9 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture, Minnesota Department of Natural Resources, and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner or designee to obtain approval for the use of pesticide at least 14 days prior to any application on their property. The landowner may request that there be no application of pesticides on any part of the site within the landowner's property. The Permittee shall provide notice of pesticide application to affected landowners, and known beekeepers operating apiaries within three miles of the project site at least 14 days prior to such application.

#### 5.2.10 Invasive Species

The Permittee shall employ best management practices to avoid the potential spread of invasive

species on lands disturbed by project construction activities. The Permittee shall develop an Invasive Species Prevention Plan to prevent the introduction and spread of invasive species on lands disturbed by project construction activities and file with the Commission 14 days prior to the pre-construction meeting.

#### 5.2.11 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil, the Permittee shall select site appropriate seed certified to be free of noxious weeds. The Permittee shall consult with landowners on the selection and use of seed for replanting. To the extent possible, the Permittee shall use native seed mixes.

#### 5.2.12 Public Roads

At least 14 days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components. The Permittee shall notify the Commission of such arrangements upon request.

#### 5.2.13 Turbine Access Roads

The Permittee shall construct the least number of turbine access roads necessary to safely and efficiently operate the project and satisfy landowner requests. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ditches without required permits and approvals. When access roads are constructed across streams, drainage ways, or drainage ditches, the access roads shall be designed and constructed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Any access roads that are constructed across streams or drainage ditches shall be designed and constructed in a manner that maintains existing fish passage. Access roads that are constructed across grassed waterways, which provide drainage for surface waters that are ephemeral in nature, are not required to maintain or provide fish passage. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and

#### 5.2.14 Private Roads

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner.

#### 5.2.15 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when constructing the LWECs. In the event that a resource is encountered, the Permittee shall contact and consult with the State Historic Preservation Office and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction at such location and promptly notify local law enforcement and the State Archaeologist. Construction at such location shall not proceed until authorized by local law enforcement and the State Archaeologist.

#### 5.2.16 Interference

At least 14 days prior to the pre-construction meeting, the Permittee shall submit to the Commission, an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law. In the event the project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

#### 5.2.17 Livestock Protection

The Permittee shall take precautions to protect livestock during all phases of the project's life.

#### 5.2.18 Fences

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the project's life unless otherwise negotiated with the affected landowner. When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

#### 5.2.19 Drainage Tiles

The Permittee shall take into account, avoid, promptly repair or replace all drainage tiles broken or damaged during all phases of project's life unless otherwise negotiated with affected landowner.

#### 5.2.20 Equipment Storage

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner. Temporary equipment staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

#### 5.2.21 Restoration

The Permittee shall, as soon as practical following construction of each turbine, restore the areas temporarily affected by construction to the condition that existed immediately before construction began, to the extent possible. The time period to complete restoration may be no longer than 12 months after completion of the construction, unless otherwise negotiated with the affected landowner. Restoration shall be compatible with the safe operation, maintenance and inspection of the project. Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities.

#### 5.2.22 Cleanup

All waste and scrap that is the product of construction shall be removed from the site and all premises on which construction activities were conducted and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.

#### 5.2.23 Pollution and Hazardous Waste

All appropriate precautions to protect against pollution of the environment shall be taken by the Permittee. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all wastes generated during



#### 5.2.24 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

#### 5.2.25 Public Safety

The Permittee shall provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the project and any restrictions or dangers associated with the project. The Permittee shall also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minn. Stat. § 216D.01, subd. 11, to Gopher State One Call following the completion of construction at the site.

#### 5.2.26 Tower Identification

All turbine towers shall be marked with a visible identification number.

#### 5.2.27 Federal Aviation Administration Lighting

Towers shall be marked as required by the Federal Aviation Administration. There shall be no lights on the towers other than what is required by the Federal Aviation Administration. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

### **5.3 Communication Cables**

The Permittee shall place all communication and supervisory control and data acquisition cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

### **5.4 Electrical Collector and Feeder Lines**

Collector lines that carry electrical power from each individual transformer associated with a wind turbine to an internal project interconnection point shall be buried underground. Collector lines shall be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

Feeder lines that carry power from an internal project interconnection point to the project substation or interconnection point on the electrical grid may be overhead or underground. Feeder line locations shall be negotiated with the affected landowner. Any overhead or

underground feeder lines that parallel public roads shall be placed within the public rights-of-way or on private land immediately adjacent to public roads. If overhead feeder lines are located within public rights-of-way, the Permittee shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited to, existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shields shall be placed on all guy wires associated with overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 10.3.

## **5.5 Other Requirements**

### **5.5.1 Safety Codes and Design Requirements**

The LW ECS and associated facilities shall be designed to meet or exceed all relevant local and state codes, Institute of Electrical and Electronics Engineers, Inc. standards, the National Electric Safety Code, and North American Electric Reliability Corporation requirements. The Permittee shall report to the Commission on compliance with these standards upon request.

### **5.5.2 Other Permits and Regulations**

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. At least 14 days prior to the preconstruction meeting, the Permittee shall submit a filing demonstrating that it has obtained such permits. The Permittee shall provide a copy of any such permit upon Commission request.

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the project that do not conflict with or are not pre-empted by federal or state permits and regulations.

## **6.0 SPECIAL CONDITIONS**

Special conditions shall take precedence over other conditions of this permit should there be a conflict.

### **6.1 Pre-Construction Noise Modeling**

Freeborn Wind Energy LLC shall file a plan, including modeling and/or proposed mitigation, at least 60 days prior to the pre-construction meeting that demonstrates it will not cause or significantly contribute to an exceedance of the MPCA Noise

To ensure that the turbine-only noise does not cause or significantly contribute to an exceedance of the MPCA Noise Standards, modeled wind turbine-only sound levels (NARUC ISO 9613-2 with 0.5 ground) at receptors shall not exceed 47 dB(A) L<sub>50</sub>-one hour. Given this, at no time will turbine-only noise levels exceed the MPCA Noise Standards, and when total sound does exceed the limits it will be primarily the result of wind or other non-turbine noise sources. Under these conditions, the contribution of the turbines will be less than 3 dB(A), which is the generally recognized minimum detectable change in environmental noise levels (non-laboratory setting). For example, when nighttime background sound levels are at 50 dB(A) L<sub>50</sub>-one hour, a maximum turbine-only contribution of 47 dB(A) L<sub>50</sub>-one hour would result in a non-significant increase in total sound of less than 3 dB(A).

## **6.2 Post-Construction Noise Modeling**

If the Noise Studies conducted under Section 7.4 document an exceedance of the MPCA Noise Standards where turbine-only noise levels produce more than 47 dB(A) L<sub>50</sub>-one hour at nearby receptors, then the Permittee shall work with the Department of Commerce to develop a plan to minimize and mitigate turbine-only noise impacts.

## **7.0 SURVEYS AND REPORTING**

### **7.1 Biological and Natural Resource Inventories**

The Permittee, in consultation with the Commission and the Department of Natural Resources, shall design and conduct pre-construction desktop and field inventories of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the project site and assess the presence of state- or federally-listed, or threatened, species. The results of the inventories shall be filed with the Commission at least 30 days prior to the pre-construction meeting to confirm compliance of conditions in this permit. The Permittee shall file with the Commission any biological surveys or studies conducted on this project, including those not required under this permit.

### **7.2 Shadow Flicker**

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated

levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure. A Shadow Flicker Management Plan will be prepared by the Permittee, which will include the results of any shadow flicker modeling, assumptions made, levels of exposure prior to implementation of planned minimization and mitigation efforts, planned minimization and mitigation efforts, and planned communication and follow up with residence. The Shadow Flicker Management Plan shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

Should shadow flicker modeling identify any residence that will experience in 30 hours, or more, of shadow flicker per year, the Permittee must specifically identify these residences in the Shadow Flicker Management Plan. If through minimization and mitigation efforts identified in the Shadow Flicker Management Plan the Permittee is not able to reduce a residence's anticipated shadow flicker exposure to less than 30 hours per year a shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at the residence. The Shadow Flicker Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of any shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

Commission staff and EERA staff will be responsible for the review and approval of the Shadow Flicker Management Plan. The Commission may require the Permittee to conduct shadow flicker monitoring at any time during the life of this Permit.

### **7.3 Wake Loss Studies**

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the pre-construction micro-siting analysis leading to the final tower locations and an estimate of total project wake losses. As part of the annual report on project energy production required under Section 10.8 of the permit the Permittee shall file with the Commission any operational wake loss studies conducted on this project during the calendar year preceding the report.

### **7.4 Noise Studies**

#### **7.4.1 Pre-Construction Demonstration of Compliance with Noise Standards**

Freeborn Wind Energy LLC shall file a plan, including modeling and/or proposed mitigation, at least 60 days prior to the pre-construction meeting that demonstrates it will not cause or significantly contribute to an exceedance of the state noise standards using the

1. If background sound levels are less than the applicable standard at nearby receptors, the modeled turbine-only noise levels cannot cause an exceedance of the applicable state standard at nearby receptors, inclusive of the measured background noise level. “Cause” means that the project turbine-only contribution is in excess of the applicable state standard.
2. If background sound levels are equal to or greater than the applicable state standard at nearby receptors, the windfarm shall not contribute more than 45 dB(A) to total sound levels at the nearby receptors. Therefore, for example, when nighttime background sound levels are at 50 dB(A), a maximum turbine-only contribution of 45 dB(A) would result in a non-significant increase in total sound of 1 dB(A).

#### **7.4.2 Post-Construction Noise Monitoring**

The Permittee shall file a proposed methodology for the conduct of a post-construction noise study at least 14 days prior to the pre-construction meeting. The Permittee shall develop the post-construction noise study methodology in consultation with the Department of Commerce. The study must incorporate the most current Department of Commerce Noise Study Protocol to determine total sound levels and turbine-only contribution at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee must conduct the post-construction noise study and file with the Commission the completed post-construction noise study within 12 months of commencing commercial operation.

A post-construction noise study must be made, commencing as soon as the Project begins operations, and continuing for the first 12 months of its operation. The study shall be conducted by an independent consultant selected by the Department of Commerce at Freeborn Wind’s expense. The independent consultant shall assist the Department of Commerce in developing a study methodology upon consultation with the Minnesota Department of Health and Minnesota Pollution Control Agency. The study must incorporate the Department of Commerce Noise Study Protocol to determine the operating LWECs noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. In addition, the study must demonstrate the extent to which turbine-only noise contributes to the overall decibel level. Special attention should be paid to receptors predicted to experience the highest turbine noise levels. The completed post-construction noise study shall be filed with the Commission within 14 months after the Project becomes operational.

If the monitored turbine-only noise level is determined to be greater than the Minnesota State Noise Standard at nearby receptors or if the background sound levels exceed the Minnesota State Noise Standards and the turbine-only contribution exceeds 45 dB(A), the Permittee

shall work with the Department of Commerce to develop a plan to minimize and mitigate turbine-only noise impacts.

## **7.5 Avian and Bat Protection**

### **7.5.1 Avian and Bat Protection Plan**

The Permittee shall comply with the provisions of the Avian and Bat Protection Plan (ABPP) submitted for this project as Appendix H of the June 15, 2017 site permit application and revisions resulting from the annual audit of ABPP implementation. The first annual audit and revision will be filed with the Commission 14 days before the preconstruction meeting and revisions should include any updates associated with final construction plans. The ABPP must address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the project. The ABPP shall also include formal and incidental post-construction fatality monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the project.

The Permittee shall, by the 15th of March following each complete or partial calendar year of operation, file with the Commission an annual report detailing findings of its annual audit of ABPP practices. The annual report shall include summarized and raw data of bird and bat fatalities and injuries and shall include bird and bat fatality estimates for the project using agreed upon estimators from the prior calendar year. The annual report shall also identify any deficiencies or recommended changes in the operation of the project or in the ABPP to reduce avian and bat fatalities and shall provide a schedule for implementing the corrective or modified actions. The Permittee shall provide a copy of the report to the Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

### **7.5.2 Quarterly Incident Reports**

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15th of January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian and bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols. If a dead or injured avian or bat species is found, the report shall describe the potential cause of the occurrence (if known) and the steps taken to address future occurrences. The Permittee shall provide a copy of the report to the Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

### **7.5.3 Immediate Incident Reports**

The Permittee shall notify the Commission, U.S. Fish and Wildlife Service, and the Minnesota

Department of Natural Resources within 24 hours of the discovery of any of the following:

- (a) five or more dead or injured birds or bats within a five day reporting period;
- (b) one or more dead or injured state threatened, endangered, or species of special concern;
- (c) one or more dead or injured federally listed species, including species proposed for listing; or
- (d) one or more dead or injured bald or golden eagle(s).

In the event that one of the four discoveries listed above should be made, the Permittee must file with the Commission within seven days, a compliance report identifying the details of what was discovered, the turbine where the discovery was made, a detailed log of agencies and individuals contacted, and current plans being undertaken to address the issue.

#### 7.5.4 Turbine Operational Curtailment

The Permittee shall operate all facility turbines so that all turbines are locked, or feathered, up to the manufacturer's standard cut-in speed from one-half hour before sunset to one-half hour after sunrise of the following day, from April 1 to October 31 of each year of operation.

All operating turbines at the facility must be equipped with operational software that is capable of allowing for adjustment of turbine cut-in speeds.

#### 7.5.5 Karst Geology Investigations

Should initial geotechnical and soils testing at proposed turbine locations identify areas with karst bedrock within 50 feet or less of the soil surface, which may lead to sinkhole formation, additional geotechnical investigations will be performed to insure the area safe for the construction of a wind turbine.

Additional geotechnical investigations may include the following:

1. A geophysical investigation (electrical resistivity) to explore for voids in the bedrock.
2. Soil/bedrock borings to check and confirm the results of the electrical resistivity survey.
3. A series of electric cone penetrometer (CPT) soundings if the potential for loose zones in the soil overburden are suspected.

The Permittee must file with the Commission, a report for all geotechnical investigations completed. The reports must include methodology, results, and conclusions drawn from

## **8.0 AUTHORITY TO CONSTRUCT LWECS**

### **8.1 Wind Rights**

At least 14 days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the project within the boundaries authorized by this permit. Nothing in this permit shall be construed to preclude any other person from seeking a permit to construct a wind energy conversion system in any area within the boundaries of the project covered by this permit if the Permittee does not hold exclusive wind rights for such areas.

### **8.2 Power Purchase Agreement**

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason for not having such commitment. In such event, the Commission may determine whether this permit should be amended or revoked. No amendment or revocation of this permit may be undertaken except in accordance with Minn. R. 7854.1300.

### **8.3 Failure to Commence Construction**

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction of the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this permit should be amended or revoked. No revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minn. R. 7854.1300.

## **9.0 COMPLAINT PROCEDURES**

Prior to the start of construction, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the



## **10.0 COMPLIANCE REQUIREMENTS**

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be electronically filed with the Commission. Attachment B to this permit contains a summary of compliance filings, which is provided solely for the convenience of the Permittee. If this permit conflicts, or is not consistent with Attachment B, the conditions in this permit will control.

### **10.1 Pre-Construction Meeting**

Prior to the start of any construction, the Permittee shall participate in a pre-construction meeting with the Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the construction start date.

### **10.2 Pre-Operation Meeting**

At least 14 days prior to commercial operation of the facility, the Permittee shall participate in a pre-operation meeting with the Department of Commerce and Commission staff to coordinate field monitoring of operation activities for the project. Within 14 days following the pre-operation meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees.

### **10.3 Site Plan**

At least 14 days prior to the pre-construction meeting, the Permittee shall provide the Commission, the Department and the Freeborn County Environmental Services Office with a site plan that includes specifications and drawings for site preparation and grading; specifications and locations of all turbines and other structures to be constructed including all electrical equipment, collector and feeder lines, pollution control equipment, fencing, roads, and other associated facilities; and procedures for cleanup and restoration. The documentation shall include maps depicting the site boundary and layout in relation to that approved by this permit. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to Minnesota Rules Chapter 7030. At the same time, the Permittee shall notify affected landowners and city and town clerks that the site plan is on file with the Commission and Freeborn County Environmental Services Office. The Permittee may submit a site plan and engineering drawings for only a portion of the project if the Permittee intends to commence construction on certain parts of the project before completing the site plan and engineering drawings for other parts of

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes to its site plan or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, the Department, the Freeborn County Environmental Services Office, city and town clerks, and the affected landowners at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

In the event that previously unidentified human and environmental conditions are discovered during construction that by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine site. Under these circumstances, the Permittee shall notify the Commission, the Department, the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, the Freeborn County Environmental Services Office, city and town clerks, and the affected landowners of any turbines that are to be relocated, and provide the previously unidentified environmental conditions and how the movement of the turbine mitigates the human and environmental impact at least five days before implementing the changes. No changes shall be made that would be in violation of any terms of this permit.

#### **10.4 Status Reports**

The Permittee shall file status reports with the Commission on progress regarding site construction. The Permittee need not report more frequently than monthly. Reports shall begin with the commencement of site construction and continue until completion of site restoration.

#### **10.5 Notification to the Commission**

At least three days before the project is to commence commercial operation, the Permittee shall file with the Commission the date on which the project will commence commercial operation and the date on which construction was completed.

#### **10.6 As-Builts**

Within 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

#### **10.7 GPS Data**

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (e.g., ArcGIS compatible

map files, GPS coordinates, associated database of characteristics) for all structures associated with the large wind energy conversion system.

### **10.8 Project Energy Production**

The Permittee shall, by February 1st following each complete or partial year of project operation, file a report with the Commission on the monthly energy production of the project including:

- (a) the installed nameplate capacity of the permitted project;
- (b) the total monthly energy generated by the project in MW hours;
- (c) the monthly capacity factor of the project;
- (d) yearly energy production and capacity factor for the project;
- (e) the operational status of the project and any major outages, major repairs, or turbine performance improvements occurring in the previous year; and
- (f) any other information reasonably requested by the Commission.

This information shall be considered public and must be filed electronically.

### **10.9 Wind Resource Use**

The Permittee shall, by February 1st following each complete or partial calendar year of operation, file with the Commission the average monthly and average annual wind speed collected at one permanent meteorological tower during the preceding year or partial year of operation. This information shall be considered public and must be filed electronically.

### **10.10 Emergency Response**

The Permittee shall prepare an Emergency Response Plan in consultation with the emergency responders having jurisdiction over the facility prior to project construction. The Permittee shall submit a copy of the plan, along with any comments from emergency responders, to the Commission at least 14 days prior to the pre-construction meeting and a revised plan, if any, at least 14 days prior to the pre-operation meeting. The Permittee shall provide as a compliance filing confirmation that the Emergency Response Plan was provided to the emergency responders and Public Safety Answering Points (PSAP) with jurisdiction over the facility prior to commencement of construction. The Permittee shall obtain and register the facility address or other location indicators acceptable to the emergency responders and PSAP having jurisdiction over the facility.

### **10.11 Extraordinary Events**

Within 24 hours of discovery of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, acts of sabotage, collector or feeder line failure, and injured worker or private person. The Permittee shall, within 30 days of the occurrence, file a report with the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

## **11.0 DECOMMISSIONING, RESTORATION, AND ABANDONMENT**

### **11.1 Decommissioning Plan**

The Permittee shall submit a decommissioning plan to the Commission at least 60 days prior to the pre-operation meeting, and provide updates to the plan every five years thereafter. The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall demonstrate that it will provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

### **11.2 Site Restoration**

Upon expiration of this permit, or upon earlier termination of operation of the project, or any turbine within the project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. To the extent feasible, the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained. All such agreements between the Permittee and the affected

landowner shall be submitted to the Commission prior to completion of restoration activities.

The site shall be restored in accordance with the requirements of this condition within 18 months of termination.

### **11.3 Abandoned Turbines**

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the project. The project, or any turbine within the project, shall be considered abandoned after one year without energy production and the land restored pursuant to Section 11.2 unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the project, or any turbine within the project, to service.

## **12.0 COMMISSION AUTHORITY AFTER PERMIT ISSUANCE**

### **12.1 Final Boundaries**

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this project in accordance with Minn. R. 7854.1300, subp. 1. If done, this permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this permit.

### **12.2 Expansion of Site Boundaries**

No expansion of the site boundaries described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

### **12.3 Periodic Review**

The Commission shall initiate a review of this permit and the applicable conditions at least once every five years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

### **12.4 Modification of Conditions**

After notice and opportunity for hearing, this permit may be modified or amended for cause, including but not limited to the following:

- (a) violation of any condition in this permit;

- (b) endangerment of human health or the environment by operation of the project; or
  
- (c) existence of other grounds established by rule.

### **12.5 More Stringent Rules**

The Commission's issuance of this permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

### **12.6 Right of Entry**

Upon reasonable notice, presentation of credentials, and at all times in compliance with the Permittee's site safety standards, the Permittee shall allow representatives of the Commission to perform the following:

- (a) to enter upon the facilities easement of the site property for the purpose of obtaining information, examining records, and conducting surveys or investigations;
- (b) to bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;
- (c) to sample and monitor upon the facilities easement of the property; and
- (d) to examine and copy any documents pertaining to compliance with the conditions of this permit.

### **12.7 Proprietary Information**

Certain information required to be filed with the Commission under this permit may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

### **13.0 PERMIT AMENDMENT**

This permit may be amended at any time by the Commission in accordance with Minn. R. 7854.1300, subp. 2. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

#### 14.0 TRANSFER OF PERMIT

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required. The Commission may impose additional conditions on any new permittee as part of the approval of the transfer.

Within 20 days after the date of the notice provided in Section 10.5, the Permittee shall file a notice describing its ownership structure, identifying, as applicable:

- (a) the owner(s) of the financial and governance interests of the Permittee;
- (b) the owner(s) of the majority financial and governance interests of the Permittee's owners; and
- (c) the Permittee's ultimate parent entity (meaning the entity which is not controlled by any other entity).

The Permittee shall immediately notify the Commission of:

- (a) a change in owner(s) of the majority\* financial or governance interests in the Permittee;
- (b) a change in owner(s) of the majority\* financial or governance interests of the Permittee's owners; or
- (c) a sale which changes the parent entity of the Permittee.

*\*When there are only co-equal 50/50 percent interests, any change shall be considered a change in majority interest.*

The Permittee shall notify the Commission of:

- (a) the sale of a parent entity or a majority interest in the Permittee;
- (b) the sale of a majority interest of the Permittee's owners or majority interest of the

- (c) a sale which changes the entity with ultimate control over the Permittee.

## **15.0 REVOCATION OR SUSPENSION OF PERMIT**

The Commission may take action to suspend or revoke this permit upon the grounds that:

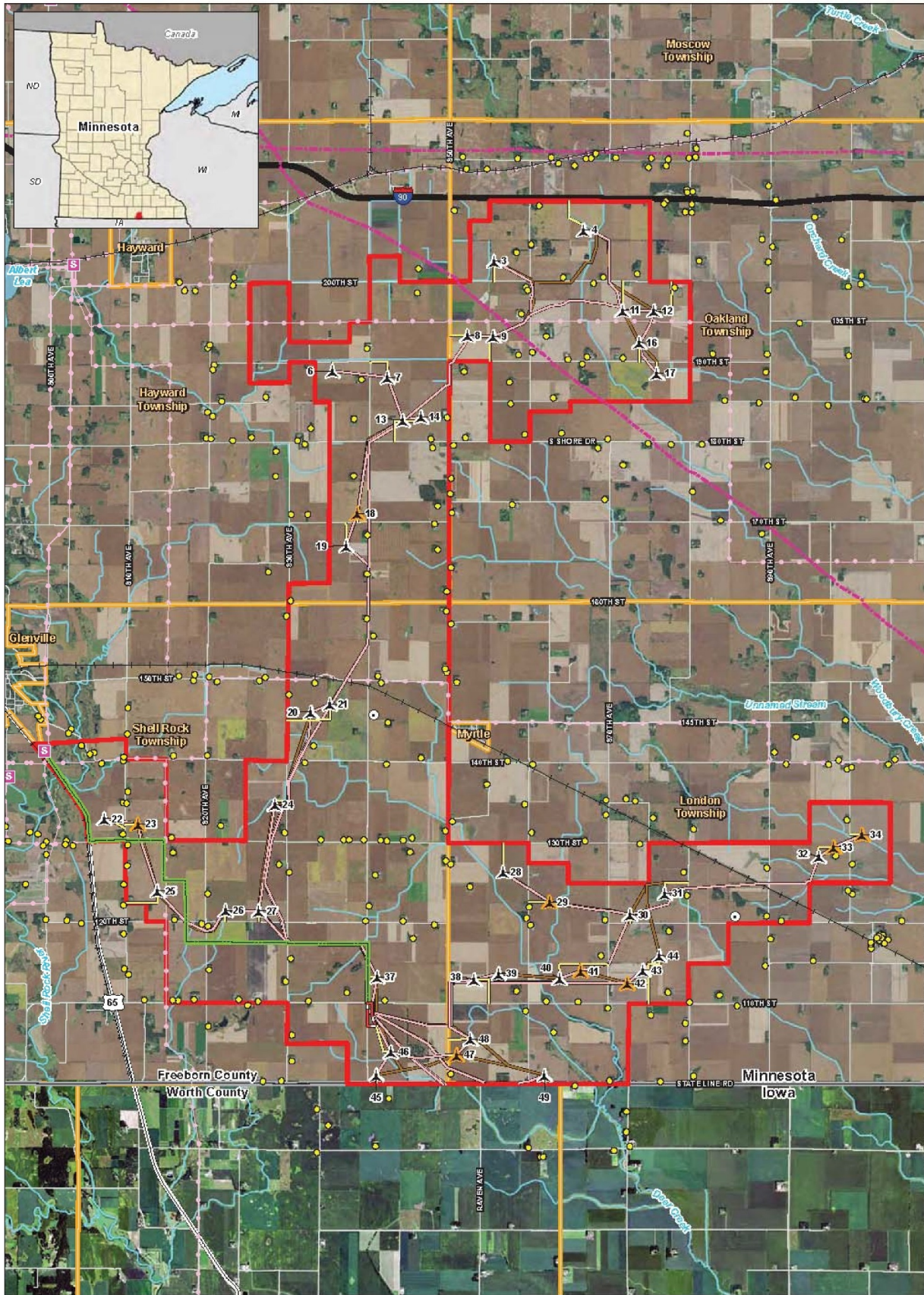
- (a) a false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;
- (b) there has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards;
- (c) there has been a material violation of a provision of an applicable statute, rule, or an order of the Commission; or
- (d) the Permittee has filed a petition with the Commission requesting that the permit be revoked or terminated.

In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minn. R. 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked.

## **16.0 EXPIRATION DATE**

This permit shall expire 30 years after the date this permit was approved and adopted.





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**Figure 3**  
**Project Area and Facilities**  
**Freeborn Wind Farm**  
**Freeborn County, MN**

- Vestas V110-2.0
- Vestas V116-2.0
- Residential Structure
- Permanent Met Tower
- Project Boundary
- O & M and Project Substation
- River/Stream
- Lake, Pond or Reservoir
- Existing Pipeline
- Existing Transmission Line
- Access Road
- Collection Line
- Crane Path
- Proposed Transmission Line

**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLAINT HANDLING PROCEDURES FOR  
PERMITTED ENERGY FACILITIES**

**A. Purpose**

To establish a uniform and timely method of reporting and resolving complaints received by the permittee concerning permit conditions for site preparation, construction, cleanup, restoration, operation, and maintenance.

**B. Scope**

This document describes complaint reporting procedures and frequency.

**C. Applicability**

The procedures shall be used for all complaints received by the permittee and all complaints received by the Minnesota Public Utilities Commission (Commission) under Minn. R. 7829.1500 or Minn. R. 7829.1700 relevant to this permit.

**D. Definitions**

**Complaint:** A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration or, television or communication signals, or other site and associated facilities permit conditions. Complaints do not include requests, inquiries, questions or general comments.

**Substantial Complaint:** A written complaint alleging a violation of a specific permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

**Unresolved Complaint:** A complaint which, despite the good faith efforts of the permittee and a person, remains unresolved or unsatisfactorily resolved to one or both of the parties.

**Person:** An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

**E. Complaint Documentation and Processing**

1. The permittee shall designate an individual to summarize complaints for the Commission. This person's name, phone number and email address shall accompany all complaint submittals.
2. A person presenting the complaint should to the extent possible, include the following information in their communications:
  - a. name, address, phone number, and email address;
  - b. date of complaint;
  - c. tract or parcel number; and
  - d. whether the complaint relates to a permit matter or a compliance issue.
3. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:
  - a. docket number and project name;
  - b. name of complainant, address, phone number and email address;
  - c. precise description of property or parcel number;
  - d. name of permittee representative receiving complaint and date of receipt;
  - e. nature of complaint and the applicable permit condition(s);
  - f. activities undertaken to resolve the complaint; and
  - g. final disposition of the complaint.

**F. Reporting Requirements**

The permittee shall commence complaint reporting at the beginning of project construction and continue through the term of the permit. The permittee shall report all complaints to the Commission according to the following schedule:

**Immediate Reports:** All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to the Commission's Consumer Affairs Office at 1-800-657-3782 (voice messages are acceptable) or [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us). For e-mail reporting, the email subject line should read "PUC EFP Complaint" and include the appropriate project docket number.

**Monthly Reports:** During project construction and restoration, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be filed by the 15th of each month to Daniel P. Wolf, Executive Secretary, Public Utilities Commission, using the eDockets system. The eDockets system is located at:  
<https://www.edockets.state.mn.us/EFiling/home.jsp>

If no complaints were received during the preceding month, the permittee shall file a summary indicating that no complaints were received.

**G. Complaints Received by the Commission**

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the permittee.

**H. Commission Process for Unresolved Complaints**

Commission staff shall perform an initial evaluation of unresolved complaints submitted to the Commission. Complaints raising substantial permit issues shall be processed and resolved by the Commission. Staff shall notify the permittee and appropriate persons if it determines that the complaint is a substantial complaint. With respect to such complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the staff notification. The complaint will be presented to the Commission for a decision as soon as practicable.

**I. Permittee Contacts for Complaints and Complaint Reporting**

Complaints may be filed by mail or email to:

Dan Litchfield, Project Developer  
120 East Main Street  
Glenville, MN 55036  
(312) 582-1057  
freebornwind@invenergyllc.com

This information shall be maintained current by informing the Commission of any changes as they become effective.

**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLIANCE FILING PROCEDURE FOR  
PERMITTED ENERGY FACILITIES**

**A. Purpose**

To establish a uniform and timely method of submitting information required by Commission energy facility permits.

**B. Scope and Applicability**

This procedure encompasses all known compliance filings required by permit.

**C. Definitions**

**Compliance Filing:** A filing of information to the Commission, where the information is required by a Commission site or route permit.

**D. Responsibilities**

1. The permittee shall file all compliance filings with Daniel P. Wolf, Executive Secretary, Public Utilities Commission, through the eDockets system. The eDockets system is located at: <https://www.edockets.state.mn.us/EFiling/home.jsp>

General instructions are provided on the eDockets website. Permittees must register on the website to file documents.

2. All filings must have a cover sheet that includes:
  - a. Date
  - b. Name of submitter/permittee
  - c. Type of permit (site or route)
  - d. Project location
  - e. Project docket number
  - f. Permit section under which the filing is made
  - g. Short description of the filing

3. Filings that are graphic intensive (e.g., maps, engineered drawings) must, in addition to being electronically filed, be submitted as paper copies and on CD. Paper copies and CDs should be sent to: 1) Daniel P. Wolf, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147, and 2) Department of Commerce, Energy Environmental Review and Analysis, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

**PERMIT COMPLIANCE FILINGS<sup>1</sup>**

PERMITTEE: Freeborn Wind Energy LLC  
 PERMIT TYPE: LWECS Site Permit  
 PROJECT LOCATION: Freeborn County  
 PUC DOCKET NUMBER: IP6946\WS-17-410

Filing Number	Permit Section	Description of Compliance Filing	Due Date
1	4.7	Prairie Protection and Management Plan	30 days prior to submitting Site Plan, as deemed necessary
2	4.12	Notification to Airports	Prior to project construction
3	5.1	Notification of Permit and Complaint Procedures	30 days of permit issuance
4	5.2.1	Field Representative	14 days prior to commencing construction
5	5.2.2	Site Manager	14 days prior to commercial operation
6	5.2.6	National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit	In accordance with Minnesota Pollution Control Agency
7	5.2.9	Notification of Pesticide Application	14 days prior to application
8	5.2.10	Invasive Species Protection Plan	14 days prior to pre-construction meeting
9	5.2.12	Identification of Roads	14 days prior to pre-construction meeting

<sup>1</sup> This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. It is not a substitute for the permit; the language of the permit controls.

Filing Number	Permit Section	Description of Compliance Filing	Due Date
10	5.2.16	Assessment of Television and Radio Signal Reception, Microwave Signal Patterns, and Telecommunications	14 days prior to pre-construction meeting
11	5.2.21	Site Restoration	60 days after completion of restoration
12	5.2.25	Public Safety/Education Materials	Upon request
13	5.4	Engineered Drawings of Collector and Feeder Lines	Submit with the Site Plan
14	5.5.2	Filing Regarding Other Required Permits	14 days prior to pre-construction meeting
15	7.1	Biological and Natural Resource Inventories	30 days prior to pre-construction meeting
16	7.2	Shadow Flicker Data	14 days prior to pre-construction meeting
17	7.3	Wake Loss Studies	14 days prior to pre-construction meeting and annual wake loss with annual report
18	7.4	Post-Construction Noise Methodology	14 days prior to pre-construction meeting
19	7.4	Post-Construction Noise Study	14 months of commercial operation
20	7.5.1	First Annual Audit and Revision of Avian and Bat Protection Plan	14 days prior to pre-construction meeting
21	7.5.1	Annual Report - Avian and Bat Protection Plan	15th of March each year or partial year



Filing Number	Permit Section	Description of Compliance Filing	Due Date
22	7.5.2	Quarterly Incident Reports	15th of January, April, July, and October the day following commercial operation
23	7.5.3	Immediate Incident Reports	24 hours of discovery and a report within 7 days
24	8.1	Demonstration of Wind Rights	14 days prior to pre-construction meeting
25	8.2	Power Purchase Agreement	If not obtained within two years issuance of permit
26	8.3	Failure to Construct	If within two years issuance of permit
27	10.0	Complaint Procedures	Prior to start of construction
28	10.1	Pre-Construction Meeting Summary	14 days following meeting
29	10.2	Pre-Operation Meeting Summary	14 days following meeting
30	10.3	Site Plan	14 days prior to pre-construction meeting
31	10.4	Construction Status Reports	Monthly
32	10.5	Commercial Operation	3 days prior to commercial operation
33	10.6	As-Builts	90 days after completion of construction

## ATTACHMENT B

Filing Number	Permit Section	Description of Compliance Filing	Due Date
34	10.7	GPS Data	90 days after completion of construction
35	10.8	Project Energy Production	February 1st following each complete or partial year of project operation
36	10.9	Wind Resource Use	February 1st following each complete or partial year of project operation
37	10.10	Emergency Response Plan	14 days prior to pre-construction meeting and revisions 14 days prior to pre-operation meeting
38	10.11	Extraordinary Event	Within 24 hours of discovery
39	11.1	Decommissioning Plan	60 days prior to pre-operation meeting
40	14.0	Notice of Ownership	14 days after operation

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Freeborn  
Wind Energy, LLC for a Large Wind  
Energy Conversion System Site Permit for  
the 84 MW Freeborn Wind Farm in  
Freeborn County

**ORDER DENYING MOTION  
BY AFCL FOR  
ADMINISTRATIVE NOTICE**

An evidentiary hearing was held in this matter before Administrative Law Judge LauraSue Schlatter on February 21 and 22, 2018, at the Albert Lea Armory, 410 Prospect Avenue, Albert Lea, Minnesota.

Christina Brusven and Lisa Agrimonti, Fredrikson & Byron, P.A., represented the Applicant, Freeborn Wind Energy LLC (Freeborn Wind).

Carol Overland, Attorney at Law, Legalectric, Inc., represented Intervenor Association of Freeborn County Landowners (AFCL).

Richard Savelkoul, Martin & Squires, P.A., represented Intervenor KAAL-TV (KAAL).

Linda Jensen, Assistant Attorney General, represented the Minnesota Department of Commerce, Energy Environmental Review and Analysis (DOC-EERA).

Mike Kaluzniak appeared on behalf of the staff of the Public Utilities Commission (Commission).

On April 2, 2018, AFCL filed a Motion requesting the Administrative Law Judge to “take administrative notice of the fact of specific points in two Public Utilities Commission Orders” issued after the close of the hearing in this docket.<sup>1</sup> On April 13, 2018, Freeborn Wind and DOC-EERA filed Reply Memoranda objecting to AFCL’s Motion.

Based upon the all of the records and the proceedings in this matter, and for the reasons discussed in the Memorandum that follows, the undersigned Administrative Law Judge makes the following:

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<sup>1</sup> AFCL Motion for Administrative Notice (Apr. 2, 2018).

## ORDER

AFCL's Motion to take Administrative Notice is **DENIED**.

Dated: May 14, 2018



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LAURASUE SCHLATTER  
Administrative Law Judge

## MEMORANDUM

### I. Applicable Legal Standard

The Administrative Law Judge is authorized to take judicial notice pursuant to Minn. R. 1405.1700, subp. 6, and 1400.7300, subp. 4 (2017). The comments to Minn. R. Evid. 201 (2016), state:

This rule is limited to judicial notice of “adjudicative” facts and does not govern judicial notice of “legislative” facts.

Adjudicative facts generally are the type of facts decided by juries. Facts about the parties, their activities, properties, motives, and intent, the facts that give rise to the controversy, are adjudicative facts.

Legislative facts involve questions of law and policy and normally are decided by the court.

### II. AFCL Motion

AFCL is asking the Administrative Law Judge to take judicial notice of policy decisions made by the Commission – decisions to include language in two of its recent orders. The first is an Order Requiring Wind Turbine Noise Study by an Approved Consultant and the Development, Distribution, and Use of Revised Complaint Procedures.<sup>2</sup> AFCL requests the Administrative Law Judge to take judicial notice of the

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<sup>2</sup> *In the Matter of the Site Permit Issued to Big Blue Wind Farm, LLC for the 36 MW Big Blue Wind Farm in Faribault County*, (Big Blue Project) PUC Docket No. IP-6851/WS-10-1238, Order Requiring Wind Turbine Noise Study by an Approved Consultant and the Development, Distribution, and Use of Revised Complaint Procedures (Mar. 8, 2018) (eDocket No. 20183-140861-01).

fact that the Commission ordered a revised complaint procedure in its March 8, 2018 Order in the Big Blue Project matter.

The second request involves language in an Order Finding Applications Complete and Notice and Order for Hearing in a transmission line case.<sup>3</sup> AFCL asks the Administrative Law Judge to take judicial notice of language requiring the Commission's Executive Secretary to "Direct Commission staff to formally contact relevant state agencies to request their participation in the development of the record and at public hearings . . . ."

AFCL argues that this information is needed for the Administrative Law Judge to consider whether the proposed Freeborn Wind Project meets the applicable statutory criteria, given the Commission's views of these issues. This is especially so, according to AFCL, because in this matter, certain state agencies resisted testifying to inform the record of their views. In addition, AFCL claims that the need for revised complaint procedures is of utmost importance in all wind siting dockets.

### **III. Responsive Arguments**

Both DOC-EERA and Freeborn Wind oppose AFCL's motions. DOC-EERA argues that AFCL does not seek admission of "judicially cognizable facts" because they are not factual evidence. Furthermore, DOC-EERA maintains that Commission orders need not be admitted to the evidentiary record. DOC-EERA asserts that Commission orders may simply be cited for their legal principles without being part of the record.

In addition, DOC-EERA points out that the two orders that are the subject of AFCL's motions do not represent new directions in Commission policymaking. DOC-EERA provides a list of transmission and wind farm case orders, dating back to 2011, in which the Commission included language requesting that Commission staff or an Administrative Law Judge contact other state agencies, using language that is similar or identical to the language to which AFCL is pointing. Further, DOC-EERA notes that the language in the Big Blue Project Order is specific to that project. Finally, DOC-EERA asserts that AFCL's motions are untimely and could have been made while the hearing record was still open.

Freeborn Wind argues that it is not appropriate for judicial notice to be taken to assist a party in making a point that they could have made on their own, but failed to make. In addition, Freeborn Wind asserts that the language AFCL seeks to introduce into the record with its motions is irrelevant to this case. Freeborn Wind points out that the order regarding participation of other agencies is based on Minn. Stat. § 216E.10, subd. 3 (2016), a statute that does not apply to this site permit proceeding. Freeborn Wind lists a number of agencies that have participated in this proceeding, and asserts that AFCL's motions are untimely.

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<sup>3</sup> *In the Matter of Application of Xcel Energy and ITC Midwest LLC for a Certificate of Need for the Huntley-Wilmarth 345 kV Transmission Line Project* (Huntley-Wilmarth Line), PUC Docket No. E-002/ET-6675/CN-17-184; E-002, ET6675/TL-17-185 (Mar. 28, 2018) (eDocket No. 20183-141450-02).

In addition to echoing the argument made by DOC-EERA regarding the singularity of the Big Blue Project complaint procedure language, Freeborn Wind argues that, if the language were to be cited, it should only be done so consistent with the Administrative Law Judge's previous order in this matter, limiting consideration of a noise report about another wind farm "[t]o the extent that the Administrative Law Judge can gain a better understanding of the proper consideration of the relevant factors to be considered in evaluating a site permit application."<sup>4</sup>

#### **IV. Analysis**

The Administrative Law Judge agrees that the information AFCL seeks to have admitted through its motions does not constitute adjudicative, or factual, evidence. The sort of language in a Commission order that would comprise adjudicative evidence would be language regarding the specific factual findings of a case – for example, whether or not there were a particular number of eagles' nests within a project area. The fact that the Commission has included in an order instructions for its staff to carry out particular duties is not the sort of fact which is appropriate for judicial notice. Nor is the fact that the Commission has determined that a variation on its usual complaint process was appropriate in a particular case justification for taking judicial notice of the Commission's order.

The Administrative Law Judge agrees with DOC-EERA that it is proper for a party to cite a Commission order from another case, assuming the purpose for which that Commission order is cited is relevant to the case at hand, and the citation is in a document which has been publicly filed. The parties will note that, despite the denial of AFCL's motions, the Administrative Law Judge, in her Findings of Fact, Conclusions of Law, and Recommendation in this matter, cited to the Commission's order in the Big Blue Project. The citation is for the limited purpose of demonstrating that the Commission has, in the past, responded to complaints regarding noise.<sup>5</sup>

#### **L. S.**

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<sup>4</sup> Order on Motions by the Minnesota Department of Commerce and Freeborn Wind to Exclude and Strike Testimony at 5 (Feb. 12, 2018) (eDocket No. 20182-140011-01).

<sup>5</sup> Findings of Fact, Conclusions of Law, and Recommendation at 113-114 (May 14, 2018).

STATE OF MINNESOTA  
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In the Matter of the Application of  
Freeborn Wind Energy, LLC for a Large  
Wind Energy Conversion System Site  
Permit for the 84 MW Freeborn Wind  
Farm in Freeborn County

**FINDINGS OF FACT,  
CONCLUSIONS OF LAW,  
AND RECOMMENDATIONS**

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Permit for the 84 MW Freeborn Wind  
Farm in Freeborn County

**FINDINGS OF FACT,  
CONCLUSIONS OF LAW,  
AND RECOMMENDATIONS**

This matter was assigned to Administrative Law Judge LauraSue Schlatter to conduct full contested case proceedings and a public hearing on Freeborn Wind Energy, LLC's (Freeborn Wind or Applicant) Application for a Large Wind Energy Conversion System Site Permit in Freeborn County (Application) (MPUC Docket No. 17-410). Freeborn Wind is seeking to construct an up to 84 megawatt (MW) large wind energy conversion system in Freeborn County, Minnesota (Project).

A public hearing on the Application for the Project was held on February 20, 2018, in Albert Lea, Minnesota.<sup>1</sup> Evidentiary hearings were held on February 21 and 22, 2018. The factual record remained open until March 15, 2018, for the receipt of written public comments.<sup>2</sup> Post-hearing submissions were filed by April 4, 2018.

Christina Brusven and Lisa Agrimonti, Fredrikson & Byron, P.A., appeared on behalf of Freeborn Wind.

Linda S. Jensen, Assistant Attorney General, represents the Minnesota Department of Commerce, Energy Environmental Review and Analysis (DOC-EERA).

Mike Kaluzniak and Bret Eknes appeared on behalf of the Minnesota Public Utilities Commission (Commission).

Richard Savelkoul, Martin & Squires, P.A., appeared on behalf of Intervenor KAAL-TV, LLC (KAAL).

Carol Overland, Legalectric, Inc. appeared on behalf of Intervenor Association of Freeborn County Landowners (AFCL).

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<sup>1</sup> Summary of Public Hearing Comments at App. B.

<sup>2</sup> Summary of Public Comments on Draft Site Permit at App. C.

## STATEMENT OF ISSUE

Has Freeborn Wind satisfied the requirements in Minnesota Statutes, chapter 216F and the criteria set forth in section 216E.03, subdivision 7, and Minnesota Rule 7854.0500 for a Site Permit for the proposed Project?

## SUMMARY OF RECOMMENDATIONS

The Administrative Law Judge concludes that Freeborn Wind has failed to demonstrate that the proposed Project will meet the requirements of Minn. R. 7030.0040, the applicable Minnesota Noise Standards. Therefore, the Administrative Law Judge respectfully recommends that the Commission either deny Freeborn Wind's Application for a Site Permit, or in the alternative, provide Freeborn Wind with a period of time to submit a plan demonstrating how it will comply with Minnesota's Noise Standards at all times throughout the footprint of the Freeborn Wind Project.

Based on the evidence in the hearing record, the Administrative Law Judge makes the following:

## FINDINGS OF FACT

### I. Applicant

1. Freeborn Wind is an affiliate of Invenergy LLC (Invenergy). Invenergy is a large-scale energy developer headquartered in Chicago, Illinois.<sup>3</sup>

2. Invenergy has developed, built, owned, and operated many operating wind farms, natural gas facilities, solar projects, and battery storage projects throughout the United States, as well as in Japan, Poland, Scotland, and Uruguay.<sup>4</sup> Invenergy has a development track record of 119 large-scale projects with 12,800 MW of wind energy and over 18,000 MW of total energy projects.<sup>5</sup>

3. Invenergy operates the Cannon Falls Energy Center (CFEC) in Cannon Falls, Minnesota. The CFEC is a 357 MW natural gas combustion turbine power plant that provides natural gas-fired power. All of the electricity generated by the CFEC is committed to Northern States Power Company, d/b/a Xcel Energy (Xcel Energy).<sup>6</sup>

4. Freeborn Wind and Invenergy do not own or operate and have no financial interest in any other large wind energy conversion systems (LWECS) in Minnesota.<sup>7</sup>

5. If approved, Freeborn Wind will develop, design, and permit the Project.<sup>8</sup>

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<sup>3</sup> Ex. FR-1 at 1 (Application).

<sup>4</sup> *Id.*

<sup>5</sup> See INVENERGY, WHAT WE DO, <https://invenergyllc.com/what-we-do/overview> (last visited May 11, 2018).

<sup>6</sup> Ex. FR-1 at 1 (Application).

<sup>7</sup> *Id.*

<sup>8</sup> *Id.*

6. Freeborn Wind has entered into an agreement with Xcel Energy whereby Xcel Energy will acquire Freeborn Wind upon conclusion of all development activities and subsequently construct, own, and operate the Project.<sup>9</sup> Xcel Energy will assume the obligations of Freeborn Wind, whether made by the company or imposed by the Commission.<sup>10</sup>

## II. Site Permit Application and Related Procedural History

7. On June 15, 2017, Freeborn Wind filed its Application with the Commission for the Project.<sup>11</sup>

8. The Commission issued a Notice of Comment Period on Site Permit Application Completeness on June 21, 2017.<sup>12</sup> The Notice requested comments on whether Freeborn Wind's Application was complete within the meaning of the Commission's rules; whether there were contested issues of fact with respect to the representations made in the Application; and whether the Application should be referred to the Office of Administrative Hearings (OAH) for a contested case proceeding.<sup>13</sup>

9. On July 6, 2017, DOC-EERA staff filed comments recommending that the Commission accept the Application as complete with the understanding that the permitting process will not progress to the preliminary determination on a draft site permit step pursuant to Minnesota Rule 7854.0800 until issues regarding compliance with certain Freeborn County Ordinance standards and general setback considerations were further developed between Freeborn Wind and Freeborn County staff.<sup>14</sup> DOC-EERA staff also recommended that the Commission delay the decision on whether to refer the Project to the OAH for a contested case hearing until the draft Site Permit stage.<sup>15</sup>

10. On July 6, 2017, AFCL filed comments and a petition requesting that the matter be referred to the OAH for contested case proceedings.<sup>16</sup>

11. Freeborn Wind filed reply comments on the completeness of the Application and agreed to a contested case hearing on July 13, 2017.<sup>17</sup>

12. On August 2, 2017, Freeborn Wind filed revised pages to the Application.<sup>18</sup>

13. On August 10, 2017, the Commission met to consider whether to accept the Application as substantially complete, and to determine what procedural process to

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<sup>9</sup> Ex. FR-4 at 9 (Litchfield Direct).

<sup>10</sup> *Id.*; see Tr. Vol. 2 at 96-100 (Litchfield).

<sup>11</sup> Ex. FR-1 (Application).

<sup>12</sup> Notice of Comment Period (June 21, 2017) (eDocket No. 20176-132986-01).

<sup>13</sup> *Id.*; Summary of Initial Public Comments at App. A.

<sup>14</sup> Ex. EERA-1 at 5 (Comments and Recommendations on Site Permit Application Completeness).

<sup>15</sup> *Id.*

<sup>16</sup> Comments and Petition for Contested Case and Referral to OAH (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>17</sup> Reply to Comments on Completeness (July 13, 2017) (eDocket No. 20177-133866-01).

<sup>18</sup> Ex. FR-2 at 32, 34 (Revised Application).

authorize.<sup>19</sup> The Commission decided to: accept the Application as substantially complete; refer the matter to the OAH for a contested case proceeding and public hearing to be conducted by an Administrative Law Judge; vary Minn. R. 7854.0600, subp. 1, and extend the 30-day time frame for the Commission decision on application completeness; vary Minnesota Rule 7854.0800, subp. 1, and extend the 45-day time frame for Commission decision on the issuance of draft site permit; and address various other administrative matters.<sup>20</sup>

14. On August 31, 2017, the Commission incorporated its decision into its Order Finding Application Complete and Varying Time Limits.<sup>21</sup> On September 6, 2017, the Commission issued an order correcting references to procedural rules.<sup>22</sup>

15. On September 1, 2017, AFCL filed a Petition to Intervene.<sup>23</sup>

16. On September 6, 2017, the Administrative Law Judge issued a Notice of Prehearing Conference to be held on September 14, 2017.<sup>24</sup>

17. On September 8, 2017, DOC-EERA issued a Notice of Public Information Meeting scheduling a public information meeting on September 20, 2017, in Albert Lea, Minnesota, and announcing that written comments would be accepted through October 9, 2017.<sup>25</sup> The Notice was published in the Albert Lea Tribune on September 11, 2017.<sup>26</sup> The Notice requested comments on issues and facts that should be considered in the development of the Draft Site Permit.<sup>27</sup> During this comment period, written comments were received from members of the public and governmental agencies, including the Minnesota Department of Transportation (MnDOT),<sup>28</sup> Minnesota Department of Natural Resources (MDNR),<sup>29</sup> Shell Rock Township,<sup>30</sup> and the London Township Town Board.<sup>31</sup>

18. On September 12, 2017, the Administrative Law Judge granted AFCL's Petition to Intervene.<sup>32</sup>

19. On September 14, 2017, the Administrative Law Judge held a prehearing conference.

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<sup>19</sup> Minutes – August 10, 2017 (Nov. 28, 2017) (eDocket No. 201711-137723-17).

<sup>20</sup> *Id.*

<sup>21</sup> Order Finding Application Complete and Varying Time Limits (Aug. 31, 2017) (eDocket No. 20178-135140-01).

<sup>22</sup> Erratum Notice (Sept. 6, 2017) (eDocket No. 20179-135278-01).

<sup>23</sup> Petition to Intervene (Sept. 1, 2017) (eDocket No. 20179-135229-01).

<sup>24</sup> Notice of Prehearing Conference (Sept. 6, 2017) (eDocket No. 20179-135289-01).

<sup>25</sup> Notice of Public Information Meeting (Sept. 8, 2017) (eDocket No. 20179-135365-01).

<sup>26</sup> Ex. EERA-2 (Notice of Public Information Meeting and Proof of Publication (Sept. 8, 2017)).

<sup>27</sup> *Id.*

<sup>28</sup> Comment by MnDOT (Oct. 6, 2017) (eDocket No. 201710-136205-01).

<sup>29</sup> Comment by MDNR (Oct. 6, 2017) (eDocket No. 201710-136200-01).

<sup>30</sup> Comment – Road Ordinance Passed by Shell Rock Township (Oct. 9, 2017) (eDocket No. 201710-136287-01).

<sup>31</sup> Comment – Road Ordinance (Oct. 9, 2017) (eDocket No. 201710-136229-01).

<sup>32</sup> Order Granting Intervention (Sept. 12, 2017) (eDocket No. 20179-135455-01).

20. On September 18, 2017, Freeborn Wind filed documentation confirming that it completed the notice requirements of Minn. R. 7854.0600 and 7829.0500, and provided direct mail notice and newspaper publications relating to the Site Permit Application, and that it placed copies of the Application in the Albert Lea Public Library, the public library closest to the proposed Project site.<sup>33</sup>

21. On September 20, 2017, AFCL filed a Motion requesting that the Administrative Law Judge certify to the Commission its petition for appointment of both an advisory task force and a scientific advisory task force.<sup>34</sup>

22. On September 20, 2017, the EERA held a public information meeting in Albert Lea, Minnesota, for comments on issues and facts to be considered in the development of the Draft Site Permit.<sup>35</sup>

23. On September 25, 2017, the Administrative Law Judge issued the First Prehearing Order, wherein she established the procedural rules for the proceeding; set a December 11, 2017, deadline for intervention; and adopted a schedule for the proceedings.<sup>36</sup> The First Prehearing Order set the following due dates: direct testimony on December 5, 2017; rebuttal testimony on January 8, 2018; surrebuttal testimony on January 22, 2018; public hearing on January 29, 2018; and evidentiary hearing on February 6 and 7, 2018. The Administrative Law Judge re-served the Order on September 26, 2017.<sup>37</sup>

24. On October 4, 2017, Freeborn Wind filed a Response opposing AFCL's Motion to Certify and Petition for Advisory and Scientific Task Forces.<sup>38</sup>

25. On October 5, 2017, AFCL filed a Reply to Freeborn Wind's Response to AFCL's Motion to Certify and Petition for Advisory and Scientific Task Force.<sup>39</sup>

26. On October 6, 2017, the Administrative Law Judge issued an Order certifying to the Commission the question of whether the Commission should appoint an advisory task force and/or a scientific advisory task force.<sup>40</sup>

27. On October 12, 2017, the Administrative Law Judge issued a Protective Order setting procedures and guidelines for classifying and handling non-public information filed in this proceeding.<sup>41</sup>

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<sup>33</sup> Ex. FR-3 (Application Notice Compliance filing).

<sup>34</sup> Motion for Certification and Petition for Advisory and Scientific Task Force (Sept. 20, 2017) (eDocket No. 20179-135694-01).

<sup>35</sup> Public Information Meeting Notes (Oct. 10, 2017) (eDocket No. 201710-136323-01).

<sup>36</sup> First Prehearing Order (Sept. 25, 2017) (eDocket No. 20179-135781-01).

<sup>37</sup> Re-Serve First Prehearing Order (Sept. 26, 2017) (eDocket No. 20179-135814-01).

<sup>38</sup> Response to Motion of AFCL (Oct. 4, 2017) (eDocket No. 201710-136128-02).

<sup>39</sup> Reply Comments (Oct. 5, 2017) (eDocket No. 201710-136142-01).

<sup>40</sup> Order on Motion for Certification (Oct. 6, 2017) (eDocket No. 201710-136186-01).

<sup>41</sup> Protective Order (Oct. 12, 2017) (eDocket No. 201710-136426-01).

28. On October 13, 2017, KAAL filed a Petition to Intervene.<sup>42</sup>

29. On October 13, 2017, the Commission issued a Notice of Commission Meeting scheduled on October 24, 2017, at which it would consider whether to establish an Advisory and/or Scientific Task Force.<sup>43</sup>

30. On October 18, 2017, DOC-EERA filed Comments and Recommendations on the Motion and Petition for Advisory Task Forces.<sup>44</sup> DOC-EERA recommended that the Commission deny both the request to appoint an Advisory Task Force and the request to appoint a Scientific Advisory Task Force.<sup>45</sup>

31. On October 20, 2017, the Minnesota Historical Society and State Historic Preservation Office (SHPO) filed comments on the Application.<sup>46</sup>

32. On October 30, 2017, the Administrative Law Judge granted KAAL's Petition to Intervene.<sup>47</sup>

33. On November 7, 2017, Freeborn Wind filed a letter requesting that its appraisal witness on property values, Michael MaRous, be excused from hearing attendance for good cause pursuant to Minn. R. 1405.2000.<sup>48</sup> Freeborn Wind requested that Mr. MaRous be allowed to be cross-examined by telephone. On November 21, 2017, the Administrative Law Judge issued an Order granting this request to excuse the witness' presence.<sup>49</sup>

34. On November 27, 2017, the Administrative Law Judge issued the Second Prehearing Order, scheduling a telephone prehearing conference to be held on November 28, 2017, to review the scheduling of public and evidentiary hearings and the pre-hearing schedule.<sup>50</sup> The telephone prehearing conference was held on November 28, 2017.

35. On December 5, 2017, the Administrative Law Judge issued the Third Prehearing Order, amending the schedule for the proceedings, which included the rescheduling of the evidentiary hearing for February 21 and 22, 2018.<sup>51</sup>

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<sup>42</sup> Petition to Intervene (Oct. 13, 2017) (eDocket No. 201710-136471-02).

<sup>43</sup> Notice of Commission Meeting – October 24, 2017 (Oct. 13, 2017) (eDocket No. 201710-136456-01).

<sup>44</sup> Comments and Recommendations (Oct. 18, 2017) (eDocket No. 201710-136632-01).

<sup>45</sup> *Id.* at 2.

<sup>46</sup> SHPO Comment (Oct. 20, 2017) (eDocket No. 201710-136677-01).

<sup>47</sup> Order Granting Intervention (Oct. 30, 2017) (eDocket No. 201710-136957-01).

<sup>48</sup> Letter (Nov. 7, 2017) (eDocket No. 201711-137196-01). Mr. MaRous appeared in person when the hearings dates were rescheduled.

<sup>49</sup> Order Granting Request to Excuse Witness Presence (Nov. 21, 2017) (eDocket No. 201711-137569-01).

<sup>50</sup> Second Prehearing Order (Nov. 27, 2017) (eDocket No. 201711-137693-01).

<sup>51</sup> Third Prehearing Order (Dec. 5, 2017) (eDocket No. 201712-137969-01).

36. On December 5, 2017, hearing subpoenas were issued for MDNR' staff members Kevin Mixon and Lisa Joyal.<sup>52</sup> Subpoenas were also issued on December 5, 2017, to Louise Miltich of DOC-EERA, and for the production of documents by DOC-EERA.<sup>53</sup>

37. On December 5, 2017, DOC-EERA filed Comments and Recommendations on issuance of a Draft Site Permit and a Preliminary Draft Site Permit.<sup>54</sup>

38. On December 18, 2017, a subpoena was issued for the Minnesota Department of Health (MDH) Assistant Commissioner Paul Allwood.<sup>55</sup>

39. On December 22, 2017, Freeborn Wind filed the Direct Testimony of the following witnesses: Dan Litchfield;<sup>56</sup> Mike Hankard;<sup>57</sup> Dr. Mark Roberts;<sup>58</sup> Dr. Jeff Ellenbogen;<sup>59</sup> Andrea Giampoli;<sup>60</sup> Michael MaRous;<sup>61</sup> and Kevin Parzyck.<sup>62</sup>

40. On December 22, 2017, KAAL filed Direct Testimony of David Harbert and Stephen Lockwood.<sup>63</sup> AFCL filed the Direct Testimony of Dorene Hansen.<sup>64</sup>

41. On December 22, 2017, the Commission issued a Notice of Commission Meeting scheduled on January 4, 2018, at which the Commission would discuss whether it should issue a Draft Site Permit.<sup>65</sup>

42. On December 29, 2017, AFCL filed a request for time at the January 4, 2018, Commission meeting to comment on the proposed Draft Site Permit.<sup>66</sup>

43. On January 5, 2018, the Administrative Law Judge issued the Fourth Prehearing Order, canceling the telephone prehearing conference scheduled for January 9, 2018.<sup>67</sup>

44. On January 16, 2018, DOC-EERA filed a Motion to Quash a Hearing Subpoena, issued at the request of AFCL, which was served upon Louise Miltich, an

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<sup>52</sup> Mem. in Support of Mot. to Quash Subpoena of Lisa Joyal (Feb. 9, 2018) (eDocket No. 20182-139915-02); Mem. in Support of Mot. to Quash Subpoena of Kevin Mixon (Feb. 9, 2018) (eDocket No. 20182-139916-02).

<sup>53</sup> Agreement of DOC-EERA and AFCL Regarding Subpoenas (Jan. 19, 2018) (eDocket No. 20181-139130-01).

<sup>54</sup> Ex. EERA-8 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>55</sup> Ex. AFCL-16 (Stipulation and Affidavit – AFCL and MDH).

<sup>56</sup> Ex. FR-4 (Litchfield Direct).

<sup>57</sup> Ex. FR-5 (Hankard Direct).

<sup>58</sup> Ex. FR-6 (Roberts Direct).

<sup>59</sup> Ex. FR-7 (Corrected Ellenbogen Direct).

<sup>60</sup> Ex. FR-8 (Giampoli Direct).

<sup>61</sup> Ex. FR-9 (MaRous Direct).

<sup>62</sup> Ex. FR-10 (Parzyck Direct).

<sup>63</sup> Ex. KAAL-1 (Harbert Direct); Ex. KAAL-4 (Lockwood Direct).

<sup>64</sup> Ex. AFCL-1 (Hansen Direct).

<sup>65</sup> Notice of Commission Meeting – January 4, 2018 (Dec. 22, 2017) (eDocket No. 201712-138388-02).

<sup>66</sup> Request for Limited Comment Time (Dec. 20, 2017) (eDocket No. 201712-138504-01).

<sup>67</sup> Fourth Prehearing Order (Jan. 5, 2018) (eDocket No. 20181-138676-01).



employee of DOC-EERA. The subpoena required Ms. Miltich to testify at the evidentiary hearing regarding her knowledge of noise monitoring at the Bent Tree Wind Farm.<sup>68</sup>

45. On January 19, 2018, DOC-EERA filed an Agreement between DOC-EERA and AFCL regarding the subpoenas.<sup>69</sup>

46. On January 22, 2018, Freeborn Wind filed the Rebuttal Testimony of the following witnesses: Mr. Litchfield, Ms. Giampoli, Mr. MaRous, Dennis Jimeno, and Mr. Hankard.<sup>70</sup> AFCL filed the Rebuttal Testimony of Ms. Hansen.<sup>71</sup> KAAL filed the Rebuttal Testimony of Mr. Harbert.<sup>72</sup>

47. On January 26, 2018, Freeborn Wind filed a Motion to Strike certain portions of the Direct and Rebuttal Testimony of AFCL witness Ms. Hansen and Exhibits B, C, and D, attached to Ms. Hansen's Rebuttal Testimony.<sup>73</sup> On February 2, 2018, AFCL filed a Response to Freeborn Wind's Motion to Strike.<sup>74</sup>

48. On January 26, 2018, DOC-EERA filed a Motion to Exclude documents regarding acoustic testing conducted for the Bent Tree Wind Farm.<sup>75</sup> On January 30, 2018, AFCL filed a Response to DOC-EERA's Motion to Exclude.<sup>76</sup>

49. On January 30, 2018, the Commission issued an Order Issuing a Draft Site Permit.<sup>77</sup>

50. On January 30, 2018, AFCL filed a letter to the Administrative Law Judge requesting that a time certain be established for MDNR witness testimony.<sup>78</sup>

51. On January 31, 2018, AFCL and MDH filed a Stipulation for the Release of Assistant Commissioner Paul Allwood of the Subpoena Issued December 18, 2017.<sup>79</sup>

52. On February 2, 2018, the Commission issued a Notice of Public Hearing and Draft Site Permit Availability.<sup>80</sup> The notice contained the location and times for the

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<sup>68</sup> DOC-EERA Motion (Jan. 16, 2018) (eDocket No. 20181-139001-01).

<sup>69</sup> Agreement of DOC-EERA and AFCL Regarding Subpoenas (Jan. 19, 2018) (eDocket No. 20181-139130-01).

<sup>70</sup> Ex. FR-11 (Litchfield Rebuttal); Ex. FR-15 (Giampoli Rebuttal); Ex. FR-14 (MaRous Rebuttal); Ex. FR-12 (Jimeno Rebuttal); Ex. FR-13 (Hankard Rebuttal).

<sup>71</sup> Ex. AFCL-15 (Hansen Rebuttal).

<sup>72</sup> Ex. KAAL-2 (Harbert Rebuttal).

<sup>73</sup> Mot. to Strike Portions of the Testimony of Dorene Hansen (Jan. 26, 2018) (eDocket No. 20181-139400-02).

<sup>74</sup> Response to Mot. to Strike (Feb. 2, 2018) (eDocket No. 20182-139747-01).

<sup>75</sup> Mot. to Exclude Bent Tree Data (Jan. 26, 2018) (eDocket No. 20181-139379-01).

<sup>76</sup> Response to DOC-EERA Mot. to Exclude Bent Tree Data (Jan. 30, 2018) (eDocket No. 20181-139493-01).

<sup>77</sup> Order Issuing Draft Site Permit (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>78</sup> Letter (Jan. 30, 2018) (eDocket No. 20181-139546-01).

<sup>79</sup> Ex. AFCL-16 (Stipulation and Affidavit – AFCL and MDH).

<sup>80</sup> Notice of Public Hr'g and Draft Site Permit Availability (Feb. 2, 2018) (eDocket No. 20182-139716-01).

public hearing scheduled on February 20, 2018, and the evidentiary hearing scheduled on February 21 and 22, 2018.

53. On February 5, 2018, Freeborn Wind filed the Surrebuttal Testimony of Dan Litchfield.<sup>81</sup> Also on February 5, 2018, KAAL filed the Surrebuttal Testimony of David Harbert and Stephen Lockwood.<sup>82</sup>

54. On February 7, 2018, DOC-EERA filed a comment letter dated October 4, 2017 from the Minnesota Pollution Control Agency (MPCA).<sup>83</sup>

55. On February 9, 2018, the MDNR filed a Motion to Quash the hearing subpoena for Lisa Joyal and, in the alternative, Objection to Intervenor's hearing subpoena for Lisa Joyal, along with a supporting memorandum and affidavit.<sup>84</sup> The MDNR also filed a Motion to Quash the hearing subpoena for Kevin Mixon and, in the alternative, Objection to Intervenor's hearing subpoena for Kevin Mixon, along with a supporting memorandum and affidavit.<sup>85</sup>

56. On February 12, 2018, the Administrative Law Judge issued an Order denying DOC-EERA's Motion to Exclude documents regarding acoustic testing conducted for the Bent Tree Wind Farm. The Administrative Law Judge received the Bent Tree documents for the limited purpose of understanding better "how noise problems have arisen in the past" and "the relevant factors to be considered in evaluating a site permit application."<sup>86</sup> In that same Order, the Administrative Law Judge granted in part and denied in part Freeborn Wind's Motion to Strike the testimony of Ms. Hansen.<sup>87</sup> The versions of Ms. Hansen's Direct and Rebuttal Testimony reflecting the portions stricken pursuant to the Administrative Law Judge's Order were filed on February 21, 2018.<sup>88</sup>

57. On February 12, 2018, the Administrative Law Judge issued the Fifth Prehearing Order.<sup>89</sup>

58. On February 12, 2018, AFCL filed a Response to MDNR's Motions to Quash the hearing subpoenas of Ms. Joyal and Mr. Mixon.<sup>90</sup>

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<sup>81</sup> Ex. FR-16 (Corrected Litchfield Surrebuttal).

<sup>82</sup> Ex. KAAL-3 (Harbert Surrebuttal); Ex. KAAL-5 (Lockwood Surrebuttal).

<sup>83</sup> DOC-EERA Comment - Letter from MPCA (Feb. 7, 2018) (eDocket No. 20182-139859-01).

<sup>84</sup> MDNR Mot. to Quash and Objection (Feb. 9, 2018) (eDocket No. 20182-139915-01); Mem. in Support of Mot. to Quash Subpoena of Lisa Joyal (Feb. 9, 2018) (eDocket No. 20182-139915-02); Affidavit of Lisa Joyal (Feb. 9, 2018) (eDocket No. 20182-139915-03).

<sup>85</sup> MDNR Mot. to Quash and Objection (Feb. 9, 2018) (eDocket No. 20182-139916-01); Mem. in Support of Mot. to Quash Subpoena of Kevin Mixon (Feb. 9, 2018) (eDocket No. 20182-139916-02); Aff. of Kevin Mixon (Feb. 9, 2018) (eDocket No. 20182-139916-03).

<sup>86</sup> Order on Mot. by DOC-EERA and Freeborn Wind to Exclude and Strike Testimony at 2, 5 (Feb. 12, 2018) (eDocket No. 20182-140011-01).

<sup>87</sup> *Id.* at 2.

<sup>88</sup> Ex. AFCL-1 (Hansen Direct); Ex. AFCL-15 (Hansen Rebuttal).

<sup>89</sup> Fifth Prehearing Order (Feb. 12, 2018) (eDocket No. 20182-140009-01).

<sup>90</sup> Reply Brief (Feb. 12, 2018) (eDocket No. 20182-140003-01).

59. On February 15, 2018, the Administrative Law Judge issued an Order denying the MDNR's Motions to Quash.<sup>91</sup>

60. A public hearing was held in Albert Lea, Minnesota, on February 20, 2018.

61. On February 21 and 22, 2018, an evidentiary hearing on the Application was held in Albert Lea, Minnesota. Commission staff, DOC-EERA staff, and representatives from Freeborn Wind, KAAL, and AFCL were present. The witnesses for the MDNR and KAAL witness Stephen Lockwood appeared by phone on February 22, 2018.

62. On March 1, 2018, Freeborn Wind filed the following exhibits pursuant to the Administrative Law Judge's request at the evidentiary hearing on February 22, 2018: the work papers and supporting affidavit of Mr. Jimeno; tables showing combined wind turbine noise and background noise and the supporting affidavit of Mr. Hankard; and the Freeborn Wind Easement Form and supporting affidavit of Mr. Litchfield.<sup>92</sup>

63. On March 20, 2018, Freeborn Wind filed post hearing briefs<sup>93</sup> and proposed findings of fact, conclusions of law, and recommendations.<sup>94</sup>

64. On March 20, 2018, AFCL filed an initial brief<sup>95</sup> and KAAL filed a post-hearing brief.<sup>96</sup>

### **III. Certificate of Need Exemption and Related Procedural Background**

65. On September 21, 2016, Freeborn Wind entered into a Purchase and Sale Agreement (PSA) with Xcel Energy and Invenergy Wind Development North America LLC. Under this PSA, Xcel Energy will purchase the ownership interest in Freeborn Wind following permitting and prior to construction, and will construct, own, and operate the Project.<sup>97</sup>

66. On October 24, 2016, Xcel Energy filed an Initial Petition notifying the Commission of its selection of the PSA (the Initial Petition), along with several other wind energy projects Xcel Energy proposed to purchase and self-build.<sup>98</sup>

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<sup>91</sup> Order Denying Mot. to Quash (Feb. 15, 2018) (eDocket No. 20182-140121-01).

<sup>92</sup> Ex. FR-17 (Jimeno Work Papers); Ex. FR-18 (Noise Tables); Ex. FR-19 (Freeborn Wind Easement Form).

<sup>93</sup> Freeborn Wind Post Hearing Brief (March 20, 2018) (eDocket No. 20183-141214-02).

<sup>94</sup> Freeborn Wind Proposed Findings of Fact, Conclusions of Law, and Recommendations (March 20, 2018) (eDocket No. 20183-141214-03).

<sup>95</sup> AFCL Initial Brief (March 20, 2018) (eDocket No. 20183-141225-02).

<sup>96</sup> KAAL Post-Hearing Brief (March 20, 2018) (eDocket No. 20183-141221-03).

<sup>97</sup> Ex. FR-4 at 9 (Litchfield Direct).

<sup>98</sup> *In re the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan*, MPUC Docket No. E002/M-16-777, Xcel Energy's Petition (Oct. 24, 2016).

67. On March 15, 2017, Xcel Energy filed a Supplemental Wind Petition seeking approval of 1,550 MW of wind energy, 750 MW of self-build wind (including the Project), and 800 MW of wind energy power purchase agreements.<sup>99</sup>

68. Xcel Energy utilized the resource acquisition process approved by the Commission as part of its approval of Xcel Energy's integrated resource plan.<sup>100</sup>

69. On September 1, 2017, the Commission approved Xcel Energy's Supplemental Wind Petition, including the PSA, in MPUC Docket No. E002/M-16-777.<sup>101</sup>

70. The Project was selected through a Commission-approved bidding process. Therefore, under Minn. Stat. § 216B.2422 subd. 5, it is exempt from the Certificate of Need requirements.<sup>102</sup>

#### **IV. Description of the Project**

71. The proposed Project is a large wind energy conversion systems (LWECS), as defined in the Wind Siting Act (Minn. Stat. ch. 216F) with a Project boundary of approximately 26,273 acres in Freeborn County, Minnesota (Project Area).<sup>103</sup>

72. Freeborn Wind proposes to construct an up to 84 MW LWECS and associated facilities in Freeborn County, Minnesota.<sup>104</sup> The Project is part of an up to 200 MW wind farm in Freeborn County, Minnesota, and Worth County, Iowa (the Wind Farm).<sup>105</sup> The Project will consist of up to 42 turbine sites yielding a total nameplate wind energy capacity of up to 84 MW in Freeborn County, Minnesota.<sup>106</sup> The remaining turbines would be located in Worth County, Iowa.<sup>107</sup>

73. Freeborn Wind is proposing to use two turbine types in the Project: the Vestas V116 and V110, both of which are rated at 2.0 MW of power production.<sup>108</sup> The

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<sup>99</sup> *In re the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan*, MPUC Docket No. E002/M-16-777, Xcel Energy's Supplemental Wind Petition (March 15, 2017).

<sup>100</sup> *Id.* at 3-12; see also *In re Xcel Energy's 2016-2030 Integrated Resource Plan*, MPUC Docket No. E002/RP-15-21, Order Approving Plan with Modifications and Establishing Requirements for Future Resource Plan Filings at Ordering Point 5 (Jan. 11, 2017).

<sup>101</sup> See *In re the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan*, MPUC Docket No. E002/M-16- 777, Order Approving Petition, Granting Variance, and Requiring Compliance Filing at 8, 10-11 (Sept. 1, 2017).

<sup>102</sup> See *In re the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan*, MPUC Docket No. E002/M-16- 777, Order Approving Petition, Granting Variance, and Requiring Compliance Filing at 8, 11 (Sept. 1, 2017).

<sup>103</sup> Ex. FR-1 at 1 (Application).

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

<sup>106</sup> *Id.*

<sup>107</sup> Ex. FR-4 at 1 (Litchfield Direct).

<sup>108</sup> *Id.* at 7.

Vestas V110 is 443 feet tall, and the Vestas V116 is 453 feet tall.<sup>109</sup> Both turbine models have hub heights of 80 meters and rotor diameters ranging from 110 to 116 meters.<sup>110</sup>

74. The Project layout proposed by Freeborn Wind would be constructed with a combination of the two turbine types, with 33 V116 turbines and nine V110 turbines.<sup>111</sup> Freeborn Wind selected these turbines due to wind resource analysis, siting, setbacks, and availability for use in the Project. Some V110 locations were selected due to siting constraints, but the majority of the V110 locations were chosen for its two A-weighted decibel (dB(A)) sound advantage and the resulting reductions in predicted dB(A) levels at adjacent, non-participating homes.<sup>112</sup>

75. The wind turbines under consideration consist of a nacelle, blades, hub, tower, and foundation.<sup>113</sup> The nacelle houses the generator, gear boxes, controller, shafts, brake, generator cabling, hoist, generator cooling, and other associated equipment.<sup>114</sup> An anemometer and weather vane located on the top of the turbine nacelle continuously monitor wind speed and direction.<sup>115</sup> The hub supports the blades and connecting rotor, yaw motors, mechanical braking system, and a power supply for emergency braking.<sup>116</sup> The hub also contains an emergency power supply to allow the mechanical brakes to work if electric power from the grid is lost.<sup>117</sup> Each turbine has three blades composed of carbon fiber, fiberglass, and internal supports to provide a lightweight but strong component.<sup>118</sup> The tip of each blade is equipped with a lightning receptor to safely conduct lightning strikes to ground.<sup>119</sup>

76. The foundation and tower support the hub, blades, and nacelle.<sup>120</sup> Foundations for the towers are anticipated to be a spread footer design.<sup>121</sup> The tubular towers will be painted a non-glare white.<sup>122</sup> The tower houses electrical and communication cables and a control system located at the base of the tower.<sup>123</sup>

77. Both proposed turbine models have Supervisory Control and Data Acquisition (SCADA) communication technology to control and monitor the Project.<sup>124</sup>

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<sup>109</sup> *Id.*

<sup>110</sup> Ex. FR-1 at 13 (Application).

<sup>111</sup> Ex. FR-4 at 7 (Litchfield Direct).

<sup>112</sup> *Id.*

<sup>113</sup> Ex. FR-1 at 12 (Application).

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

<sup>120</sup> *Id.*

<sup>121</sup> *Id.*

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> *Id.* at 14.

The SCADA communications systems permit automatic, independent operation and remote supervision, allowing the simultaneous control of the wind turbines.<sup>125</sup>

78. In addition to the wind turbines and associated equipment, the Project includes the following permanent and temporary associated facilities:<sup>126</sup>

- Gravel access road and improvements to existing roads;
- Electric collection lines;
- Operation and maintenance (O&M) facility;
- Project substation;
- Fiber optic communication lines;
- Permanent meteorological tower and associated weather collection data system;
- Improvements to public and private roads for delivery of materials and equipment; and
- Temporary crane paths that will be routed and used during construction of the Project.<sup>127</sup>

79. The temporary associated facilities for the Wind Farm in Iowa will also include staging areas for construction of the Project and a temporary batch plant area.<sup>128</sup>

80. The Project will include a wind access buffer of five rotor diameters in the prevailing wind directions and three rotor diameters in the non-prevailing wind directions; a noise setback meeting the MPCA's Noise Standards found in Minn. R. ch. 7030 (the Noise Standards); and a minimum setback of 1,000 feet from residences and 250 feet from public roads and trails.<sup>129</sup>

81. The Project's O&M facility and substation will require approximately 12 acres of land within the Project Area.<sup>130</sup> Freeborn Wind sited these facilities to avoid and/or minimize, to the extent practicable, disturbance from installation of the collection system and fiber-optic communication system.<sup>131</sup>

82. The total Wind Farm installed capital costs are estimated to be approximately \$300 million, including wind turbines, associated electrical and

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<sup>125</sup> *Id.*

<sup>126</sup> *Id.* at 4.

<sup>127</sup> *Id.* at 15; Ex. FR-4 at 6-7 (Litchfield Direct).

<sup>128</sup> Ex. FR-1 at 4 (Application).

<sup>129</sup> *Id.* at 6-7.

<sup>130</sup> *Id.* at 15.

<sup>131</sup> *Id.* at 15-16.

communication equipment and systems, and access roads.<sup>132</sup> The Minnesota portion of the Project would be approximately \$126 million in capital costs.<sup>133</sup> Ongoing operations and maintenance costs and administrative costs are estimated to be approximately \$7 to \$8 million per year in total, and \$3 million per year for the Minnesota portion of the Project.<sup>134</sup>

## V. Site Location and Characteristics

83. The Project is located in Hayward, London, Oakland, and Shell Rock Townships in Freeborn County in southcentral Minnesota.<sup>135</sup>

84. The Project Area contains approximately 26,273 acres, of which approximately 17,435 is currently leased for the Project.<sup>136</sup>

85. The Project Area consists of approximately 91.6 percent cropland, 1.4 percent pasture/grassland, 0.5 percent aquatic/wetland/open water, 5.6 percent developed land, and 0.9 percent introduced and semi-natural vegetation.<sup>137</sup>

86. The Project is located in a rural area.<sup>138</sup> Within the Project Area, the population density is between 8.7 and 12.3 people per square mile.<sup>139</sup>

## VI. Wind Resource Considerations

87. Predicted wind speeds near the Project Area at 80 meters above ground level are 6.0 to 8.8 meters per second (m/s).<sup>140</sup>

88. Freeborn Wind has conducted detailed site wind characterization studies and analysis over the past seven years for the Project and had two temporary meteorological towers monitoring weather data in the Project Area.<sup>141</sup> The mean annual wind speed at 80 meters above ground level is estimated to be 7.6 m/s.<sup>142</sup> The months of November through May are expected to generally have the highest wind speeds, while the months of June through October are expected to have the lowest wind speeds.<sup>143</sup> On average, wind speeds are higher in the evening and nighttime hours, and lower in the morning.<sup>144</sup>

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<sup>132</sup> *Id.* at 108.

<sup>133</sup> *Id.*

<sup>134</sup> Ex. FR-4 at 8 (Litchfield Direct).

<sup>135</sup> Ex. FR-1 at 19 (Application).

<sup>136</sup> *Id.* at 3.

<sup>137</sup> *Id.* at 4.

<sup>138</sup> *Id.* at 19.

<sup>139</sup> *Id.* at 20.

<sup>140</sup> *Id.* at 97.

<sup>141</sup> *Id.* at 96.

<sup>142</sup> *Id.* at 97.

<sup>143</sup> *Id.*

<sup>144</sup> *Id.* at 98.

89. The prevailing wind directions in the Project Area are generally from the south and the west-northwest.<sup>145</sup>

90. Freeborn Wind estimates the Project will have a net capacity factor of between 45 to 52 percent and an average annual output of between approximately 788,000 and 911,000 megawatt hours (MWh).<sup>146</sup> The 84 MWs in Minnesota would generate between 331,000 and 382,000 MWh per year.<sup>147</sup> Annual energy production output will depend on final design, site specific features, and annual variability in the wind resource.<sup>148</sup>

## VII. Wind Rights and Easement/Lease Agreements

91. Freeborn Wind states it has all the voluntary private easements necessary to construct the Project, and it plans to acquire the applicable federal, state, and local permits.<sup>149</sup> All Project facilities will be on private easements or, in limited instances, in public road right-of-way (ROW) pursuant to local permits that will be obtained prior to construction.<sup>150</sup> Freeborn Wind reports it worked with landowners to secure sufficient land lease and wind easements/setback easement agreements to build the Project.<sup>151</sup> Land rights secured from each landowner vary, and may include, but are not limited to, the rights to construct wind turbines and Project facilities, including access roads, collection lines, crane paths, rights to wind and buffer easements, transmission feeder lines in public road ROW and rights to additional land, as needed, to mitigate environmental impacts.<sup>152</sup> Freeborn Wind maintains it currently leases 17,435 acres of the 26,273 acres within the Project Area (66 percent of the Project Area). The current leasehold is sufficient to accommodate the proposed facilities, required buffers, and turbine placement flexibility needed to avoid natural resources, homes, and other sensitive features.<sup>153</sup>

92. According to Freeborn Wind, the Project's layout follows the wind energy conversion facility siting criteria outlined in the Commission's Order Establishing General Wind Permit Standards, MPUC Docket No. E,G999/M-07-1102 (Jan. 11, 2008), and Freeborn Wind's guidelines and best practices.<sup>154</sup> With one limited exception, the Project layout conforms to all applicable county ordinances.<sup>155</sup> Where state and local setbacks differ for the same feature, the most stringent setback distance is used.<sup>156</sup>

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<sup>145</sup> *Id.* at 9.

<sup>146</sup> *Id.* at 109.

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> Ex. FR-11 at 3 (Litchfield Rebuttal); Ex. FR-4 at 8 (Litchfield Direct).

<sup>150</sup> Ex. FR-11 at 3 (Litchfield Rebuttal); Ex. FR-4 at 8 (Litchfield Direct).

<sup>151</sup> Ex. FR-1 at 18 (Application).

<sup>152</sup> See Ex. FR-19 (Litchfield Affidavit and Freeborn Wind Easement Form).

<sup>153</sup> Ex. FR-1 at 18 (Application).

<sup>154</sup> *Id.* at 6-12.

<sup>155</sup> *Id.*; see also *id.* at 27-28 (discussing limited variance from Freeborn County wetland setback ordinance).

<sup>156</sup> *Id.* at 6. One limited exception to Freeborn County's setback from wetlands is discussed in Section XI.B.



## VIII. Project Schedule

93. In the Application, the anticipated construction start was May 2020, with commercial operations commencing in the fourth quarter of 2020.<sup>157</sup> However, Freeborn Wind reports that Xcel Energy intends to advance the construction timetable and start construction in the fall of 2019, with commercial operations still commencing in the fourth quarter of 2020.<sup>158</sup> The commercial operations date is dependent on several factors, including weather, permitting, and other development activities.<sup>159</sup>

## IX. Additional Issues Raised by AFCL

### A. Notice and Public Participation

94. In its Petition, AFCL raised the issue of whether landowners and affected parties have received notice and have had an opportunity to participate in these proceedings.<sup>160</sup>

95. Freeborn Wind complied with the notice requirements of Minn. R. 7854.0600 and 7829.0500 by providing direct mail notice and newspaper publications relating to the Site Permit Application, and by placing copies of the Application in the Albert Lea Public Library.<sup>161</sup>

96. On September 8, 2017, DOC-EERA issued a Notice of Public Information Meeting, which was published in the Albert Lea Tribune and mailed to landowners.<sup>162</sup> The Notice alerted the public to the subsequent written comment period and public meeting, which provided an opportunity for landowners and other members of the public to raise concerns regarding the issues and facts to be considered in the development of the Draft Site Permit in these proceedings.<sup>163</sup>

97. On September 12, 2017, the Administrative Law Judge granted AFCL's Petition to Intervene, thus allowing the direct participation of affected landowners in these proceedings.<sup>164</sup>

98. On February 2, 2018, the Commission issued a Notice of Public Hearing and Draft Site Permit Availability, providing notice of the February 20, 2018, Public Hearing to be held in Albert Lea, Minnesota. The same Notice alerted the public to an

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<sup>157</sup> Ex. FR-1 at 109 (Application).

<sup>158</sup> Ex. FR-4 at 7-8 (Litchfield Direct).

<sup>159</sup> *Id.*

<sup>160</sup> Petition for Contested Case at 3-4 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>161</sup> Ex. FR-3 (Application Notice Compliance filing).

<sup>162</sup> Notice of Public Information Meeting (Sept. 8, 2017) (eDocket No. 20179-135365-01).

<sup>163</sup> *Id.*

<sup>164</sup> Order Granting Intervention (Sept. 12, 2017) (eDocket No. 20179-135455-01).

additional comment period from February 1, 2018, through March 15, 2018. This Notice was served on landowners and other interested parties.<sup>165</sup>

99. The Administrative Law Judge has accepted, reviewed, summarized, and considered comments from many members of the public.<sup>166</sup>

100. The Administrative Law Judge finds that landowners, affected parties, and the public have received notice and had an opportunity to participate in these proceedings.

## **B. Transmission Route Permit**

101. In its Petition, AFCL raised the issue of whether Freeborn Wind and/or Invenergy are public utilities and, if not, whether they would be able to obtain a transmission route permit.<sup>167</sup>

102. AFCL did not pursue or develop a record regarding this argument at the evidentiary hearing or in its post-hearing briefs.

103. The issue of whether Freeborn Wind or Invenergy can obtain a transmission route permit is the subject of a separate MPUC docket.<sup>168</sup>

104. DOC-EERA has not raised concerns about Freeborn Wind or Invenergy's ability to obtain a transmission route permit. DOC-EERA's proposed amendments to Freeborn Wind's proposed findings of fact demonstrate that DOC-EERA is aware of the separate transmission proceeding.<sup>169</sup> DOC-EERA's recommendation nonetheless concludes that "Freeborn Wind Project is a feasible LWECs project," and that "a Site Permit should be issued to Freeborn Wind LLC" for the Project.<sup>170</sup>

105. The Administrative Law Judge finds that the issue of whether Freeborn Wind and/or Invenergy is able to obtain a transmission route permit is beyond the scope of this proceeding. The issue of whether Freeborn Wind and/or Invenergy is able to obtain a transmission route permit will properly be addressed in the Commission's route permit proceeding, where a record on the issue has been developed, and not in these proceedings, where no such record has been developed.

## **C. MISO Queue**

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<sup>165</sup> Notice of Public Hearing (Feb. 2, 2018) (eDocket No. 20182-139716-01); Affidavit of Publication (Feb. 12, 2018) (eDocket No. 20182-140016-02).

<sup>166</sup> Citation to comment appendix.

<sup>167</sup> Petition for Contested Case at 4-5 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>168</sup> PUC Docket IP-6946/TL-17-322.

<sup>169</sup> DOC-EERA Reply Brief at 3 (Apr. 4, 2018) (eDocket No. 20184-141695-01) (noting the removal of references to the transmission line in the proposed findings because the transmission line "is currently in the route permit process, eDocket #17-322, and will not be approved as associated infrastructure under the Site Permit process").

<sup>170</sup> DOC-EERA Reply Brief at 7 (Apr. 4, 2018) (eDocket No. 20184-141695-01).

106. In its Petition to Intervene, AFCL stated that the Midcontinent Independent System Operator (MISO) queue could only accept 150 MW of the proposed 200 MW capacity of the Freeborn Wind Project. In addition, AFCL raised the issue of whether the cost of network upgrades would increase the costs of electricity generated by the Project.<sup>171</sup>

107. AFCL failed to develop a record regarding this argument at the evidentiary hearing or in its post-hearing briefs.

108. Of the up to 200 MW proposed capacity of the overall project, only up to 84 MW will be sited in Minnesota and is, thus, at issue in this contested case proceeding.<sup>172</sup>

109. The Administrative Law Judge finds that AFCL failed to demonstrate that MISO could only accept 150 MW of the proposed 200 MW capacity of the entire Freeborn Wind Project, because AFCL has not developed a record from which the Administrative Law Judge could make findings concerning the MISO queue's capacity.

110. Furthermore, the Administrative Law Judge Finds that AFCL failed to demonstrate that MISO intends to make network upgrades as a result of the Freeborn Wind project, or that any possible cost of network upgrades would increase the costs of electricity generated by the Freeborn Wind project.

#### **D. Land Rights Free From Coercion**

111. In its Petition, AFCL raised the issue of whether Freeborn Wind had secured its land rights in a manner free from coercion.<sup>173</sup>

112. It is undisputed that a Freeborn Wind land agent made misrepresentations to certain landowners while securing land rights for Freeborn Wind.<sup>174</sup>

113. At the evidentiary hearing, a representative of Freeborn Wind testified that he "[didn't] dispute that [the agent] was unprofessional."<sup>175</sup> Freeborn Wind also testified that the agent in question had been fired.<sup>176</sup> Freeborn Wind communicated with landowners whose "agreements are a necessary part of the project and then visited with those landowners to ensure that they are still comfortable with their participation in the project and they all are."<sup>177</sup>

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<sup>171</sup> Petition for Contested Case at 6-7 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>172</sup> Ex. FR-1 at 1 (Application).

<sup>173</sup> Petition for Contested Case at 11-13 (July 6, 2017) (eDocket No. 20177-133591-01) at 11-13.

<sup>174</sup> *Id.* at 12.

<sup>175</sup> Tr. Vol. 1A at 94 (cross-examination of Litchfield).

<sup>176</sup> Tr. Vol. 2 at 78 (cross-examination of Parczyk); see Ex. AFCL-34.

<sup>177</sup> Tr. Vol. 1A at 94 (cross-examination of Litchfield).

114. There was no testimony alleging that any person continued to be bound by the terms of an agreement based on misrepresentations of the fired agent.

115. AFCL proposed that any site permit contain a special condition requiring the Applicant to obtain new signatures on all the affected landowners' contracts.<sup>178</sup>

116. The Administrative Law Judge finds that Freeborn Wind has secured its land rights in a manner free from coercion.

## **X. Site Permit Criteria**

117. Wind energy projects are governed by Minn. Stat. Ch. 216F and Minn. R. ch. 7854. Minn. Stat. § 216F.01, subd. 2, defines a "large wind energy conversion system" as a combination of wind energy conversion systems with a combined nameplate capacity of five MW or more. Minnesota Statute chapter 216F.03 requires that a LWECS be sited in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.

118. When deciding whether to issue a site permit for an LWECS, the Commission considers the factors set forth in Minn. Stat. § 216E.03, subd. 7, which specifies, in relevant part, that the Commission shall be guided by, but not limited to, the following considerations:

- 1) evaluation and research and investigations relating to the effects on land, water, and air resources or large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic field resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;
- 2) environmental evaluation of sites . . . proposed for future development and expansion and their relationship to the land, water, air, and human resources of the state;
- 3) evaluation of the effects of new electric power generation . . . systems related to power plants designed to minimize adverse environmental effects;
- 4) evaluation of the potential for beneficial uses of waste energy from proposed large electric power generating plants;

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<sup>178</sup> Comment by Carol Overland on behalf of AFCL at 13 (July 6, 2013) (eDocket No.20177-133591-01).

- 5) analysis of the direct and indirect economic impact of proposed sites . . . including, but not limited to, productive agricultural land lost or impaired;
- 6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site . . . be accepted;
- 7) evaluation of alternatives to the applicant's proposed site . . . ;
- 8) \*\*\*
- 9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- 10) \*\*\*
- 11) evaluation of irreversible and irretrievable commitments of resources should the proposed site . . . be approved; and
- 12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.<sup>179</sup>

119. The Commission must also consider whether the applicant has complied with all applicable procedural requirements.<sup>180</sup>

120. The Commission's rules require the applicant to provide information regarding any potential impacts of the proposed project, potential mitigation measures, and any adverse effects that cannot be avoided as part of the application process.<sup>181</sup> No separate environmental review document is required for an LWECS project.<sup>182</sup>

## **XI. Application of Siting Criteria to the Proposed Project**

### **A. Human Settlement**

121. The Project is located in rural southcentral Minnesota. Population densities within the Project Area range from 8.7 people per square mile in London Township, to

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<sup>179</sup> Minn. Stat. § 216E.03, subd. 7. Considerations (8) and (10) are omitted because they pertain only to proposed routes of high voltage transmission lines.

<sup>180</sup> Minn. R. 7854.1000, subp. 3.

<sup>181</sup> Minn. R. 7854.0500, subp. 7.

<sup>182</sup> *Id.* ("The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts 7849.1000 to 7849.2100, and Minnesota Statutes, chapter 116D. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.").

12.3 people per square mile in Shell Rock Township.<sup>183</sup> There are already hundreds of commercial wind turbines operating within 20 miles of the Project Area.<sup>184</sup>

122. The construction of the Project will not displace residents or change the demographics of the Project Area.<sup>185</sup>

## **B. Zoning and Land Use**

### **i. Zoning**

123. The Project is located in Freeborn County in an area generally designated as an agricultural district.<sup>186</sup> The Project includes an O & M facility and substation which will require approximately 12 acres of land within the Project Area.<sup>187</sup>

124. At the public hearing, Freeborn County Commissioner Dan Belshan testified that Freeborn Wind's O & M building is a commercial building in an area that is zoned for agricultural use. Commissioner Belshan stated that Freeborn County does

not usually allow in an agricultural zoning a commercial building built like that, and we have precedents for that. We did the wind farm into Hartland, and we made them go into the city limits of Hartland where they have water and sewer. There's a lot of reasons we don't want to see spot zoning out in an ag district. If you put up a small machine shop on a road. Pretty soon you've got them running on a township road. So there's a reason we want industrial things in industrial parks or next to cities that have that.<sup>188</sup>

125. Freeborn County has adopted a Comprehensive Land Use Policy Plan, codified in the Freeborn County Code of Ordinances, which includes the Project Area.<sup>189</sup> The Freeborn County Zoning Ordinance (Ordinance or Freeborn County Ordinance) identifies commercial wind energy conversion systems and meteorological towers as conditionally permitted uses in an agricultural district.<sup>190</sup>

126. The Ordinance defines "aggregated projects," which are projects developed and operated by multiple entities. The definition of "aggregated projects" specifies that "[a]ssociated infrastructure . . . are also included as part of the aggregated project."<sup>191</sup>

127. The Ordinance also includes regulations relating to, among other things, turbine setbacks, environmental mitigation, shadow flicker, and decommissioning.<sup>192</sup> By

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<sup>183</sup> Ex. FR-1 at 20 (Application).

<sup>184</sup> See *id.* at 102.

<sup>185</sup> *Id.* at 21.

<sup>186</sup> *Id.* at 23.

<sup>187</sup> *Id.* at 15.

<sup>188</sup> Public Hr'g Tr. at 158 (Belshan) (Feb. 20, 2018).

<sup>189</sup> Ex. FR-1 at 22-23 (Application).

<sup>190</sup> Freeborn County, Minn., Code of Ordinances § 26-41 (2015).

<sup>191</sup> Freeborn County, Minn., Code of Ordinances § 26-24 (2015).

<sup>192</sup> See, e.g., Freeborn County, Minn., Code of Ordinances §§ 26-51, 26-55 (2015).

its terms, the Ordinance applies only to systems that are not otherwise subject to siting and oversight by the Commission.<sup>193</sup> Similarly, Minn. Stat. § 216F.07 states, “A permit under this chapter is the only site approval required for the location of an LWECS. The site permit supersedes and preempts all zoning, building, or land use rules, regulations, or ordinances adopted by regional, county, local, and special purpose governments.”

128. Because the Freeborn Wind project, including the O & M building, is subject to siting and oversight by the Commission, the Freeborn County Ordinance does not apply. Thus, the proposed use does not require separate permitting from Freeborn County.<sup>194</sup>

## ii. Water Impacts

129. Freeborn County has also adopted the Comprehensive Water Plan Amended to 2016. This plan identifies specific natural resources such as aquifers and surface waters, as well as, drainage, and soil and erosion, and implementation actions to address priority concerns. The Plan focuses on agricultural land uses because approximately 81 percent of productive land in Freeborn County is farmed or used for rotational animal pastures.<sup>195</sup>

130. The Project is consistent with Freeborn County’s Comprehensive Plan and will not alter the land use or Comprehensive Water Plan designations of any parcel within the Project Area boundary.<sup>196</sup>

131. Freeborn Wind identified one four acre Reinvest in Minnesota (RIM) easement within the Project Area. The Project will not impact this conservation easement.<sup>197</sup> Based on publicly available information, Freeborn Wind states there are no U.S. Fish and Wildlife Service (USFWS) wetland or grassland easements in the Project Area. USFWS Windom Wetland Management District also confirmed the absence of USFWS easements or fee-title properties in the Project Area. Similarly, there are no wetland bank easements in the Project Area.<sup>198</sup>

## iii. Wetland Setbacks

132. Under Minn. Stat. § 216F.081:

A county may adopt by ordinance standards for LWECS that are more stringent than standards in commission rules or in the commission's permit standards. The commission, in considering a permit application for LWECS

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<sup>193</sup> See Freeborn County, Minn., Code of Ordinances § 26-20 (2015); see also Minn. Stat. § 216F.07 (“A permit under this chapter is the only site approval required for the location of an LWECS. The site permit supersedes and preempts all zoning, building, or land use rules, regulations, or ordinances adopted by regional, county, local, and special purpose governments.”).

<sup>194</sup> Freeborn County, Minn., Code of Ordinances § 26-20.

<sup>195</sup> Ex. FR-1 at 25 (Application).

<sup>196</sup> *Id.* at 26.

<sup>197</sup> *Id.*

<sup>198</sup> *Id.* at 26-27.

in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the commission finds good cause not to apply the standards.<sup>199</sup>

133. Freeborn Wind asserts it has designed the Project to generally comply with the Freeborn County Ordinance, with a limited wetland setback exception, anticipated shadow flicker setbacks, and required signed road agreements.<sup>200</sup> Freeborn County's Ordinance includes setback requirements for LWECS that are more restrictive than the Commission's LWECS requirements. With one limited exception relating to wetland setbacks, the Project meets Freeborn County's more stringent setback requirements.<sup>201</sup>

134. Freeborn County Ordinance Section 26-51 requires a three rotor diameter (RD) setback from USFWS Types III, IV, and V wetlands. With the exception of three stock ponds (created for agricultural feed lot operations at a nearby farm), none of the wetlands identified in close proximity to turbines within the Project Area were delineated as Types III, IV, or V.<sup>202</sup>

135. Three RD is 1,141 feet for the V116 turbine model.<sup>203</sup> Freeborn Wind states that, due to other siting restrictions, Turbine 31, a V116 model, is sited 2.9 RD (1,086 feet) from three stock ponds classified as Type III wetlands.<sup>204</sup> According to Freeborn Wind, a formal wetland delineation and classification conducted for the wetlands near Turbine 31 characterized them as a small man-made collection of stock ponds that would serve as very low-quality habitat for wildlife.<sup>205</sup> Further, Freeborn Wind reports these stock ponds have not been actively used since 1985.<sup>206</sup> Because wildlife would not be expected to be attracted to this pond, Freeborn Wind believes the proposed location of Turbine 31 is not expected to have an impact on wildlife.<sup>207</sup> Accordingly, Freeborn Wind maintains Turbine 31's proposed 1,086-foot setback is adequate to protect the nearby wetlands and wildlife activities supported by the wetland from any potential adverse effects of the Project.<sup>208</sup> Finally, Freeborn Wind argues that the Commission has specifically rejected imposing a 1,000-foot setback from wetlands, concluding there is insufficient justification for such a setback. In addition, Freeborn Wind argues that imposing a 1,000-foot setback from wetlands would take an unjustifiable amount of land out of wind energy production.<sup>209</sup>

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<sup>199</sup> Minn. Stat. § 216F.081.

<sup>200</sup> Ex. FR-1 at 23 (Application); Freeborn County, Minn., Code of Ordinances §§ 26-51, 26-56, 26-59(a) (2015).

<sup>201</sup> Ex. FR-4 at 16 (Litchfield Direct). Since Freeborn Wind's application was submitted, on July 11, 2017, the Freeborn County Board passed a statement in support of a 1,500 foot setback from residences. See Public Comment of Dorene Hansen (July 12, 2017) (eDocket No. 20177-133792-01). However, that is not part of a County ordinance.

<sup>202</sup> Ex. FR-1 at 26 (Application).

<sup>203</sup> *Id.* at 8, Table 5.1-2.

<sup>204</sup> *Id.* at 27; Ex. FR-8 at 7 (Giampoli Direct).

<sup>205</sup> Ex. FR-8 at 7-8 (Giampoli Direct); Ex. FR-1 at 27-28 (Application).

<sup>206</sup> Ex. FR-8 at Schedule 4 at 2 (Giampoli Direct).

<sup>207</sup> *Id.* at 8.

<sup>208</sup> *Id.*

<sup>209</sup> *In re Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*, MPUC Docket No. E,G999/M-07-1102, MPUC Order Establishing General Wind Permit Standards at 3-4 (Jan. 11, 2008) (eDocket No. 4897855).



Therefore, Freeborn Wind asserts, pursuant to Minn. Stat. § 216F.081, there is good cause not to apply Freeborn County's wetland setback to the proposed location of Turbine 31.<sup>210</sup>

136. AFCL argues that the Commission should not find good cause to refuse to apply Freeborn County's wetland setback requirements, but does not say why.<sup>211</sup>

137. The Administrative Law Judge concludes that Freeborn Wind has demonstrated good cause for the Commission not to apply Freeborn County's wetland setback to the proposed location of Turbine 31.

#### iv. Other Setbacks

138. The Freeborn County Ordinance requires a setback of 1,000 feet from a dwelling.<sup>212</sup> The Ordinance defines a "dwelling" as "a residential building or portion thereof intended for occupancy by a single-family, but not including hotels, motels, boarding or rooming houses, or tourist homes."<sup>213</sup>

139. Freeborn Wind states that all turbines within the Project comply with the Freeborn County Ordinance's residential setback of 1,000 feet.<sup>214</sup> According to Freeborn Wind, the Project's average residential setback is 1,905 feet.<sup>215</sup> The turbine with the shortest setback (1,189 feet), Turbine 23, is located on a participating landowner's property, and the nearby residence in question belongs to that participating landowner.<sup>216</sup>

140. Freeborn Wind acknowledges that one turbine is located 700 feet from a vacant house (identified as house No. 281) located on property owned by participating landowner Richard Carroll.<sup>217</sup> Freeborn Wind asserts that the house is not a dwelling within the meaning of the Ordinance because it is currently unoccupied, and the owner has no intention of renting the house in the future if the Project is approved. Further, Freeborn Wind maintains that Mr. Carroll has expressed his consent to the Project and its proximity to the house on his property, and that the house will remain unoccupied.<sup>218</sup>

141. At the public hearing, Mr. Carroll expressed his support for wind energy, generally, and for the Project. Specifically, Mr. Carroll expressed concern that members of the community continue to treat one another with respect, despite their differences.<sup>219</sup>

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<sup>210</sup> See Ex. FR-8 at 8-9 (Giampoli Direct).

<sup>211</sup> See AFCL Brief at 56-57 (Mar. 20, 2018); AFCL Reply Brief at 11-15 (Apr. 4, 2018).

<sup>212</sup> Freeborn County, Minn., Code of Ordinances § 26-51.

<sup>213</sup> Freeborn County, Minn., Code of Ordinances § 26-24.

<sup>214</sup> Ex. FR-4 at 17 (Litchfield Direct).

<sup>215</sup> *Id.* at 18-19.

<sup>216</sup> *Id.* at 19. A participating landowner is a landowner who has entered into an agreement with Freeborn Wind. A non-participating landowner has not entered into an agreement with Freeborn Wind.

<sup>217</sup> *Id.* at 17; Ex. FR-4 (Errata).

<sup>218</sup> See Ex. FR-4 at Sched. 6, 17 (Litchfield Direct). Mr. Carroll also spoke in support of the Project at the public hearing. See Public H'rg Tr. at 106 (Feb. 20, 2018) (Carroll).

<sup>219</sup> Public H'rg. Tr. at 106-107 (Feb. 20, 2018).

142. Freeborn Wind argues that, even if the vacant house were considered a “dwelling” under the Ordinance, pursuant to Minn. Stat. § 216F.081, good cause exists for the Commission to not apply Freeborn County’s 1,000-foot setback to the vacant house.

143. AFCL disagrees, stating that, at a minimum, Mr. Carroll must commit in writing to leaving his house unoccupied.<sup>220</sup>

144. The Administrative Law Judge agrees that good cause exists for the Commission not to apply Freeborn County’s 1,000-foot setback to the vacant house on Mr. Carroll’s property. There is no evidence in the record that siting a wind turbine less than 1,000 feet from Mr. Carroll’s vacant house will affect any other landowner. In addition, Mr. Carroll was present and spoke at the public hearing, but gave no indication that he was displeased with the proposed turbine layout.

145. Public comments requesting increased residential setbacks have been submitted, and the Freeborn County Board of Commissioners submitted a comment requesting a 1,500-foot setback requirement.<sup>221</sup> The residential setback required by Section 26-51 of the Ordinance is 1,000 feet.<sup>222</sup>

146. The Freeborn County Ordinance also provides that shadow flicker may not exceed 30 hours per year at any receptor.<sup>223</sup> To ensure that no landowner experiences more than 30 hours of shadow flicker per year, Freeborn Wind states that it plans to utilize Turbine Control Software programmed to shut down a specific turbine or turbines for an appropriate amount of time to reduce flicker to below 30 hours per year at each home.<sup>224</sup> Freeborn Wind projects that, in this way, it can comply with the 30-hour per year shadow flicker limits of the Ordinance.

147. As discussed in detail in section X.E. of this Report, the Administrative Law Judge recommends that, if the Commission issues the Site Permit, Section 7.2 of the Draft Site Permit be modified to ensure that Freeborn Wind complies with Freeborn County’s shadow flicker limits.

148. Section 4.4 of the Draft Site Permit also requires that all wind turbines and meteorological towers be set back a minimum of 250 feet from the edge of the nearest public road ROW.<sup>225</sup> The Freeborn County Ordinance requires turbines to be set back a minimum of 1.1 times the turbine height from the nearest public ROW.<sup>226</sup> This is 487 feet

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<sup>220</sup> AFCL redline comments to Freeborn Wind Proposed Findings of Fact, Conclusions of Law, and Recommendation at 21 (Apr. 4, 2018).

<sup>221</sup> Freeborn Cnty. Bd. of Comm’rs Comment (July 13, 2017) (eDocket No. 20177-133824-01); see Attach. A at 7 (Summary of Initial Public Comments).

<sup>222</sup> See Ex. EERA-8 at 15 (Comments and Recommendations on a Preliminary Draft Site Permit) (stating that DOC-EERA “does not consider 1,300 feet, 1,500 feet, one-half mile, one mile, or 10 times the turbine tip height to be justified distances for turbine setbacks from residences.”); Ex. FR-4 at 21 (Litchfield Direct).

<sup>223</sup> Freeborn County, Minn., Code of Ordinances § 26-56 (2015).

<sup>224</sup> Tr. Vol. 1A at 33 (Litchfield); see *also* Ex. AFCL-19 at 2 (Freeborn Response to AFCL IR No. 7).

<sup>225</sup> Draft Site Permit at 3-4 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>226</sup> Freeborn County, Minn., Code of Ordinances § 26-51.

for the V110 model and 498 feet for the V116 model.<sup>227</sup> DOC-EERA considered this setback and recommended that it not be adopted. DOC-EERA stated that a 1.1 times the total turbine height as a clear turbine fall zone is not necessary and results in additional siting constraints that are not justified.<sup>228</sup> Within the proposed turbine layout, the turbines are located at least 499 feet from the nearest public roadway.<sup>229</sup> Therefore, the proposed Project will comply with the Draft Site Permit conditions and the Freeborn County Ordinance.

149. None of the townships within the Project Area have adopted zoning regulations.<sup>230</sup>

150. Should the Commission grant a Site Permit, including the conditions preventing excessive shadow flicker, the Project would not conflict with the applicable zoning and/or comprehensive plan requirements.<sup>231</sup> The Project is not expected to have negative impacts on local zoning, comprehensive plans, and conservation easements. The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to land use and local zoning.

### **C. Property Values**

151. Freeborn Wind states that project facilities will be sited and constructed predominantly on leased agricultural lands owned by participating landowners. According to Freeborn Wind, these participating landowners will be compensated for the use of their property, yielding increased valuations on the farmland due to the harvest of electricity along with traditional agricultural products that underpin the value of the land.<sup>232</sup> Therefore, Freeborn Wind anticipates that there will be no unmitigated impacts to the property values of participating landowners.<sup>233</sup>

152. Michael MaRous is a certified Member Appraisal Institute appraiser with 30 years of experience evaluating the impact of wind turbines on property values. Mr. MaRous conducted a Market Analysis to evaluate the potential impact of the Project on the value of the surrounding properties and found no credible data indicating property values are adversely impacted due to proximity to wind farm developments.<sup>234</sup> Mr. MaRous completed a Project-specific market analysis of properties in the Project Area and concluded that “[a]n analysis of agricultural land values in the area and in other areas of the state with wind farms did not support any finding that the agricultural land values are negatively impacted by the proximity to wind turbines.”<sup>235</sup>

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<sup>227</sup> Ex. FR-1 at 7 (Application).

<sup>228</sup> Ex. EERA-8 at 28 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>229</sup> Ex. FR-1 at 42 (Application).

<sup>230</sup> Ex. FR-1 at 26 (Application).

<sup>231</sup> *Id.* at 27.

<sup>232</sup> *Id.* at 67-68.

<sup>233</sup> *Id.* at 67.

<sup>234</sup> Ex. FR-9 at 4-5 (MaRous Direct); see also Ex. FR-1 at App. E (Application); Tr. Vol. 2 at 57 (MaRous).

<sup>235</sup> Ex. FR-9 at 4 (MaRous Direct).

153. There were some public comments alleging that the proximity of wind turbines will negatively affect the value of nearby agricultural properties. One public comment reflected concerns several people had with the turbines' cement foundations:

For the land, the amount of cement that has to go in the ground is going to diminish the yield potential around them because of the secretion into the soil around it. Producers will have to spend more on fertilizer to bring that up to the needed nutrients for the plant to fully produce a crop. In seasons where it's already hard to start out farming and profits are hard to make, this added cost is only going to put another wrench in the mix for our young producers to come back to the area.<sup>236</sup>

154. There was conflicting testimony regarding the ability of agricultural pilots to conduct aerial spraying within the perimeter of a wind farm.<sup>237</sup> AFCL provided no expert testimony regarding the impact of wind turbines on neighboring agricultural property or practices.

155. The Administrative Law Judge finds that the preponderance of the evidence is that the Project will not adversely affect agricultural land values.

156. The impact of the Project on residential property values was more strongly contested. Mr. MaRous concluded that "an analysis of recent residential sales proximate to existing wind farms did not support any finding that proximity to a wind turbine had a negative impact on property values."<sup>238</sup> Mr. MaRous found no market evidence to support a negative impact on property values as a result of the development of and proximity to a wind farm.<sup>239</sup> Mr. MaRous' initial analysis of the Project assumed a 1,500-foot setback from all residences, but he was aware that six turbines were proposed to be closer than 1,500 feet from the nearest house. The existence of these six closer turbines did not affect the conclusions of his analysis because all of his research "in Freeborn County and elsewhere has confirmed that where there is a setback of at least three times the turbine height, there is no impact on land values. All but one of the [six] closest residences meets that threshold."<sup>240</sup>

157. Mr. MaRous' research on residential property values considered a variety of data. To determine the extent to which the data supports his conclusion, each data source must be examined.

158. Mr. MaRous conducted a site-specific assessment of the residence located 1,189 feet from the nearest turbine to determine whether there would be an effect on its value. The primary owner of the property lives on property in Iowa with wind turbines and stated that he believes the turbine lease and location, as proposed, will not have a

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<sup>236</sup> Comment by Jennifer Johnson (July 13, 2017) (eDocket No. 20177-133824-01).

<sup>237</sup> Public Hr'g Tr. at 77 (Rauenhorst), 90-91 (Thisius), 180-82 (Follmuth) (Feb. 20, 2018).

<sup>238</sup> *Id.* at 4.

<sup>239</sup> Ex. FR-9 at 4-5 (MaRous Direct); see *id.* at Schedules 2-3 (MaRous Direct).

<sup>240</sup> *Id.* at 6-7 (MaRous Direct). Three times the turbine height for the V110 model is 1,329 feet and for the V116 model is 1,359 feet. *Id.* at 7.

negative impact on the property value. Accordingly, Mr. MaRous concluded that the Project will not adversely affect the value of a property close to a turbine.<sup>241</sup>

159. The Administrative Law Judge gives little weight to the opinion of an expert witness that rests in large part upon the opinion of a non-expert, non-resident, participating landowner who was not subject to cross-examination.

160. Mr. MaRous also used the “matched pair” method to examine the effect of proximity to a wind turbine on a property’s value. This method analyzes the impact of a single feature on a property’s value by finding the sale value of a nearly identical property but for the single feature.

161. While theoretically attractive, the Administrative Law Judge notes that the accuracy of the “matched pair” method obviously depends on the adequacy of the data to which it is applied. No two properties are exactly alike in every detail, and differences between the properties other than their proximity to wind turbines could share responsibility for any differences in the properties’ values. The greater the number of “matched pairs,” the more confidence can be placed in the conclusions drawn.

162. There were few recent sales of single-family homes in Freeborn County. Mr. MaRous acknowledges that it “is difficult to find properties that are identical except for proximity to a wind turbine, and which also occurred under substantially similar market conditions, especially in rural areas.”<sup>242</sup> He found only a single recent sale of a single-family residence near a wind turbine – a residence 2,375 feet from its nearest turbine in the Bent Tree Wind Farm. That distance is just 235 feet short of one-half mile and 25 percent further from the nearest turbine than the Project’s average planned setback of 1,905 feet.<sup>243</sup> He compared that sale to the sale price of a property he judged to be quite similar but was not located near wind turbines. Based on a comparison of the properties, Mr. MaRous found no evidence that proximity to a wind turbine decreased the property’s value.<sup>244</sup>

163. This single matched pair is an exceedingly limited foundation upon which to base any conclusion about the effect of the Project on property values. Its relevance for properties 1,000 feet closer to a turbine is questionable. Both turbine-emitted noise, and its visual impacts decline with a receptor’s distance from the turbine. The Administrative Law Judge finds that while this observation is consistent with the testimony of the owner of the property closest to a Project turbine, the two observations together are not compelling evidence that proximity to wind turbines has no effect on the values of properties.

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<sup>241</sup> *Id.* The owner of this residence, Paul Follmuth, expressed his strong support for the Project at the public hearing. See Public Hr’g Tr. at 180-83 (Follmuth) (Feb. 20, 2018).

<sup>242</sup> Ex. FR-4 at App. E at 9 (Market Impact Analysis).

<sup>243</sup> *Id.* at 6, 8; see *also* Letter from Robert VanPelt to MPUC Commissioners (July 2, 2017) (eDocket No. 20177-133481-01)

<sup>244</sup> Ex. FR-4 at App. E. at 12 (Market Impact Analysis).

164. Mr. MaRous provided additional support for his conclusion that property values were not affected by proximity to a wind farm by examining similarly matched pairs in three counties in Illinois. Mr. MaRous found three matched properties in Mclean County, two in LaSalle County, and one in Livingston County.<sup>245</sup> The distances of the dwellings from the nearest wind turbine in feet were 1,865 feet, 2,210 feet, 1,573 feet, 3,160 feet, 2,325 feet, and 2,322 feet. There are just two matched pairs where the distance to the nearest turbine is less than the average distance for the Project Area. Mr. MaRous found no indication that proximity to a wind turbine lowered the value of non-participating properties.

165. While data from Minnesota transactions would be preferable, the Administrative Law Judge finds this data lends a degree of support to Mr. MaRous' conclusions with regard to residential properties. Somewhat more probative is Mr. MaRous' survey of assessors in the eight counties in Minnesota with large wind farms. County Assessors perform property valuations. Mr. MaRous found "[w]ith one exception, the interviewees reported that there was no market evidence to support a finding that there has been a negative impact upon residential property values as a result of the development of and the proximity to a wind farm facility."<sup>246</sup> Mr. MaRous also supplied a similar survey his firm conducted in South Dakota with similar results.<sup>247</sup> However, data from actual transactions involving resident owners of non-participating properties with known distances from wind farms would be far preferable to general statements of assessed values.

166. Lastly, Mr. MaRous submitted a number of empirical studies that found no effect of proximity to a wind turbine on a residential property's value.<sup>248</sup> In particular, the 2009 and 2013 nation-wide studies conducted by Lawrence Berkeley National Laboratory (LBNL) analyzed thousands of sales of residential properties. The 2009 LBNL Study analyzed 7,489 sales within 10 miles of 11 wind farms and 125 post-construction sales within one mile of a turbine. The 2013 LBNL Study included 51,276 sales in nine states proximate to 67 wind farms and 376 post-construction sales within one mile of a turbine.<sup>249</sup> Both studies found "no statistically significant evidence that wind turbines affect real estate sale prices."<sup>250</sup>

167. The 2009 LBNL Study categorized residences as within 3,000 feet of a turbine, between 3,000 feet and one mile, one mile to three miles, and three miles to five miles. The Study's results show a slight decline in value, but the difference was not statistically significant.<sup>251</sup> The lack of statistical significance could be due to the small

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<sup>245</sup> *Id.* at 13-30.

<sup>246</sup> Ex. FR-9 at Schedule 1 at 1 (Minnesota Assessor's [sic] Survey).

<sup>247</sup> *Id.* at Schedules 2-3 (Iowa and South Dakota Assessor Surveys). MaRous refers in his testimony to a survey of "County Assessors in all 18 Illinois counties in which wind farms are located" but did not supply that survey with his testimony. *Id.* at 5 (MaRous Direct).

<sup>248</sup> *Id.* at 8-12.

<sup>249</sup> *Id.* at 8.

<sup>250</sup> *Id.* at 9-10.

<sup>251</sup> *Id.* at Schedule 4 at 31 (2009 LBNL Study).

number of homes within one mile of the nearest turbine. The slight decline in value could be due to the still smaller number of sales of homes within 1,500 or 2,000 feet of a turbine.

168. The 2013 LBNL Study also produced results indicating a slightly negative but statistically insignificant effect of proximity to turbines less than one mile distant.<sup>252</sup> Like the 2009 Study, the 2013 Study did not take a granular view of distance from a turbine. It grouped transactions no finer than one-half mile distant from a turbine. It also had relatively few sales transactions occurring within one-half mile (331 out of 51,276).<sup>253</sup>

169. The other studies Mr. MaRous included arrived at similar conclusions. All but one study suffered from a similar limitation in that they did not separately consider properties within 1,500 or 2,000 feet of a turbine. These studies review transactions occurring within larger distances. The 2012 and 2016 Ontario Assessment Studies and the 2013 Canada Study considered transactions within 1 kilometer (3,280 feet).<sup>254</sup> The 2013 Rhode Island Study grouped transactions within one-half mile (2,640 feet).<sup>255</sup> The 2014 Massachusetts Study, however, separately grouped transactions within one-quarter mile (1,320 feet) of a turbine.<sup>256</sup> It also found no negative effect on property from proximity to a turbine. However, it concerned property values in urban settings only.

170. DOC-EERA cited several studies that found no impact on property values by nearby wind farms, including the 2009 and 2013 LBNL studies.<sup>257</sup> It also noted that “[s]ix counties in southern Minnesota (Dodge, Jackson, Lincoln, Martin, Mower, and Murray Counties) with large wind energy conversion systems responded to a Stearns County survey asking about impacts on property values as a result of wind farms. That survey showed that neither properties hosting turbines, nor those adjacent to those properties in the counties listed, have been negatively impacted by the presence of wind farms.”<sup>258</sup>

171. However, the Stearns County Board was careful to note that the “collected data is insufficient to allow for a reasonable analysis of the effects of wind energy development on land values.”<sup>259</sup>

172. DOC-EERA concluded that:

[t]he studies and information cited previously [do] not suggest that the presence of wind turbines negatively impacts property values on a regular basis. The studies do identify additional data needs for future analysis, but a statement identifying additional data needs should not be viewed as a

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<sup>252</sup> *Id.* at Schedule 5 at 32-33 (2013 LBNL Study).

<sup>253</sup> *Id.* at Schedule 5 at Table 4 (2013 LBNL Study).

<sup>254</sup> *Id.* at Schedules 6-7.

<sup>255</sup> *Id.* at Schedule 8.

<sup>256</sup> *Id.* at Schedule 9

<sup>257</sup> Ex. EERA-8 at 12 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>258</sup> See *id.* at 13 (citing Stearns Cnty. Resolution #10-46 (June 15, 2010) (eDocket No. 20106-52067-01)).

<sup>259</sup> Stearns Cnty. Resolution #10-46 at 4 (June 15, 2010) (eDocket No. 20106-52067-01).

reason to ignore the data and analysis provided in studies completed to date.<sup>260</sup>

173. Members of the public expressed their strong disagreement with Mr. MaRous' conclusions with respect to residential property. They provided comments and submitted documents into the record stating that proximity to wind farms did adversely affect the values of non-participating residential properties.<sup>261</sup> AFCL correctly pointed out that the studies Mr. MaRous performed, and those he included with his testimony, based their conclusions on data that included very few sales of homes within 1,500 or 2,000 feet of a wind turbine. Because of their close proximity to turbines, these properties are at greatest risk of the noise and visual impacts of turbines.<sup>262</sup>

174. The Administrative Law Judge finds it plausible that non-participating, residential properties within 2,000 feet of a wind turbine are less valuable because of that proximity. However, there was no expert testimony to rebut Mr. MaRous' conclusions or to explain and support the contrary evidence provided by AFCL and members of the public. The Administrative Law Judge did not find the evidence Mr. MaRous provided in support of the Project individually compelling, but collectively, the evidence supports Freeborn Wind's position that its Project will not harm property values. Despite the limitations of the various studies and analyses, the preponderance of the evidence is that proximity to a wind turbine does not negatively affect property values.

175. Several members of the public believe maintained that Freeborn Wind should be required to provide each non-participating landowner with a Property Value Guarantee (PVG) to ensure that they do not suffer losses in property values as a result of the Project.<sup>263</sup>

176. There is no evidence in the record that shows a PVG is warranted for the Project. First, the evidence demonstrates the Project will not negatively impact property values in the Project area. Second, neither DOC-EERA nor the Commission can efficiently or effectively administer a Site Permit condition that would require Freeborn

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<sup>260</sup> *Id.* at 13.

<sup>261</sup> See, e.g., Letter from McCann Appraisal, LLC to Ben Hoen, Ernest Orlando Lawrence, Berkeley National Laboratory (Dec. 14, 2009) (eDocket No. 20177-133481-02) (finding proximity to wind turbines has a negative effect on property values near a large wind farm in northern California); Letter from Robert VanPelt to MPUC Commissioners (July 2, 2017) (eDocket No. 20177-133481-01); Comment by Stephanie Richter (July 2, 2017) (eDocket No. 20177-133481-01) (the proximity to wind farms affects the values of both matched properties; study should have had Minnesota data rather than Illinois); Comment from Stephanie Richter (July 2, 2017) (eDocket No. 20177-133473-010) (providing property values from "Beacon-Schneider website" of properties within wind farm and five miles away showing declining property values since 2014 for properties within a wind farm and increasing property values for properties five miles away); Ex. EERA-3 (Comment from AFCL (Oct. 9, 2017)) (eDocket No. 201710-136324-01) (market impact study has no data for properties very close to wind farms because proximity prevents sales); Comment from Gregg Koch (Mar. 12, 2018) (eDocket No. 20183-141062-01) (concern for decreased property value).

<sup>262</sup> AFCL Reply Brief at 8.

<sup>263</sup> Public Hr'g Tr. at 121-22 (Van Pelt), 166-67 (Szymeczek), 219-20 (Richter) (Feb. 20, 2018).



Wind to establish PVGs with homeowners. Finally, it would not be feasible to direct a local government department to implement and administer such a program.<sup>264</sup>

#### **D. Noise**

##### **i. Concern for the Noise the Turbines ill Cause**

177. The most commonly voiced objection to the wind farm is the fear that it will produce bothersome noise.<sup>265</sup> Many people expressed concern that there could be adverse effects even if the wind farm is fully compliant with Minnesota noise regulations.<sup>266</sup> Numerous articles were placed into the record by members of the public and AFCL concerning the adverse effects of the noise produced by wind turbines.<sup>267</sup>

178. Freeborn Wind retained Hankard Environmental, Inc. to conduct a pre-construction noise analysis for the Project.<sup>268</sup> Mike Hankard is the President and Principal of the firm.<sup>269</sup> During the past eight years, Mr. Hankard's focus has been studying noise from utility-scale wind turbines and he has "been principally responsible for noise measurements, analysis, and control on over 500 projects."<sup>270</sup>

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<sup>264</sup> See Ex. EERA-8 at 13 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>265</sup> Ex. FR-4 at 25 (Litchfield Direct): see, e.g., Ex. P-23 (Letter from Jacob Schumaker) (eDocket No.20183-140952-08); Ex. P-19 (email from Allie Olson to Administrative Law Judge LauraSue Schlatter with two attached peer reviewed studies linking wind turbine noise to adverse health effects (Feb. 20, 2018)) (eDocket No. 20183-140952-04); EERA-8 at 16 (Comments and Recommendations of Minnesota Department of Commerce Energy Environmental Review and Analysis Staff). Beyond bothersome noise, some record submissions contend that the low-frequency noise of wind turbines "lead to significant increases in suicide." Ex. P-19 (Eric Zou, *Wind Turbine Syndrome: The Impact of Wind Farms on Suicide*, (Oct. 2017) (abstract)) (eDocket No. 20183-140952-04).

<sup>266</sup> Ex. P-23 (Bob Thorne, *The Problems With "Noise Numbers" for Wind Farm Noise Assessment*, Bulletin of Science, Technology & Society (2011)) (eDocket No. 20183-140952-08).

<sup>267</sup> See, e.g., Ex. EERA-6 (Allec N Salt and Timothy E. Hullar, *Responses of the ear to low frequency sounds, infrasound and wind turbines* (June 16, 2010)) (eDocket No.201710-136011-01); Ex. EERA-6 (Mariana Alves-Pereira and Numo A.A. Castelo Branco, *Infrasound and low frequency noise dose responses: Contributions*, Inter-Noise 200 (Aug. 2007)) (eDocket No. 201710-136016-01); Ex. EERA-6 (Jerry Punch, PhD and Richard James, INCE, BME, *Negative Health Effects of Noise from Industrial Wind Turbines: Some Background*, Hearing Health & Technology Matters (Nov. 4, 2014)) (eDocket No. 201710-136056-01); Letter from Bridget Ellingson to Richard Davis (Oct. 7, 2017) (eDocket No. 201710-136285-01); Comment by Dorene Hansen (Oct. 9, 2017) (presentation from Paul D. Schomer, Ph.D., P.E., *Effects of Wind Turbine Acoustic Emissions*) (June 23, 2015)) (eDocket No. 201710-136267-04).

<sup>268</sup> Ex. FR-1 at 1 (Pre-Construction Noise Analysis for the Proposed Freeborn Wind Farm (June 5, 2017)) (Pre-Construction Noise Analysis).

<sup>269</sup> Ex. FR-5 at 1 (Hankard Direct).

<sup>270</sup> *Id.*

<sup>271</sup> Pre-Construction Noise Analysis at 1.

<sup>272</sup> Ex. FR-5 at 1 (Hankard Direct).

from utility-scale wind turbines and he has “been principally responsible for noise measurements, analysis, and control on over 500 projects.”<sup>273</sup>

180. AFCL provided no expert witness testimony on the subject of noise.

181. It is generally accepted that if a wind farm complies with Minnesota noise regulations, people living and working near its turbines will not suffer direct physical damage to their hearing.<sup>274</sup> But, it is also believed that “*subaudible infrasound can be detected inside homes* near operating wind turbines, and that such sound can be identified from up to 10 kilometers distant.”<sup>275</sup>

182. While it has not been shown that wind turbines cause harm to human hearing, people’s reactions to wind turbine noise vary widely. Some people may not be bothered by the noise of the rotating turbines and some may only experience mild annoyance from time to time. But there may be others who are especially sensitive to the noise patterns and inaudible low frequency emissions of the turbines. Their reactions to wind turbines may include nausea, sleeplessness, headaches, chest pains, and high levels of stress.<sup>276</sup>

183. The Minnesota Department of Health recommends:

[r]ecognizing that it is unknown whether reported health impacts are direct health effects or indirect stress impacts from annoyance and/or lack of sleep resulting from turbine noise or shadow flicker, potential health impacts from wind turbine projects should be acknowledged, and provision should be made to mitigate these effects for residents within and near proposed project areas.<sup>277</sup>

184. This section concerns the Project’s compliance with Minnesota noise regulations and whether the Draft Site Permit’s provisions relating to noise are sufficient. The potential for the Project to cause adverse health effects more generally is discussed at section H of this Report.

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<sup>273</sup> *Id.*

<sup>274</sup> *But see* Ex. EERA-5 (Alec N. Salt and Jeffery T. Lichtenhan, *Perception-based protection from low-frequency sounds may not be enough*, *inter.noise* (Aug. 2012) (study suggesting that the inaudible sounds generated by wind turbines can be harmful to people)) (eDocket No. 201710-136072-01).

<sup>275</sup> Ex. EERA-6 at 6 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01).

<sup>276</sup> Ex. AFCL-13 (Michael A Nissenbaum, Jeffery J. Aramini, & Christopher D. Hanning, *Effects of Industrial Wind Turbine Noise on Sleep and Health*, *Noise & Health* (2012)); Comment by Kristi Rosenquist (Mar. 14, 2018) (Letter to Dan Litchfield from Paul Allwood, Assistant Commissioner Minnesota Department of Health (May 2, 2017)) (eDocket No. 20183-141013-01) (Allwood Letter).

<sup>277</sup> Allwood Letter at 3.

## ii. Sound and Hearing

185. Wind turbines produce sound patterns which the ear and audio processing functions in the brain recognize.<sup>278</sup> The equipment inside a wind turbine's nacelle produces some noise, but the more recent models of turbine nacelles produce very little noise. The main subject of noise complaints is the "broadband 'whooshing' sound produced by interaction of turbine blades with the wind."<sup>279</sup> There is also a concern that wind turbines generate "[r]hythmic, low frequency pulsing of higher frequency noise (like the sound of an amplified heart beat) ... one type of sound that can be caused by wind turbine blades under some conditions."<sup>280</sup> Another pattern is "a tonal signal of *sharply rising and falling pulses* in the infrasound range."<sup>281</sup>

186. "Sound consists of small changes in air pressure that our ears detect."<sup>282</sup> Sound is carried through the air in electromagnetic compression waves. These waves can be measured and have specific frequencies and amplitude. Very low frequency sounds are deep, low notes. Higher frequency sound waves produce higher notes. A sound's frequency is also called its "pitch." The louder a sound, the greater is the amplitude of its wave.<sup>283</sup>

187. A sound's power level is the amount of acoustic energy emitted by the sound-making source. Sound power emissions produce pressure waves which emanate from the source outward. Sound pressure decreases with distance from the source as the medium through which the sound is traveling attenuates its energy to various degrees depending upon the medium and the sound's frequency. "Sound attenuation factors include meteorological conditions such as wind direction, temperature, and humidity; sound interaction with the ground; and atmospheric absorption 'terrain effects' diffraction of sound around objects and topographical features' and foliage."<sup>284</sup> For example, a steadily operating chain saw will be very loud to the person holding it but much less loud

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<sup>278</sup> Ex. EERA-6 at 5 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01).

<sup>279</sup> Comment by Sean Gaston at 6 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03); Ex. EERA-6 at 6 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01).

<sup>280</sup> Comment by Sean Gaston at 9 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>281</sup> Ex. EERA-6 at 5 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01).

<sup>282</sup> Ex. FR-5 at 4 (Hankard Direct).

<sup>283</sup> *Id.* at 5; Comment by Sean Gaston at 8 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>284</sup> Ex. AFCL-11 at 6 (*Bent Tree Wind Farm Post-Construction Noise Assessment*, DNV GL-Energy (Aug. 30, 2017)).

to the neighbor down the block. Thus, measurements of sound pressure levels will depend on where the measurements are made.

188. In humans, logarithmic increases in the intensity of sound cause an arithmetically increasing perception of the sound's loudness. In other words: "[l]oudness increases as the logarithm of air pressure."<sup>285</sup>

189. Human ears are not equally sensitive to all sound frequencies. "The human ear is sensitive primarily to the level (loudness) of a noise (sound), but also to its pitch (frequency)." The ear is more sensitive to frequencies in the 1,000 Hertz [Hz]<sup>286</sup> to 4,000 Hz than it is to lower or higher frequencies.<sup>287</sup>

190. Individuals differ in their hearing acuity with significant variations in ability to hear very low and very high frequency sounds. The average range of human hearing is generally accepted to be 20 Hz to 20,000 Hz but the range declines with age. Sounds below 20 Hz are described as having an "infrasonic frequency."<sup>288</sup> Low frequency sounds have frequencies between 20 to 250 Hz.<sup>289</sup>

191. 20 Hz is widely regarded as the threshold of human hearing. Air pressure changes in frequencies below 20 Hz are inaudible to most people.<sup>290</sup> "Sounds" with frequencies below 20 Hz are referred to as Infrasound.<sup>291</sup> Low frequency sounds have very long wavelengths that are not decreased by most walls and windows. Inaudible low frequency "sounds" can cause vibrations in buildings which in turn can cause audible rumblings.<sup>292</sup>

192. Most available evidence suggests that reported health effects are related to inaudible (to most people) low frequency noise. Wind turbines generate a broad spectrum of low intensity noise.<sup>293</sup>

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<sup>285</sup> Comment by Sean Gaston at 6 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>286</sup> Hz stands for "Hertz" a unit of frequency measuring cycles per second. *Merriam-Webster's Collegiate Dictionary*, (11th ed. 2011).

<sup>287</sup> Ex. FR-5 at 4 (Hankard Direct).

<sup>288</sup> Ex. P-23 (Bob Thorne, *The Problems With "Noise Numbers" for Wind Farm Noise Assessment*, Bulletin of Science, Technology & Society at 263 (2011)) (eDocket No. 20183-140952-08).

<sup>289</sup> *Id.*

<sup>290</sup> "Some individuals have extraordinary sensitivity at low frequencies, up to 25 dB more sensitive than the presumed thresholds at some low frequencies." Comment by Sean Gaston at 10 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>291</sup> *Id.* at 6.

<sup>292</sup> *Id.* at 9; Ex. EERA-6 at 11 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01).

<sup>293</sup> Ex. EERA-6 (Jerry Punch, PhD and Richard James, INCE, BME, *Negative Health Effects of Noise from Industrial Wind Turbines: Some Background*, Hearing Health & Technology Matters (Nov. 4, 2014)) (eDocket No. 201710-136056-01); Ex. EERA-6 at 11 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01); compare Ex. P-23 at 263 (Bob Thorne, *The Problems*

193. A decibel is the unit in which the intensity of sound (sound pressure level) is typically measured. A barely audible sound (near total silence) is assigned a measure of 0 decibels (dB). The decibel is a logarithmic unit in base 10. A sound that is 10 dB is 10 times louder than the just barely audible 0 dB sound.<sup>294</sup>

194. Human ears are not equally sensitive to every sound frequency. A 10 dB, 1,000 Hz sound is perceived as louder than a 10 dB, 50 Hz sound. To measure noise in a way that corresponds to how the ear perceives loudness, a measuring device must attenuate the low frequencies and amplify higher frequencies. “A-weighting” describes a weighting scheme intended to emulate the perception of the human ear.<sup>295</sup> A-weighted sound measurements are indicated as dB(A) with weights calibrated for a low level of loudness. The weighting of different frequencies is also described as filtering. Because the ear is not as sensitive to low frequencies, filtering or eliminating some of the low sound pressure of a given low frequency sound will replicate how the ear experiences its loudness.<sup>296</sup> A-weighting gradually reduces the significance of frequencies below 1000Hz until at 10Hz, the attenuation is 70dB.<sup>297</sup>

195. An alternative to A-weighting is C-weighting. C-weighting does not filter out low frequency sound as the A-weighting does, making C-weighting better if the concern is to measure absolute sound pressure levels rather than loudness to the human ear.<sup>298</sup> The C-weighting is flat to within 1dB down to about 50 Hz and then attenuation commences, but not as rapidly as with A-weighting.

196. Freeborn Wind and the wind energy industry generally supports the use of A-weighting for assessing wind turbine noise. The primary reason for this preference is that A-weighting reflects an aspect of human hearing – the perception of loudness.<sup>299</sup> People concerned about the potential impacts of low frequency noise and infrasound contend that A-weighting should not be used for wind turbine noise. International Standards Organization (ISO) 1996-1 states, in part, “sounds with strong low-frequency content engender greater annoyance than is predicted by the A-weighted sound pressure level.”<sup>300</sup>

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*With “Noise Numbers” for Wind Farm Noise Assessment*, Bulletin of Science, Technology & Society (2011) (eDocket No. 20183-140952-08) with Ex. FR-5 at 8 (“Many measurements have demonstrated that wind turbine LFN is inaudible below about 40 Hz.”) (Hankard Direct).

<sup>294</sup> Ex. FR-5 at 4 (Hankard Direct).

<sup>295</sup> *Id.* at 4.

<sup>296</sup> Comment by Sean Gaston at 10 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>297</sup> *Id.* at 9.

<sup>298</sup> Ex. EERA-6 at 12 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01); Ex. FR-5 at 5 (Hankard Direct).

<sup>299</sup> Ex. FR-5 at 4-7 (Hankard Direct); Comment by Dorene Hansen (Oct. 9, 2017) (presentation from Paul D. Schomer, Ph.D., P.E., *Effects of Wind Turbine Acoustic Emissions*) (June 23, 2015)) (eDocket No. 201710-136267-04).

<sup>300</sup> Comment by Dorene Hansen at 10 (Oct. 9, 2017) (presentation from Paul D. Schomer, Ph.D., P.E., *Effects of Wind Turbine Acoustic Emissions*) (June 23, 2015)) (eDocket No. 201710-136267-04).

197. Most sound is a mixture of frequencies. Sound meters add all of the sound pressure levels of the various frequencies across the audible spectrum to compute a single loudness metric. When you have two noise sources of equal strength, you add them together for a total noise level that is three dB greater than either one alone.<sup>301</sup> An increase of three dB in the total noise level will be noticeable to people, but just barely.<sup>302</sup>

198. Sounds from different sources can occur at the same time. If a 50 dB noise is added to an existing 50 dB noise, the resulting noise level is 53 dB, which is enough of an increase in sound pressure to be noticeable. Freeborn Wind provided the following rules of thumb for adding noise from a point source to ambient noise: when one source is 10 dB less than another, it is irrelevant. If a wind turbine is generating 50 dB and ambient noise is 45 dB, the total sound level is 51.<sup>303</sup>

### iii. Minnesota Noise Regulations

199. Minnesota Rule 7030.0040 (2017) provides Minnesota's Noise Standards:

Subpart 1. **Scope** These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conservation requirements for receivers within areas grouped according to land activities by the noise area classification (NAC) system established in part 7030.0050. However, these standards do not, by themselves, identify the limiting levels of impulsive noise<sup>304</sup> needed for the preservation of public health and welfare. *Noise standards in subpart 2 apply to all sources.*<sup>305</sup>

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<sup>301</sup> Tr. Vol. 1B at 65 (Hankard).

<sup>302</sup> Comment by Dorene Hansen (Oct. 9, 2017) (presentation from Paul D. Schomer, Ph.D., P.E., *Effects of Wind Turbine Acoustic Emissions*) (June 23, 2015)) (eDocket No. 201710-136267-04).

<sup>303</sup> Tr. Vol 1B at 108 (Hankard).

<sup>304</sup> "Impulsive noise" means either a single sound pressure peak (with either a rise time less than 200 milliseconds or total duration less than 200 milliseconds) or multiple sound pressure peaks (with either rise times less than 200 milliseconds or total duration less than 200 milliseconds) spaced at least by 200 millisecond pauses." Minn. R. 7030.0020, subp. 6 (2017).

<sup>305</sup> Emphasis added.

## Subp. 2. Noise Standards

Noise Area Classification	Daytime		Nighttime	
	L <sub>50</sub>	L <sub>10</sub>	L <sub>50</sub>	L <sub>10</sub>
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

200. Minnesota's primary noise limits are set by "noise area classifications" (NACs) based on the land use at the location of the person that hears the noise. They are also based on the sound level in decibels (dB(A)) over ten percent (L<sub>10</sub>) (or six minutes), and fifty percent (L<sub>50</sub>) (or thirty minutes) of an hour.<sup>306</sup>

201. For residential locations (NAC 1),<sup>307</sup> the limits are L<sub>10</sub> = 65 dB(A) and L<sub>50</sub> = 60 dB(A) during the daytime (7:00 a.m. – 10:00 p.m.) and L<sub>10</sub> = 55 dB(A) and L<sub>50</sub> = 50 dB(A) during the nighttime (10:00 p.m.-7:00 a.m.).<sup>308</sup> This means that during a one-hour period of monitoring, daytime noise levels at residences cannot exceed 65 dB(A) for more than 10 percent of the time (six minutes) and cannot exceed 60 dB(A) more than 50 percent of the time (30 minutes).<sup>309</sup>

### iv. Application of Noise Standards

202. The Minnesota Pollution Control Agency (MPCA) enforces the state's noise rules (Minn. R. Ch. 7030). Freeborn Wind looks to Minn. Stat. Ch. 116 (2016), the chapter that establishes the MPCA, for a definition of "noise." That chapter defines "noise" to mean "any sound not occurring in the natural environment, including, but not limited to, sounds emanating from aircraft and highways, and industrial, commercial, and residential sources."<sup>310</sup> Freeborn Wind contends that because "noise" is any sound not occurring in the natural environment, the noise limits in subpart 2 of Minn. R. 7030.0400 apply to wind turbine noise alone, and that the rule regulates only the noise emissions of non-natural sources considered individually, not the total amount of noise a receptor experiences.

203. At the evidentiary hearing and in public comment, there was discussion of the language in Appendix A of DOC's "Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report."<sup>311</sup> The discussion focused specifically on the sentence under modeling that reads "Developers should not propose projects where total

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<sup>306</sup> Pre-Construction Noise Analysis at App. B at 2.

<sup>307</sup> NAC 2 is the land use classification for businesses, stores, restaurants, and parks while NAC 3 is for industrial, manufacturing and mining. NAC4 applies to undeveloped and unused areas. Minn. R. 7030.0050, subp. 2 (2017).

<sup>308</sup> Minn. R. 7030.0040.

<sup>309</sup> Pre-Construction Noise Analysis at 2.

<sup>310</sup> Minn. Stat. § 116.06, subd. 15 (2016).

<sup>311</sup> Ex. EERA-9 at 12.

noise is estimated to exceed the noise standards at receptor property” and whether the noise standards sets limits on “total noise” or “project-related (i.e., turbine) noise.”<sup>312</sup>

204. AFCL’s and DOC-EERA’s position on the interpretation of Minn. R. 7030.0400 is that its noise limits apply to the “total ambient level of **sound** required to protect public health and welfare from noise pollution. The MPCA Noise standard regulates certain noise sources, including wind turbines, that contribute to this total ambient sound level.”<sup>313</sup>

205. The MPCA’s interpretation of its rule is that, to estimate the effect of wind farm noise on total noise levels, the ambient level of noise must be known. In its Comment on the DOC’s Guidance for Large Wind Energy Conversion Systems Noise Protocol and Report, the MPCA noted:

Although the noise rules apply to total noise measured at a wind farm, the culpability of the wind turbines depends on attribution. If noise exceedances are recorded, it is necessary to determine the increment due to the turbine noise. Background noise information is very important to this effort. This is where background data might be “subtracted.” Compliance is based on the inclusion of background total noise, whereas attribution depends on the use of the background information to adjust the measured noise to the source (turbines).<sup>314</sup>

206. The Administrative Law Judge agrees with DOC-EERA’s interpretation of the noise limits in Minn. R. 7030.0400 for a number of reasons. First, DOC-EERA’s interpretation is consistent with the MPCA’s interpretation of its own rule. Second, Freeborn Wind appears to equate the pre-construction environment with the “natural environment.” However, the Project Area has roads, vehicles, farm equipment, and other non-natural sources of sound and is not solely a “natural environment.” Third, subpart 1 explicitly provides that the standards in subpart 2 do not apply to impulsive noise. If the rule was intended not to apply to ambient noise, it would have similarly distinguished and excluded ambient noise. Fourth, the noise standards are “consistent with speech, sleep, annoyance, and hearing conservation requirements.” This implies a focus on the protecting the recipients of the noise and these goals are frustrated when total noise levels are exceeded. DOC-EERA’s analysis correctly identifies the total noise levels experienced by receptors when the wind turbines are operating as the regulated sound from “all sources.”

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<sup>312</sup> See, e.g., Tr. Vol. 2 at 185 (Davis); Comment by Kristi Rosenquist (March 14, 2019) (eDocket No. 20183-140988-01).

<sup>313</sup> EERA Reply Mem. at 4 (emphasizing the initial language of rule 7030.0040, subp. 1, which states: “These standards describe the limiting levels of sound . . .”); AFCL Initial Brief at 25.

<sup>314</sup> Ex. EERA-9 at App. A (MPCA Comments on the draft DOC EFP Guidance for LWECS Noise Study Protocol (Oct. 8, 2012)).<sup>314</sup>



## v. Limitations of Noise Standards

207. The Minnesota noise standards fail to regulate certain kinds of noise that are important to the well-being of people in or near the Project Area. People very sensitive to low frequency noises or infrasound may be affected even if they are not exposed to noise levels that violate the applicable noise standards.<sup>315</sup>

208. Public comments also raised concerns regarding low-frequency noise (LFN) and infrasound.<sup>316</sup> The levels of infrasound produced by wind turbines are significantly below currently accepted thresholds of human hearing.<sup>317</sup> Low frequency sounds below 60 dB(C) have not been associated with adverse effects on people.<sup>318</sup> Between 60 and 75 dB(C), some people could experience noise disturbance from low-frequency sounds. The industry guideline for LFN is 75 dB(C).<sup>319</sup>

209. While infrasound and LFN may not pose noise issues per se, that is an artifact of our hearing. Physically, infrasound and LFN are electromagnetic waves just like audible sounds, and they may have physical effects on humans, just like audible sounds. The Minnesota Department of Health found that wind turbine-related noise complaints “appear to rise with increasing outside noise levels above 35 dB(A)” and “[t]he Minnesota nighttime standard of 50 dB(A) not to be exceeded more than 50% of the time in a given hour, appears to underweight penetration of low frequency noise into dwellings.”<sup>320</sup>

210. In his direct testimony, Mr. Hankard predicted LFN from the Project to be 62 dB(C) at one residence and less than 60 dB(C) at all other residences. Thus, according to Mr. Hankard, wind turbine noise emissions are below commonly applied LFN limits, and generally below even the most stringent limits.<sup>321</sup> Mr. Hankard did not state whether, or to what extent, the increased total noise predictions would affect the LFN predictions.<sup>322</sup>

211. Mr. Hankard affirmed that the primary source of LFN and infrasound is ambient noise such as “wind blowing through vegetation and against buildings such as houses.”<sup>323</sup> This is especially so when ground winds exceed 10 miles per hour, which is

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<sup>315</sup> Ex. EERA-6 at 6 (Keith Stelling, *Infrasound Low frequency noise and Industrial Wind Turbines*, An information report prepared for the Multi-Municipal Wind Turbine Working Group (July 2015)) (eDocket No. 201710-136094-01); Comment by Sean Gaston at 15-18 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>316</sup> See, e.g., Comment by Kristi Rosenquist (Oct. 6, 2017) (eDocket No. 201710-136197-01); Comment by Brian Olson (Oct. 9, 2017) (eDocket No. 201710-136293-01); Comment by Erik Nelson (Oct. 9, 2017) (eDocket No. 201710-136273-01).

<sup>317</sup> Ex. FR-5 at 5-6 (Hankard Direct).

<sup>318</sup> Tr. Vol. 1B at 77 (Hankard).

<sup>319</sup> *Id.* at 74, 78.

<sup>320</sup> Allwood Letter at 2-3.

<sup>321</sup> FR-5 at 8 (Hankard Direct).

<sup>322</sup> Ex. FR-18 (Aff. of Mike Hankard) (Mar. 1, 2018).

<sup>323</sup> FR-5 at 8 (Hankard Direct).

when wind turbines tend to operate. Mr. Hankard stated that ambient levels of LFN in the Project area “range from about 45 to 80 dBC under windy conditions.”<sup>324</sup>

212. The Minnesota Department of Health advised that wind turbine noise assessments include the construction of isopleths in the event that sound level estimates were such that the difference between dB(C) and dB(A) exceeded 10 dB.<sup>325</sup>

213. Freeborn Wind did not follow this guidance “because the frequency spectrum of noise from wind turbines is relatively fixed, and once one part of the spectrum becomes limited, so does every other part of the audible spectrum.”<sup>326</sup> The 50 dB(A) limit for receptors was attained by placing the wind turbines at certain distances from the receptors. For the Project, the 50 dB(A) limit at residences controls Project LFN levels to about 60 dB(C) or less at residences, and limits infrasound to levels orders of magnitude below the human hearing threshold.<sup>327</sup>

214. While the record evidence legitimates concerns over the Project’s potential to generate harmful LFN and infrasound, opponents of the Project are correct that Minnesota’s noise standards do not address them. DOC-EERA did not recommend the addition of any conditions or special conditions specific to infrasound or low frequency noise.<sup>328</sup> While the Department of Health, the Department of Commerce, and the Pollution Control Agency all acknowledge public complaints concerning wind turbine generated infrasound and LFN merit concern, “the present knowledge of the potential health effects of infrasound does not lend itself to the development of an appropriate standard at this time.”<sup>329</sup>

215. The limitations of Minnesota noise standards as protective of human well-being in the context of wind farms has been acknowledged by regulatory authorities. The Minnesota Department of Commerce, the Minnesota Department of Health, and the Minnesota Pollution Control Agency stated:

The MPCA noise standard was not promulgated with wind turbine-like noise in mind; it addresses audible noise, not infrasound. As such, it is not a perfect measure to use for determining noise-related set-backs between wind turbines and residences. However, the agencies are currently unaware of a noise-related standard that could be used. Further, the

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<sup>324</sup> *Id.* at 9 (Hankard Direct).

<sup>325</sup> Comment by Sean Gaston at 9 (July 5, 2017) (*Public Health Impacts of Wind Turbines*, Minnesota Department of Health Environmental Health Division (May 22, 2009)) (eDocket No. 20177-133511-03).

<sup>326</sup> *Id.*

<sup>327</sup> Ex. FR-5 at 5 (Hankard Direct).

<sup>328</sup> Ex. EERA-8 at 16. EERA’s Reply Brief does not propose any measures be taken with regard to LFN and infrasound.

<sup>329</sup> Ex. EERA-5 (Letter from Paul Allwood, Assistant Commissioner, Minnesota Department of Health; William Grant, Deputy Commissioner, Minnesota Department of Commerce; and J. David Thornton, Assistant Commissioner, Minnesota Pollution Control Agency to Kristi Rosenquist) (May 13, 2016)) (eDocket No. 201710-136098-01).

present knowledge of the potential health effects of infrasound does not lend itself to the development of an appropriate standard at this time.<sup>330</sup>

216. The Commission requires that the “Project must meet Minnesota Noise Standards, Minnesota Rules Chapter 7030, at all residential receivers (homes). Residential noise standard NAC 1, L<sub>50</sub> 50 dB(A) during overnight hours. Setback distance calculated based on site layout and turbine for each residential receiver.”<sup>331</sup> The Commission prescribed a minimum setback of “[t]ypically 750 – 1500 ft. is required to meet noise standards depending on turbine model, layout, site specific conditions.”<sup>332</sup>

217. Several opponents of the Project were critical of the Commission’s failure to address the shortcomings of Minnesota’s noise standards. Kristi Rosenquist is a member of the public who expressed concern over inadequacies of Minnesota’s regulation of wind farms. Ms. Rosenquist points out that the Commission’s 2008 Order establishing the Large Wind Energy Conversion system General Wind Turbine Permit Setbacks and Standards applies only to “permits issued by the Commission for LWECs with a combined nameplate capacity of less than 25,000 watts.”<sup>333</sup> She provided a report to the Legislative Energy Commission on October 19, 2017. Ms. Rosenquist contends that Minnesota agency officials acknowledged that “[n]o science was used to inform the decisions and laws affecting wind energy in Minnesota.”<sup>334</sup>

218. Ms. Rosenquist further complains that the Commission has not developed rules for siting wind projects that adequately address the infrasound and low frequency emissions of wind turbines. She points out that European countries with more experience with wind farms and the problems they cause, have established setback distances “that are 10 times the height of the turbine to the blade tip at its highest point (5000 feet for large modern wind turbines).”<sup>335</sup>

219. Carol Overland requested that the MPCA develop rules governing wind turbine noise. In response, John Linc-Stine, Commissioner of the Minnesota Pollution Control Agency, stated: “After consulting with colleagues at the Minnesota Departments of Health and Commerce, I have concluded that the current understanding of wind turbine noise and its potential effects is insufficient to support rulemaking at this time.”<sup>336</sup>

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<sup>330</sup> *Id.*

<sup>331</sup> Ex. AFCL-8 (*In re Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*, MPUC Docket No. E,G-999/M-07-1102, Order Establishing General Wind Permit Standards at Ex. A (Jan. 11, 2008)) (eDocket No. 201712-138411-06).

<sup>332</sup> *Id.*

<sup>333</sup> *Id.*

<sup>334</sup> See Ex. P-22 at 3 (*Wind Turbine Siting in Minnesota*, A Report for the Legislative Energy Commission (Oct. 19, 2017) (referring to comments made by former Senator Ellen Anderson and Bill Grant, Deputy Commissioner of Commerce, in 2012 at a public forum on energy)) (eDocket No. 20183-140952-07).

<sup>335</sup> See *id.* at 1.

<sup>336</sup> *Id.* at 6 (referring to a letter from John Linc-Stine to Carol Overland (September 12, 2016) (eDocket No. 20169-124844-01)).

**a. Pre-Construction Noise Analysis**

220. The Department of Commerce, Energy Facility Permitting is the author of Guidance for Developing and e-Filing the LWECS Noise Study Protocol and Report Submittals to the Minnesota Public Utilities Commission (Oct. 8, 2012) [LWECS Noise Study Protocol].<sup>337</sup> The document's purpose is:

to aid wind developers in the preparation and use of a noise study protocol that standardizes sound monitoring methodologies, analysis, and presentation. The purpose of the protocol and the resulting noise study report are to quantify sound generated by an operational Large Wind Energy Conversion System (LWECS) at receptors: sound that is present during the measurement, project-related and otherwise.<sup>338</sup>

221. The Department of Commerce recommends that sound measurements be taken at the same locations either pre-construction or with turbines off and with turbines on. The latter can only be done post-construction, when the turbines are in place and operational. The document provides guidance on when, where, and how to monitor noise, including wind speeds, atmospheric conditions, required equipment, and data to be recorded and reported to the Commission.<sup>339</sup>

222. The purpose of the pre-construction noise analysis is to inform the placement of wind turbines so as to comply with Minnesota noise regulations because, once built, a properly functioning wind turbine's noise output can only be changed by taking it out of service.

223. Mr. Hankard prepared the Pre-Construction Noise Analysis Report included in Freeborn Wind's Site Permit Application as Appendix B.<sup>340</sup> He drew upon his familiarity with the noise emissions of Vestas wind turbines from previous work.<sup>341</sup> Hankard Environmental conducted an ambient noise measurement survey at the Project site in April 2016 and modeled noise emissions from the Project to assist in designing the turbine layout so as to comply with Minnesota's noise standards.<sup>342</sup>

224. Mr. Hankard used the International Organization for Standardization (ISO) standard 9613-2, Attenuation of Sound During Propagation Outdoors – Part 2: General

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<sup>337</sup> Ex. EERA-9 (LWECS Noise Protocol).

<sup>338</sup> *Id.* at 4.

<sup>339</sup> *Id.* at 4-9.

<sup>340</sup> Ex. FR-1 at App. B.

<sup>341</sup> Ex. FR-5 at 3 (Hankard Direct).

<sup>342</sup> *Id.* The Pre-Construction Noise Analysis pointed out that the pre-existing environmental sound level should not be taken as the baseline for subsequent comparison with the post-construction operational noise level. "The background sound level varies dramatically with time, typically over a dynamic range of 30 dB(A) or more, depending not only on the wind speed but many other facts, such as the prevailing atmospheric conditions, the time of day, season of the year, etc., so the level measured one or two years earlier cannot be taken to accurately represent the background level present during an operational compliance test." Pre-Construction Noise Analysis at 4.

method of calculation modeling method.<sup>343</sup> This method assumes “optimal acoustic propagation in all directions.”<sup>344</sup>

225. According to Mr. Hankard, microphones are placed at various locations to measure ambient levels of sound. A sound transmission model estimates noise levels at receptor locations that the wind turbines would generate at full acoustic output. The estimated turbine-generated noise could be added to the ambient noise measures to predict the total (ambient plus turbine-generated) noise level at receptor locations post-construction.

226. Mr. Hankard personally set up noise measurement equipment at residences he thought were representative of residences in the Project Area and analyzed the data to develop a noise emission model. The noise emission model was used in determining where to site the Project’s turbines.<sup>345</sup> Noise levels were estimated for the locations of 251 NAC-1 receptors (249 residences and two churches) as well as three NAC-2 receptors (two businesses and a government facility).<sup>346</sup>

227. Mr. Hankard measured ambient noise at three wind speeds: the speed at which the blades “cut-in” and begin to generate power; the speed at which the turbines generate full acoustic output; and the speed at which full power is generated. It appears that the five measurement sites chosen were in the Project Area. At three of five measuring locations, full power produced ambient sound levels of 50 or 51 dB(A).<sup>347</sup>

228. The next part of the study was to estimate noise levels at receptor locations based on operating the turbines and assumed no ambient noise. The study also assumed the full operation of all 42 Project turbines in Minnesota and the northernmost 52 turbines in Iowa. Each turbine was represented as a point source located at its hub height (262 feet above ground), operating at its full acoustic output (wind speed of 12 meters per second measured at hub height), in normal operating mode, and fitted with standard blades.<sup>348</sup>

229. Mr. Hankard asserts that the model of wind turbine noise that he used is “calibrated to predict the very loudest wind turbine noise levels that are ever expected to regularly occur.”<sup>349</sup> The turbines modeled are the Vestas V116-2.0 (V116) and the V110-2.0 (V110). The V110 has an overall sound power level that is 1.9 dB(A) lower than the V116.<sup>350</sup> However, results of the modeling show that between 63 Hz and 250 Hz, the V110 is .9 to 2.4 dB louder than the V116.

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<sup>343</sup> *Id.* at 10.

<sup>344</sup> *Id.*

<sup>345</sup> *Id.*

<sup>346</sup> *Id.* at 11.

<sup>347</sup> *Id.* at 9.

<sup>348</sup> *Id.* at 11. Kristi Rosenquist criticized this assumption because “noise is coming from the blade, which sticks out 190 feet.” Public Hr’g Tr. at 202 (Rosenquist) (Feb. 20, 2018).

<sup>349</sup> Pre-Construction Noise Analysis at 2.

<sup>350</sup> *Id.* at 11.

230. This modeling was conducted using conservative assumptions. The results of the modeling show the loudest one-hour levels expected to occur. To be most conservative, the modeling assumes all turbines are operating and producing maximum acoustic output, the emissions propagate out fully in all directions, and that atmospheric conditions will be relatively ideal for the propagation of sound.<sup>351</sup> In addition, the predicted turbine-only noise levels include the other conservative modeling inputs described in the Noise Analysis, resulting in the least amount of ground and atmospheric sound absorption and the highest levels of sound reaching the receivers.<sup>352</sup> Also, 52 of the northernmost turbines located in Iowa were included in the model.<sup>353</sup> Accordingly, the results are the “loudest” one-hour levels expected to occur. Much of the time turbine noise levels would be expected to be less.<sup>354</sup> Freeborn Wind’s acoustical expert verified these conservative assumptions through field measurements at other operating wind projects.<sup>355</sup>

231. Freeborn Wind’s Noise Analysis measured background noise levels in the Project Area to characterize the existing acoustic environment as it relates to wind turbine operations.<sup>356</sup> Background noise levels vary significantly in the Project Area, depending on many factors, such as the presence of traffic, wind speed, prevailing atmospheric conditions, and time of day.<sup>357</sup>

232. Freeborn Wind submitted Mr. Hankard’s results to demonstrate that turbine-generated noise would not, by itself, exceed Minnesota’s noise standard at any non-participating receptor location at any time of day.<sup>358</sup> The highest level of “wind turbine-noise-only” that a receptor is estimated to be exposed to is 48.9 dB(A).<sup>359</sup> The Noise Analysis indicated 15 receptors would be exposed to “wind turbine-only-noise” between 45.0 and 50 dB(A), with all but one receptor at 47.2 dB(A) or less.<sup>360</sup>

233. Mr. Hankard predicts that the total nighttime noise standard (ambient plus wind turbine noise) L<sub>50</sub> will be exceeded at times when ambient noise levels are 50 dB(A) and above.<sup>361</sup> The average background noise L<sub>50</sub> levels, including both ambient and turbine noise, range from 33 to 57 dB(A), under conditions during which the turbines would operate (“Critical” and “Full Power” turbine operations). The average background noise L<sub>10</sub> levels range from 37 to 60 dB(A) under conditions during which the turbines would operate (“Critical” and “Full Power” turbine operations). This information was not provided with Freeborn Wind’s original Application. It was provided as a post-hearing exhibit following questioning by DOC-EERA during which it became apparent that

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<sup>351</sup> *Id.* at 13; Ex. FR-18 at 2 (Hankard Affidavit and Noise Tables).

<sup>352</sup> Pre-Construction Noise Analysis at 12-13.

<sup>353</sup> *Id.* at 11.

<sup>354</sup> Ex. FR-5 at 11 (Hankard Direct); Pre-Construction Noise Analysis at 13.

<sup>355</sup> Ex. FR-5 at 12 (Hankard Direct).

<sup>356</sup> *Id.* at 9; Pre-Construction Noise Analysis.

<sup>357</sup> Pre-Construction Noise Analysis at 4, 9.

<sup>358</sup> *Id.* at 14.

<sup>359</sup> *Id.*

<sup>360</sup> *Id.*; Ex. FR-5 at 11 (Hankard Direct); see also Ex. FR-18 at 5-8, 9 (Hankard Affidavit and Noise Tables).

<sup>361</sup> Ex. FR-18 (Hankard Affidavit and Noise Tables).

Freeborn Wind interpreted Minn. R. 7030.0040 to require only the measurement of the proposed additional source of noise, not including ambient noise.<sup>362</sup>

234. The results of this post-hearing analysis show that, when background noise levels are 45 dB(A) or less, total sound levels are 50 dB(A) or less regardless of the turbine-only noise level. When background noise levels are in the 45 to 50 dB(A) range, turbines contribute to the total when turbine-only noise levels are approximately 44 dB(A) or greater. Once background noise levels exceed 50 dB(A), the total sound level exceeds 50 dB(A).<sup>363</sup> Freeborn Wind asserts that, due to the conservative nature of the turbine-only noise modeled for the Project, it can confidently conclude that the Project will comply with the Noise Standards once operational.<sup>364</sup> The confidence that Freeborn Wind has in reaching this conclusion derives from the conservative assumptions Mr. Hankard input into his model.

235. The Administrative Law Judge is not as confident as Freeborn Wind that the Project, when operational, will comply with Minnesota noise standards. Mr. Hankard's estimates are predictions generated from mathematical equations representing many assumptions and uncertainties. In addition, for the following reasons, Mr. Hankard's predictions are uncertain:

- Sound constantly changes in the way it travels from a source to a receiving point because of minor changes in the atmosphere between the source and the receiving point.
- The sound level one actually records at a receiving point takes the shape of a bell curve; and with a bell curve, half the data will be randomly above the design level and half the data will be randomly below.
- The random variation of the bell curve creates uncertainty.
- To ensure that nearly all of the data are below the criterion level, one subtracts a tolerance from the prediction. This tolerance is solely based on the parameters for the bell curve as fit to the data.<sup>365</sup>

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<sup>362</sup> *Id.* at 2, 4; Tr. Vol. 1B at 98-124 (Hankard).

<sup>363</sup> Ex. FR-18 at 2-3, 9 (Hankard Affidavit and Noise Tables).

<sup>364</sup> Tr. Vol. 1B at 112 (Hankard). The EERA, which provided an edited version of Freeborn Wind's Proposed Findings of Fact, edited out language asserting that turbines are not a significant contributor to total sound levels exceeding 50 dB(A). However, the EERA left the statement that the conservative nature of the turbine-only noise modeling leads to the conclusion that the Project will comply with the Noise Standards once operational. DOC-EERA Proposed Findings of Fact, Conclusions of Law, and Recommendations at 27 (Apr. 4, 2018) (eDocket No. 20184-141695-01). This implies that the EERA agrees with that statement, although the EERA never stated so directly.

<sup>365</sup> Comment by Dorenne Hansen at 16-17 (Oct. 9, 2017) (presentation from Paul D. Schomer, Ph.D., P.E., *Effects of Wind Turbine Acoustic Emissions*) (June 23, 2015)) (eDocket No. 201710-136267-04).

236. The methodology Mr. Hankard employed has a margin of error to its noise level measurements of plus or minus three dB.<sup>366</sup> An increase of three dB corresponds to a doubling of sound power but only a slightly noticeable increase in loudness. Mr. Hankard contends that, by using the most conservative values for the model's parameters, the margin of error with respect to underestimating sound levels is much smaller than three dB.<sup>367</sup>

237. The three dB margin of error is not accepted by every acoustician. Kristi Rosenquist submitted an email exchange with Robert W. Rand, ASA, INCE, in which he stated:

To meet the '50 dBA total' not-to-exceed regulation standard under all conditions, the facility should be designed to prevent the total noise level exceeding 50 dBA for the worst case baseline condition, which would be the 50 dBA ambient background. Locations where the ambient background is 50 dBA and facility noise is 41 dBA or higher will result in a total noise level of 51 dBA or higher.

I have observed that facility design margins are universally omitted by wind industry sound prediction consultants. Whereas noise consultants who have designed other types of power generation facilities conservatively, use facility noise design margins to ensure compliance with regulations, typically 2-3 dB for steady continuous noise sources. Wind turbines have highly irregular noise output and exhibit amplitude modulation: larger facility design margins are recommended for such noise sources.<sup>368</sup>

238. Another cause for uncertainty is the absence of certain empirical data. That is, sound measurements are not made when one would expect the loudest levels to occur. As Mr. Hankard pointed out, the American National Standards Institute (ANSI) "discourages measurements when the local wind speed is 11 miles an hour or greater. And that's because what you're actually measuring at that point is distortion of the microphone and not actual sound in the air."<sup>369</sup> Accordingly, Mr. Hankard did not include any noise monitoring results over 11 miles per hour. The average monthly wind speed in the Freeborn Project Area is greater than 11 miles per hour.<sup>370</sup> While the wind speed at the hub height of a turbine may differ from the wind speed near ground level for a variety of reasons,<sup>371</sup> Freeborn Wind's Application stated that, at 80 meters above the ground,

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<sup>366</sup> Tr. Vol. 1B at 64-65, 115-16 (Hankard).

<sup>367</sup> *Id.* at 113-15.

<sup>368</sup> Comment by Kristi Rosenquist (Email from Robert Rand ASA, INCE, to Redacted (March 13, 2018 at 12:48 p.m.)) (eDocket No. 20183-140988-01); Comment by Dorene Hansen at 17 (Oct. 9, 2017) (presentation from Paul D. Schomer, Ph.D., P.E., *Effects of Wind Turbine Acoustic Emissions*) (June 23, 2015) (recommending 4-6 dB for a criterion of 39 dB)) (eDocket No. 201710-136267-04).

<sup>369</sup> Tr. Vol. 1B at 66 (Hankard).

<sup>370</sup> *Id.* at 65.

<sup>371</sup> *Id.* at 69.



predicted wind speeds near the Project Area are 6.0 to 8.8 meters per second.<sup>372</sup> At 8.8 meters per second, this is just under 20 miles per hour.

239. The Project Area is quite large and measurements were taken at five locations. In those five locations, 251 receptors were studied. The results for receptors could be quite sensitive to the locations of the measurements.

240. The turbines have yet to be built. One or more of the sound estimation model's assumptions or its data may be wrong. For example, the location of a turbine when finally erected could differ from its assumed location, or the location of a house could be incorrect. Or, post-construction measurements may not be made under identical atmospheric conditions as pre-construction measurements.

241. Table 2 in FR-18 shows that there are many instances where total noise will be quite close to, or exceed, 50 dB(A). There are approximately 254 homes in the Freeborn Wind Project footprint.<sup>373</sup> According to Table 2, any time the ambient noise level is 50 dB(A), added wind turbine noise results in 53 homes experiencing levels of 51 dB(A) and 25 homes at levels of 52 dB(A), for a total of 78 homes experiencing more noise than permitted by Minn. R. 7030.0040.<sup>374</sup> Two of the homes will experience 58 dB(A) if the ambient noise is 57 dB(A).<sup>375</sup> None of these homes was predicted to experience wind turbine noise alone above 48.9 dB(A). Many were predicted to experience wind turbine noise alone in the very low-to-mid 40's range.<sup>376</sup> Thus, the addition of ambient noise is significant in that it raises the predicted nighttime noise exposure of more than 30 percent of the homes in the footprint of the Project beyond what is allowed in Minn. R. 7030.0040.

242. For the reasons discussed above, despite Freeborn Wind's confidence that its conservative assumptions belie the numbers it has presented, the Administrative Law Judge concludes that Freeborn Wind has not demonstrated by a preponderance of the evidence that it will be able to comply with Minnesota noise standards. Therefore, the Administrative Law Judge cannot recommend that the Commission grant the Site Permit Application.

243. Should the Commission choose to do so, it could provide Freeborn Wind with an opportunity to submit a plan demonstrating how it will comply with Minnesota's noise standards at all times throughout the footprint of the Freeborn Wind Project. The plan should include low-frequency noise measurements for evaluation in consultation with MDH.

244. The Administrative Law Judge further recommends that the plan be made available for public and agency comment. The Commission should then review and

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<sup>372</sup> Ex. FR-1 at 97 (Application).

<sup>373</sup> Ex. FR-18 at 5-8.

<sup>374</sup> *Id.* at 5-8.

<sup>375</sup> *Id.* at 6.

<sup>376</sup> *Id.* at 5-8.

approve a pre-construction noise mitigation plan that best assures that turbine noise will not cause noise levels that exceed Minnesota's noise standards.<sup>377</sup>

245. Freeborn Wind cannot lawfully operate its turbines if their operation results in total noise at any receptor in excess of the standards in Minn. R. 7030.0400. If the Commission grants a Site Permit and post-construction measurements show that total noise levels exceed L<sub>50</sub> dB(A) for any receptor, Freeborn Wind must adjust its operations, including shutting down one or more turbines, if doing so will result in complying with the standards.

246. Site Permit Condition 7.4 requires the Permittee to file its post-construction noise study within 18 months of commencing commercial operation. The Administrative Law Judge finds this condition is insufficient in light of the many instances in which the operation of the Project may exceed what Minn. R. 7030.0040 allows, and the lack of analysis of infrasound in light of the combined ambient and turbine sound totals.

247. Because of the many potential sources of inaccuracy in the pre-construction noise level measurements and post-construction noise level predictions, should the Commission decide to grant Freeborn Wind's Site Permit Application, the Administrative Law Judge recommends a special permit condition requiring that post-construction noise level measurements be made during the first year of operation by an independent consultant selected by DOC-EERA at Freeborn Wind's expense. The measurements should be taken at multiple locations including locations near receptors that are predicted to experience the highest turbine noise levels. The consultant should be charged with ensuring that there are no receptors where levels of ambient noise plus turbine noise exceed L<sub>50</sub> 50 dB(A) during nighttime hours.

## **E. Shadow Flicker**

248. Shadow flicker from wind turbines occurs when rotating wind turbine blades move between the sun and the observer. When the blades rotate, this shadow creates a pulsating effect, known as shadow flicker. For shadow flicker to occur, the sun must be shining with no clouds to obscure it, the rotor blades must be spinning and must be located between the receptor and the sun, and the receptor must be sufficiently close to the turbine to be able to distinguish a shadow created by it.<sup>378</sup>

249. Shadow flicker intensity and frequency at a given receptor are determined by a number of interacting factors, including sun angle and path, turbine and receptor locations, cloud cover and degree of visibility, wind direction, wind speed, obstacles, contrast, and local topography.<sup>379</sup>

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<sup>377</sup> "[A]s indicated in Condition 4.3 Noise of the attached Preliminary DSP, if operating turbines are found to be in violation of Minnesota Rules Chapter 7030 noise standards turbine operations must be modified or the turbine must be removed from service." Ex. EERA-8 at 15 (Comments on Preliminary Draft Site Permit).

<sup>378</sup> Ex. FR-1 at App. C at 2-3 (Shadow Flicker Assessment).

<sup>379</sup> *Id.*

250. While some residents may find shadow flicker annoying, there is no scientific data that suggests that shadow flicker exposure, at the rates that are anticipated from the proposed turbine models, will cause negative human health impacts.<sup>380</sup>

251. Shadow flicker from turbines is not harmful to the health of photosensitive individuals, including those with epilepsy.<sup>381</sup> Seizures that occur as a result of flashes of light (a condition known as photic-stimulated epilepsy) happen as a result of frequencies greater than five Hz, usually substantially higher.<sup>382</sup> The frequency of any shadow flicker from wind turbines will be approximately 0.5 to 1 Hz, which is considerably below the range that would elicit a seizure even in someone who is vulnerable to seizures as a result of flashes of light.<sup>383</sup> The maximum speed of the turbines will result in 14.88 blade revolutions per minute, which equates to 0.75 flickers per second.<sup>384</sup> The Epilepsy Foundation has determined that flashing lights (which could mimic flicker) at a rate of five to 30 flashes per second may induce seizures.<sup>385</sup>

252. Many members of the public expressed concern about the shadow flicker the turbines would cause. In addition to finding the flicker irritating, people feared adverse health effects.<sup>386</sup>

253. The Commission has not adopted a standard for shadow flicker exposure from wind turbines. Freeborn County's Ordinance contains a requirement to conduct a flicker analysis and states that flicker at a receptor should not exceed 30 hours per year.<sup>387</sup> DOC-EERA confirmed that no supporting scientific data has been provided to suggest that there is a link between shadow flicker in excess of 30 hours or more per year of exposure and negative human health impacts, but acknowledged that 30 hours or more of exposure is commonly used as a benchmark at which point mitigation is generally necessary.<sup>388</sup>

254. Freeborn Wind's consultant retained EAPC Wind Energy (EAPC) to provide estimates of the shadow flicker potential of the Project's proposed turbine layout. EAPC used wind modeling software, turbine coordinates and specifications, and the locations

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<sup>380</sup> Ex. EERA-8 at 18 (Comments and Recommendations on Preliminary Draft Site Permit); see also Ex. FR-6 at Schedule 2 at 6 (Roberts Direct), Schedule 5 at 8-9 (Roberts Direct), Schedule 16 at 127 (Roberts Direct), Schedule 25 at 4 (Roberts Direct), Schedule 26 at 16 (Roberts Direct).

<sup>381</sup> Ex. FR-7 at 5 (Corrected Ellenbogen Direct); see also Ex. FR-6 at Schedule 2 at 6 (Roberts Direct), Schedule 6 at 14 (Roberts Direct), Schedule 26 at 16 (Roberts Direct), Schedule 29 at 37 (Roberts Direct).

<sup>382</sup> Ex. FR-7 at 5 (Corrected Ellenbogen Direct).

<sup>383</sup> *Id.*

<sup>384</sup> Ex. FR-1 at 39 (Application).

<sup>385</sup> *Id.*

<sup>386</sup> Public Hr'g Tr. at 93-95 (amount of shadow flicker), 146-48 (effect on autistic child), 219-20 (health effects) (Feb. 20, 2018).

<sup>387</sup> Freeborn County, Minn., Code of Ordinances § 26-56 (2015); Ex. EERA-8 at 29 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>388</sup> Ex. EERA-8 at 29 (Comments and Recommendations on a Preliminary Draft Site Permit); see also *id.* at 18 (Comments and Recommendations on a Preliminary Draft Site Permit) ("30 hours of flicker per year was a suggested standard in a couple of sources of information reviewed by EERA, but those sources do not provide supporting scientific data that would suggest there is a link between shadow flicker in excess of 30 hours per year of exposure and negative human health impacts.").

of 254 homes and businesses within two kilometers of any turbine. In addition, EAPC obtained monthly sunshine probabilities, wind speed and direction data, and a digital height contour map to generate a shadow flicker model. The model was then used to perform shadow flicker calculations for the area and evaluate the shadow flicker at all 254 buildings.<sup>389</sup>

The 254 dwellings were represented in the model by omni-directional shadow receptors that simulate a 1 m x 1 m window 1 m above ground level. Reductions based on turbine operational time, turbine operational direction, and sunshine probabilities were used to calculate a realistic number of hours of shadow flicker to be expected at each shadow receptor. No obstacles were used so that shadow flicker reductions due to interference from trees and structures were not included, meaning that the “realistic” estimates are still conservative.<sup>390</sup>

255. Freeborn Wind modeled shadow flicker frequency calculations for the Project at 254 residences, using both a worst-case scenario model and a more “realistic” model. Although the Project will utilize some Vestas V110 wind turbines, Freeborn Wind’s shadow flicker modeling assumed all turbines would be the Vestas V116 model. The Vesta 116 Model has a larger rotor diameter than the V110, thereby rendering results more conservative.<sup>391</sup> The “realistic” estimates are based on additional conservative assumptions, including that no credit was taken for the blocking effect of trees or buildings. The overall effect of using these conservative assumptions indicates that the number of hours of shadow flicker that would actually be observed will be less than those predicted.<sup>392</sup>

256. The results of the study indicate that, of the 254 receptors modeled, seven were predicted to realistically experience more than 30 hours of shadow flicker per year. Three of the seven receptors were at participating landowners’ occupied residences and would experience 40:28, 30:52, and 32:30 hours of shadow flicker. Four non-participating landowners’ occupied residences would experience 31:12, 34:35, 34.29, and 45.23 hours of shadow flicker.<sup>393</sup>

257. Freeborn Wind conducted an additional assessment of each of the non-participating residences where modeling indicated flicker could potentially exceed 30 hours per year. It concluded that there are a number of visual obstructions (e.g., trees and buildings) that would further diminish the potential for shadow flicker to occur at these locations.<sup>394</sup>

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<sup>389</sup> Ex. FR-1 at App. C at 1-4 (Shadow Flicker Assessment).

<sup>390</sup> *Id.*

<sup>391</sup> *Id.* at 4-5.

<sup>392</sup> *Id.* at 7.

<sup>393</sup> Ex. FR-1 at App. B (Shadow Receptor Coordinates & Realistic Shadow Hours).

<sup>394</sup> Ex. FR-11 at 5, Schedule 1 (Litchfield Rebuttal).

258. EAPC mentions that the realistic shadow hour predictions assume an “availability factor of 100% which is very unlikely to be the case.”<sup>395</sup> EAPC opines that an actual availability factor would be 95 to 98 percent.<sup>396</sup> Although EAPC does not explicitly state what an “availability factor” is, the Administrative Law Judge assumes it refers to the percentage of time turbines are inoperable for maintenance or repair purposes. Applying an availability factor of 95 percent to the non-participating landowners estimated exposure time reduces the estimate for one participating and one non-participating landowner below 30 hours.<sup>397</sup>

259. Freeborn Wind has considered shadow flicker when siting wind turbines to minimize impacts to all area residents. Freeborn Wind has also identified a number of potential mitigation measures, which may include providing indoor or exterior screening that will be considered and implemented, based on individual circumstances of residences experiencing shadow flicker, and as a reasonable function of the amount of flicker experienced.<sup>398</sup> In addition, Freeborn Wind has committed to use Turbine Control Software programmed to shut down a specific turbine or turbines for an appropriate amount of time to reduce flicker to below 30 hours per year at each home as necessary to comply with the 30 hour per year requirement in the Freeborn County Ordinance.<sup>399</sup>

260. The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts from shadow flicker. However, the shadow flicker exposure predictions may be incorrect to a greater or lesser extent because data used in the model is incorrect. The shadow flicker exposure estimates, for example, are based in part on measurements of wind direction and speed taken from “temporary meteorological towers located within the Project.”<sup>400</sup> To the extent that “temporary” measurements of wind direction and speed differ from their long run values, the shadow flicker exposure estimates will be wrong. Similarly, the estimates do not reflect the impact of any longer-term weather trends such as increased (or decreased) cloudiness.

261. The Administrative Law Judge finds Freeborn Wind has provided reasonable estimates for the hours landowners will be exposed to shadow flicker, but they are only estimates. With one modification, the Administrative Law Judge agrees with DOC-EERA’s recommendation to require post-construction measurements of shadow flicker. DOC-EERA recommends measuring shadow flicker “at receptor locations that were anticipated to receive over 30 hours of shadow flicker per year.” Because the exposure predications may be incorrect, it is possible that a location expected to receive under 30 hours of exposure, might receive over 30 hours. In particular, Shadow Receptors 303 and 401 are predicted to receive more than 27 hours of shadow flicker.<sup>401</sup>

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<sup>395</sup> Ex. FR-1 at App. C at 6 (Shadow Flicker Assessment).

<sup>396</sup> *Id.* at 4-5.

<sup>397</sup> The calculation for the non-participating landowner is: 31 hours and 12 minutes equals 1,872 minutes, 95 percent of which is 1,778.4 minutes or 29 hours and 28 minutes. If the availability factor is 98 percent, the predicted exposure to shadow flicker exceeds 30 hours.

<sup>398</sup> Ex. FR-1 at 40 (Application).

<sup>399</sup> Tr. Vol. 1A at 33 (Litchfield); *see also* Ex. FR-1 at 40 (Application); Ex. AFCL-19 at 2 (Freeborn Wind Response to AFCL IR No. 7).

<sup>400</sup> Ex. FR-1 at App. C at 28 (Shadow Flicker Assessment).

<sup>401</sup> Ex. FR-1 at App. B (Shadow Receptor Coordinates & Realistic Shadow Hours).

Because they are within 10 percent of exceeding the 30 hour limit, the Administrative Law Judge finds it reasonable to monitor their exposure as well. DOC-EERA proposed, and the Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, section 7.2 of the Site Permit be revised as recommended by DOC-EERA, with one modification:

Shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at receptor locations that were anticipated to receive over ~~30~~ 27 hours of shadow flicker per year. The Permittee will submit a Shadow Flicker Monitoring and Management Plan at least 14 days prior to the pre-construction meeting. The Shadow Flicker Monitoring and Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

262. The condition in Section 7.2 of the Draft Site Permit, as modified, appropriately addresses shadow flicker. It would require the Permittee to provide the Commission with data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the Project Area potentially subject to turbine shadow flicker exposure. The data would include the modeling results, assumptions made, and the anticipated level of exposure from turbine shadow flicker for each residence. Freeborn Wind would also be required to provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure.<sup>402</sup> Modified Section 7.2 of the Draft Site Permit would also identify shadow flicker monitoring, operational planning, and reporting requirements of the Permittee. With the adoption of the operational monitoring, mitigation measures, and reporting requirements, the Project would not be expected to result in significant impacts because of shadow flicker.

#### **F. Aesthetic Impacts**

263. The existing landscape in the Project Area is generally flat and agricultural with some windbreaks surrounding farmsteads and dwellings.<sup>403</sup>

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<sup>402</sup> See Draft Site Permit at 15-16 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>403</sup> Ex. FR-1 at 35 (Application).

264. Construction and operation of the Project will alter the viewshed within and proximate to the Project Area. The level of visual impact as either positive or negative will depend largely upon perceptions of observers.<sup>404</sup> However, following construction activities, the presence of the facility will not alter the day-to-day human activity or traffic in the area. The Project Area will retain its overall rural character. The turbines are compatible with the rural agricultural heritage of the area that often includes other high-profile facilities such as grain elevators and communication towers.<sup>405</sup>

265. Freeborn Wind states it will also implement mitigation measures to minimize any potential aesthetic impacts. In the Application, Freeborn Wind identified nine mitigation measures, including, but not limited to: using existing roads to the greatest extent possible to limit the number of new roads that need to be constructed; limiting above ground electrical lines; and using a uniform turbine color.<sup>406</sup>

266. The record demonstrates that Freeborn Wind plans to take steps to avoid and minimize aesthetic impacts. With the mitigation measures discussed above, the Project is not anticipated to result in significant aesthetic impacts.

### **G. Local Economy**

267. Freeborn Wind asserts the Project will create approximately 200 jobs during the construction phase and approximately ten permanent jobs during operation.<sup>407</sup>

268. According to Freeborn Wind, local contractors and suppliers will be used for portions of the construction, and total wages and salaries paid in Freeborn County will contribute to the total personal income of the region.<sup>408</sup> Several commenters at the public hearing noted that the Project is expected to result in well-paying jobs in the area.<sup>409</sup>

269. Freeborn Wind asserts the Project will provide landowners and farmers with opportunities for higher agricultural profitability and a more diverse revenue stream. Landowners having turbines or other Project facilities on their land will receive a royalty or lease payment annually for the life of the Project.<sup>410</sup> Several commenters at the public hearing expressed support for the Project because of the long-term economic benefits it will provide to landowners and the region.<sup>411</sup> Landowner royalties are estimated by Freeborn Wind to total \$800,000 per year in Freeborn County, with Freeborn County

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<sup>404</sup> Compare Public Hr'g Tr. at 52 (Hardison) ("To me, they're [wind turbines] very majestic."), 60-61 (Crane) ("It is my artistic opinion that these wind turbines are not only necessary for the viability of our energy future, but awe inspiringly beautiful in form and color."), 205 (Marin) ("And when I see a wind farm, I do see beauty.") (Feb. 20, 2018) with Public Hr'g Tr. at 66 (Olson) (referring to wind turbines as "monster structures."), 137 (Brandt) ("[T]hese eyesores could consume our once beautiful countryside.") (Feb. 20, 2018).

<sup>405</sup> Ex. FR-1 at 35-36 (Application).

<sup>406</sup> Id. at 39.

<sup>407</sup> Ex. FR-4 at 11-12 (Litchfield Direct); Public Hr'g Tr. at 26 (Litchfield) (Feb. 20, 2018).

<sup>408</sup> Ex. FR-4 at 11-12 (Litchfield Direct); Ex. FR-1 at 67 (Application).

<sup>409</sup> E.g., Public Hr'g Tr. at 62 (Forman), 140 (Davidson) (Feb. 20, 2018).

<sup>410</sup> Ex. FR-4 at 12-13 (Litchfield Direct).

<sup>411</sup> See Public Hr'g Tr. at 54 (Hardison), 60 (Crane), 116 (Hamersly), 164 (Schipper) (Feb. 20, 2018).

landowners receiving an estimated total of \$35 million over the 30-year life of the Project.<sup>412</sup>

270. Freeborn Wind states the Project will also provide significant benefits for local tax revenue. The Project anticipates paying a Wind Energy Production Tax to the local units of government of \$1.20 per megawatt hour of electricity produced, resulting in an annual tax payment of approximately \$9,400 per turbine per year, or up to \$397,000 per year for all 42 turbines planned.<sup>413</sup> This would be allocated as follows: 80 percent to Freeborn County and 20 percent to the host township (meaning each township would receive approximately \$1,900 per turbine per year). Hayward Township has the potential for six turbines and approximately \$11,400 per year in new revenue. Oakland Township has the potential for eight turbines and approximately \$15,200 per year in new revenue. Shell Rock Township has the potential for 11 turbines and approximately \$20,900 per year in new revenue. London Township has the potential for 17 turbines and approximately \$32,300 per year in new revenue.<sup>414</sup>

271. The record demonstrates that the Project, if built, will result in both short- and long-term benefits to the local economy.

## **H. Public Health**

### **i. Public Health Benefits**

272. Freeborn Wind maintains that wind farms benefit the environment and health of the regional community by reducing emissions from fossil fuels. Throughout their operational life-cycle, LWECs operations emit the smallest amount of greenhouse gasses (GHGs) compared to other energy generation methods. Wind energy does not emit sulphur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), particulate matter (PM<sub>10</sub>), or mercury, and drastically reduces water consumption.<sup>415</sup>

273. The Minnesota Center for Environmental Advocacy (MCEA) commented that increased use “of wind and other renewable resources with near-zero life-cycle [greenhouse gas] emissions leads to a direct reduction in the use of fossil fuels like coal and natural gas.” The MCEA echoed Freeborn Wind’s assertion that using wind to generate energy reduces SO<sub>x</sub>, mercury, NO<sub>x</sub>, and particulate matter, while requiring virtually no water to operate.<sup>416</sup>

274. The American Lung Association in Minnesota (ALA) submitted a letter in support of the Project, noting that the avoided air emissions from the Wind Farm “will benefit all Minnesotans, especially helping children with asthma, seniors with COPD, and

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<sup>412</sup> Ex. FR-4 at 12 (Litchfield Direct).

<sup>413</sup> *Id.* at 13.

<sup>414</sup> *Id.*

<sup>415</sup> Ex. FR-1 at 56 (Application).

<sup>416</sup> Comment by Carolyn Berninger on behalf of MCEA at 2 (Mar. 8, 2018) (eDocket No. 20183-140900-01).



others with respiratory conditions.”<sup>417</sup> A representative from the ALA also attended the public hearing and stated that “projects like this are important for avoiding the use of fossil fuels and helping protect the air quality we all breathe.”<sup>418</sup>

275. The Administrative Law Judge concludes that the Freeborn Wind project would generally contribute to public health by helping to reduce the emission of GHG’s in Minnesota.

## ii. Electric and Magnetic Field Risks

276. Electric and magnetic fields (EMFs) are present around electrical devices. Electric fields arise from the voltage or electrical charges, and magnetic fields arise from the flow of electricity or current through transmission lines, power collection (feeder) lines, substation transformers, distribution plant, service drop, house wiring, and electrical appliances.<sup>419</sup>

277. The electrical fields around the underground electrical collection lines associated with wind turbines dissipate within 20 feet on either side of the installed cable. EMFs associated with the transformers within the nacelle dissipates within 500 feet, so the 1,000-foot turbine setback from residences will adequately avoid any EMF exposure to homes. Based on the most current research on electromagnetic fields, and the distance between any turbines or collector lines and houses, the Project will have no impact to public health and safety due to EMFs.<sup>420</sup>

278. Stray voltage is a natural phenomenon that is the result of low levels of electrical current flowing between two points that are not directly connected. Stray voltage is not fatal to humans or other animals, and is not related to ground current, EMFs, or Earth currents. Stray voltage is a particular concern for dairy farms because it can impact operations. Problems are usually related to the distribution and service lines directly serving the farm or the wiring on a farm affecting confined farm animals.<sup>421</sup> Freeborn Wind states it “will design, construct and operate all electrical equipment and devices, including turbines . . . in accordance with applicable codes, manufacturer specifications and required setbacks.”<sup>422</sup>

279. Stray voltage impacts are not anticipated to occur as a result of the Project.<sup>423</sup> Therefore, the Administrative Law Judge determines that neither stray voltage nor EMFs pose a risk in the Freeborn Wind project.

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<sup>417</sup> Ex. FR-4 at Schedule 4 at 2 (Litchfield Direct).

<sup>418</sup> Public Hr’g Tr. at 129 (Hunter) (Feb. 20, 2018).

<sup>419</sup> Ex. FR-1 at 57 (Application).

<sup>420</sup> *Id.* at 58.

<sup>421</sup> *Id.* at 57-58.

<sup>422</sup> FR-1 at 58 (Application).

<sup>423</sup> Ex. EERA-8 at 30 (Comments and Recommendations on a Preliminary Draft Site Permit).

### iii. Public Health Risks

280. A number of AFCL members and other members of the public raised concerns about threats that wind turbines pose to those who live close to them. One landowner worried about her son who has autism and gets dizzy watching other children play baseball. She worries about his response to seeing the turbines turning every day.<sup>424</sup> Another landowner suffers from migraines, which she states are triggered by vibrations, and could be triggered by the whooshing and flicker of the turbines.<sup>425</sup> Similar concerns were raised by AFCL witness Hansen, who is a cancer survivor, on daily chemotherapy which causes her to be sensitive to motion and other stimuli.<sup>426</sup> A landowner who is a veteran with post-traumatic stress disorder and tinnitus wrote that the turbine noise and shadow flicker will trigger problems, both because of the noise and possible triggering of flashbacks.<sup>427</sup>

281. In its 2009 report, *Public Health Impacts of Wind Turbines*, the Minnesota Department of Health (MDH Report) reported, among other things, that:

The noise from multiple turbines similarly distant from a residence can be noticeably louder than a lone turbine simply through the addition of multiple noise sources. Under steady wind conditions noise from a wind turbine farm may be greater than noise from the nearest turbine due to synchrony between noise from more than one turbine (citation omitted). Furthermore, if the dominant frequencies (including aerodynamic modulation of different turbines vary by small amounts, an audible beat or dissonance may be heard when wind conditions are stable.<sup>428</sup>

282. The MDH Report also stated that “[r]hythmic light flicker from the blades of a wind turbine casting intermittent shadows has been reported to be annoying in many locations.”<sup>429</sup> Based on its own modeling, the MDH recommended that turbines be set back at a distance of 10 rotational diameters (approximately 1,000 meters, or .6 miles) in directions that shadow flicker may occur.<sup>430</sup> Shadow flicker can also be eliminated by placing turbines outside of the path of the sun in relation to areas of concern.<sup>431</sup>

283. The MDH Report does not conclude that any illness or condition is caused or aggravated by the noise or shadow flicker produced by wind turbines or wind farms. However, it concludes that the low-frequency noise that may not be addressed by the typical setback requirements, is commonly associated with “annoyance or an impact on quality of life.”<sup>432</sup> The MDH Report further states:

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<sup>424</sup> Comment by Michelle Severtson (July 3, 2017) (eDocket No. 20177-133516-01).

<sup>425</sup> Comment by Jennifer Johnson (Jul.13, 2017) (eDocket No. 20177-133824-01).

<sup>426</sup> Ex. AFCL-1 at 17-19 (Hansen Direct).

<sup>427</sup> Comment by Holly and Chuck Clarke (Jul. 4, 2017) (eDocket No. 20177-133515-01).

<sup>428</sup> Ex. FR-6 at Att. 7 at 17 (Roberts Direct).

<sup>429</sup> *Id.*

<sup>430</sup> *Id.* (citing *Wind Energy Handbook* (Burton et al., 2001)).

<sup>431</sup> Ex. FR-6 at Att. 7 at 28 (Roberts Direct).

<sup>432</sup> *Id.*

[s]leeplessness and headache are the most common health complaints and are highly correlated (but not perfectly correlated) with annoyance complaints. Complaints are more likely when turbines are visible or when shadow flicker occurs. Most available evidence suggests that reported health effects are related to audible low frequency noise. Complaints appear to rise with increasing outside noise levels above 35 dB(A).<sup>433</sup>

284. Before submitting its application to the Commission in this proceeding, Freeborn Wind invited comments from MDH about the proposed Freeborn Wind project. MDH Assistant Commission Paul Allwood replied with a letter to Applicant (2017 MDH Letter).<sup>434</sup> Referring to the noise standards at Minn. R. 7030.0040, the MDH response warned “The MPCA nighttime standard for noise intensity of 50 dB(A), not to be exceeded more than 50% of the time in a given hour, appears to underestimate how much low frequency noise can enter into dwellings. Prior to site development, MDH recommends that low frequency noise and total noise from turbines be evaluated.”<sup>435</sup> The MDH response repeated the setback recommendations it made for shadow flicker in 2009. The MDH comments closed with the following recommendations:

- Prior to development, low frequency noise and total noise from turbines should be evaluated by qualified acoustical engineers to determine measurable noise components from wind turbines that engender complaints and to assess noise impacts from proposed wind farms.
- Wind turbine noise estimates should include cumulative impacts (40-50 dB(A) isopleths) of all wind turbines.
- Isopleths for dB(C) – dB(A) greater than 10 dB should be determined to evaluate the low frequency noise component.
- The impacts of aerodynamic modulation noise and shadow flicker should be modeled and evaluated.
- Evaluations of turbine noise generation and shadow flicker should be incorporated into decisions when determining the appropriate setback distances of homes from wind turbines.
- Any noise criteria beyond current state standards used for placement of wind turbines should reflect priorities and attitudes of the community.
- Recognizing that it is unknown whether reported health impacts are direct health effects or indirect stress impacts from annoyance and/or lack of sleep resulting from turbine noise or shadow flicker, potential

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<sup>433</sup> *Id.*

<sup>434</sup> Ex. AFCL-16 at Att. 2 (Stipulation and Affidavit – AFCL and MDH).

<sup>435</sup> *Id.*

health impacts from wind turbine projects should be acknowledged, and provision should be made to mitigate these effects for residents within and near proposed project areas.

- The project should be designed so that exposure to residents is minimized and inclusion of all potential residents as compensated participants should be considered.<sup>436</sup>

285. Freeborn Wind's two independent medical experts, Dr. Mark Roberts and Dr. Jeff Ellenbogen, maintained that there is no scientifically-proven link between wind turbines and any adverse health effect. Dr. Roberts, a medical doctor and epidemiologist, studied the peer-reviewed scientific research involving health effects relating to noise.<sup>437</sup> He concluded that "there is no peer-reviewed, scientific data to support a claim that wind turbines are causing disease or specific health conditions."<sup>438</sup> Dr. Roberts determined that the evidence supports the conclusion that there are no potential adverse health effects from the sound produced by wind turbines, "because the levels of sound and infrasound from wind turbines are significantly lower than those that have been shown to cause harm."<sup>439</sup>

286. Dr. Ellenbogen, a sleep specialist, participated on a panel that conducted a Massachusetts health impact study regarding wind turbines and public health.<sup>440</sup> The Massachusetts panel concluded that wind turbines do not pose a risk to human health.<sup>441</sup> Dr. Ellenbogen specifically evaluated the merits of "wind turbine syndrome" and "found no basis for a set of health effects from wind turbines."<sup>442</sup> He also evaluated four individuals claiming to suffer from "wind turbine syndrome" and found that the claims could not be substantiated and, in fact, prevented the individuals from seeking appropriate treatment. Dr. Ellenbogen testified: "In my opinion, the misapplied blame to wind turbines prevented these individuals from seeking and obtaining much-needed medical treatment for their underlying conditions."<sup>443</sup>

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<sup>436</sup> *Id.*

<sup>437</sup> Ex. FR-6 at 15 (Roberts Direct).

<sup>438</sup> *Id.* at 16 (Roberts Direct); *see also* Ex. FR-8 at 4, 6 (Corrected Ellenbogen Direct) (concluding that wind turbines do not pose a risk to human health, and noting that peer-reviewed scientific studies from numerous organizations and agencies across numerous countries around the world have found no association between wind turbines and adverse health effects).

<sup>439</sup> Ex. FR-6 at 20 (Roberts Direct).

<sup>440</sup> Ex. FR-7 at 4 (Corrected Ellenbogen Direct).

<sup>441</sup> *Id.*

<sup>442</sup> *Id.* at 5.

<sup>443</sup> *Id.* at 5, 8; *see also* Ex. FR-6 at 16 (Roberts Direct) ("Neither wind turbine syndrome nor vibroacoustic disease has been recognized by organized medicine (professional societies or other professionally based societies) as a disease caused by wind turbine operations.").

287. Shadow flicker from wind turbines does not pose a risk for triggering seizures.<sup>444</sup> The frequency of any shadow flicker from wind turbines will be approximately 0.5-1 Hz, which is considerably below the range that would elicit a seizure even in someone vulnerable to seizures as a result of flashes of light.<sup>445</sup>

288. The recommendations of MDH were brought up in public comments and by AFCL. Specifically, AFCL requested that, in considering the Project, the Commission act on the recommendations made by in the 2009 MDH Report and in the 2017 MDH Letter.<sup>446</sup>

289. Freeborn Wind and DOC-EERA maintained that “the research identified by MDH identified no consist[ent] pattern of health impacts related to wind turbines.”<sup>447</sup> DOC-EERA further commented that “the conclusions and recommendations drawn in the 2009 [MDH Report] do not appear to be supported by the research and data that was available at the time” the report was written.<sup>448</sup>

290. Freeborn Wind asserts it has adequately addressed MDH’s concerns.<sup>449</sup> It points out that Mr. Hankard, a qualified acoustical professional, addressed low and total noise from the proposed wind turbines in his Direct Testimony and in his Affidavit and Noise Tables.<sup>450</sup> In addition, Freeborn Wind declares it evaluated noise and shadow flicker during the Project design,<sup>451</sup> and that Dr. Roberts and Dr. Ellenbogen provided robust testimony on potential health impacts from the Project.<sup>452</sup>

291. AFCL argued that much of Freeborn Wind’s witness testimony regarding the health effects of wind turbines was not relevant because causation is not an issue in this proceeding. AFCL reasons that causation is not an issue because Freeborn Wind is the applicant and bears the burden of proof.<sup>453</sup>

292. The Administrative Law Judge agrees that, as the Applicant, Freeborn Wind bears the burden of proof in this proceeding. However, causation and the burden of proof are two different concepts. Minn. Stat. § 216E.03, subd.7 (2016), lists some of the criteria

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<sup>444</sup> Ex. FR-7 at 5 (Corrected Ellenbogen Direct); see also Ex. EERA-8 at 29 (Comments and Recommendations on a Preliminary Draft Site Permit) (“there are no human health impacts known to be association with a person’s exposure to 30 or more hours of shadow flicker generated by a wind turbine.”), 18 (“30 hours of flicker per year was a suggested standard in a couple of sources of information reviewed by EERA, but those sources do not provide supporting scientific data that would suggest there is a link between shadow flicker in excess of 30 hours per year of exposure and negative human health impacts”).

<sup>445</sup> Ex. FR-7 at 5 (Corrected Ellenbogen Direct).

<sup>446</sup> See Ex. AFCL-1 at 16-19 (Hansen Direct).

<sup>447</sup> Ex. EERA-8 at 20 (Comments and Recommendations on a Preliminary Draft Site Permit); see also Ex. FR-6 at 15 (Roberts Direct).

<sup>448</sup> Ex. EERA-8 at 20 (Comments and Recommendations on a Preliminary Draft Site Permit); see also Ex. FR-6 at 15 (Roberts Direct).

<sup>449</sup> See, e.g., Ex. FR-13 at Schedule 1 (Hankard Rebuttal).

<sup>450</sup> See Ex. FR-5 at 4-5, 7-8 (Hankard Direct); Ex. FR-18 (Hankard Affidavit and Noise Tables).

<sup>451</sup> See, e.g., Ex. FR-1 at §§ 8.3, 8.4 (Application).

<sup>452</sup> See, e.g., Ex. FR-6 (Roberts Direct); Ex. FR-7 (Corrected Ellenbogen Direct).

<sup>453</sup> Tr. V. 1B at 134-35 (Feb. 21, 2018) (Overland); AFCL Reply Brief at 16 (Apr. 4, 2018).

the Commission must consider in deciding whether to grant a site permit. The subdivision states, in relevant part:

(b) To facilitate the study, research, evaluation, and designation of sites and routes, the commission shall be guided by, but not limited to, the following considerations:

(1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants . . . and the effects of . . . electric and magnetic fields resulting from such facilities on public health and welfare . . . .<sup>454</sup>

This statutory language contemplates consideration of a causal relationship between large electric power generating plants and public health and welfare.

293. AFCL and other members of the public have asserted in this case that the proposed Freeborn Wind project will cause them to suffer a variety of physical and psychological harms. Freeborn Wind has the burden of proving that its proposed wind farm will not be the cause of such health effects. Freeborn Wind sought to meet its burden of proof by presenting testimony of expert witnesses who testified that wind turbines have not been proven to be the direct cause of health problems or disease.<sup>455</sup> Thus, it was appropriate for Freeborn Wind's medical experts to testify regarding the question of whether or not wind turbines cause health problems in humans living near turbines.

294. AFCL did not present any expert medical testimony. Instead, it relied on anecdotal reports of people's negative responses to potentially living near wind turbines, along with articles by a variety of individuals, none of whom were presented to have their qualifications, methods, or conclusions subject to examination or cross-examination. Nor was expert witness foundation laid pursuant to Minn. R. Evid. 702 for any of the authors of the comments or articles.<sup>456</sup> The majority of the comments from members of AFCL and the public came from people who have not yet experienced living near a wind turbine, but are anticipating being harmed by the experience.<sup>457</sup>

295. The 2009 MDH Report did not differ significantly from Dr. Roberts' and Dr. Ellenbogen's testimony in concluding that annoyance, with possible associated

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<sup>454</sup> Minn. Stat. § 216E.03, subd. 7(b)(1) (emphasis added).

<sup>455</sup> Ex. FR-6 at 2-3 (Roberts Direct); Ex. FR-7 at 4-6 (Corrected Ellenbogen Direct).

<sup>456</sup> See, e.g., Comment by Ted Hartke (July 6, 2013) (eDocket No. 20177-133562-03); Ex. P-19 (Eric Zou, *Wind Turbine Syndrome: The Impact of Wind Farms on Suicide*, (Oct. 2017) (abstract)) (eDocket No. 20183-140952-04)); Ex. EERA-6 (Allec N Salt and Timothy E. Hullar, *Responses of the ear to low frequency sounds, infrasound and wind turbines* (June 16, 2010)) (eDocket No.201710-136011-01); Ex. AFCL-13 (Michael A Nissenbaum, Jeffery J. Aramini, & Christopher D. Hanning, *Effects of Industrial Wind Turbine Noise on Sleep and Health*, Noise & Health (2012)).

<sup>457</sup> See Attach. A at 3, 10-11(Summary of Initial Public Comments); Attach. B at 4-16 (Summary of Public Hearing); Attach. C at 5 (Summary of Public Comments on Draft Site Permit).

sleeplessness and headaches, are the impacts that have been demonstrated to occur in some people living near wind turbines.<sup>458</sup>

296. The preponderance of the evidence in the record demonstrates that current science supports a determination that people who live near wind turbines may experience annoyance, loss of sleep, and headaches. These symptoms are related to some combination of the presence of the turbines, the noise they make, and the attitudes of the people reporting the negative responses.<sup>459</sup>

297. The Administrative Law Judge further concludes that these adverse effects of wind turbines are mild, in the sense that there is no evidence to show that they will lead to more serious illnesses or death. However, chronic annoyance, sleeplessness, and headache can have significant impacts on the quality of the lives of the people who suffer from them.

298. The Administrative Law Judge finds that it is not in the best interest of the local community where a wind farm is being located, or of the wind energy industry generally, to locate wind turbines in a manner that angers and alienates the people whose lives are most directly affected by the turbines.

299. The Administrative Law Judge observes that the Project is predicted to exceed the 30-hour shadow flicker limit with regard to seven homes (three participating and four non-participating homeowners) under Freeborn County's Ordinance, a limit to which Freeborn Wind stated it would adhere.<sup>460</sup> Based on these concerns, and on the public health concerns arising from evidence of chronic annoyance, sleeplessness, and headache, the Administrative Law Judge recommends that the Commission amend the Draft Site Permit regarding shadow flicker consistent with the recommendations made in Section XI.E. of this Report.

300. The Commission approved the Draft Site Permit based upon the noise analysis in Freeborn Wind's Application, which included a summary prediction of ambient noise, but no predictions of combined ambient and turbine noise.<sup>461</sup> As discussed in Section XI.D.v. of this Report, the total average background noise L<sub>50</sub> levels, including both ambient and turbine nighttime noise levels, exceed those permitted by Minn. R. 7030.0040.<sup>462</sup>

301. While Freeborn Wind's proposed project meets the setback requirements based on Freeborn County's ordinance, it is not clear that it meets the requirements of the Commission's 2008 Order Establishing General Wind Permit Standards.<sup>463</sup> Those standards call for a setback distance of 750-1,500 feet, "depending on turbine model,

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<sup>458</sup> Ex. FR-6 at Att. 7 at 28 (Roberts Direct).

<sup>459</sup> Tr. Vol. 2 at 66 (Ellenbogen).

<sup>460</sup> Ex. FR-1 at App. C at 12-20 (Shadow Flicker Assessment).

<sup>461</sup> Ex. FR-1 at App. B at 30-31, 41-42 (Noise Analysis); Tr. Vol. 1B at 98-124 (Hankard).

<sup>462</sup> Ex. FR-18 at 2, 4 (Hankard Affidavit and Noise Tables).

<sup>463</sup> Ex. AFCL-8 (Order Establishing General Standards, PUC Docket No. E,G-999/M-07-1102 (Jan.11, 2008)).

layout, and specific site conditions.”<sup>464</sup> In addition, for homes, the required setback is “at least 500 feet plus the distance required to meet the state noise standard.”<sup>465</sup>

302. In light of the revised total noise predictions, and the lack of evidence that Freeborn Wind took the required 500 additional feet into account in establishing residential setbacks, the Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, the Draft Site Permit conditions be amended to require Residential setbacks of 1500 feet for all non-participating landowners.<sup>466</sup>

303. The Administrative Law Judge further recommends that the Commission retain the current Draft Site Permit conditions requiring Freeborn Wind to monitor, minimize, and mitigate potential impacts.<sup>467</sup>

304. The Administrative Law Judge finds, should the Commission issue a Site Permit to Freeborn Wind, that the amended shadow flicker, noise, setback and monitoring, minimizing, and mitigating potential impacts site permit conditions will provide adequate public health protections, while still allowing for the public health benefits of the proposed Project.

## **I. Public Safety**

305. Freeborn Wind maintained that current turbine technology, proactive maintenance, and regular facility inspections have significantly reduced safety risks.<sup>468</sup> Plans for the Project include a number of safety-related measures, such as equipping all Project-related facilities with sufficient security measures during construction and operation of the Project. Freeborn Wind indicated it will utilize temporary or permanent fencing, warning signs, and secure locks on equipment and wind power facilities. Security gates and fences will be constructed at locations deemed necessary by Freeborn Wind at the request of landowners. Construction and operation staff will receive safety training. According to Freeborn Wind, regular maintenance and inspections will be conducted to assess potential blade failures and minimize the potential for blade throw.<sup>469</sup>

306. Freeborn Wind reported that it is coordinating with applicable emergency and non-emergency response staff in the area, such as regional air ambulance services, sheriff’s offices, and fire departments to develop a safety plan during construction and operation of the Project. Freeborn Wind planned to be in contact with local first responders to offer information about the Project.<sup>470</sup>

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<sup>464</sup> *Id.* at 8.

<sup>465</sup> *Id.*

<sup>466</sup> There are four non-participating landowners with setbacks of less than 1500 feet. Ex. FR-4 at 19 (Litchfield Direct).

<sup>467</sup> See Draft Site Permit at 3, 15-16, 19-20 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>468</sup> Ex. FR-1 at 60 (Application).

<sup>469</sup> *Id.* at 61.

<sup>470</sup> *Id.* at 60.



307. In the event that emergency services are needed at local residences during construction, Freeborn Wind pledged to halt and relocate construction activities so that emergency vehicles may have unfettered access to the emergency site.<sup>471</sup>

308. Public commenters raised concerns regarding potential ice throw from the turbine blades in the winter. The commenters' concerns related primarily to turbine setback distances from public roads and the snowmobile trail located in the southern portion of the Project Area.<sup>472</sup> DOC-EERA claimed that the odds of ice throw occurring at the same time that someone would be snowmobiling in the adjacent portion of the trail, with optimal weather conditions, resulting in a snowmobiler being struck by ice fragments are "negligible, or almost non-existent."<sup>473</sup>

309. On February 22, 2018, the final day of the evidentiary hearing in this matter, a large piece of ice was thrown from a wind turbine on the Bent Tree Wind Farm, just to the northwest of Albert Lea. The ice struck and damaged a truck being driven on Highway 13 at the time. Freeborn County Commissioner Dan Belshan provided a public comment with information about the incident. Commissioner Belshan estimated that the ice traveled a distance of approximately 300 feet, based on the distance from the truck to the nearest wind turbine.<sup>474</sup> He provided a document from GE Energy titled, "Ice Shedding and Ice Throw – Risk and Mitigation."<sup>475</sup> The GE document recommends that turbines be sited a safe distance from occupied structures, roads, and public use areas to mitigate ice throw risk. Another mitigation suggestion is that turbines be deactivated when site personnel detect ice accumulation on the blades.<sup>476</sup>

310. Draft Site Permit Condition 4.4, which provides for a setback of 250 feet from public road ROW and designated public trails (such as the identified snowmobile trail), does not fully address this concern.<sup>477</sup> The turbine closest to the snowmobile trail (turbine 20) is 538 feet away from the snowmobile trail, exceeding the minimum setback in the Draft Site Permit (250 feet), as well as the setback required by Section 26-51 of the Freeborn County Ordinance (1.1 times the turbine height), and the likely distance the ice was thrown from the turbine at the Bent Tree Wind farm on February 22, 2018.<sup>478</sup>

311. The Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, the Site Permit Condition 5.2.25 be amended to require that

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<sup>471</sup> *Id.*

<sup>472</sup> See, e.g., Comment by Sue Madson (Oct. 9, 2017) (eDocket No. 201710-136275-01); Comment by Lisa Hajek (Oct. 9, 2017) (eDocket No. 201710-136294-01); Comment by Dan Belshan (March 15, 2018) (eDocket No. 20183-140987-01); Comment by Bonita Belshan (Mar. 15, 2018) (eDocket No. 20183-141038-01).

<sup>473</sup> Ex. EERA-8 at 15-16 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>474</sup> Comment by Dan Belshan (March 15, 2018) (eDocket No. 20183-140987-01).

<sup>475</sup> *Id.* (GE Energy | GER-4262 (04/06)).

<sup>476</sup> *Id.*

<sup>477</sup> Draft Site Permit at 3-4 (Jan. 30, 2018) (eDocket No. 20181-139549-01); Ex. EERA-8 at 16 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>478</sup> See Ex. EERA-8 at 16 (Comments and Recommendations on a Preliminary Draft Site Permit); Ex. FR-1 at 7 (Application). 1.1 times the turbine height is 487 feet for the V110 model and 498 feet for the V116 model. Ex. FR-1 at 7 (Application).

site personnel inspect any turbines closer than 1200 feet to structures, roads or trails for ice when weather conditions are such that ice is likely to accumulate on turbine blades. To the extent that ice is accumulating on the blades of turbines located within 1200 feet of structures, roads, or trails, the turbines must be deactivated until such time as the turbine blades are free from ice.

312. Aside from the above concern, if the Project is built, construction and operation of the Project is not anticipated to have a significant impact to public safety. The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to public safety. Further, the Draft Site Permit, with the recommended amendments, contains adequate conditions to monitor and mitigate the Project's potential impacts on public safety.<sup>479</sup>

## **J. Public Service and Infrastructure**

### **i. Roads**

313. The proposed Project is located in a sparsely populated, predominantly rural and agricultural area in southcentral Minnesota. Public services supporting rural residences and farmsteads within the Project Area include transportation/roadways, electric, and telephone/telecommunications.<sup>480</sup>

314. An established network of county and township roads exist in the Project Area. Various county and township roads provide access to the Project Area.<sup>481</sup>

315. During construction, Freeborn Wind anticipates temporary impacts on some public roads within the Project Area. Roads will be affected by the normal use of vehicles employed to deliver Project components, construction materials and equipment to and from Project locations.<sup>482</sup> Specific routes may also be impacted by the temporary expansion of road widths and/or intersections to facilitate the safe and efficient delivery of Project facility components and associated construction equipment.<sup>483</sup> Construction activities will increase the amount of traffic using local roadways, but such use is not anticipated to result in adverse traffic impacts. Freeborn Wind plans to coordinate with local authorities to implement appropriate traffic control measures to ensure public health and safety is protected with respect to the Project.<sup>484</sup>

316. Several local units of government, local officials, and members of the public raised concerns regarding the potential for Project construction to damage local roads.<sup>485</sup> Freeborn Wind states it is committed to repair all damage to local roads and to negotiate

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<sup>479</sup> Draft Site Permit at 3-4, 13-14, 23 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>480</sup> Ex. FR-1 at 40 (Application).

<sup>481</sup> *Id.* at 41.

<sup>482</sup> *Id.* at 42.

<sup>483</sup> *Id.*

<sup>484</sup> *Id.*

<sup>485</sup> See, e.g., Comment – Road Ordinance Passed by Shell Rock Township (Oct. 9, 2017) (eDocket No. 201710-136287-01); Comment – Road Ordinance (Oct. 9, 2017) (eDocket No. 201710-136229-01); Public Hr'g Tr. at 71 (Madson) (Feb. 20, 2018).

in good faith with Freeborn County and Hayward, London, Oakland, and Shell Rock Townships to develop an agreement that will address local concerns regarding development, road use, and drainage issues.<sup>486</sup>

317. The Draft Site Permit contains provisions that adequately address the use of public roads, the construction of turbine access roads, and private roads. For example, the Draft Site Permit requires Freeborn Wind to make satisfactory arrangements with the appropriate road authorities for use, maintenance and repair of the roads that may be subject to increased impacts due to transportation of equipment and Project components.<sup>487</sup> While this requirement can be satisfied in a number of ways,<sup>488</sup> Freeborn Wind reports it has begun meeting with local road authorities and offered to negotiate a road use agreement that establishes Freeborn Wind's responsibilities to maintain the roads in safe condition and repair roads and public drainage infrastructure damaged during construction.<sup>489</sup>

318. In addition, Freeborn Wind says it will construct the least number of turbine access roads necessary to safely and efficiently operate the Project and satisfy landowner requests; and access roads will be constructed in accordance with all applicable township, county, or state road requirements and permits. Further, Freeborn Wind promises to promptly repair private roads damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner.<sup>490</sup>

## **ii. Communications**

### **a. Concerns the Project Will Interfere with Communications**

319. After noise, the second most common concern brought to Freeborn Wind's attention concerning the Project is the fear that the wind turbines will adversely affect television and radio reception and possibly other communications services.<sup>491</sup>

320. One public commenter, Gregory D. Jensen, is the owner of FM KQPR and AM KQAQ radio stations.<sup>492</sup> His FM radio tower is located within the Project Area.<sup>493</sup> Jensen's attorney, Abby K. Leach, wrote on Mr. Jensen's behalf. She referenced a publication of the U.S. Department of Energy, Energy Efficiency & Renewable Energy, which concluded that:

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<sup>486</sup> Ex. FR-1 at 26 (Application); Tr. Vol 1A at 26 (Litchfield).

<sup>487</sup> Draft Site Permit at 10 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>488</sup> See Tr. Vol 1A at 26-28 (Feb. 21, 2018) (Litchfield); Ex. AFCL-18 (Freeborn Wind Response to AFCL IR No. 20).

<sup>489</sup> Ex. FR-4 at 6, 26, Schedule 2 (Litchfield Direct).

<sup>490</sup> See Draft Site Permit at 10-11 (Jan. 30, 2018) (eDocket No. 20181-139549-01) (Conditions 5.2.12, 5.2.13, 5.2.14).

<sup>491</sup> Ex. FR-4 at 25 (Litchfield Direct); see also AFCL Initial Brief at 54-55.

<sup>492</sup> Letter from Abby K Leach, Leach Law PLLC, on behalf of Gregory D. Jensen (July 6, 2017) (eDocket No. 20177-133586-01).

<sup>493</sup> *Id.* at Ex. A (eDocket No. 20177-133586-02).

[w]ind turbines, like all structures, can interfere with communication or radar signals when these signals are interrupted by the turbine's tower or blades . . . . Relocating some of the planned turbines is one approach to mitigating signal interferences . . . . Wind turbines can cause electromagnetic interference and affect TV and radio reception. Electromagnetic interferences can be caused by near-field effects, diffraction, or reflection and scattering.<sup>494</sup>

321. Commenter Janice A. Helgeson wrote that the Project would cause her to lose reception of KAAL, an ABC affiliate broadcasting on Channel 6 with a coverage area that includes the Project Area as well as Albert Lea.<sup>495</sup> Ms. Helgeson is concerned that the Project could also interfere with her reception of other TV and radio stations. She relies "on over-the-air (OTA) TV and radio" and wants interference issues resolved in advance of permitting rather than mitigated after construction.<sup>496</sup>

322. Roland and Rebecca Senne similarly wrote of their concern for the possible loss of the OTA signals for TV and radio. Although they have satellite TV, they state that, "whenever there's a storm we have to switch to the OTA signal."<sup>497</sup>

323. KAAL intervened in this proceeding because of its concern the Project could interfere with its microwave system and disrupt its OTA services to many of its viewers.<sup>498</sup> Obstruction of the station's signal would deprive its viewers not only of entertainment, but also "breaking weather announcements which can have an impact on the lives of those in the area if they are unable to receive emergency warnings."<sup>499</sup>

324. Commenter Allie Olson advised the Commission that the 34.5 kV transmission lines that would transmit the power generated by the Project could cause interference with the underground copper cables of the Sleepy Eye Telephone Company.<sup>500</sup> Commenter Kristi Rosenquist also expressed concern that the wind farm's sporadic electricity transmissions over its power lines would interfere with landline service

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<sup>494</sup> *Id.* at Ex. B (U.S. Department of Energy, Energy Efficiency & Renewable Energy, WINDEXchange) (July 6, 2017) (eDocket No. 20177-133586-03).

<sup>495</sup> Letter from David Harbert, KAAL GM & VP, to Richard Davis, Environmental Review Manager, DOC-EERA (July 24, 2017) (eDocket No. 20177-134203-01).

<sup>496</sup> Letter from Janice A. Helgeson to the attention of Richard Davis, Environmental Review Manager, DOC-EERA (Sept. 18, 2017) (eDocket No. 201710-136270-01). Tyler M. Nelson similarly objected to post-construction mitigation rather than planning to prevent problems prior to permitting the Project. Letter from Tyler M. Nelson to Richard Davis, Environmental Review Manager, DOC-EERA (Oct. 9, 2017) (eDocket No. 201710-136259-01).

<sup>497</sup> Letter from Roland and Rebeca Senne to Richard Davis, Environmental Review Manager, DOC-EERA (Sept. 8, 2017) (eDocket No. 201710-136238-01).

<sup>498</sup> Petition to Intervene from KAAL-TV, LLC at 2 (Oct. 13, 2017).

<sup>499</sup> Ex. KAAL-1 at 3 (Harbert Direct).

<sup>500</sup> Letter from Allie Olson to the Commission (July 6, 2017) (eDocket No. 20177-133592-01).

over copper cables.<sup>501</sup> Both Ms. Olson and Ms. Rosenquist refer to prior Commission proceedings where this issue has arisen.<sup>502</sup>

### 1. Wind Farm Interference with Communications Signaling Systems

325. No party disputes that the:

presence of a wind farm near telecommunications transmitters or receivers may introduce distortions on the transmitted signals. These distortions can cause different effects on radiocommunications services depending on several factors such as the frequency band, the modulation scheme and the discrimination of the radiation pattern of transmitter and receiver aerials.

. . . .

[A] wind turbine may cause a scattered signal of dynamic nature which is both amplitude and frequency modulated due to the rotating blades. The time and frequency characteristics of this scattering signal will depend on multiple factors. Some of them are fixed, such as the distance from the transmitter and the dimensions and materials of the wind turbine, while other are time-varying, such as the nacelle orientation and the rotation speed of the blades.<sup>503</sup>

326. Of the various types of radio communications services, the types most sensitive to the presence of wind turbines include fixed radio links and “broadcasting services (mainly analog television and digital television to a lesser extent).”<sup>504</sup>

327. The need for a detailed pre-wind farm construction assessment of potential interference issues is not disputed by the parties. As one article explains:

Although the critical interference cases are not common, if they occur when the wind farm is already installed, the posteriori corrective measurements are normally technically complex and/or cost prohibitive. By contrast, the prediction of the potential impact of a wind farm on the telecommunication services before its installation allows the planning of alternative solutions in order to assure the coexistence between the wind turbines and the telecommunication services. This potential impact must be analyzed in a case-by-case basis, taking into account the particular features of each

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<sup>501</sup> Letter from Kristi Rosenquist to the Commission (eFiled Oct. 9, 2017) (eDocket No. 201710-136227-01).

<sup>502</sup> *In re AWA Goodhue Wind, LLC's Application for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County*, PUC Docket No. IP-6701/CN-09-1186; *Large Wind Energy Convers System Site In the Matter of the Application of AWA Goodhue Wind, LLC for a Site Permit for the 78 MW Goodhue Wind Farm in Goodhue County*, PUC Docket No. IP-6701/WS-08-1233.

<sup>503</sup> Ex. KAAL-4 at Ex. D at 85-86 (I. Angulo et. al., *Impact analysis of wind farms on telecommunications services*, 32 RENEWABLE AND SUSTAINABLE ENERGY REVIEW 84 (2014) (footnote omitted)).

<sup>504</sup> *Id.* (footnotes omitted).

installation and the involved services, such as the accurate location of the wind turbines and the telecommunications infrastructure, terrain altimetry and topography, telecommunication towers height, service frequency and modulation, radiating systems characteristics and reception conditions.

In the case of a potential problem being identified, preventive measurements can be taken in order to avoid it. These may include proposing safe-guarding zones, changing the location of a wind turbine in the preliminary design of a wind farm, choosing a model with different dimensions or selecting alternatives for the telecommunications services (new transmitter locations, different communications links, etc.) Whatever the case may be, the cost of preventive measure[ment]s is lower than the one of corrective measurements and prevents public opposition to wind energy development.<sup>505</sup>

## **2. Freeborn Wind's Assessment of Potential Interference Issues**

328. Freeborn Wind retained Comsearch to analyze the Project's potential for interfering with AM and FM radio, communication towers, mobile phones, microwave beam paths and OTA TV reception.<sup>506</sup> Comsearch provides engineering services including wireless communications and microwave planning, interference analysis, and spectrum management.<sup>507</sup>

329. Comsearch maintains databases on licensed communications providers' networks in the United States that provide, among other information, the three-dimensional physical locations of communications transmission towers, antennas, and microwave stations. In addition, Comsearch has access to data sources maintained by others. With this information, Comsearch can identify the particular transmission paths or coverage areas that intersect the Project Area for each mode of communications technology – microwave, radio, cell towers, and TV.<sup>508</sup>

330. Comsearch found 17 tower structures and 70 communication antennas in the Project Area used in the transmission of microwave, cellular, radio, TV and land mobile services.<sup>509</sup> The report concluded that “[d]etailed impact assessments should be performed for these service types.”<sup>510</sup>

## **3. Radio Interference**

331. For its initial examination of the potential for interference with AM and FM radio, Comsearch located all radio stations within 30 kilometers of the Project Area.<sup>511</sup>

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<sup>505</sup> *Id.* at 86.

<sup>506</sup> Ex. FR-1 at App. D.

<sup>507</sup> Ex. FR-12 at 1 (Jimeno Rebuttal).

<sup>508</sup> Ex. FR-4 at Schedule 8 at 3 (Litchfield Direct).

<sup>509</sup> Ex. FR-1 at App. D at 7 (Wind Power GeoPlanner™ Communication Tower Study) (Dec. 8, 2016)).

<sup>510</sup> *Id.*

<sup>511</sup> *Id.* at App. D at 1, 3 (Wind Power GeoPlanner™ AM and FM Radio Report (Dec. 6, 2016)).

Comsearch found five such AM stations but all were outside of the “exclusion distance,” the distance beyond which no interference from the Project would be expected.<sup>512</sup> Consequently, Comsearch made no recommendations and proposed no mitigation measures for AM radio interference.

332. Comsearch identified five FM stations within the 30 kilometer radius that were potentially subject to interference from the Project. Comsearch concluded that the “effect of wind turbines on FM radio coverage and reception is expected to be minimal as long as the turbines are sited in the far-field region of the broadcast antennas and line-of-sight to the populations served by the FM stations is maintained.”<sup>513</sup>

333. After Freeborn Wind developed siting plans for its turbines, Comsearch conducted a second study of the Project’s potential for interfering with AM and FM radio in May of 2017.<sup>514</sup> Comsearch found that three FM stations were so close to the proposed turbines that it used aerial imagery to verify their exact locations.<sup>515</sup> After determining the stations’ precise locations, Comsearch found that two of the three stations were within 500 meters of a turbine such that “radiation pattern distortion could become a factor” and “[s]ignal attenuation is also possible ....”<sup>516</sup> Specifically, wind Turbine 10 could interfere with station KNSE and Turbine 15 could interfere with station KAUS-FM.<sup>517</sup>

334. The attorney for the owner of KQPR-FM and KQAQ-AM radio stations criticized Freeborn Wind’s radio interference study for only considering “the first three radio towers that are closest to the proposed wind turbines.”<sup>518</sup>

335. According to Comsearch, KQPR-FM transmitter is 1.82 kilometers from the nearest turbine and the KQAQ transmitter is over 15 kilometers distant. The stations did not dispute these measurements.<sup>519</sup> The stations’ letter cited Comsearch’s study’s statement that “[a]t distances less than 500 meters, radiation pattern distortion could become a factor.”<sup>520</sup> There is no specific evidence that any AM or FM radio transmitter will be within 500 meters of the nearest wind turbine, according to Freeborn Wind’s turbine siting layout.

336. DOC-EERA noted Comsearch’s finding of potential interference with KAUS-FM and KNSE by Turbines 10 and 15.<sup>521</sup> The agency pointed to Condition 5.2.16 in the

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<sup>512</sup> *Id.* at 1, 5.

<sup>513</sup> *Id.* at 5.

<sup>514</sup> Ex. FR-1 at App. D (Wind Power GeoPlanner™ AM and FM Radio Report (May 17, 2017)).

<sup>515</sup> *Id.* at 4.

<sup>516</sup> *Id.* at 8.

<sup>517</sup> *Id.* at 11.

<sup>518</sup> Letter from Abby K Leach, Leach Law PLLC, on behalf of Gregory D. Jensen at 1 (July 6, 2017) (eDocket No. 20177-133586-01).

<sup>519</sup> Ex. FR-1 at App. D at 1, 3 (Wind Power GeoPlanner™ AM and FM Radio Report (May 17, 2017)).

<sup>520</sup> *Id.* at 8. In the report’s Figure 2, KQPR-FM’s transmitter is identified by the number 4 and does not appear to be very close to any turbine.

<sup>521</sup> Ex. EERA-8 at 23 (DOC-EERA Comments and Recommendations on a Preliminary Draft Site Permit) (Dec. 4, 2017)).

Draft Site Permit that would require Freeborn Wind to “avoid, minimize, and mitigate interference to radio signals when siting and operating turbines.”<sup>522</sup>

337. In response to concerns about the Project causing significant disturbance to radio stations KNSE and KAUS-FM, Freeborn Wind removed Turbines 10 and 15 from the Project.<sup>523</sup> Comsearch’s study concluded that the wind farm’s remaining turbines would not interfere with stations KQPR-FM or KQAQ-AM.

338. The Administrative Law Judge concludes that there is no evidence to support the need for Freeborn Wind to relocate or remove additional turbines in order to minimize the potential for the Project to interfere with AM or FM radio reception. In the event that the Commission issues a Site Permit in this docket, the Administrative Law Judge recommends that Section 5.2.16 be amended to require Freeborn Wind to investigate concerns about radio interference caused by the Project. If the Project’s operations contribute to the interference, Freeborn Wind must undertake measures to mitigate the interference.

#### 4. Telephone Interference

339. Comsearch also studied the potential impact of wind turbines on mobile phone operations in and near the Project Area.<sup>524</sup> Comsearch did not anticipate any “significant harmful effect to mobile phone services in Freeborn.” The report noted that “[m]obile phone systems that are implemented in urban areas near large structures and buildings often have to combat even more problematic signal attenuation and reflection conditions than rural areas containing a wind energy turbine facility.”<sup>525</sup>

340. No party or member of the public disputed Comsearch’s conclusion that mobile phone service would not be disrupted by the Project. As noted previously, several members of the public raised the concern that Freeborn Wind’s power transmission lines could cause interference with landline telephone service.<sup>526</sup>

341. DOC-EERA commented that the “Applicant has been in direct communication with the landline provider in the Project Area. The local landline provider has not mentioned any concerns with regard to inductive interference as a result of the proposed Project.”

342. The Administrative Law Judge finds that the record contains no evidence that the Project, if built, would disrupt mobile or landline telephone service.

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<sup>522</sup> *Id.*

<sup>523</sup> Ex. FR-4 at 26 (Litchfield Direct). Freeborn Wind also encountered issues with acquiring the land rights necessary for turbine #15. EERA-8 at 9 (DOC-EERA Comments and Recommendations on a Preliminary Draft Site Permit) (Dec. 4, 2017)). Although the statement concerning land rights issue cites footnote 18 in support, there is no footnote 18 between footnotes 17 and 19 in EERA-8.

<sup>524</sup> Ex. FR-1 at App. D (Wind Power GeoPlanner™ Mobile Phone Carrier Report (Dec. 8, 2016)).

<sup>525</sup> *Id.* at 9.

<sup>526</sup> See *supra* at ¶ 324.



## 5. Interference with Radio Links and Microwave Beam Paths

343. Microwave networks constitute the telecommunications backbone of the country and transport local and long distance calls, wireless calls, internet traffic, and video services.<sup>527</sup> Microwave and radiowave systems are forms of radar systems that transmit at frequencies in the microwave or radio range respectively. According to information provided by KAAL, these systems direct beams at specific target receptors:

Because of the point-to-point nature of these links, and the frequency range they use, unobstructed line of sight between both ends of the links is intended. Diffraction effects occur in the forward scattering zone of the wind turbines, where the turbine obstructs the path between transmitter and receiver, located at the two end points of the link. Attenuation due to this mechanism will be of significance for high frequency [microwave] links with a turbine close to one of the antennas.<sup>528</sup>

344. MnDOT submitted a letter expressing concern about interference with MnDOT's Albert Lea-to-Oakland Woods Allied Radio Matrix of Emergency Response (ARMER) microwave paths.<sup>529</sup> However, following a review of the Project with respect to that ARMER path, MnDOT "has no concerns about any turbine locations impacting its licensed ARMER microwave paths."<sup>530</sup> No other state agency raised concerns about potential Project interference with microwave systems.

345. Comsearch conducted several studies to analyze potential interference with microwave beam paths. Comsearch's initial study was dated April 30, 2015. It was updated in December 2016 because Freeborn Wind expanded the Project to include an additional area. These studies sought to identify microwave beam paths crossing the Project Area to use in siting turbines to avoid them. The studies calculated the Fresnel Zones, the physical area of the beam path in which an obstruction can cause interference with the signal and disrupt its reception. Comsearch advised Freeborn Wind to site its turbines to avoid the Fresnel Zones they identified.<sup>531</sup> Freeborn Wind used these studies in developing its turbine layout.<sup>532</sup>

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<sup>527</sup> Ex. FR-1 at App. D (Wind Power GeoPlanner™ Microwave Study at 1 (Dec. 6, 2016)).

<sup>528</sup> Ex. KAAL-4 at Ex. D at 94 (I. Angulo et. al., *Impact analysis of wind farms on telecommunications services*, 32 RENEWABLE AND SUSTAINABLE ENERGY REVIEW 84 (2014)).

<sup>529</sup> MnDOT Comments (Oct. 6, 2017) (eDocket No. 201710-136205-01).

<sup>530</sup> Ex. FR-4 at Schedule 7 (Litchfield Direct).

<sup>531</sup> *Id.* at Schedule 8 (Litchfield Direct) (Wind Power GeoPlanner™ Microwave Study at 9 (June 23, 2017)).

<sup>532</sup> *Id.* at 29 (Litchfield Direct). Only the December 6, 2016 and June 23, 2017 studies are in the record.

346. Comsearch conducted a third study in June 2017 to respond to KAAL's concerns.<sup>533</sup> This study confirmed that the proposed turbine layout would not interfere with any of the 46 microwave beam paths crossing the Project Area, including KAAL's.<sup>534</sup>

347. KAAL agreed that microwave interference was not an issue based on the proposed Project design. KAAL's expert witness Steven Lockwood testified that Freeborn Wind analyzed the proposed turbine locations and correctly concluded that there would be no microwave interference.<sup>535</sup>

348. Accordingly, the Administrative Law Judge concludes that, if the Commission grants a Site Permit in this docket, Freeborn Wind's Project layout need not be modified to minimize potential microwave beam path interference.

## 6. Over-the-Air Television Interference

### a) Wind Turbine Interference with OTA Television

349. Freeborn Wind acknowledges the "dozens of comments in the Docket expressing concerns about television interference."<sup>536</sup> Freeborn Wind recognizes:

that with current television broadcast technologies, construction of wind turbines has the potential to impact TV reception as a result of an obstruction in the line of sight between residents relying on digital antennas for TV reception and the TV station transmitter. This is true of the Project and every other wind farm planned or operational in Minnesota or anywhere else in the world. Signal scattering could impact certain areas currently served by the TV stations, especially those that would have line-of-sight to at least one wind turbine but not to a respective station transmitter.<sup>537</sup>

350. "Scattering" occurs when TV signals are reflected off of the wind turbines which causes two or more versions of the same TV signal to reach the receiver at slightly different times. This creates the potential for multipath interference to develop and impede a receiver's ability to decode the TV signal.<sup>538</sup> As wind turbine blades move through a signal, "they cause the signal to drop and then pop up again as the blade moves out of the path."<sup>539</sup> This can cause reception to fail, especially for viewers on the edge of the coverage area or in a weak signal area. The potential for disruption due to such interference is much less now with digital broadcasts than it was with analog

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<sup>533</sup> Ex. FR-12 at 2 (Jimeno Rebuttal); Ex. FR-1 at App. D (Wind Power GeoPlanner™ Microwave Study (Dec. 6, 2016)); Ex. FR-4 at Schedule 8 (Litchfield Direct) (Wind Power GeoPlanner™ Microwave Study (June 23, 2017)).

<sup>534</sup> Ex. FR-4 at Schedule 8 at 7-9 (Litchfield Direct) (Wind Power GeoPlanner™ Microwave Study (June 23, 2017)).

<sup>535</sup> Ex. KAAL-4 at 3 (Lockwood Direct).

<sup>536</sup> Ex. FR-4 at 27 (Litchfield Direct).

<sup>537</sup> *Id.*

<sup>538</sup> *Id.* at 5; Ex. KAAL-6 (KAAL Information Request No. 5).

<sup>539</sup> Ex. FR-1 at App. D (Wind Power GeoPlanner™ TV Coverage Impact Study (May 22, 2017)).

broadcasts.<sup>540</sup> Nonetheless, demodulating a digital TV signal requires the receiver's Automatic Gain Control to maintain signal amplitude. Receivers are generally more likely to fail to maintain the necessary amplitude the faster a wind turbine's blades turn.<sup>541</sup>

351. Freeborn Wind asserts that the “complexity of identifying the exact antenna location at hundreds of potential private residents makes it impossible to avoid this impact upfront. However, we are diligently implementing a program to very promptly respond and mitigate any problems observed upon commencement of operations.”<sup>542</sup>

## **b) Comsearch's OTA Television Interference Study**

352. Dennis Jimeno is a telecommunications engineer III employed by Comsearch. Mr. Jimeno conducted the Comsearch studies for Freeborn Wind.<sup>543</sup> Comsearch's study followed the recommendations provided in ITU-R BT.1893-1, “Assessment Methods of Impairment Caused to Digital Television Reception by Wind Turbines (ITU-R BT.1893-1)”.<sup>544</sup> This document states that “wind turbines may cause television reception problems at locations where there is no line-of-sight to the TV transmitter but there is line-of-sight to the wind turbines.”<sup>545</sup>

353. Comsearch located 21 operating television stations within 100 kilometers of the Project Area providing coverage to the Project Area. Comsearch plotted the Federal Communications Commission (FCC) coverage contours for the 21 stations and found that six intersected with at least one wind turbine.<sup>546</sup> Comsearch then identified the areas within and near the Project Area that would be “especially susceptible” to multipath interference due to the signal scattering effects of the turbines.<sup>547</sup> The study concluded that these “at-risk” areas were those where the receiver antenna is within 10 kilometers and has line-of-sight to a wind turbine but no line-of-sight to the serving television station: “The severity of the interference at a given receiver in these areas is a function of the receiver itself, the type and configuration of the receiver antenna, the orientation of the wind turbine, and other signal propagation factors.”<sup>548</sup>

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<sup>540</sup> Ex. KAAL-4 at Ex. D at 95 (I. Angulo et. al., *Impact analysis of wind farms on telecommunications services*, 32 RENEWABLE AND SUSTAINABLE ENERGY REVIEW 84 (2014)).

<sup>541</sup> *Id.* at 6.

<sup>542</sup> Ex. FR-4 at 27 (Litchfield Direct); see Attach. B at 3 (Summary of Public Hearing).

<sup>543</sup> Ex. FR-12 at 1 (Jimeno Rebuttal).

<sup>544</sup> *Id.* at 5. “ITU” stands for the International Telecommunications Union. ITU-R indicates the Radiocommunication Sector of the ITU. “BT” represents the ITU-R's recommendations concerning broadcasting service (or television). Ex. KAAL-4 at Ex. B (Lockwood Direct) (Recommendation ITU-R BT.1893-1, *Assessment methods of impairment caused to digital television reception by wind turbines*, BT Series Broadcasting service (television) (Oct. 2015)).

<sup>545</sup> Ex. FR-12 at 5 (Jimeno Rebuttal) (apparently referring to ITU-R BT.1893-1 at 13).

<sup>546</sup> *Id.* at 3; Ex. FR-1 at App. D at 6 (Wind Power GeoPlanner™ TV Coverage Impact Study (May 22, 2017)). It is not clear why Comsearch studied 47 potential turbine sites when “the Project will include up to 42 turbine sites” within Freeborn County.

<sup>547</sup> Ex. FR-12 at 8 (Jimeno Rebuttal).

<sup>548</sup> *Id.*; Ex. KAAL-6 (KAAL Information request No. 5).

354. To estimate the impact of potential TV interference with the 10-kilometer study area, Comsearch first determined that 411 census blocks were partially or fully within the “at risk” areas. Comsearch used other census data to determine the number of households in each potentially affected census block. For census blocks only partially within the “At-Risk” areas, Comsearch calculated the percentage of the census block’s area within the “At-Risk” areas and applied that to the number of households in the block to estimate the number of potentially affected households in that block. In this manner, Comsearch identified that 867 households were located in the “at risk” areas that are “especially susceptible” to wind farm interference.<sup>549</sup>

355. Not all of these 867 households were within the coverage contours of each of the six TV stations, but many were in more than one station’s coverage contour.<sup>550</sup> Not every household however, uses OTA TV. Satellite TV is common and cable TV may be available to some. Comsearch relied upon a study from GfK, an independent research company, to estimate the portion of the 867 households using OTA TV. The GfK study found that 25 percent of households in the U.S. were without cable or satellite TV. On this basis, Comsearch assumed that only 25 percent of the “especially susceptible” households were subject to possible OTA signal disruption. Based on the 25 percent “especially susceptible” concept, Comsearch estimated that 735 households would be at risk of potentially losing OTA coverage from at least one of the six TV stations, if the Project is built.<sup>551</sup>

356. Because KAAL is a party to this action, it is an appropriate example to use in considering Comsearch’s methodology. Comsearch determined the census blocks within KAAL’s coverage contour and used additional data to estimate that there are 254,447 households within it. The Comsearch assumes 25 percent of the 254,447 households (63,612 households) use OTA to receive KAAL TV. Comsearch’s next step was to determine the number of households that are both within KAAL’s coverage contour and also within an “at risk” area, finding 604 such households. Comsearch then again assumed 25 percent of these households (151 households) are potentially at risk of interference to their reception of KAAL via OTA TV. Comsearch divides 151 by 63,612 to estimate that 0.24 percent of KAAL’s OTA household viewers who may have their reception disrupted by the Project.<sup>552</sup>

357. Comsearch advises use of “a high-gain directional antenna, preferably outdoors, and oriented towards the television tower location” to mitigate interference caused by the wind farm.<sup>553</sup> Alternatively, but at a much greater cost, interference problems could be resolved by installing low-power translator stations to re-broadcast an

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<sup>549</sup> Ex. KAAL-6 (KAAL Information request No. 5).

<sup>550</sup> Ex. FR-4 at App. D at 15 (“Wind Power GeoPlanner™ TV Coverage Impact Study” (May 22, 2017)).

<sup>551</sup> Id.

<sup>552</sup> Ex. FR-17 at 1-2 (Jimeno Affidavit and Workpapers); Ex. FR-4 at App. D at 14-15 (“Wind Power GeoPlanner™ TV Coverage Impact Study” (May 22, 2017)).

<sup>553</sup> Ex. FR-4 at App. D at 16 (“Wind Power GeoPlanner™ TV Coverage Impact Study” (May 22, 2017)).

affected station's programming in the areas with interference issues not remedied by a high-gain antenna.<sup>554</sup>

## 7. KAAL-TV's concerns

358. Freeborn Wind plans to place wind turbines near KAAL's microwave network installations and its broadcasting system equipment, "potentially causing harmful interference to those microwave system and broadcast operations. Moreover, homes and businesses which currently receive KAAL's over-the-air broadcast signal may experience interference caused by the wind turbine generators."<sup>555</sup> David A. Harbert, vice president and general manager of KAAL, <sup>556</sup> explained that, "[m]any homeowners in the path of the proposed windfarm could lose their KAAL signal, denying them breaking weather and news of immediate relevance to their well-being in addition to cutting them off from community, county and state news of great civic interest."<sup>557</sup>

359. As explained above, the Administrative Law Judge concludes that Freeborn Wind has demonstrated that its planned turbine layout will not obstruct any existing microwave beam paths, including those of KAAL. This subsection accordingly concerns only KAAL's fears of interference with its OTA TV signals.

360. Mr. Harbert submitted a document entitled "KAAL Field Testing Final Report" by Ray Conover that analyzed reception of the KAAL's signal in the Austin and Albert Lea areas in December 2010.<sup>558</sup> One testing site was Freeborn, Minnesota, 52.5 miles from the KAAL transmitter. According to Mr. Conover:

This site was selected to examine the effects of the path passing through a wind farm. Spectrum analyzer video reveals that the signals passing through the wind farm fluctuated at a modest rate by as much as 10dB. While the axion receiver was not affected by the level variations, I expect that older version receivers may well have a great deal of difficulty with these signals. The analyzer video also revealed that signals not passing through the wind farm were stable. Signal margins to receiver threshold continued to be quite good.<sup>559</sup>

In all other locations tested, there was much less fluctuation.<sup>560</sup>

361. Mr. Conover's study does not evidence any reception issues for OTA KAAL-TV, but the station fears the wind farm will change that situation. To that end, KAAL

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<sup>554</sup> *Id.*; Ex. KAAL-1 at 7-8 (Harbert Direct).

<sup>555</sup> Petition to Intervene from KAAL-TV, LLC (Oct. 13, 2017).

<sup>556</sup> Ex. KAAL-1 at 2 (Harbert Direct).

<sup>557</sup> *Id.* at 2-3.

<sup>558</sup> *Id.* at Ex. A (KAAL Field Testing Final Report) (Oct. 2011)).

<sup>559</sup> *Id.* at 11-12.

<sup>560</sup> *Id.*

retained Steven S. Lockwood, senior engineer and president of Hatfield & Dawson Consulting Engineers, to review filings and testify in this proceeding.<sup>561</sup>

362. Mr. Lockwood cited Recommendation ITU-R BT.1893-1 as an authoritative source for quantifying, predicting, and measuring wind farm caused “scattering” of TV signals.<sup>562</sup> He stated that wind turbines can cause reception problems when a TV signal passes through wind turbines as well as when signals are reflected or obstructed by the turbines. According to Mr. Lockwood, “As turbine blades move through the signal, they cause the signal to drop then pop up again as the blade moves out of the path.”<sup>563</sup> This gives rise to two problems for TV reception: 1) if the signal drops below the receiver’s threshold, reception fails; and 2) the faster turbine blades move, the more likely it is that some receivers’ Automatic Gain Control (AGC) will fail.<sup>564</sup>

363. Mr. Lockwood contends that the Comsearch study underestimated the effects of wind turbines on OTA TV reception because it only considered households within 10 kilometers of the Project, and within that subset, only those households with line-of-sight to the turbine but not line-of-sight to the TV transmitter. Other households that receive signals that pass through the wind farm were not included in the study. In addition, Mr. Lockwood questioned the assumption that only 25 percent of households affected relied on OTA TV. He also noted that many viewers would not have outdoor elevated antennas.<sup>565</sup>

364. Mr. Lockwood disagreed that ITU-R BT.1893-1 methods produced a conservative estimate of households that would experience signal disruption. He claimed that the European Digital Video Broadcasting – Terrestrial (DVB-T) standard performs better in multipath signal environments than Advanced Television Systems Committee (ATSC), which is the United States standard.<sup>566</sup> The implication of this statement is that the signal scattering interference in an ATSC standard based system is underestimated by using the ITU-R BT.1893-1 methods. Mr. Lockwood noted that the superior guide to methods for determining areas most susceptible to interference is ITU-R BT.2142. That reference includes a study finding scattering occurring at least 13.5 kilometers from the wind farm.<sup>567</sup>

365. KAAL’s data indicates far more homes will be affected than Comsearch’s study, but KAAL did not submit this data or a summary of it into the record.<sup>568</sup> KAAL urged that Freeborn Wind be required “to perform accurate impact studies and, if appropriate, construct a new translator tower.”<sup>569</sup> KAAL proposed that a survey be

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<sup>561</sup> Ex. KAAL-4 at 1 (Lockwood Direct).

<sup>562</sup> *Id.* at Ex. B (Recommendation ITU-R BT.1893-1, *Assessment methods of impairment caused to digital television reception by wind turbines*, BT Series Broadcasting service (television) (Oct. 2015)). ITU is the International Telecommunications Union.

<sup>563</sup> *Id.* at 5.

<sup>564</sup> *Id.* at 5-6.

<sup>565</sup> *Id.* at 6-7.

<sup>566</sup> Ex. KAAL-5 at 1 (Lockwood Surrebuttal).

<sup>567</sup> *Id.* at 2.

<sup>568</sup> *Id.*

<sup>569</sup> *Id.* at 5.

conducted to determine the “current method of reception of local news and weather information, especially during weather and/or headline alerts.”<sup>570</sup> KAAL recommended that DOC-EERA retain a company, at Freeborn Wind’s expense, to conduct this door-to-door survey of all residents within 20 kilometers of any turbine. The survey would be repeated 90 days after operations commenced, as well as, after any change in turbine equipment specifications.<sup>571</sup> According to KAAL, having a Freeborn Wind consultant visit viewers post-operation is inadequate because many people will not report problems, and not every problem that is reported will be resolved.<sup>572</sup>

366. KAAL proposed that “[u]nserved’ or ‘failure’ for purposes of the post-construction survey shall mean a drop in reception of Over-the-Air KAAL-TV signal such that blocking artifacts or pixilation remains.”<sup>573</sup> Ultimately, if household antenna adjustments, replacements, or satellite service do not resolve reception issues, KAAL wants Freeborn Wind to be responsible for the financial and legal costs of establishing translators to reinforce its OTA signals so that every household that enjoyed KAAL OTA TV service before the wind farm commences operation, will receive it after operations commence.<sup>574</sup> This includes any viewers who have satellite service but also use OTA TV, particularly during periods of inclement weather that disrupts satellite service.<sup>575</sup> One purpose of the survey is, thus, to identify the households that rely on OTA TV only occasionally.

367. Mr. Harbert initially proposed that if 10 or more households experience blocking artifacts or pixilation, Freeborn Wind should compensate KAAL for its costs of applying for a frequency allocation and translator antenna to provide service to affected households, install a translator antenna to provide KAAL-TV reception, and set aside funds to cover these expenses as well as subsequent operations and maintenance costs. In response to an information request, KAAL subsequently retracted its threshold of 10, and proposed that one household “is too many and must require full mitigation measures, because that one (1) household is a family and not one child should be injured due the loss of the breaking weather or information alert provided them over-the-air by KAAL-TV.”<sup>576</sup> Mr. Harbert affirmed this position in his surrebuttal testimony.<sup>577</sup>

368. Translators range from \$60,000 to \$175,000, depending upon the power required for the service area. In addition, engineering, legal fees, and installation costs could result in capital costs of \$450,000, assuming the translator could be located on KAAL’s existing tower.<sup>578</sup> If a new tower were required, costs could triple.<sup>579</sup> Consequently, KAAL requests that Freeborn Wind be ordered to reserve a minimum of \$450,000, plus annual maintenance costs for the life of the wind power purchase

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<sup>570</sup> Ex. KAAL-1 at 5 (Harbert Direct).

<sup>571</sup> *Id.* at 5-6.

<sup>572</sup> *Id.*

<sup>573</sup> *Id.* at 6.

<sup>574</sup> *Id.*

<sup>575</sup> *Id.*

<sup>576</sup> Ex. FR-16 at Schedule 1 at 15 (Corrected Litchfield Surrebuttal).

<sup>577</sup> Ex. KAAL-3 at 3 (Harbert Surrebuttal).

<sup>578</sup> *Id.* at 7.

<sup>579</sup> *Id.* at 8.

agreement, to fund the construction of a translator if the survey finds more than 10 households experience disruptions.<sup>580</sup>

## 8. Freeborn Wind's Response to KAAL

369. Mr. Jimeno responded to Mr. Lockwood's criticisms by first noting that ITU-R BT.1893-1 states, "it is unlikely necessary to extend the investigation area to more than about 10 km."<sup>581</sup> The guidance also emphasizes that interference is more likely when the receiving antenna is within two kilometers of a wind turbine.<sup>582</sup> Second, Mr. Jimeno contends that the study did consider households using signals passing through wind turbines "well beyond 2 km from the wind turbines."<sup>583</sup>

370. The ITU-R BT.1893-1 study assumes turbines with metal blades of a particular configuration. Mr. Jimeno explains that the Project's blades are fiberglass and less obstructive of TV signals than metal blades, rendering the results of the study more conservative.<sup>584</sup> Mr. Lockwood counters that the blades are made of "carbon fiber pultrusions" and have a "down conduction" made of metal.<sup>585</sup> The implication of the parties' competing expert testimony is that the Project's blades will cause less OTA TV signal distortion than metal blades but more than pure fiber glass blades.<sup>586</sup>

371. The ITU-R BT.1893-1 model assumes the European DVB-T digital signaling system. Mr. Lockwood contends that the U.S. ATSC standard is more susceptible to multipath interference. Mr. Jimeno responds that receivers using the U.S. ATSC standard are able "to handle strong multipath distortions."<sup>587</sup>

372. Freeborn Wind dismisses Mr. Lockwood's criticism of Comsearch's 10-kilometer study area because it "relies on one instance where signal scattering was

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<sup>580</sup> *Id.*

<sup>581</sup> Ex. FR-12 at 6 (Jimeno Rebuttal) (citing KAAL-4 at Ex B at 4 (Lockwood Direct)).

<sup>582</sup> *Id.* (citing KAAL-4 at Ex. B at 12 (Lockwood Direct)).

<sup>583</sup> *Id.*

<sup>584</sup> *Id.* at 7.

<sup>585</sup> Ex. KAAL-5 at 2.

<sup>586</sup> Authors of the article *Impact analysis of wind farms on telecommunications services* conclude that

all these models have proved to not accurately characterize signal scattering from wind turbines, due to several reasons. For example, they are merely based on the signal scattered by the blades, thus, they do not consider the contribution of the mast to the scattered signal. Nevertheless, despite being based on the scattering by the blades, they do not model the signal scattering variation due to rotations, which may be of importance for the assessment of reception quality of the new telecommunications services in the UHF band. Moreover, they do not consider the scattering pattern variation in the vertical plane, and thus obviate the situation where a wind farm is located at a higher height than the potential viewers.

Ex. KAAL-4 at Ex. D at 96-97.

<sup>587</sup> Ex. FR-12 at 8 (Jimeno Rebuttal) (quoting KAAL-4 at Ex. D at 95 (Lockwood Direct)). The quotation continues: "However, if signal level variations due to a wind farm make the signal level to be below the operational threshold, the video will be affected." *Id.*



allegedly observed at 13.5 [kilometers].”<sup>588</sup> Further, signal scattering does not always result in interfering with OTA reception, as shown by KAAL’s own field testing.<sup>589</sup> Finally, Freeborn Wind argues that Lockwood provides no support for his proposed 20-kilometer study area.<sup>590</sup>

## 9. DOC-EERA’s Analysis

373. DOC-EERA took note of KAAL’s concerns and committed to work with KAAL if it identified areas of potential concern or turbine locations that may cause signal interference.<sup>591</sup> However, there is no report in the record of KAAL identifying specific areas or turbines of concern.

374. DOC-EERA does not support KAAL’s demands for pre-construction household surveys or its request to set aside funds for a translator. Nor does DOC-EERA propose any special conditions in the Draft Site Permit related to OTA signal interference. DOC-EERA did not express any concerns with Freeborn Wind’s OTA TV interference mitigation commitments. DOC-EERA concurs with Comsearch’s study results: relatively few households are likely to experience interference with their OTA TV reception. According to DOC-EERA, households that do experience reception problems are protected by section 5.2.16 of the Site Permit, by Freeborn Wind’s proposed mitigation measures, and ultimately, by the Commission through the complaint process.

375. Richard Davis, author of the Draft Site permit for DOC-EERA, was not aware of any unresolved OTA TV complaints of Minnesota wind farms.<sup>592</sup> He acknowledged DOC-EERA did not receive copies of complaints involving TV interference and that the public might be unaware that wind farms could interfere with OTA TV.<sup>593</sup>

376. DOC-EERA concludes, in paragraphs 199 and 200 of its proposed Findings of Fact, that the conditions in section 5.2.16 of the Draft Site Permit are an adequate response to potential OTA TV interference problems. Section 5.2.16 requires:

Freeborn Wind to submit to the Commission, prior to the pre-construction meeting, an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the project area and also requires Freeborn Wind to be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.<sup>594</sup>

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<sup>588</sup> Freeborn Wind Reply Brief at 23.

<sup>589</sup> *Id.* (citing KAAL-1 at Ex. A at 11 (Harbert Direct) (KAAL Field Testing Final Report) (Oct. 2011)).

<sup>590</sup> *Id.* at 24 (citing Tr. Vol. 2 at 162-63 (Lockwood)).

<sup>591</sup> Ex. EERA-7 at 23 (Comments and Recommendations of the Minnesota Department of Commerce Energy and Environmental Review and Analysis Staff (Dec. 4, 2017)).

<sup>592</sup> Tr. Vol 2 at 166 (Davis).

<sup>593</sup> *Id.* at 181-82.

<sup>594</sup> Draft Site Permit at 11-12 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

377. To address KAAL's concern that "at risk" viewers may not be aware of this mitigation, Freeborn Wind agreed to expand the list for the notice required under Draft Site Permit Condition 5.1. The expanded notice would include those in "at risk" areas identified on Figure 7 of the TV Coverage Impact Study included in Appendix D to the Application.<sup>595</sup>

## 10. Freeborn Wind's Proposed Mitigation Measures

378. Freeborn Wind retained Dave Veldman of Veldman Antenna, a local television and satellite installation business, to respond to OTA TV interference complaints.<sup>596</sup> Freeborn Wind contends that post-construction mitigation efforts are a much superior alternative to pre-construction survey efforts: "while our Project might temporarily limit TV reception for some viewers, we will work with them to promptly restore service. The complexity of identifying the exact antenna location at hundreds of potential private residences makes it impossible to avoid this impact upfront."<sup>597</sup>

379. If a resident complains of ongoing TV reception interference, Freeborn Wind proposed to do the following:

- a. It will review the Comsearch report to assess whether the impacts are likely Project-related.
- b. If Freeborn Wind believes the impacts are likely projected-related, it will send Mr. Veldman to visit the landowner and determine the current status of TV equipment and reception.
- c. If project-related interference is found, Freeborn Wind will give the landowner an option between having Freeborn Wind install a high gain antenna and/or a low-noise amplifier, or, providing monetary compensation "equal to the cost of comparable satellite TV services at the residence."
- d. If the new equipment restores reception to pre-wind farm operations, the matter will be closed.
- e. If interference remains an issue, Freeborn Wind will offer monetary compensation equal to the cost of comparable satellite TV service.
- f. If the landowner and Freeborn Wind cannot agree to resolve interference issues, Freeborn Wind will report the issue to the Commission's dispute resolution process.<sup>598</sup>

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<sup>595</sup> Tr. Vol. 2 at 76, 81-82 (Parzyck).

<sup>596</sup> Ex. FR-16 at 3 (Corrected Litchfield Surrebuttal).

<sup>597</sup> Ex. FR-4 at 27 (Litchfield Direct).

<sup>598</sup> *Id.* at 28.

## 11. Analysis of KAAL's Demand for a Pre-Construction Survey

380. As an initial matter, there is uncertainty as to the number of OTA TV-using households potentially affected by the Project. KAAL asserts that “[a]ccording to our [KAAL’s] data in the zip codes impacted, far more homes are impacted than what Comsearch asserted. . . . Not only does KAAL-TV record extremely high OTA viewing within the view zip codes, but the overwhelming share of news viewing by hour on a Monday – Friday basis which determine ratings.”<sup>599</sup> However, KAAL chose not to submit this data into the record.<sup>600</sup>

381. Mr. Harbert testified that 34.3 percent of KAAL’s viewers use satellite, 46.4 percent use cable, and 19 to 20 percent use OTA TV.<sup>601</sup> But he also testified that the percentage of OTA viewers is higher in rural areas that lack cable TV service, varies substantially from county to county, and could range from 18 to 28 percent.<sup>602</sup>

382. The Administrative Law Judge concludes that Comsearch’s use of 25 percent as the percentage of viewers who use OTA TV is not an unreasonable approximation of the percentage of OTA viewers in its service area as a whole, and may be a reasonable estimate for most counties within that area. However, the "at risk" areas do not correspond to counties. The actual percentage of OTA TV viewers in the "at risk" areas could be higher or lower than 25 percent.

383. The Administrative Law Judge concludes that KAAL’s demand for Freeborn Wind to fund a pre-construction survey of homes within 20 kilometers of a Project turbine would involve a disproportionately large expense for information of limited value. The furthest estimated distance of wind turbine interference with OTA TV is 13.5 kilometers in one study. But as noted previously, that study involved Europe’s broadcast standards and receivers which differ from U.S. standards and receivers.<sup>603</sup> While the European standard is less susceptible to multipath interference according to Lockwood, U.S. receivers have Automatic Gain Control and can handle strong multi-path distortions

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<sup>599</sup> Ex. KAAL-1 at 4 (Harbert Direct).

<sup>600</sup> KAAL explains that viewing data is subject to a non-disclosure agreement with the Neilson rating organization. However, the data can be released by court order and KAAL chose not to seek such an order. Tr. Vol 2 at 114-16 (Harbert). Freeborn Wind could also have sought an order from the Administrative Law Judge and chose not to do so.

<sup>601</sup> *Id.* at 153-54 (Harbert).

<sup>602</sup> *Id.* at 154.

<sup>603</sup> Ex. KAAL-5 at Ex. A at 55 (Lockwood Surrebuttal) (Report ITU-R BT.2142-2, *The effect of the scattering of digital television signals from wind turbines*, BT Series Broadcasting Service (television) (July 2015)).

according to Mr. Jimeno. The record contains only minimal evidence of households that have had unresolved OTA TV interference caused by wind farms.<sup>604</sup> Of the six television stations potentially affected, only one has expressed concern.

384. Although, as KAAL asserts, some households whose OTA TV reception is disrupted may not complain for a variety of reasons, the Administrative Law Judge finds that requiring a door-to-door survey to locate indifferent viewers is a poor use of resources. The KAAL Field Test Report found that its signal was adequate even after passing through an existing wind farm.<sup>605</sup> The Administrative Law Judge agrees with Freeborn Wind and DOC-EERA that the pre-construction survey urged by KAAL should not be a condition of a permit, if the Commission issues a Site Permit in this docket.

385. The Administrative Law Judge does not entirely rule out the possibility that, if the Commission issues a Site Permit in this docket, significant numbers of households could experience OTA TV reception interference from the wind farm and concludes that all potentially affected households should receive notice of the wind farm, its potential effects on OTA TV service, Freeborn Wind's mitigation commitment, and a copy of the site permit and complaint procedure. After receiving adequate notice, viewers who experience interference can either initiate the complaint and mitigation procedures, or accept the interference as inconsequential.

## **12. Analysis of KAAL's Demand for Funds to be Reserved for a Translator**

386. Given KAAL's estimated translator costs of up to \$450,000, and up to three times that amount if a new tower is required,<sup>606</sup> its demand for Freeborn Wind to incur these costs if a single household is not satisfied by antenna or receiver adjustments, replacements, or by satellite service, is unreasonable. KAAL's insistence that its OTA TV reception is a matter of life and death because it provides news of weather and other emergencies is overstated. The record demonstrates no problems with AM or FM radio service which can provide emergency weather information to households whose OTA TV and satellite service are both disrupted, one by the Project and the other by the weather.

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<sup>604</sup> Bernie and Cheryl Hagen wrote about the TV interference they suffered when the Bent Tree windfarm went into service: "We experienced television reception problems early on – when they were testing the turbines prior to them going online. We taped and reported the bad transmission to Bent Tree and they did come to our home to witness the tv disruption. They waited six weeks and then mailed us a Release Claim which will in fact result in an easement on your property and prevent you from ever complaining about noise, tv or any RF interference again. In exchange for the \$24 monthly allocation, you forfeit your constitutional rights." Letter from Bernie and Cheryl Hagen to Richard Davis (Oct. 8, 2017) (eDocket No. 201710-136219-01). The Administrative Law Judge has no reason to doubt the Hagens' experience, but we do not know whether the Hagens utilized the complaint process to involve the Commission in resolving the reception issues nor do we have the wind farm's view of the matter. In addition, Bent Tree is owned by a different company, whose possible lack of responsiveness cannot be attributed to Freeborn Wind.

<sup>605</sup> Ex. KAAL-3 at Ex. A at 11 (Harbert Direct).

<sup>606</sup> Ex. KAAL-1 at 8 (Harbert Surrebuttal).

387. Whether a translator will be needed is speculative. The only time a translator may become necessary would be if there are households whose OTA TV is disrupted and cannot be remedied by reasonable efforts to adjust or replace the receiving antenna or receiver, and for whom substitute satellite service is unsatisfactory. The record does not evidence significant disruption of OTA TV service by wind farms. The Administrative Law Judge does not rule out the possibility that a translator could be proven necessary to meet Freeborn Wind's obligations under the Site Permit, but the preponderance of the evidence is that the need for a translator is highly speculative. Therefore, there is no basis to require Freeborn Wind to reserve \$450,000 to cover the cost of a translator.

### 13. Analysis of Freeborn Wind's Mitigation Program

#### a) The Number of "At Risk" Households

388. The adequacy of Freeborn Wind's mitigation program depends upon two factors. First, whether Comsearch's study accurately identifies the number of OTA TV viewing households likely to suffer interference. Second, how adequately Freeborn Wind's local communications technician can remedy any reception issues that may arise. If hundreds of households complain of loss of service, fully implementing mitigation measures for them could take months or years to complete.

389. With regard to the households at risk of losing OTA reception, the study's estimate depends heavily upon assumptions, some of which have little support. On cross examination, Mr. Jimeno admitted that Comsearch did not have actual household locations.<sup>607</sup> Without actual physical locations for households in the census blocks most likely to be affected, it is not evident how Comsearch could make an accurate estimate of the households that had line-of-sight to a turbine but not line-of-sight to a transmitter.

390. Comsearch's study assumes that KAAL serves 25 percent of the households in its service territory with OTA signals. Such an assumption is not unreasonable for KAAL's entire service area, but it may be unreasonable for any particular sub-area. The record is unclear as to how the number of households in each census block were determined.<sup>608</sup> Mr. Jimeno states that census block data does not directly identify the number of households in each census block, but that other data allows the number of households in each census block to be derived.<sup>609</sup>

391. Mr. Jimeno notes that, in rural areas, a single census block may be a square mile in area.<sup>610</sup> The Comsearch study models signaling interference based upon assumed household locations. The principal interference problems occur when a wind turbine is between a TV transmitter and the household's antenna. Not knowing household

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<sup>607</sup> Tr. Vol. 2 at 22-27 (Jimeno).

<sup>608</sup> *Id.* at 22.

<sup>609</sup> *Id.*

<sup>610</sup> Ex. FR-17 at ¶ 4 (Jimeno Aff.).

locations is a substantial limitation on the survey's predictive accuracy in identifying "at risk" areas.

392. Comsearch assumes that 25 percent of the households in "at risk" areas rely on OTA TV. Comsearch supported the 25 percent estimate solely with reference to an article by an independent research company, GfK, in July 2016. A press release referring to the article is in the record.<sup>611</sup> The press release states that 3,009 US households were included in the study "including representative levels of non-TV, non-internet, cell-phone-only, and Spanish dominant homes."<sup>612</sup> There is no particular reason to believe that the Project area mirrors the demographics of the GfK study.<sup>613</sup> Mr. Jimeno acknowledged that he did not know whether OTA usage is higher or lower in rural or smaller communities than it is in urban areas or nationally.<sup>614</sup> Comsearch makes the same assumption as to the percent of OTA viewers for each of the six local stations.<sup>615</sup>

393. The Administrative Law Judge concludes that the Comsearch's estimates of the number of households in "at risk" areas could significantly understate, or overstate, the actual number.

#### **b) The 10-Kilometer Limit to "At Risk" Areas**

394. The ITU-R BT.1893-1 Recommendation does not explain why interference beyond 10 kilometers is unlikely. Despite this fact, both Comsearch and KAAL cite it in support of their opposed positions. Comsearch relies on the statement that interference is "unlikely" to occur at a distance greater than 10 kilometers.<sup>616</sup> Mr. Lockwood contends that "unlikely" does not rule out interference problems occurring at greater distances.<sup>617</sup>

395. The ITU-R BT.1893-1 Recommendation recognizes that identifying "at risk" areas is "more complicated if there are multiple wind turbines on a given site as there are then several possible sources of impairment at each receiving location." The recommendation refers to Report ITU-R BT.2142 for example predictions for large wind farms.<sup>618</sup> It is this second ITU-R report where a study of a wind farm in Spain finds OTA TV interference occurring 13.5 kilometers from the wind farm.

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<sup>611</sup> Ex. KAAL-7.

<sup>612</sup> *Id.*

<sup>613</sup> In his rebuttal, Jimeno says Comsearch "used household viewing data based on census blocks." Ex. FR-12 at 6-7 (Jimeno Rebuttal). It is not clear what this means. Comsearch used the 25% figure from a GfK study for the US. They used census block household counts to determine the number of viewers, but I don't see where it says the GfK study had viewer data at the census block level.

<sup>614</sup> Tr. Vol. 2 at 15 (Jimeno).

<sup>615</sup> Ex. FR-1 at App. D at 15 (Wind Power GeoPlanner™ TV Coverage Impact Study (May 22, 2017)). The report indicates that there should be, but there is not, a footnote 3 explaining the column headed "Number of Potentially At-Risk Households." It is Comsearch's estimate of the number of households in census blocks and portions of census blocks in "At-Risk" areas.

<sup>616</sup> Ex. FR-12 at 6 (Jimeno Rebuttal) (citing KAAL-4 at Ex. B at 4 (Lockwood Direct)).

<sup>617</sup> Ex. KAAL-5 at 1 (Lockwood Surrebuttal).

<sup>618</sup> Ex. KAAL-4 at Ex. B (Lockwood Direct) (Recommendation ITU-R BT.1893-1, *Assessment methods of impairment caused to digital television reception by wind turbines*, BT Series Broadcasting service (television) (Oct. 2015)).

396. ITU-R BT.1893-1 also allows for the possibility of interference at a greater distance than 10 kilometers:

It is unlikely to be necessary to extend the investigation area to more than about 10 km from the proposed wind turbine site (or sites, if there are multiple turbines). However, if there are special circumstances, for example buildings which are screened from the wanted transmitter but which are line-of-site [sic] to the wind turbine, then the area may need to be extended.<sup>619</sup>

397. The record does not indicate, however, that any special circumstances apply.

398. For the ITU-R BT.1893-1-based estimates of the "at risk" areas to be correct, it must not matter that the Project will use turbine blades of a different composition and configuration than those assumed for the estimates, or that the ancillary Project facilities that will obstruct and reflect signals are not taken into account. In addition, it must not matter that the U.S. uses a different TV signaling protocol and that the results must not be sensitive to the differences between the assumed antenna locations, the actual location, and types of receiving antennas and receivers. Consequently, the record does not indicate how the "at risk" areas would be affected by the differences between the guidance's assumptions and the actual Project data.

399. Comsearch separately estimated the areas "at risk" of OTA TV disruption for each of the six TV stations serving the Project Area. The "at risk" areas are the shaded areas in Figures 4 through 9, on pages 9 through 14, of Comsearch's "Wind Power GeoPlanner™ TV Coverage Impact Study." The shaded areas do not appear to include most of Albert Lea. It is not clear from the Figures whether the shaded areas include all of the following towns: Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow. In addition, there is no indication of whether the shaded areas include population centers. Finally, there is no Figure that aggregates all of the shaded areas.

400. The shaded areas for all six TV stations share a similar curvature at similar locations on their western and northern edges. The Administrative Law Judge assumes that these curved boundaries of the shaded areas result from Comsearch's assumption that OTA TV reception issues are "unlikely" to occur further than 10 kilometers from a turbine, an assumption that KAAL disputes.

401. The same complexity that renders pre-construction identification of OTA TV reception problems impossible also makes the determination of "at risk" areas uncertain. The Administrative Law Judge concludes that although the 10 kilometer boundaries of the "At Risk" areas are uncertain, Mr. Lockwood offers no support for his contention the "at risk" areas should extend to 20 kilometers.

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<sup>619</sup> *Id.*

## 14. Notice to “At Risk” Areas

402. Freeborn Wind observes that, although the study area for OTA TV interference is the area within 10 kilometers of a wind turbine, it remains responsible for mitigating wind farm OTA TV interference wherever it occurs. In an effort to reassure KAAL, Freeborn Wind agreed at the hearing to provide notice of the site permit complaint process to the landowners in any “at risk” areas identified by Figure 7 of Comsearch’s TV interference study.<sup>620</sup> This notice would be in addition to the notice required in Section 5.2 of the Draft Site Permit, which requires that a copy of the permit and the complaint procedures be sent to all “affected landowners.”<sup>621</sup>

403. Under the Freeborn Wind’s proposal, KAAL’s “at risk” viewers would receive this notice, but “at risk” viewers of other stations would not.

404. The Administrative Law Judge is concerned that Freeborn Wind’s proposal for additional notice is inadequate for three reasons. First, notice should be given to all “at risk” households, not just those in KAAL’s “at risk” areas. Second, the additional notice should be given to households in the “at risk” areas and not to the owners of those areas who may not reside there. Third, because the boundaries of the “at risk” areas are uncertain, they should be supplemented to include all households in the communities that are partially within any “at risk” area.

405. The Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, Section 5.2 of the Draft Site Permit should be amended to require that notice must be provided to all households in “at risk” areas identified for all six television stations. In addition, the Administrative Law Judge recommends that Freeborn Wind be required to provide the same notice to every household in communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow. The notice should include a description of the Project’s potential to interfere with OTA TV service, Freeborn Wind’s mitigation program, and copies of the Site Permit and Complaint Procedure.

406. The Administrative Law Judge further recommends that, upon receiving a complaint from a household within the notice area, Freeborn Wind should evaluate the complaint to determine whether its operations are the likely cause of the interference. In the event that the wind farm is determined to be the likely cause of interference, Freeborn Wind should offer the mitigation measures it has proposed as listed in paragraph 378 of this Report.

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<sup>620</sup> Tr. Vol 2 at 76, 82 (Parzyck); Ex. FR-4 at App. D at 9-14 (Wind Power GeoPlanner™ TV Coverage Impact Study (May 22, 2017)).

<sup>621</sup> Order Issuing Draft Site Permit, Draft Site Permit ¶ 5.2 (Jan. 30, 2018) (eDocket No. 20181-139549-01).



## 15. Permit Compliance Concerns

407. The Draft Site Permit<sup>622</sup> provides the following:

### 5.2.16 Interference

At least 14 days prior to the pre-construction meeting, the Permittee shall submit to the Commission, an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law. In the event the project or its operations cause such interference, the Permittee shall take timely measures to correct the problem.

408. The Draft Site Permit requires the interference assessment be submitted prior to the pre-construction meeting. Presumably, Freeborn Wind's assessment will include the Comsearch studies and their "at risk" areas for OTA TV interference.

409. In its reply brief, Freeborn Wind commits that "[i]f OTA reception is affected by the Project beyond [10 kilometers] distance, Freeborn Wind will address those issues as required by the conditions set forth in the Site Permit."<sup>623</sup> However, if Freeborn Wind's required assessment submission are the Comsearch studies which contend that interference beyond 10 kilometers is unlikely, Freeborn Wind could reasonably deny any complaint from a more distant household. More distant households without notice of the Project and the complaint procedure, might not even make complaints.

410. The Draft Site Permit does not set out how a complainant establishes the Project has caused interference nor how Freeborn Wind can demonstrate that its turbines are not the cause. Unlike turbine-originated noise concerns where Freeborn Wind can rely upon DOC-EERA's Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report to establish monitoring protocols for assessing noise

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<sup>622</sup> *Id.*

<sup>623</sup> Freeborn Wind Reply Brief at 24-25 (citing Draft Site Permit at 11-12 (Jan. 30, 2018)) (eDocket No. 20181-139549-01) (Condition 5.2.16); see also Freeborn Wind Initial Brief at 38-42, 69 (Mar. 20, 2018) (eDocket No. 20183-141214-02).

problems, the record has no authoritative guidance on how to identify wind farm OTA TV interference post-construction.<sup>624</sup>

411. The Administrative Law Judge concludes that Freeborn Wind may not dismiss a complaint as unrelated to its wind turbines simply because the complaint arises at a location more than 10 kilometers from the nearest turbine.

412. In addition, should the Commission decide to approve Freeborn Wind's Application for a Site Permit, the Administrative Law Judge recommends the following special conditions:

- Freeborn Wind shall investigate any non-frivolous claims of OTA TV interference.
- Freeborn Wind shall not dismiss a complaint on the basis that it arises from a location further than 10 kilometers distant from any turbine, or because its location is not within an "at risk" area.
- Freeborn Wind will report promptly, at the beginning of each month, the results of the previous month's investigations of TV interference complaints, including the role of the wind farm in causing the interference, and whether Freeborn Wind's remedial measures resolved the interference issues.
- Freeborn Wind will maintain and submit with its monthly report, a map showing the location of the complainant households, their distance to the nearest turbine, and their locations in relation to the "at risk" areas. Freeborn Wind will report the date of each complaint, its response, and the date the complaint is closed.

413. These requirements are intended to provide the Commission with accurate information regarding whether there is a significant problem with OTA TA inference from the wind turbines, and whether it should investigate Freeborn Wind's compliance with condition 5.2.16. These reports should be publicly available so that a complainant, a member of the public, or the Commission may make an assessment of whether Freeborn Wind is "taking timely measure to correct the problem[s]" as required by condition 5.2.16.

## **K. Recreational Resources**

414. Recreational opportunities in Freeborn County include hiking, biking, boating, fishing, camping, swimming, cross country skiing, snowmobiling, hunting, and nature viewing.<sup>625</sup>

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<sup>624</sup> Ex. EERA-9 (Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report (Oct. 8, 2012)).

<sup>625</sup> Ex. FR-1 at 53 (Application).

415. There are Wildlife Management Areas (WMA) and Waterfowl Protection Areas (WPA) within ten miles of the Project Area. The Shell Rock WMA is located adjacent to the Project Area.<sup>626</sup>

416. Freeborn Wind states the Project will avoid all Aquatic Management Areas (AMA), Scientific and Natural Areas (SNA), WMAs, WPAs, and state trails. Project turbines and facilities will not be located within public parks, trails, WMAs, AMAs, or WPAs.<sup>627</sup> USFWS Windom Wetland Management District also confirmed the absence of USFWS easements or fee-title properties in the Project Area.<sup>628</sup>

417. Recreational impacts will generally be visual in nature, affecting individuals using public lands near the Project Area for recreation.<sup>629</sup> Turbines will be set back from these public lands a minimum of the three RD by five RD setbacks from all non-leased properties per the Commission's siting guidelines.<sup>630</sup>

418. Based on the record, no anticipated adverse impacts to recreational resources have been established as a result of the Project.

#### **L. Land-Based Economics**

419. The majority of the Project Area is in agricultural cropland. Cultivated land comprises approximately 24,058.7 acres (91.6 percent) of the Project Area. Pasture land comprises approximately 95.3 acres (0.4 percent) of the Project Area.<sup>631</sup>

420. Freeborn Wind anticipates that small portions of land will be taken out of agricultural production at turbine locations and along access roads (less than one acre per turbine). Approximately 0.1 percent of the Project Area will be converted to non-agricultural use. Landowners may continue to plant crops near and graze livestock up to the turbine pads. In some instances, agricultural practices may be impacted by creating altered maneuvering routes for agricultural equipment around the turbine structures and access roads.<sup>632</sup> Fewer than 35 acres of land will be permanently removed from agricultural production.<sup>633</sup>

421. Freeborn Wind plans to discuss turbine and facility siting with property owners to identify features which should be avoided on their property, such as drain tile, among others.<sup>634</sup>

422. In the event that there is damage to agricultural drain tile as a result of the Project, the tile will be repaired according to the agreement between Freeborn Wind and

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<sup>626</sup> See *id.* at 53-55.

<sup>627</sup> *Id.* at 55.

<sup>628</sup> *Id.* at 26-27.

<sup>629</sup> *Id.* at 55.

<sup>630</sup> *Id.*

<sup>631</sup> *Id.* at 62.

<sup>632</sup> *Id.* at 63.

<sup>633</sup> *Id.* at 72.

<sup>634</sup> *Id.* at 63.

the landowner.<sup>635</sup> Freeborn Wind has committed to repairing all agricultural tile damage that occurs during the construction phase of the Project.<sup>636</sup> Additionally, the Draft Site Permit contains conditions adequate to address drain tile damage. The conditions require Freeborn Wind to “avoid, promptly repair or replace all tile lines broken or damaged during all phases of the Project,” and to fairly restore or compensate landowners for damage to drain tile during construction.<sup>637</sup>

423. Freeborn Wind states that it will avoid or minimize impacts to Conservation Reserve Program (“CRP”) land, and avoid all impacts to RIM lands. If CRP land is impacted, Freeborn Wind will work with the landowners and the United States Department of Agriculture’s Natural Resource Conservation Service to remove the impacted portion of the enrolled parcel from the CRP program.<sup>638</sup>

424. The Draft Site Permit includes multiple provisions related to agriculture. For example, Section 5.2.4 requires Freeborn Wind to implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with landowners.<sup>639</sup> Section 5.2.17 requires Freeborn Wind to take precautions to protect livestock during all phases of the Project’s life.<sup>640</sup>

425. The evidence in the record does not establish that the presence of the Project will significantly impact the agricultural land use or general character of the area. As demonstrated by other wind energy projects in the Midwest, agricultural practices continue during construction and operations. In addition, the evidence in the record does not establish that there will be significant impacts to forestry, mining, or tourism as a result of the Project.<sup>641</sup>

## **M. Archaeological and Historic Resources**

426. Freeborn Wind initiated coordination with the State Historical Preservation Office (SHPO) and the Office of the State Archaeologist (OSA) in March 2017. Cultural resource specialist staff at Merjent, Inc., on behalf of Freeborn Wind, conducted a literature review based on the Project Area and a one-mile buffer. The literature review revealed that no previously-documented archaeological sites are located within the Project Area. One previously documented archaeological site was identified within the surrounding one-mile buffer.<sup>642</sup>

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<sup>635</sup> *Id.*; see also Comment by Dave Olson (Batch 3) (March 6, 2018) (eDocket No. 20183-140801-01) (“The easement I signed ensures that our significant investment in the drain tile in our fields will be protected.”).

<sup>636</sup> See Ex. FR-11 at 7 (Litchfield Rebuttal).

<sup>637</sup> Draft Site Permit at 12, 13 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>638</sup> Ex. FR-1 at 64 (Application).

<sup>639</sup> Draft Site Permit at 8 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>640</sup> *Id.* at 12.

<sup>641</sup> Ex. FR-1 at 64, 65-66 (Application).

<sup>642</sup> *Id.* at 48-49.

427. Seventeen previously reported architecture inventory resources are present within the one-mile study area. Four of these are located within the Project Area.<sup>643</sup>

428. The Project Area has potential to contain archaeological resources. Freeborn Wind state that it will conduct a Phase I archaeological resources inventory and work cooperatively with SHPO and OSA prior to construction. According to Freeborn Wind, the inventory will focus on areas proposed for Project construction, including wind turbine locations, associated access roads, electrical cable routes, and other construction elements, and will be conducted by a professional archaeologist. If archaeological resources are identified during the survey, an archaeologist will identify the location and record Universal Transverse Mercator coordinates so that Project construction layout can consider the location and adjust construction plans. Freeborn Wind states that, if plans cannot be adjusted, further investigation may be needed and further coordination with SHPO and possibly OSA will be required.<sup>644</sup>

429. The Administrative Law Judge finds that, if the Commission issues a Site Permit in this docket, Section 5.2.15 of the Draft Site Permit adequately addresses archeological and historical resources. It requires Freeborn Wind to avoid impacts to identified archaeological and historic resources. According to Section 5.2.15, if a resource is encountered, Freeborn Wind shall contact and consult with SHPO and OSA. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize Project impacts consistent with SHPO and OSA requirements. In addition, before construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties are found. If human remains are found during construction, Freeborn Wind shall immediately halt construction at such location and promptly notify local law enforcement and OSA. Construction at such location shall not proceed until authorized by local law enforcement or OSA.<sup>645</sup>

## **N. Aviation**

430. There are six airports within 20 miles of the Project Area. The nearest airport is the Northwood Municipal Airport, located approximately 3.6 miles south of the Project Area in Worth County, Iowa.<sup>646</sup>

431. The Project has been sited to meet setback requirements for airport facilities established by MnDOT, the Department of Aviation, and the Federal Aviation Administration (FAA). These setback requirements are incorporated into Draft Site Permit as Section 4.12.<sup>647</sup> Additionally, Freeborn Wind agrees that it will coordinate with the Northwood Municipal Airport, the FAA, and applicable state authorities prior to construction to understand potential impacts.<sup>648</sup> Draft Site Permit Section 4.12

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<sup>643</sup> *Id.* at 49, 50-51.

<sup>644</sup> *Id.* at 52-53.

<sup>645</sup> Draft Site Permit at 11 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>646</sup> Ex. FR-1 at 58 (Application).

<sup>647</sup> *Id.* at 60; Draft Site Permit at 6 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>648</sup> Ex. FR-1 at 59 (Application).

adequately addresses airports and requires that Freeborn Wind notify all owners of airports within six miles of the Project prior to construction.

432. While the installation of wind turbine towers, above ground electric lines, and other associated above ground facilities in active croplands present a potential for collisions with crop-dusting aircraft, the turbines will be visible from a distance and lighted according to FAA guidelines.<sup>649</sup> Permanent meteorological towers will be freestanding with no guy wires, and temporary meteorological towers with supporting guy wires have been marked with alternating red and white paint at the top and colored marking balls on the guy wires for increased visibility.<sup>650</sup>

433. The FAA requires obstruction lighting of structures exceeding an elevation of 200 feet above average ground level because they are considered obstructions to air navigation. To mitigate the visual impact of such lighting, Freeborn Wind states that it will use FAA guidance and standards when applying to the FAA for approval of a lighting plan that will light the Project, and will follow the approved plan to meet the minimum requirements of FAA regulations for obstruction lighting.<sup>651</sup> Freeborn Wind anticipates that the FAA review of the Project will result in a “No Hazard” issuance determination.<sup>652</sup>

434. Commenters Linda Herman, Brian Olson, and Judy Olson expressed concern that farmers would be unable to perform aerial spraying because of the turbines.<sup>653</sup>

435. Commenter John Thisius, an experienced aerial crop sprayer, testified that, while it is possible to treat crops on the outskirts of a wind facility, it is impossible to safely do so within a wind farm because of the turbulence from the moving blades and problems with depth perception.<sup>654</sup>

436. Commenter Ray Rauenhorst, also an experienced aerial crop sprayer, testified that wind farms were first appearing as he approached retirement. He had sprayed among widely spaced turbines. He also pointed out that turbines can be turned off to reduce the hazard they pose.<sup>655</sup>

437. In a previous position, Freeborn Wind employee Dan Litchfield had experience with landowners and the operations team on issues related to aerial spraying. He explained that aerial spraying and seeding only occurs when wind speeds are low. At those speeds, turbines barely operate, if at all.<sup>656</sup> Mr. Litchfield states that many farmers find aerial applications expensive and inaccurate and use other methods. On behalf of Freeborn Wind, he committed the Applicant would cooperate with landowners in the

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<sup>649</sup> *Id.*

<sup>650</sup> *Id.* at 60.

<sup>651</sup> *Id.* at 36.

<sup>652</sup> *Id.* at 60.

<sup>653</sup> Public Hr'g Tr. at 47 (Herman), 57-59 (Olson), 68-69 (Olson) (Feb. 20, 2018).

<sup>654</sup> *Id.* at 90-91 (Thisius).

<sup>655</sup> *Id.* at 82-84 (Rauenhorst).

<sup>656</sup> Tr. Vol. 1A at 18-19 (Litchfield).

Project Area to accommodate aerial spraying, which could involve shutting turbines down during spraying.<sup>657</sup>

438. AFCL argues that Project will result in barring aerial spraying and seeding in the Project Area causing farmers to incur more expense to accomplish these tasks.<sup>658</sup> AFCL provided no testimony on the issue of aerial spraying and seeding.

439. The record contains no evidence that any of the affected landowners use aerial spraying. Nor is there a record of the cost of aerial spraying or its cost relative to other methods. It is unclear from the record how closely Mr. Thisius or Mr. Rauenhorst had studied the Project and considered how its turbine layout would affect aerial spraying. The Administrative Law Judge finds no basis for recommending that the site permit be denied because of any impacts the Project will have on aerial spraying and seeding.

440. The record demonstrates that Freeborn Wind has taken steps to minimize and mitigate impacts to aviation.

#### **O. Wildlife**

441. Freeborn Wind completed Tier 1, 2, and 3 wildlife studies consistent with the USFWS Land-Based Wind Energy Guidelines (WEG). The WEG are voluntary guidelines that provide a structured, scientific process for addressing wildlife conservation concerns at all stages of land-based wind energy development.<sup>659</sup>

442. The Tier 1 and 2 studies include preliminary site evaluation and site characterization to identify and characterize habitat and biological resources present within and surrounding the Project Area. These studies also summarize potential species of concern and sensitive ecological areas in the region.<sup>660</sup>

443. A Tier 1 preliminary site evaluation and a Tier 2 site characterization study were initially completed for the Project in Spring 2015, and were later expanded to include new areas being considered for development in Fall 2016.<sup>661</sup> The Tier 1 and 2 studies were based on a comprehensive desktop review of existing data including published technical literature, field guides, public datasets, site visits, agency correspondence, and meetings with MDNR and USFWS over the course of several years.<sup>662</sup>

444. Tier 3 studies include more extensive field surveys to document site wildlife conditions. They inform avoidance and minimization measures, and post-construction

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<sup>657</sup> *Id.* at 20-21.

<sup>658</sup> AFCL Initial Br. at 51-54.

<sup>659</sup> Ex. FR-1 at 82 (Application); Ex. FR-8 at 3 (Giampoli Direct).

<sup>660</sup> Ex. FR-8 at 3-4 (Giampoli Direct).

<sup>661</sup> Ex. FR-1 at 83 (Application); see Ex. FR-1 at App. G (Application).

<sup>662</sup> Ex. FR-1 at 83 (Application).

monitoring.<sup>663</sup> These field studies included raptor nest surveys, bat acoustic studies, and avian use studies from 2015 to 2017.<sup>664</sup>

445. Wildlife in the Project Area includes birds, mammals, reptiles, amphibians, and insects. Wildlife are both resident and migratory, and all utilize habitats in the Project area for foraging, breeding, and shelter.<sup>665</sup> Wildlife species use the food and habitat available from agricultural fields, pasture, farm woodlots, and wetland areas.<sup>666</sup> Reptile and amphibian species that may be present in the Project Area include turtles, frogs, and snakes.<sup>667</sup> Reptiles and amphibians may utilize pasture areas, wetlands, and grasslands.<sup>668</sup> Several species of birds and bats are also known to occur in the landscape, including grassland birds, migratory and resident birds, raptors, waterfowl, and hoary, little brown, eastern red, silver-haired, northern-long eared, and tri-colored bats.<sup>669</sup>

446. There are many species of insects and pollinators that may utilize the Project Area. Typically, these species inhabit native prairie.<sup>670</sup> The Project has been designed to avoid mapped and field verified potential prairie, and, therefore, has no impact on insect species.<sup>671</sup>

447. No species listed as endangered under the Endangered Species Act (ESA) are identified for Freeborn County.<sup>672</sup> However, the northern long-eared bat (NLEB), listed as threatened under the ESA, may potentially occur in Freeborn County.<sup>673</sup> The Natural Heritage Information System (NHIS) data does not identify any NLEB hibernacula within ten miles of the proposed Project Area or any NLEB roost trees within the Project Area.<sup>674</sup> Based on the Project's location relative to the nearest known NLEB hibernaculum, NLEB are not expected to occur in the Project Area during the fall swarming period or during the winter when they are hibernating.<sup>675</sup> Consistent with federal NLEB guidance, Freeborn Wind has designed the layout to site turbines at least 1,000 feet from wooded habitat that NLEB and other bat species utilize for roosting and foraging.<sup>676</sup>

448. The USFWS Information for Planning and Consultation (IPaC) lists 23 species of migratory birds of particular conservation concern that may utilize or stop over

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<sup>663</sup> *Id.* at 82.

<sup>664</sup> *Id.* at 83. The results of these studies are presented on pages 85-92 of the Application and in Appendix F of the Application and in Ex. FR-8 at Schedule 2 through 8 (Giampoli Direct).

<sup>665</sup> Ex. FR-1 at 87-88 (Application).

<sup>666</sup> *Id.* at 87.

<sup>667</sup> *Id.* at 88.

<sup>668</sup> *Id.*

<sup>669</sup> *Id.* at 88, 90; Ex. FR-15 at Schedule 1 at 19 (Giampoli Rebuttal).

<sup>670</sup> Ex. FR-1 at 88 (Application).

<sup>671</sup> *Id.*

<sup>672</sup> *Id.* at 83, 90.

<sup>673</sup> *Id.* at 83.

<sup>674</sup> *Id.* at 84.

<sup>675</sup> *Id.* at 91-92.

<sup>676</sup> *Id.* at 92.



in Freeborn County.<sup>677</sup> Bald and golden eagles are also federally protected under the Bald and Golden Eagle Protection Act and are known to occur in Freeborn County.<sup>678</sup> The Shell Rock River intersects a small portion of the western edge of the Project Area where the substation will be located.<sup>679</sup> This area contains some of the only suitable bald eagle nesting and foraging habitat in the Project Area.<sup>680</sup>

449. Freeborn Wind followed the USFWS's Eagle Conservation Plan Guidance when conducting its avian use and raptor nest surveys.<sup>681</sup> Raptor nest surveys were completed in 2015, 2016, and 2017.<sup>682</sup> Thirteen occupied and active bald eagle nests, and one occupied and inactive bald eagle nest were identified within ten miles of the Project Area, but all were located outside of the Project Area.<sup>683</sup>

450. There are no protected areas or designated critical habitat in the Project Area.<sup>684</sup> Surveys indicate that the Shell Rock River may be considered a feature of significant value for raptors.<sup>685</sup> Freeborn Wind has committed to USFWS that it would build fewer than four turbines within 0.5 mile of the Shell Rock River, and it ultimately sited only one turbine 0.6 mile from the Shell Rock River. All other turbines are one mile or greater from the river to minimize impacts.<sup>686</sup> Additionally, all turbines are sited to the east of the river so they are not placed between nesting habitat and the river, where eagles and other raptors may forage.<sup>687</sup>

451. AFCL witness Dorenne Hansen testified that there are at least five bald eagle nesting locations missing from Freeborn Wind's project map. AFCL provided approximate addresses and Geographic Information System (GIS) coordinates for the nests.<sup>688</sup> AFCL provided photographs of eagles taken within the project footprint.<sup>689</sup> At the public hearing, several commenters asserted the existence of additional eagle nests not identified in the Application.<sup>690</sup>

452. After being notified of possible additional eagle nests in the area, Freeborn Wind conducted several additional surveys of the area but did not find any omitted eagle nests in or near the Project Area.<sup>691</sup>

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<sup>677</sup> *Id.* at 83.

<sup>678</sup> *Id.*

<sup>679</sup> *Id.*

<sup>680</sup> *Id.*

<sup>681</sup> *Id.* at 85.

<sup>682</sup> *Id.* at 86. The results of these surveys are discussed in Ex. FR-1 at Appendix F (Application) and Ex. FR-8 at Schedules 2, 3, and 6 (Giampoli Direct).

<sup>683</sup> Ex. FR-8 at 10 (Giampoli Direct).

<sup>684</sup> Ex. FR-1 at 84 (Application).

<sup>685</sup> *Id.*

<sup>686</sup> *Id.* at 83.

<sup>687</sup> *Id.* at 84.

<sup>688</sup> Ex. AFCL-1 at 27 (Hansen Direct); see Comment by Dorenne Hansen (July 3, 2017) (eDocket No. 20177-133470-01).

<sup>689</sup> Ex. AFCL-14 (Eagle Photos).

<sup>690</sup> Public Hr'g Tr. at 104-105 (Hansen), 141-42 (Erickson) (Feb. 20, 2018); Ex. P-10; Ex. P-15.

<sup>691</sup> Tr. Vol. 1B at 31-32 (Giampoli); Ex. FR-8 at 10, Schedule 6 (Giampoli Direct).

453. If a new bald eagle or raptor nest is identified in the Project Area in the future, Freeborn Wind asserts that it will follow the procedures identified in the Avian and Bat Protection Plan (ABPP) and consult with MDNR, USFWS, and DOC-EERA as necessary.<sup>692</sup>

454. The Project has the potential to cause displacement of some bird species from the Project Area due to increased human activity or the presence of tall structures, though clearing of habitat will be minimal.<sup>693</sup> Many of the most observed bird species within the Project Area were common, disturbance-tolerant species, similar to the results of surveys at other wind energy facilities in the region.<sup>694</sup> Shorebirds and waterfowl using saturated depressions within croplands in the Project Area as stopover habitat during spring migration may be more sensitive to displacement by Project turbines, as displacement of these bird types has been reported at wind facilities in Europe.<sup>695</sup> Given that most lands within the Project Area are already disturbed and subject to human activity related to farming, and because most of the birds observed were common, disturbance-tolerant species, displacement effects are expected to be minimal.<sup>696</sup>

455. Project operation may result in avian mortality from collision with the Project's turbines or other structures.<sup>697</sup> Post-construction monitoring completed at wind facilities located on agricultural landscapes in southern Minnesota and northern Iowa show avian fatality estimates ranging from 0.27 to 5.59 birds per megawatt produced per year.<sup>698</sup> Given the lack of unique ecological features within the Project Area that would attract birds, estimated avian fatality rates at the Project would be expected to be within this range or lower.<sup>699</sup>

456. Freeborn Wind conducted a bat acoustic study from April 14 to November 14, 2015.<sup>700</sup> Freeborn Wind also completed further desktop review of northern long-eared bat habitat to determine potential summer roosting habitat and community/travel habitat.<sup>701</sup> All seven bat species known to occur in Minnesota may migrate through the Project Area, but bat habitat within the Project Area is limited to small groves of trees and fence rows near homesteads and riparian corridors along a few small streams with fringe wetlands.<sup>702</sup> Outbuildings can also provide roosting habitat.<sup>703</sup>

457. Bat fatalities may occur during Project operation.<sup>704</sup> Bat fatalities at wind energy facilities in the United States have mostly occurred in the swarming and migration

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<sup>692</sup> Ex. FR-8 at 12-13 (Giampoli Direct).

<sup>693</sup> Ex. FR-1 at 88 (Application).

<sup>694</sup> *Id.*

<sup>695</sup> *Id.*

<sup>696</sup> *Id.*

<sup>697</sup> *Id.*

<sup>698</sup> *Id.* at 89.

<sup>699</sup> *Id.* at 88-89.

<sup>700</sup> *Id.* at 87.

<sup>701</sup> *Id.*

<sup>702</sup> *Id.* at 90.

<sup>703</sup> *Id.*

<sup>704</sup> *Id.*

seasons, typically between mid-July and mid-September.<sup>705</sup> Post-construction monitoring studies completed at other wind facilities in southern Minnesota show most bat fatalities occurring during the fall migration season and consisting primarily of eastern red bats and hoary bats, both migratory tree bat species.<sup>706</sup> Post-construction fatality studies completed in Iowa and Minnesota show bat fatality estimates ranging from 0.74 to 20.19 bats/MW/year.<sup>707</sup> The pre-construction acoustic study conducted for the Project recorded highest bat activity in the summer (June 1 to July 15), followed by the fall migration period (July 30 to October 14).<sup>708</sup> Consequently, estimated bat fatality rates at the Project would be expected to be within the range reported from studies at other wind facilities in the region.<sup>709</sup>

458. MDNR identified two avoidance areas that contain an increased amount of habitat that may concentrate birds and bats.<sup>710</sup> The Project Area avoids both areas.<sup>711</sup> Freeborn Wind states that it will also avoid siting turbines in mapped native prairie, sensitive habitat, and sites of biodiversity significance.<sup>712</sup>

459. Freeborn Wind revised the Project boundary multiple times to avoid and create distance from higher quality wildlife habitats in the Project vicinity.<sup>713</sup> Freeborn Wind has incorporated the recommendations of MDNR in the Project layout and configuration.<sup>714</sup> Freeborn Wind revised the system configuration to connect at the Glenworth Substation due to the increased eagle activity near Albert Lea Lake.<sup>715</sup> Additionally, Freeborn Wind complied with the bat habitat setbacks recommended by MDNR.<sup>716</sup>

460. To minimize Project-related bat fatalities during operation of the Project, the turbine blades will be feathered below the operational cut-in speed at specific times, and all turbines will have the necessary operational software to allow for the adjustment of turbine cut-in speeds.<sup>717</sup> The ABPP and Draft Site Permit were both revised to reflect the language recommended by MDNR.<sup>718</sup>

461. The ABPP prepared by Freeborn Wind for this Project was developed in a manner consistent with the guidelines and recommendations of the WEGs and incorporates the results of the numerous studies conducted on the Project Area, as well

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<sup>705</sup> *Id.*

<sup>706</sup> *Id.*

<sup>707</sup> *Id.* at 91.

<sup>708</sup> *Id.* at 90-91.

<sup>709</sup> *Id.*

<sup>710</sup> *Id.* at App. A (MDNR Feb. 21, 2017 letter).

<sup>711</sup> *Id.* at 83 (Application).

<sup>712</sup> *Id.* at 85.

<sup>713</sup> *Id.* at 83.

<sup>714</sup> *Id.*

<sup>715</sup> Ex. FR-4 at 14-15 (Litchfield Direct), Ex. FR-8 at 6 (Giampoli Direct).

<sup>716</sup> Ex. FR-8 at 6 (Giampoli Direct).

<sup>717</sup> Draft Site Permit at 18 (Jan. 30, 2018) (eDocket No. 20181-139549-01); *see also* Ex. FR-15 at 1, Schedule 1 at 46 (Giampoli Rebuttal); Comment by MDNR (Oct. 6, 2017) (eDocket No. 201710-136200-01).

<sup>718</sup> Ex. FR-8 at 7 (Giampoli Direct).

as agency feedback and input from MDNR.<sup>719</sup> The ABPP includes minimization and avoidance measures to avian and bat species that will be implemented during construction and operation of the Project.<sup>720</sup> It also includes construction practices and design standards, operational practices, permit compliance, and construction and operations worker training.<sup>721</sup> Freeborn Wind revised the ABPP to reflect MDNR's recommendations, including revising language in the ABPP regarding feathering to match language in recent site permits.<sup>722</sup> Further, Freeborn Wind contends that the ABPP is designed to be a living document, that it will be regularly updated, and sets forth procedures to follow should environmental conditions change during operation of the Project.<sup>723</sup> These measures are consistent with Sections 4.7 (Native Prairie), 7.1 (Biological and Natural Resources Inventories), 7.5 (Avian and Bat Protection) in the Draft Site Permit.<sup>724</sup>

462. After reviewing the Draft Site Permit, revised ABPP, and most recent shapefiles of the Project layout, MDNR agreed that Freeborn Wind “has taken numerous measures, as outlined in the draft site permit and ABPP, to minimize the risk of fatalities to birds and bats,” stating it appreciated Freeborn Wind’s “efforts to develop a project that minimizes wildlife impacts.” Given the measures outlined in the Draft Site Permit and the ABPP, the MDNR had no recommendations concerning the proposed turbine locations.<sup>725</sup>

463. Noting that the Draft Site Permit states that there have been no bald eagle fatalities at Minnesota wind facilities, the MDNR recommended that Freeborn Wind discuss that issue with a particular representative of the USFWS.<sup>726</sup>

464. The Administrative Law Judge concludes that Freeborn Wind has demonstrated by a preponderance of the evidence that the Project is designed to minimize impacts to wildlife, if a Site Permit is issued in this docket.

## **P. Rare and Unique Natural Resources**

465. Freeborn Wind conducted a desktop analysis to determine the presence of rare and unique natural resources within the Project Area.<sup>727</sup> There is one NHIS record of a federal and state-listed plant species (the western prairie fringed orchid, last observed in 1939) that intercepts the Project boundary.<sup>728</sup> Based on USFWS IPaC results, there is one federally-listed threatened species known to occur in Freeborn County: the northern

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<sup>719</sup> *Id.* at 3-5.

<sup>720</sup> *Id.* at 4-5.

<sup>721</sup> See Ex. FR-15 at Schedule 1 (Giampoli Rebuttal); Ex. FR-1 at 93 (Application).

<sup>722</sup> Ex. FR-8 at 7 (Giampoli Direct).

<sup>723</sup> Ex. FR-15 at Schedule 1 at 5 (Giampoli Rebuttal).

<sup>724</sup> See Draft Site Permit at 4, 15, 16-18 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>725</sup> Comment by MDNR (March 15, 2018) (eDocket No. 20183-141051).

<sup>726</sup> Comment by Cynthia Warzecha, MDNR (Mar. 15, 2018) (eDocket No. 20183-141051-01).

<sup>727</sup> Ex. FR-1 at 93-96 (Application).

<sup>728</sup> *Id.* at 96.

long-eared bat.<sup>729</sup> There are no other records of threatened or endangered species occurring within the Project Area.<sup>730</sup>

466. There is a special concern plant species and a watch list plant species within the Project. There are documented occurrences of one reptile and seven mussels within five miles of the Project Area that are state-listed endangered or threatened. However, none of these records are within the Project Area and none have been observed during field surveys.<sup>731</sup>

467. There are 13 species of special concern (one bird, two fish, three mussels, and seven plants) that do not have a legal status but are being tracked by the MDNR that have been documented within five miles of the Project Area. There are two colonial waterbird nesting sites outside and Project Area and associated with Albert Lea Lake.<sup>732</sup>

468. Based on NIHS data, Freeborn Wind found there is one wet prairie (southern) within the Project Area and one dry sand-gravel oak savanna (southern) terrestrial communities within five miles of the Project. Freeborn Wind states that no Project infrastructure will be sited near these communities.<sup>733</sup>

469. Freeborn Wind has committed to avoid rare and unique resources to the extent practicable.<sup>734</sup> Turbines and other project facilities have been sited to avoid mapped native prairie, native plant communities, railroad ROW prairie, site-specific potential prairie, and sites of biodiversity significance. Freeborn Wind has designed the Project to site turbines at least 1,000 feet from northern long-eared bat habitat.<sup>735</sup>

470. Accordingly, the Administrative Law Judge finds that the record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to rare and unique natural features. Further, the Draft Site Permit contains adequate conditions to monitor and mitigate the Project's potential impacts on rare and unique natural resources.<sup>736</sup>

## **Q. Vegetation**

471. The majority of the land within the Project Area is cultivated cropland (91.6 percent) and developed areas (5.6 percent).<sup>737</sup> There are also limited areas of potential native prairie, as well as other areas the MDNR has mapped as sites of

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<sup>729</sup> *Id.*

<sup>730</sup> *Id.*

<sup>731</sup> *Id.* at 93.

<sup>732</sup> *Id.*

<sup>733</sup> *Id.* at 96.

<sup>734</sup> *Id.*

<sup>735</sup> *Id.*

<sup>736</sup> *E.g.*, Draft Site Permit at 15-17 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>737</sup> Ex. FR-1 at 77 (Application).

biodiversity significance, although there are no “outstanding” or “high” sites of biodiversity significance in the Project Area.<sup>738</sup>

472. Freeborn Wind plans to remove vegetation for the installation of turbine foundations, access roads, the Project substation, and O&M facilities. The majority of turbines will be sited in plowed crop fields that are typically planted in rows. The Project is estimated to result in up to 38.5 acres of permanent impacts to vegetation (including cropland).<sup>739</sup>

473. According to Freeborn Wind, temporary vegetation impacts will be associated with crane walkways, the installation of underground collection lines, and contractor staging and laydown areas. Freeborn Wind states that it will work with all Project construction parties entering the Project Area to control and prevent the introduction of invasive species. In addition, Freeborn Wind commits to reseed temporary disturbed areas to blend with existing vegetation. In addition, Freeborn Wind asserts that, to the extent practicable, direct permanent and temporary impacts to natural areas, including wetlands and native prairies, will be avoided and minimized.<sup>740</sup>

474. According to Freeborn Wind has taken established Wildlife Management Areas (WMAs), Scientific and Natural Areas (SNAs), state parks, Waterfowl Production Areas (WPAs), and other recreation areas were excluded from consideration for Project facilities.<sup>741</sup> In addition, Freeborn Wind states that the Project Area was revised to exclude two of the larger patches of potential native prairie in T101N R20W Section 30 and T102N R20W Section 17.<sup>742</sup> The Project Area excludes all MDNR-mapped native prairie, native plant communities, and railroad ROW prairie,<sup>743</sup> and the Project was designed to minimize the need to clear existing trees.<sup>744</sup> Freeborn Wind commits to use best management practices (BMPs) during construction and operation to protect topsoil and adjacent resources and to minimize soil erosion.<sup>745</sup>

475. Freeborn Wind asserts that it will avoid disturbance of wetlands during Project construction and operation. If jurisdictional wetland impacts are proposed, Freeborn Wind will need to obtain applicable wetland permits.<sup>746</sup>

476. The Administrative Law Judge finds that the Draft Site Permit contains adequate conditions to monitor and mitigate the Project’s potential impacts on vegetation. For example, Section 4.7 of the Draft Site Permit provides that Project facilities will not be placed in native prairie unless addressed in a Prairie Protection and Management Plan, and shall not be located in areas enrolled in the Native Prairie Bank Program. This section further requires Freeborn Wind to prepare a Prairie Protection and Management Plan in

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<sup>738</sup> *Id.* at 79-80.

<sup>739</sup> *Id.* at 80; Ex. FR-4 at 30-31, Schedule 9 (Litchfield Direct).

<sup>740</sup> Ex. FR-1 at 80 (Application).

<sup>741</sup> *Id.* at 81.

<sup>742</sup> *Id.* at 78-79.

<sup>743</sup> *Id.* at 79.

<sup>744</sup> *Id.* at 81.

<sup>745</sup> *Id.*

<sup>746</sup> *Id.*

consultation with MDNR if native prairie is identified within the site boundaries. According to Freeborn Wind, the Prairie Protection and Management Plan will address steps that will be taken to avoid impacts to native prairie, and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition. Freeborn Wind will accomplish this by conveyance of conservation easements, or by other means agreed to by Freeborn Wind, MDNR, and the Commission.<sup>747</sup>

477. The Administrative Law Judge finds that the record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to vegetation. Further, the Draft Site Permit contains adequate conditions to monitor and mitigate the Project's potential impacts on vegetation.

## **R. Soils, Geologic, and Groundwater Resources**

478. Ten soil associations are found within the Project Area: Webster-Nicollet-Clarion-Canisteo; Webster-Nicollet-Lester; Kenyon-Floyd-Clyde; Lester-Hamel; Mayer-Estherville-Biscay; Webster-Estherville-Dickinson; Muskego-Caron-Blue Earth variant-Blue Earth; Moland-Merton-Maxcreek-Canisteo; Waukee-Udolpho-Marshan-Hayfield-Fairhaven; and Newry-Maxcreek-Havana-Blooming.<sup>748</sup>

479. Construction of the Project will increase the potential for soil erosion and compaction during construction. In some locations, some prime farmland may be converted from agricultural use to wind energy generation use. As discussed previously, fewer than 35 acres will be permanently removed from agricultural production.<sup>749</sup> The Project is estimated to result in up to 38.5 acres of permanent impacts to vegetation (including cropland).<sup>750</sup>

480. Freeborn Wind will acquire a National Pollutant Discharge Elimination System (NPDES) permit from the MPCA to discharge storm water from construction facilities. BMPs will be used during construction and operation to protect topsoil and adjacent resources and to minimize soil erosion. In addition, Freeborn Wind will develop a Storm Water Pollution Prevention Plan (SWPPP) prior to construction that will include BMPs such as silt fencing, revegetation plans, and management of exposed soils to prevent erosion.<sup>751</sup>

481. Impacts to geologic and groundwater resources are not anticipated. Water supply needs will be limited and wells will not be impacted. The proposed O&M facility water requirements will be satisfied with a new well. Construction and operating of the Project will not impact existing water wells. Thus, no mitigation is necessary.<sup>752</sup>

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<sup>747</sup> Draft Site Permit at 4-5 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>748</sup> Ex. FR-1 at 69 (Application).

<sup>749</sup> *Id.* at 72.

<sup>750</sup> *Id.* at 80; Ex. FR-4 at 30-31, Schedule 9 (Litchfield Direct).

<sup>751</sup> See Draft Site Permit at 8 (Jan. 30, 2018) (eDocket No. 20181-139549-01); Ex. FR-1 at 72 (Application).

<sup>752</sup> Ex. FR-1 at 73 (Application).

482. According to the Minnesota Regions Prone to Surface Karst data set, the Project Area is located near a region prone to karst.<sup>753</sup> Freeborn Wind undertook a geotechnical evaluation to evaluate the likelihood of karst in the proposed turbine locations. Freeborn Wind conducted a geophysical investigation to explore for voids and examine soil borings. This investigation confirmed there is no karst bedrock within 50 feet of the soil surface and that the proposed turbine locations would not impact any karst areas.<sup>754</sup> Additionally, the Draft Site Permit contains adequate conditions to monitor, avoid, and mitigate the Project's potential impacts karst. For example, Condition 7.5.5 requires additional field testing be completed to identify karst features, should standard geotechnical testing indicate the presence of karst.<sup>755</sup> This condition has already been satisfied by the performance of the geotechnical testing. Freeborn Wind states that the final wind turbine foundation design will satisfy the permit conditions.<sup>756</sup>

483. AFCL raised concerns regarding groundwater impacts and mitigation; specifically, AFCL asserted that Project construction — particularly “leaching” from concrete used for turbine foundations — can cause a number of surface and groundwater impacts.<sup>757</sup> Freeborn Wind provided testimony that cured (hardened) concrete does not leach chemicals, and that, although there is no evidence to suggest that uncured concrete leaches, dewatering strategies will be implemented to prevent potential contamination from the portion of uncured concrete that comes into contact with the soil. The wind turbine concrete mix follows the building code requirements for concrete exposure and thus is similar to any exterior concrete in constant contact with the ground, such as foundations for houses, barns, offices, and sidewalks. Additionally, the chemical properties of the groundwater are investigated during the subsurface investigation. If the groundwater is determined to be acidic or potentially corrosive to concrete (which could potentially cause leaching) the concrete would be mixed with a chemically resistant formula to increase the concrete durability and resistance to chemical attack.<sup>758</sup>

484. The record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to soils, geologic, and groundwater resources. Further, the Draft Site Permit contains adequate conditions to monitor and mitigate the Project's potential impacts on soils, geologic, and groundwater resources.

## **S. Surface Water and Wetlands**

485. Freeborn Wind states that surface water and floodplain resources for the Project Area were identified through review of U.S. Geological Survey topographic maps and Minnesota Public Waters Inventory (PWI) maps. The Project Area occurs within the vicinity of the Lower Mississippi River Basin in the Shell Rock River and Cedar River watersheds. There are two impaired waters within the Project Area: Shell Rock River and

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<sup>753</sup> Ex. EERA-8 at 11 (Comments and Recommendations on a Preliminary Draft Site Permit).

<sup>754</sup> Ex. FR-4 at 31 (Litchfield Direct); *see also* Ex. FR-4 at Schedule 10 (Litchfield Direct).

<sup>755</sup> Ex. FR-1 at 72 (Application).

<sup>756</sup> *See* Draft Site Permit at 18 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>757</sup> Ex. FR-4 at Schedule 10 (Litchfield Direct); Ex. FR-4 at 31 (Litchfield Direct).

<sup>758</sup> *See* Ex. AFCL-1 at 11-14 (Hansen Direct).

<sup>758</sup> Ex. FR-11 at 6 (Litchfield Rebuttal).



Woodbury Creek. There is one PWI wetland, three PWI watercourses, and one PWI ditch in the Project Area.<sup>759</sup>

486. According to Freeborn Wind, there are a total of 404.7 acres of NWI wetlands in the Project Area. Approximately two-thirds (269.9 acres) of the mapped wetlands are palustrine emergent (“PEM”). Approximately 20 percent (81 acres) of the wetlands are mapped as palustrine forested, which are primarily associated with the Shell Rock River. The remaining 14 percent of wetlands are mapped as palustrine shrubbed wetlands (28.1 acres) and freshwater pond or riverine wetlands (25.3 acres). There is one PWI wetland located within the Project Area, which also overlaps the NWI wetland.<sup>760</sup> Access roads may impact 0.1 acre of PEM wetlands.<sup>761</sup>

487. Freeborn Wind denies that the Project will require the appropriation of surface water or permanent dewatering. However, Freeborn Wind acknowledges that temporary dewatering may be required during construction for specific turbine foundations and/or electrical trenches.<sup>762</sup>

488. There are no turbines sited within Federal Emergency Management Agency floodplains, according to Freeborn Wind. The access roads to Turbines 28, 33, and 34 will cross floodplains, but Freeborn Wind does not anticipate the roads will increase the flood stage level or reduced the flood storage capacity. In addition, Freeborn Wind notes that temporary workspace associated with these turbines will be within a floodplain, but commits to restore the affected areas to preconstruction grades and elevations.<sup>763</sup>

489. Freeborn Wind recognizes that Project facilities such as collection lines, access roads, crane paths, and the Project substation have the potential to impact surface water runoff. Ground-disturbing construction activities may also cause sedimentation. However, Freeborn Wind expects these impacts to be minimal.<sup>764</sup>

490. Freeborn Wind plans to site turbines to avoid direct impacts to surface waters, floodplains, and wetlands. In addition, Freeborn Wind states it will design access roads and the Project Substation to minimize impacts on surface waters and floodplains. Temporary impacts associated with crane paths will also be minimized. Installation of electrical collection cables is expected to avoid impacts by boring under surface water features, as necessary. Furthermore, after field verification of wetlands, Freeborn Wind maintains that Project facilities may undergo minor shifts to avoid wetland features to the extent practicable. As stated above, Freeborn Wind asserts it will use BMPs during construction and operation to minimize soil erosion, protect topsoil, and protect surface waters and floodplains from direct and indirect impacts.<sup>765</sup>

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<sup>759</sup> Ex. FR-1 at 73-74 (Application).

<sup>760</sup> *Id.* at 76.

<sup>761</sup> *Id.* at 77.

<sup>762</sup> *Id.* at 74.

<sup>763</sup> *Id.* at 75.

<sup>764</sup> *Id.* at 74-75.

<sup>765</sup> *Id.* at 75.

491. If Project facilities will impact waters of the United States, Minnesota's PWI, or 100-year floodplains, Freeborn Wind states that it will work with the appropriate agencies to apply for the necessary permits.<sup>766</sup>

492. According to the Application, there are no expected wetland impacts from turbines or the Project Substation and O&M facilities. Additionally, all turbines have been sited at least 1,000 feet from Class III-IV wetlands.<sup>767</sup> Freeborn Wind has committed to completing formal wetland delineations before construction, and wetlands will be avoided to the extent possible during Project construction and operation. If wetland impacts cannot be avoided, Freeborn Wind will submit a permit application to the United States Army Corps of Engineers (USACE) for dredge and fill within Waters of the United States under Section 404 of the Clean Water Act (CWA), to the Local Government Unit (LGU) for Minnesota Wetland Conservation (WCA) coverage, and the MPCA for Water Quality Certification under Section 401 of the CWA before construction. Freeborn Wind asserts that it will mitigate direct or indirect wetland impacts during construction and operation by protecting topsoil, minimizing soil erosion, and protecting adjacent wetland resources.<sup>768</sup>

493. The Administrative Law Judge finds that the record demonstrates that Freeborn Wind has taken steps to avoid and minimize impacts to surface water and wetlands. Further, the Draft Site Permit contains conditions that adequately address potential impacts. For example, conditions of Section 4.6 requires that wind turbines and associated facilities not be placed in public waters wetlands, except that electric collector or feeder lines may cross or be placed in public waters or wetlands subject to applicable permits and approvals.<sup>769</sup> Conditions contained in Section 5.2.7 include additional provisions related to wetlands, including a requirement that construction in wetlands occur during frozen ground conditions to minimize impacts, to the extent feasible. When winter construction is not possible, wooden or composite mats shall be used to protect wetland vegetation. Further, the conditions require that wetland and water resources disturbed by construction will be restored to pre-construction conditions, in accordance with applicable permits and landowner agreements.<sup>770</sup>

## **T. Air and Water Emissions**

494. Throughout their operational life-cycle, LWECS operations emit the smallest amount of greenhouse gasses compared to other energy generation methods by replacing energy generated by fossil fuels. Wind energy production also eliminates emission of SO<sub>x</sub>, NO<sub>x</sub>, PM<sub>10</sub>, and mercury, as well as drastically reduces water consumption.<sup>771</sup>

495. Over 30 years, the Project's generation is anticipated to reduce carbon dioxide (CO<sub>2</sub>) emissions by over 11 million tons relative to coal-fired electricity, and

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<sup>766</sup> *Id.*

<sup>767</sup> *Id.* at 77.

<sup>768</sup> *Id.*

<sup>769</sup> Draft Site Permit at 4 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>770</sup> *Id.* at 8-9.

<sup>771</sup> Ex. FR-1 at 56 (Application).

reduce CO<sub>2</sub> emissions by over 4.5 million tons relative to gas-fired electricity. The entire 200 MW Wind Farm would reduce CO<sub>2</sub> emissions by approximately 26 million tons relative to coal-fired electricity over 30 years.<sup>772</sup>

496. Increased deployment of wind and other renewable resources with near-zero life-cycle greenhouse gas (GHG) emissions leads to a direct reduction in the use of fossil fuels like coal and natural gas. As described in the comment submitted by Minnesota Center for Environmental Advocacy (MCEA), the Project will aid Minnesota in meeting its statewide GHG emission reduction goals and reducing harmful air pollutants.<sup>773</sup>

497. The avoided air emissions from the Wind Farm “will benefit all Minnesotans, especially helping children with asthma, seniors with COPD, and others with respiratory conditions.”<sup>774</sup> A representative from the American Lung Association in Minnesota attended the public hearing and stated that “projects like this are important for avoiding the use of fossil fuels and helping protect the air quality we all breathe.”<sup>775</sup>

498. Wind energy also requires virtually no water to operate. Therefore increased wind energy leads to an overall reduction in water use, as well as less competition for water resources with other uses like agriculture and drinking water.<sup>776</sup>

499. The Administrative Law Judge finds that the Project, if a Site Permit is issued by the Commission, will not have a negative impact on water emissions, and will have a positive impact on air emissions.

## **U. Solid and Hazardous Wastes**

500. Potential hazardous materials within the Project Area may be associated with agricultural activities and material uses. Freeborn Wind states it will conduct a Phase I Environmental Site Assessment (Phase 1 ESA) for the Project to identify known recognized environmental conditions or historically recognized environmental conditions. The Phase I ESA will be conducted before construction to locate and avoid hazardous waste sites.<sup>777</sup>

501. Three types of petroleum product fluids are necessary for turbine operation: gear box oil; hydraulic fluid; and gear grease. Freeborn Wind has committed to service the turbines will be regularly, including managing any waste fluids that are generated with the servicing. Furthermore, if disposal is necessary, Freeborn Wind states fluids will be disposed of or recycled in compliance with the requirements of applicable laws and regulations.<sup>778</sup>

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<sup>772</sup> Ex. FR-4 at 10 (Litchfield Direct).

<sup>773</sup> Comment by MCEA (March 9, 2018) (eDocket No. 20183-140900-01).

<sup>774</sup> Ex. FR-4 at Schedule 4 at 2 (Litchfield Direct).

<sup>775</sup> Public Hr’g Tr. at 129 (Hunter) (Feb. 20, 2018).

<sup>776</sup> Comment by MCEA at 3 (March 9, 2018) (eDocket No. 20183-140900-01).

<sup>777</sup> Ex. FR-1 at 62 (Application).

<sup>778</sup> *Id.*

502. Freeborn Wind asserts that, because any potential hazardous waste sites identified will be avoided, no mitigation measures are necessary. Freeborn Wind acknowledges that, if any wastes, fluids, or pollutants are generated during any phase of the operation of the Project, must be handled, processed, treated, stored, and disposed of in accordance with Minn. R. ch. 7045.<sup>779</sup>

503. The Administrative Law Judge finds that the record demonstrates that Freeborn Wind has taken steps to avoid and minimize potential solid and hazardous waste impacts. Further, the Draft Site Permit contains adequate conditions to monitor and mitigate the Project's potential impacts from solid and hazardous wastes.<sup>780</sup>

#### **V. Future Development and Expansion**

504. The Project is located in southcentral Minnesota, where there are already eight other large-scale wind energy facilities located within 20 miles of the Project Area.<sup>781</sup>

505. Section 4.1 of the Draft Site Permit imposes a wind access buffer and provides for setbacks from properties where Freeborn Wind does not hold wind rights.<sup>782</sup>

506. There is no evidence that the Project is inconsistent with any future development or expansion plan.

#### **W. Decommissioning, Turbine Abandonment, and Restoration**

507. The anticipated life of the Project is approximately 30 years beyond the date of first commercial operation.<sup>783</sup>

508. Freeborn Wind's decommissioning, abandonment, and restoration obligations are particularly important to the owners of land upon which turbines will be built. Commenter Wayne Brandt expressed his concerns in oral and written comments:

The easement states that if grantee fails to fulfill their obligation within one year, then the owner may do so and the owner will be reimbursed for reasonable and documented costs. Even if the owner was to take these turbines down, they should not have to be responsible for finding the cranes and equipment and so forth to do so. The astronomical cost to remove these towers and access roads could be more than \$100,000 per turbine, probably more than that, and probably more than what farmers could afford.<sup>784</sup>

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<sup>779</sup> *Id.*

<sup>780</sup> Draft Site Permit at 13 (Jan. 30, 2018) (eDocket No. 20181-139549-01) (Conditions 5.2.22 and 5.2.23).

<sup>781</sup> Ex. FR-1 at 102 (Application).

<sup>782</sup> Draft Site Permit at 3 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>783</sup> Ex. FR-1 at 110 (Application).

<sup>784</sup> Tr. Public Hearing (Feb. 20, 2018) at 134.

In my opinion, I firmly believe Grantees [Freeborn Wind] have no intention of taking these wind turbines down. I believe that about a year from their final termination, they will deed the wind turbines back to the Owner, relieving the Grantee of all obligations to do so. The Grantee will be long gone shortly thereafter with no address or phone number to be found and no one to be held accountable.<sup>785</sup>

In closing, I would like to know how our townships are going to be protected from all the damage that will be incurred during the reverse procedure of removing these eyesores. We will have to contend with considerable damage to our roads because the huge cranes and trucks will cause damage once again.<sup>786</sup>

509. Once the Easement terminates, Freeborn Wind is obliged to “remove above-ground and below-ground . . . Windpower Facilities” and to restore the subject property “to a condition reasonably similar to its original condition.”<sup>787</sup>

510. The Easement’s Assignment section gives Freeborn Wind the right, without the property owner’s consent, to:<sup>788</sup>

sell, convey, lease, assign, mortgage, encumber, or transfer t one or more Assignees the Easement, or any or all right or interest in the Easement . . . or any or all right or interest of Grantee in the Property or in any or all of the Windpower Facilities that Grantee or any Assignee party may now or hereafter install on the Property.

511. The Assignment paragraph also requires:<sup>789</sup>

Grantee shall notify Owner in writing of any such assignment, and any such Assignee shall assume in writing the obligations of Grantee under this Agreement which Grantee will no longer be fulfilling pursuant to the terms and conditions of such assignment with respect to the Property assigned.

512. The Administrative Law Judge finds that the Easement Agreement requires that any future owners of any wind energy facilities built as part of the Freeborn Wind Project will be required to bear the costs of decommissioning, as defined in the any Site Permit the Commission grants to Freeborn Wind, to the same extent as Freeborn Wind is required to bear those costs.

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<sup>785</sup> Ex. P-14 Wayne Brandt (Mar. 12, 2018) (eDocket No. 20183-140951-09); see also Public Hr’g Tr. at 48 (Herman) (Feb. 20, 2018).

<sup>786</sup> Public Hr’g Tr. at 135-36 (Brandt) (Feb. 20, 2018).

<sup>787</sup> Ex. FR-19 at 16 (Easement Form).

<sup>788</sup> *Id.* at 11.

<sup>789</sup> *Id.*

513. AFCL asserts that Freeborn Wind has not complied with Freeborn County's ordinance regarding decommissioning requirements.<sup>790</sup> While the limited comments Freeborn Wind made in its Site Permit Application regarding decommissioning do not meet Freeborn County's requirements, the Ordinance has no timeline attached to it. Thus, Freeborn Wind is not in violation of the Ordinance.

514. Pursuant to Section 11.1 of the Draft Site Permit, Freeborn Wind will develop a Project decommissioning and restoration plan in accordance with the requirements of Minn. R. 7854.0500, subp. 13, prior to the Project's pre-operation meeting with DOC-EERA.<sup>791</sup> At the end of commercial operation, the Project owners will be responsible for removing wind facilities, and removing the turbine foundations to a depth of four feet below grade.<sup>792</sup>

515. AFCL objects to Freeborn Wind's proposal to develop its decommissioning and restoration plan after the Site Permit is issued. AFCL argues that Minn. R. 7854.0500, subp. 13 requires these plans be submitted with the application.<sup>793</sup> AFCL argues the Commission should deny the permit application because Freeborn Wind has not provided these plans.

516. Minn. R. 7854.0500, subp. 13 requires:

The applicant shall include the following information regarding decommissioning of the project and restoring the site:

- A. the anticipated life of the project;
- B. the estimated decommissioning costs in current dollars;
- C. the method and schedule for updating the costs in current dollars;
- D. the method of ensuring that funds will be available for decommissioning and restoration; and
- E. the anticipated manner in which the project will be decommissioned and the site restored.

517. The Decommissioning Plan included in Freeborn Wind's Application estimates the service life of Project to be thirty years, and states that "[p]roject decommissioning has not yet been determined."<sup>794</sup> Freeborn Wind goes on to state that it will create a "thorough decommissioning cost estimate prior to construction

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<sup>790</sup> See AFCL redlined version of Freeborn Wind Proposed Findings of Fact, Conclusions of Law, and Recommendation at 19 (Apr. 4, 2018).

<sup>791</sup> Draft Site Permit at 23-24 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>792</sup> See *id.* Freeborn Wind also represents that its responsibility for decommissioning is also a term in its wind lease agreements. Tr. Vol. 1A at 24 (Litchfield).

<sup>793</sup> AFCL Initial Br. at 13-15; AFCL Reply Brief at 22-25.

<sup>794</sup> Ex. FR-1 at 110 (Application).

begins . . . .”<sup>795</sup> The Decommissioning Plan in the Application includes language stating that Freeborn Wind will remove the improvements from properties, and restore them to their approximate original condition. Specifically, it says that decommissioning “will include the removal of above-ground wind facilities . . . .” In addition, “[f]oundations will be removed to a depth of 48 inches below current grade.” Unless landowners want them to remain, access roads will be removed, and disturbances created from the decommissioning itself will be restored.<sup>796</sup>

518. The Commission issued its Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing [Order] on August 31, 2017.<sup>797</sup> AFCL did not raise its decommissioning and restoration plan concerns in comments prior to the issuance of the Order. No one requested reconsideration of the Order. Accordingly, the Commission’s Order is final.

519. The Commission found the application “substantially complete.”<sup>798</sup> The Commission’s order granted variances to the time frames for consideration of application completeness and for issuance of a draft site permit, but not for the submission of developed decommissioning and restoration plans.<sup>799</sup> The Draft Site Permit contemplates submission and review of decommissioning and restoration plans after construction has been completed but before commencing operations.<sup>800</sup>

520. The Commission referred this matter to the Office of Administrative Hearings because AFCL had “identified contested issues of fact.”<sup>801</sup> The Commission did not specifically identify decommissioning and restoration plans in its referral. However, the Commission further explained: “The ultimate issue in this case is whether Freeborn Wind’s proposed site application meets the criteria set forth in Minn. Stat. § 216F and Minn. R. ch. 7854. This turns on numerous factors that are best developed in formal evidentiary proceedings.”<sup>802</sup> The Administrative Law Judge interprets the Commission’s referral to request findings and recommendations as to whether the requirements of ch. 7854 have been met with regard to permit issuance.

521. DOC-EERA proposed to add language to the Draft Site Permit Section 11.1 that “requires the Permittee to update the decommission plan every five years, and also to identify all sureties and financial securities that are established to ensure site restoration.”<sup>803</sup> With DOC-EERA’s proposed language included, Section 11.1 reads:

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<sup>795</sup> *Id.*

<sup>796</sup> *Id.*

<sup>797</sup> Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing (Aug. 31, 2017) (eDocket No. 20178-135140-01).

<sup>798</sup> *Id.* at 3.

<sup>799</sup> *Id.* at 3-5.

<sup>800</sup> Draft Site Permit at 23 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>801</sup> Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing at 4 (Aug. 31, 2017) (eDocket No. 20178-135140-01).

<sup>802</sup> *Id.* at 5.

<sup>803</sup> Ex. EERA-8 at 26.

The Permittee shall submit a decommissioning plan to the Commission at least fourteen 14 days prior to the pre-operation meeting, and provide updates to the plan every five years thereafter. The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.<sup>804</sup>

522. The Commission's referral of this matter to the Office of Administrative Hearings requests findings and recommendations concerning the Draft Site Permit's compliance with Minnesota Rules chapter 7854. Minnesota Rule 7854.0500, subpart 13 requires decommissioning and restoration plans be submitted with the application.

523. Freeborn Wind and DOC-EERA assert that the requirement in section 11.1 of the Draft Site Permit that Freeborn Wind submit a fully-developed plan to comply with subpart 13 at least 14 days prior to commencing operations satisfies subpart 13 sufficiently to allow a permit to issue. This position may be reasonable concerning some details of the decommissioning process that can be more meaningfully developed once construction is completed. It is likely substantially easier to estimate costs of removing structures and restoring the site after construction. Furthermore, as noted above, Freeborn Wind stated in its Application that it would provide a "thorough decommissioning cost estimate prior to construction begins . . . ." <sup>805</sup>

524. In addition, it does not follow that all aspects of decommissioning and restoration are best considered post-permit issuance. Perhaps the most pressing concern with regard to decommissioning and restoration for AFCL and members of the public is whether Freeborn Wind will have the funds to pay to remove the turbines and other facilities and physically restore the area.<sup>806</sup>

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<sup>804</sup> *Id.*

<sup>805</sup> *Id.*

<sup>806</sup> AFCL Initial Brief at 16 (referring to the comments of Wayne Brandt quoted above in ¶ 502).



525. Subpart 1 of Minn. R. 7854.0900 (2017) requires public notice of draft site permits. It further requires that an informational public meeting be held and offers the opportunity to request a contested case proceeding. No similar notice requirements or procedural rights are implicated by the pre-operation filings of decommissioning and restoration plans.<sup>807</sup>

526. Freeborn Wind employee Daniel Litchfield stated that he is a member of a Commission working group on decommissioning. He stated that the Commission is considering whether “they need to change permit conditions on decommissioning” and the working group is considering “establishing some form of financial assurance, independent from just a promise that the project will get removed.”<sup>808</sup> Mr. Litchfield’s testimony suggests that both regulators and industry participants recognize that financial guarantees should be secured during the permitting process.

527. The Administrative Law Judge concludes that the requirements of chapter 7854 are not met unless Freeborn Wind demonstrates its capacity to guarantee it can fund the decommissioning and restoration of its Project prior to commencing construction. Furthermore, the Draft Site Permit contains appropriate conditions to ensure proper decommissioning and restoration of the Project site, with the exception of demonstrating that it has the resources necessary to carry out decommissioning and restoration.<sup>809</sup>

528. The Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, Section 11.1 be amended to require that any successors or assigns of Freeborn Wind be obligated to bear the costs of decommissioning to the same extent that Freeborn Wind is, unless Freeborn Wind retains those obligations for itself.

529. Furthermore, if a Site Permit is issued, the Administrative Law Judge recommends that Section 11.1 be amended to require a pre-construction demonstration that the applicant can guarantee that the resources needed for decommissioning and restoration will be available. The Administrative Law Judge recommends that the Commission provide the public notice of Freeborn’s submission as required by Minn. R. 7854.0900. In future wind farm site permit proceedings, an applicant should provide this information in its initial filings.

530. Freeborn Wind has reserved the right to extend operations instead of decommissioning at the end of the site permit term. As necessary, Freeborn Wind may apply for an extension of the LWECs Site Permit to continue Project operation. In this case, a decision may be made on whether to continue operation with existing equipment or to retrofit the turbines and power system with upgrades based on newer technologies.<sup>810</sup>

531. Section 11.2 provides that Freeborn Wind is required to dismantle and remove all towers, turbine generators, transformers, overhead and underground cables

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<sup>807</sup> Minn. R. 7850.0900 (2017).

<sup>808</sup> Tr. Vol. 2 at 100 (Litchfield).

<sup>809</sup> Draft Site Permit at 23-24 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>810</sup> Ex. FR-1 at 110 (Application).

and lines, foundations, buildings, and ancillary equipment to a depth of four feet. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. Further, Freeborn Wind is required to restore and reclaim the site to its pre-Project topography and topsoil quality within 18 months of the Project's termination.<sup>811</sup> Freeborn Wind is responsible for decommissioning costs, both as a condition of the Site Permit and pursuant to the terms of its private easement agreements.<sup>812</sup>

532. The record demonstrates that, if the Commission issues a Site Permit in this docket, decommissioning has been appropriately addressed by Freeborn Wind and the Draft Site Permit with the modifications recommended by the Administrative Law Judge.

## **X. Complaint Process**

533. AFCL maintains that the Commission's complaint process is not effective and asks that the Administrative Law Judge recommend changes in the process in this proceeding.

534. Commenter Marie McNamara submitted written public comments regarding the Commission's complaint process.<sup>813</sup> Ms. McNamara questioned whether the State "is tracking or doing any comparison of wind project monthly logs for noise complaints to determine if Freeborn Wind or any project should be permitted as proposed."<sup>814</sup> Ms. McNamara stated that permittees self-report complaint information, including information about the status of complaints. In addition, Ms. McNamara asserted that permittees are redacting information from Minnesota wind complaint logs, in violation of site permit conditions requiring them to provide complainant contact information "to the extent possible."<sup>815</sup>

535. The other parties did not take a position on AFCL's concerns about the complaint process.

536. The Administrative Law Judge notes that the Commission has responded recently to noise complaints at other wind farms by initiating noise monitoring and reporting, and requiring remedial action by the owners of the facilities.<sup>816</sup>

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<sup>811</sup> Draft Site Permit at 24 (Jan. 30, 2018) (eDocket No. 20181-139549-01).

<sup>812</sup> Tr. Vol. 1A at 24 (Litchfield); see also Draft Site Permit at 24 (Jan. 30, 2018) (eDocket No. 20181-139549-01); Ex. FR-19 at 16 (Litchfield Affidavit and Freeborn Wind Easement Form).

<sup>813</sup> Comment by Marie McNamara (Mar. 15, 2018) (eDocket No. 20183-141050-01).

<sup>814</sup> *Id.* at 2.

<sup>815</sup> *Id.*

<sup>816</sup> *In re the Site Permit Issued to Big Blue Wind Farm, LLC for the 36 MW Big Blue Wind Farm in Faribault County* (Big Blue Project), PUC Docket No. IP-6851/WS-10-1238, Order Requiring Wind Turbine Noise Study by an Approved Consultant and the Development, Distribution, and Use of Revised Complaint Procedures (Mar. 8, 2018) (eDocket No. 20183-140861-01); *In re Application of Wisconsin Power and Light for a Large Wind Energy Conversion System Site Permit for the Bent Tree Wind Project in Freeborn County*, PUC Docket No. ET6657/WS-08-573, Order Requiring Noise Monitoring, Noise Study, and Further Study (Aug. 24, 2016) (eDocket No. 20168-124382-01), Order to Show Cause, Requiring Further Review by the Department of Commerce, and Continuing Curtailment (Mar. 23, 2018) (eDocket No. 20183-141316-01).

537. The Commission is developing revised complaint procedures for the Big Blue Project.<sup>817</sup>

538. The Administrative Law Judge finds that the existing complaint procedures, as set forth at Attachment A to the Commission's Draft Site Permit, are sufficient pursuant to the requirements of Minn. R. 7829.1500, .1600, and .1700 (2017). There is insufficient evidence in the record for the Administrative Law Judge to recommend specific changes in the procedures.

539. The Administrative Law Judge recognizes that the Commission may develop new procedures which it believes will be more effective in the future and may choose to substitute those procedures for the procedures proposed in the Draft Site Permit. Should the Commission decide to issue a Site Permit in this proceeding, it would be appropriate for it to use either the Complaint Procedures in as attached to the Draft Site Permit, or to use revised procedures currently being developed.

## **XII. Site Permit Conditions**

540. The Draft Site Permit issued on January 30, 2018, includes a number of proposed permit conditions, many of which have been discussed above. The conditions apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning, and other aspects of the Project.

541. Many of the conditions contained in the Draft Site Permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Commission. Comments received by the Commission have been considered in development of the Draft Site Permit for this Project.

542. The Administrative Law Judge has not recommended that the Commission issue a Site Permit in this docket. Should the Commission decide, initially, or at a later date, to issue a Site Permit, the Administrative Law Judge recommends the amendments and additions to the conditions and special conditions in the Draft Site Permit, as discussed in the following paragraphs.

543. As a result of the contested case proceeding and the public hearing and public comments received in this docket, the Administrative Law Judge recommends the following amendments and additions to the Draft Site Permit:

544. The Administrative Law Judge recommends that Section 5.2 of the Draft Site Permit should be amended, as follows:

Freeborn Wind must provide notice which includes a description of the Project's potential to interfere with OTA TV service, Freeborn Wind's

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<sup>817</sup> Big Blue Project, Order Requiring Wind Turbine Noise Study by an Approved Consultant and the Development, Distribution, and Use of Revised Complaint Procedures at 5 (Mar. 8, 2018) (eDocket No. 20183-140861-01).

mitigation program, and copies of the Site Permit and Complaint Procedure to households in the following areas:

- all households in “at risk” areas identified for all six local television stations, as identified in Appendix D of the Site Permit Application; and
- each household in the communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow.

545. The Administrative Law Judge recommends that Section 5.2.16 of the Draft Site Permit be amended as follows:

- Upon receiving a complaint from a household within the required Notice area regarding interference, Freeborn Wind shall evaluate the complaint to determine whether Freeborn Wind’s operations are the likely cause of the interference. In the event that the wind farm is determined to be the likely cause of interference, Freeborn Wind should offer the mitigation measures it has proposed as listed in paragraph 378 of this Report.
- Freeborn Wind shall investigate any non-frivolous claims of OTA TV interference.
- Freeborn Wind shall not dismiss a complaint on the basis that it arises from a location further than 10 kilometers distant from any turbine, or because its location is not within an “at risk” area.
- Freeborn Wind shall file a report with the Commission on the first working day of each month. The report shall inform the Commission of the results of the previous month’s investigations of TV interference complaints, including the role of the wind farm in causing the interference, and whether Freeborn Wind’s remedial measures resolved the interference issues.
- Freeborn Wind shall maintain and submit with its monthly report, a map showing the location of the complainant households, their distance to the nearest turbine, and their locations in relation to the “at risk” areas. Freeborn Wind will report the date of each complaint, its response, and the date the complaint is closed.
- Freeborn Wind shall make these reports publicly available.

546. The Administrative Law Judge recommends that Special Condition Section 7.2 of the Site Permit be revised as recommended by DOC-EERA, with one modification:

Draft Site Permit Section 7.2 Shadow Flicker

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize and mitigate shadow flicker exposure. The results of any modeling shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

Shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at receptor locations that were anticipated to receive over ~~30~~ 27 hours of shadow flicker per year. The Permittee will submit a Shadow Flicker Monitoring and Management Plan at least 14 days prior to the pre-construction meeting. The Shadow Flicker Monitoring and Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

547. Because of the many potential sources of inaccuracy in the pre-construction noise level measurements and post-construction noise level predictions, the Administrative Law Judge recommends replacing Special Condition 7.4, Noise Studies, with the following Special Condition:

A post-construction noise study must be made, commencing as soon as the Project begins operations, and continuing for the first 12 months of its operation. The study shall be conducted by an independent consultant selected by the DOC-EERA at Freeborn Wind's expense. The independent consultant shall develop a methodology in consultation with the DOC-EERA. The study must incorporate the Department of Commerce Noise Study Protocol to determine the operating LWECS noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. In addition, the study must demonstrate the extent to which turbine-only noise contributes to the overall decibel level. Special attention should be paid to receptors predicted to experience the highest

turbine noise levels. The consultant should be charged with ensuring that there are no receptors where levels of ambient noise plus turbine noise exceed L<sub>50</sub> 50 dB(A) during nighttime hours. If, during the course of the study, noise levels exceeding those permitted by Minn. R. 7030.0040 are measured, the measurements shall be reported to the Commission within five working days, or as designated by the Commission. The completed post-construction noise study shall be filed with the Commission within 14 months after the Project becomes operational.

548. In light of the revised total noise predictions, and the lack of evidence that Freeborn Wind took the required 500 additional feet into account in establishing residential setbacks, the Administrative Law Judge recommends that Draft Site Permit Condition 4.2 be amended to require Residential setbacks of 1500 feet for all non-participating landowners.<sup>818</sup>

549. The Administrative Law Judge recommends that Site Permit Section 5.2.25 be amended as follows:

Site personnel shall inspect any turbines located closer than 1,200 feet to structures, roads, or trails for ice when weather conditions are such that ice is likely to accumulate on turbine blades. To the extent that ice is accumulating on the blades of turbines located within 1,200 feet of structures, roads, or trails, the turbines shall be deactivated until such time as the turbine blades have been re-inspected and found free from ice.

550. The Administrative Law Judge recommends that Special Conditions Section 11.1 be amended as follows:

Any successors or assigns of Freeborn Wind will be obligated to bear the costs of decommissioning to the same extent that Freeborn Wind is, unless Freeborn Wind retains those obligations, in writing, to itself.

551. The Administrative Law Judge recommends that Special Conditions Section 11.1 be amended to require:

The Applicant must demonstrate, at least 45 prior to the scheduled start of construction, that it can guarantee that the resources needed for decommissioning and restoration will be available.

552. If Freeborn Wind demonstrates that it can meet the requirements of Minn. R. 7030.0040 and the Commission issues a Site Permit for the Project with the Draft Site Permit conditions, as amended by the Administrative Law Judge's recommended amendments and additions to the Permit Conditions and Special Conditions set forth above, the Freeborn Wind Project would satisfy the Site Permit criteria for an LWECs at

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<sup>818</sup> There are four non-participating landowners with setbacks of less than 1500 feet. Ex. FR-4 at 19 (Litchfield Direct).

Minn. Stat. ch. 216F, 216E.03, subd. 7, Minn. R. 7854.0500, and all other applicable legal requirements.

553. Any of the foregoing Findings more properly designated Conclusions of Law are hereby adopted as such.

Based on the foregoing Findings of Fact and the record in this proceeding, the Administrative Law Judge makes the following:

### **CONCLUSIONS OF LAW**

1. The Commission and the Administrative Law Judge have jurisdiction over the site permit applied for by Freeborn Wind for the up to 84 MW proposed Project pursuant to Minn. Stat. §§ 216F.04 and 14.57-.62 (2016).

2. Freeborn Wind has substantially complied with the procedural requirements of Minn. Stat. ch. 216F, Minn. Stat. § 216E.03 (2016), and Minn. R. ch. 7854 (2017).

3. A public hearing was conducted in a community near the proposed Project. Proper notice of the public hearing was provided, and the public was given an opportunity to speak at the hearing and to submit written comments.

4. An evidentiary hearing was conducted pursuant to Minn. R. 1405.0200-.2400, 1400.5010-.8400, and chs. 7854 and 7829 (2017).

5. The Applicant failed to demonstrate, by a preponderance of the evidence, that the Project complies with Minn. R. 7030.0040. Therefore, the Project does not comply with criteria set forth in chapter 216F and section 216E.03, subdivision 7 of the Minnesota Statutes and chapter 7854 of the Minnesota Rules.

6. The Commission has the authority under Minn. Stat. § 216F.04 to place conditions in a LWECS site permit.

7. The Draft Site Permit contains a number of important mitigation measures and other reasonable conditions that adequately address the potential impacts of the Project on the human and natural environments.

8. It is reasonable to amend the Draft Site Permit to include the amended and additional Permit Conditions and Special Conditions to sections 4.2, 5.2, 5.2.25, 7.2, 7.4, and 11.1 as described at paragraphs 543 through 550 of this Report.

9. Should the Applicant demonstrate that it can meet the requirements of Minn. R. 7030.0040, the Project, with the Draft Site Permit conditions and the amended and additional Permit Conditions and Special Conditions to sections 4.2, 5.2, 5.2.25, 7.2, 7.4, and 11.1, as described at paragraphs 543 through 550 of this Report, would satisfy the site permit criteria for an LWECS in Minn. Stat. § 216F.03 and meet all other applicable legal requirements.

10. With the exception of its noncompliance with Minn. R. 7030.0040, the Project, with the Draft Site Permit Conditions and amended and additional Permit Conditions and Special Conditions discussed above, does not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act and/or the Minnesota Environmental Policy Act.

11. Any of the foregoing Conclusions of Law which are more properly designated Findings of Fact are hereby adopted as such.

Based upon these Conclusions, the Administrative Law Judge makes the following:

### **RECOMMENDATION**

Based upon these Conclusions of Law, the Administrative Law Judge respectfully recommends that the Commission deny the site permit to Freeborn Wind Energy, LLC to construct and operate the up to 84 MW portion of the Freeborn Wind Farm in Freeborn County, Minnesota. In the alternative, the Administrative Law Judge respectfully recommends that the Commission provide Freeborn Energy, LLC with a period of time to submit a plan demonstrating how it will comply with Minnesota's Noise Standards at all times throughout the footprint of the Freeborn Wind Project.

Dated: May 14, 2018



LAURASUE SCHLATTER  
Administrative Law Judge



[112297/1]

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STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of  
Freeborn Wind Energy, LLC for a Large  
Wind Energy Conversion System Site  
Permit for the 84 MW Freeborn Wind Farm  
in Freeborn County

**ATTACHMENT A:**  
**SUMMARY OF INITIAL  
PUBLIC COMMENTS**

**I. Background**

1. Freeborn Wind Energy, LLC (Applicant or Freeborn Wind) filed an Application with the Public Utilities Commission (Commission) for a Large Wind Energy Conversion System (LWECS) Site Permit on June 15, 2017, to build and operate the Freeborn Wind Farm (Project) in Freeborn County, Minnesota. The Project includes a wind turbine layout with up to 42 turbines, including associated facilities, gravel roads, electrical collection system, permanent meteorological towers, and other operations and maintenance facilities.<sup>1</sup>

2. On June 21, 2017, the Commission issued a Notice of Comment Period on Site Permit Application Completeness.<sup>2</sup> The Notice requested comments on whether Freeborn Wind's Application was complete within the meaning of the Commission's rules; whether there were contested issues of fact with respect to the representations made in the Application; and whether the Application should be referred to the Office of Administrative Hearings (OAH) for a contested case proceeding. The initial comment period closed July 6, 2017, and the reply comment period closed July 13, 2017.<sup>3</sup>

3. On July 6, 2017, the Department of Commerce-Energy Environmental Review and Analysis (DOC-EERA) staff filed comments recommending that the Commission accept the Application as complete with the understanding that the permitting process not progress to the Preliminary Determination on a Draft Site Permit step pursuant to Minnesota Rule 7854.0800 (2017) until issues regarding compliance with certain Freeborn County Ordinance standards and general setback considerations were further developed with Freeborn Wind and Freeborn County staff.<sup>4</sup>

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<sup>1</sup> Ex. FR-1 at 3-4 (Application) (eDocket No. 20176-132804-01).

<sup>2</sup> Notice of Comment Period (June 21, 2017) (eDocket No. 20176-132986-01).

<sup>3</sup> *Id.*

<sup>4</sup> Ex. EERA-1 at 5 (Comments and Recommendations on Site Permit Application Completeness).

4. On July 6, 2017, the Association of Freeborn County Landowners (AFCL) filed comments and a petition requesting that the matter be referred to the OAH for contested case proceedings.<sup>5</sup>

5. On July 13, 2017, Freeborn Wind filed reply comments on the completeness of the Application and agreed to a contested case hearing.<sup>6</sup> On August 2, 2017, Freeborn Wind filed revised pages to the Application.<sup>7</sup>

6. On August 31, 2017, the Commission issued its Order Finding Application Complete and Varying Time Limits; and Notice and Order for Hearing (PUC Order).<sup>8</sup> The PUC Order specifically required the Administrative Law Judge to “consider timely comments received to date in evaluating the merits of [Freeborn Wind’s] application.”<sup>9</sup>

## II. Public Comments

7. Approximately 100 written public comments were received during the public comment period. This document summarizes those comments in eight different topic areas of concern. A report prepared by the Minnesota Department of Health (MDH) Environmental Health Division was also received and summarized.

## III. Visual Impacts: Shadow Flicker

8. The MDH submitted a 2009 report titled, “Public Health Impacts of Wind Turbines” (MDH Report).<sup>10</sup> The MDH Report addressed shadow flicker, among other things. According to the MDH Report, the National Research Council of the National Academies notes that different people have different values and levels of sensitivity to wind projects near one’s home. The potential impacts include noise, low frequency vibration, and shadow flicker. Shadow flicker casts moving shadows on the ground as the wind turbine blades rotate. Modeling done by MDH suggests that a receptor 300 meters perpendicular to, and in the shadow of the blades of a wind turbine, can be in the flicker shadow of the rotating blade for almost 1½ hours per day.<sup>11</sup> Shadow flicker is a potential issue in the mornings and evenings, and the flicker can be an issue both indoors and outdoors when the sun is low in the sky.<sup>12</sup>

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<sup>5</sup> Comments and Petition for Contested Case and Referral to OAH (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>6</sup> Reply to Comments on Completeness (July 13, 2017) (eDocket No. 20177-133866-01).

<sup>7</sup> Ex. FR-2 at 32, 34 (Revised Application).

<sup>8</sup> Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing (Aug. 31, 2017) (eDocket No. 20178-135140-01).

<sup>9</sup> Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing at 8 (Aug. 31, 2017) (eDocket No. 20178-135140-01).

<sup>10</sup> Ex. FR-6, Sched. 7, MDH Environmental Health Division, Public Health Impacts of Wind Turbines, at 6 (May 22, 2009).

<sup>11</sup> *Id* at 14.

<sup>12</sup> *Id*.

9. A number of individual commenters also raised concerns about shadow flicker. One concern was that Freeborn Wind had not adequately accounted for the number of homes that would be affected by shadow flicker.<sup>13</sup>

10. Others had specific health concerns, including:

- “My biggest concern is my 9-year-old son with autism. He tells me that he gets dizzy watching kids play baseball. What is a giant wind turbine going to do to him when he is outside every day?”<sup>14</sup>
- “I suffer from migraines and . . . the vibrations, whooshing, and flicker all trigger migraines, with these being even larger than what’s already built, these pose a greater risk to causing migraines.”<sup>15</sup>
- “I am a stage 4 cancer survivor who will be living in the Freeborn Wind footprint . . . I have been and always will be on an adjacent daily chemotherapy treatment. There is no cure for my cancer but it is treatable. The wind turbines are a huge concern for my health . . . my medicine [causes me to] suffer from heightened motion sickness and other sensitivities which I believe would be enhanced by the infrasound, flicker, and audible noise from the turbines.”<sup>16</sup>
- A Vietnam veteran with PTSD and tinnitus asserts that he will be negatively impacted by the windmill noise and visuals. They will trigger more problems because the windmill blades look like helicopter blades, and the sounds they make are also similar. He fears that flashing lights and flicker from the windmills could also trigger terrifying military flashbacks.<sup>17</sup>

11. There were seven homes projected to have shadow flicker in excess of 30 hours per year. This exceeds the Freeborn County Ordinance of 30 hours maximum shadow flicker per year. One home has 45 hours projected. The homeowner stated she was told by the Applicant, “I could ‘learn to close my blinds’ if shadow flicker bothers my family or that we will not be bothered if we ‘go to Florida for the winter.’”<sup>18</sup>

12. “The shadow flicker modeling map for this project calls into question the ability of the project to limit shadow flicker to less than 30 hours annually, a promise repeatedly made by project developers.”<sup>19</sup>

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<sup>13</sup> Comment by Kathy Nelson (July 6, 2017) (eDocket No. 20177-133467-01); Comment by Sean Gaston (July 4, 2017) (eDocket No. 20177-133481-01); Comment by Carol Overland, on behalf of Association of Freeborn County Landowners at 14 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>14</sup> Comment by Michelle Severtson (July 3, 2017) (eDocket No. 20177-133516-01).

<sup>15</sup> Comment by Jennifer Johnson (July 13, 2017) (eDocket No. 20177-133879-01).

<sup>16</sup> Comment by Dorenne Hanson (July 4, 2017) (eDocket No. 20177-133517-01).

<sup>17</sup> Comment by Holly and Chuck Clarke (July 4, 2017) (eDocket No. 20177-133515-01).

<sup>18</sup> Comment by Kathy Nelson (June 30, 2017) (eDocket No. 20177-133467-02).

<sup>19</sup> Comment by Carol Overland on behalf of AFCL at 14 (July 6, 2017) (eDocket No. 20177-133591-01).

13. In its July 6, 2017, comments, DOC-EERA staff noted that Freeborn County Ordinance indicates that shadow flicker at non-participating homes should not exceed 30 hours per year. The Application has identified four non-participating homes that are expected to receive more than 30 hours of shadow flicker per year under real case scenarios.<sup>20</sup>

14. Freeborn Wind stated in its reply comments that it will ensure that the four non-participating homes expected to experience more than 30 hours of shadow flicker in a year will not, in fact, experience this by using the mitigation techniques listed in the Application.<sup>21</sup>

#### **IV. Property Values**

15. Commenters voiced their concerns that Freeborn Wind's proposed turbines will negatively influence property value for non-participating landowners.<sup>22</sup>

16. A commenter wrote from Illinois about his experience with Invenergy, Freeborn Wind's parent company. He was initially an enthusiastic participant in a wind farm Invenergy was building in rural Illinois. In 2012, Invenergy constructed wind turbines 1665 and 2225 feet from his home. Because of noise, especially at night within their home, the landowner and his family started suffering health issues; they were exhausted, and grades and academic performance suffered. The family finally abandoned their home on Christmas weekend, 2013, after almost a year in their home after the wind farm began operation. They moved into a mobile home eight miles away. The house was for sale from 2013 to 2016. The family owned the home and had to maintain it, pay for the mortgage, and pay taxes, but could not live there. When it finally sold in September 2016, the family "took a huge a financial loss."<sup>23</sup>

17. Some commenters have criticized Freeborn Wind's market analysis, asserting it has numerous contradictions and inaccuracies that raise questions about the thoroughness of the report and its applicability to the project:

- One commenter maintained that the property value study by Ben Hoen is biased. The commenter noted that Mr. Hoen was paid by the United States Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy Wind and Water Power to conduct the study. That office, according to the commenter, is "pro-wind". In addition, there is a conflict of interest with the Market Impact Analysis because it was performed by MaRous & Co, and paid for by

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<sup>20</sup> Comment by EERA (July 6, 2017) (eDocket No. 20177-133597-01).

<sup>21</sup> Comment by Christina Brusven on behalf of Freeborn Wind Energy LLC at 4 (July 13, 2017) (eDocket No. 20177-133866-01).

<sup>22</sup> Comment by Carol Overland on behalf of AFCL at 15 (July 6, 2017) (eDocket No. 20177-133591-01); Comment by Abby Leach on behalf of Gregory D. Jensen (Jul. 6, 2017) (eDocket No. 20177-133586-01).

<sup>23</sup> Comment by Ted Hartke; Comment by Dorene Hansen (July 6, 2017) (eDocket No. 20177-133562-03).

Invenergy. The commenter notes, “I find it hard to believe that of the 5 sales that they used as a summary (pg 8) in the ‘area’ of the Brent Tree project, only one was remotely close to a turbine. Sale number 4 was 2375 ft from a turbine and studies have shown properties as far as 2-3 miles are effected by noise and visual impacts.”<sup>24</sup>

- According to another commenter, the property values within Bent Tree Wind Farm are inaccurate in Invenergy’s application. The Beacon-Schneider website provides the actual property values from 2014 to 2017.<sup>25</sup>
- A commenter stated that the sample size in the Freeborn Wind’s Market Analysis states it is based on a survey of assessors in 10 Minnesota counties, while the analysis only states eight assessors were surveyed. According to the commenter, this reduction in sample size significantly affects the outcome of the survey. The commenter claims there is also a discrepancy as to what an individual real estate agent reported. The analysis reports this agent found no negative connection between Bent Tree Wind Farm and local sales. However, the agent specifically stated proximity to a wind turbine “would be a major concern to me as well.” This statement was provided in an email attached to the comment.<sup>26</sup>

## **V. Wildlife Impacts (Bird Migration, Avian and Bat Protection)**

18. Commenters asked whether the Project will negatively impact bat migration, wetlands, and environmentally concerned areas, and eagle’ nests.

19. AFCL maintained that there were at least three eagle nesting locations missing from Freeborn Wind’s Application. AFCL noted that Freeborn Wind had provided no comment letter from U.S. Fish and Wildlife Service (USFWS) regarding location of eagle nests and whether an eagle take permit is recommended. Nor did Freeborn Wind indicate whether USFWS knows about the issue, and whether they have been consulted in relation to the Project.<sup>27</sup>

20. Another commenter pointed out that, on the most recent proposed maps, there was a proposed turbine in the southwest quarter of section 32. The commenter was concerned that this had potential setbacks toward the wetland and environmentally concerned area to the east of the proposed turbine.<sup>28</sup>

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<sup>24</sup> Comment by Robert VanPelt at 1(July 2, 2017) (eDocket No. 20177-133481-01).

<sup>25</sup> Comment by Stephanie Richter (July 2, 2017) (eDocket No. 20177-133473-01).

<sup>26</sup> Comment by Sean Gaston (July 6, 2017) (eDocket 20177-133598-01); attached email from Rick Mummer (May 4, 2017) (eDocket 20177-133598-02).

<sup>27</sup> Comment by Carol Overland on behalf of AFCL at 14-15 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>28</sup> Comment by Lance Davis (July 3, 2017) (eDocket No. 20177-133482-01).

21. Another commenter maintained that Freeborn Wind’s report contradicts the USFWS’s recommendation regarding the migration period and increased activity of bats.<sup>29</sup> The commenter writes, “Wind turbine operation has been documented to kill [northern long-eared bats], particularly during the fall migratory period.”<sup>30</sup>

22. AFCL questioned whether Freeborn Wind had done additional bat monitoring, as recommended by the MDNR.<sup>31</sup>

## VI. Effect on Farmland

23. Landowners who farm expressed concerns about the impact the proposed wind farm will have on their farmland:

- “This past year we spent \$23,000 in tile improvements on our farm land . . . all field tile is connected, as water flows from our field through the one next to us . . . [and] as this particular tile line passes through a field that will be having windmills installed, this will affect our \$23,000 investment and ultimately hurt the yield of our crops, not only in this field, but also every other field as they all have connected lines.”<sup>32</sup>
- “I wont [sic] even begin about the amount of cement footing going into the ground and the destruction to the land structure and minerals breakdowns it will cause or WHO will clean all that out once the life span is over for the windmill.”<sup>33</sup>
- “For the land, the amount of cement that has to go in the ground is going to diminish the yield potential around them because of the secretion into the soil around it. Producers will have to spend more on fertilizer to bring that up to the needed nutrients for the plant to fully produce a crop. In seasons where it’s already hard to start out farming and profits are hard to make, this added cost is only going to put another wrench in the mix for our young producers to come back to the area.”<sup>34</sup>

## VII. Setback Distances

24. Some commenters stated Freeborn Wind used a setback of 1,000 feet in their Application, but the Market Analysis was prepared with the assumption of a 1,500-

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<sup>29</sup> Comment by Dorene Hansen (July 2, 2017) (eDocket No. 20177-133572-01).

<sup>30</sup> *Id.*

<sup>31</sup> Comment by Carol Overland on behalf of AFCL at 13 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>32</sup> Comment by Sandy Johnson at 2 (July 5, 2017) (eDocket No. 20177-133572-01).

<sup>33</sup> Comment by Sue VanPelt (July 13, 2017) (eDocket No. 20177-133914-01).

<sup>34</sup> Comment by Jennifer Johnson (July 13, 2017) (eDocket No. 20177-133879-01).

foot setback.<sup>35</sup> However, the Applicant had informed Worth County representatives and residents that even though Worth County didn't have an ordinance for the setback from the towers, they were going to use 1500 feet.<sup>36</sup> The map Freeborn Wind presented to the County Engineer indicates there is a 1,500-foot setback from each home located in the wind tower farm.

25. Many commenters agreed with the Freeborn County Board of Commissioners that the minimum setback considered should be 1,500 feet.<sup>37</sup>

26. There are safety considerations that go into setting a setback, especially noise complaints. AFCL pointed out that the MDH report states a setback distance of one-half mile from residences would limit noise and shadow flicker complaints. AFCL maintained that a setback of 1,000 feet is not reasonable.<sup>38</sup>

27. One commenter strongly recommended setbacks of one-half mile to a mile, citing examples in South Dakota that have recently required one-mile setbacks.<sup>39</sup>

28. DOC-EERA noted that, according to Freeborn County Ordinance Section 26-51, public conservation lands require a setback of three times the rotor diameter. The proposed project does not meet some of the Freeborn County Ordinance standards, which are more stringent than standards identified within the State LWECs Site permit. Turbine 31 is closer than three rotor diameters from a Type III wetland.<sup>40</sup>

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<sup>35</sup> Comment by Dorenne Hansen (July 5, 2017) (eDocket No. 20177-133456-01).

<sup>36</sup> Comment by Dorenne Hansen (July 12, 2017) (eDocket No. 20177-133792-01).

<sup>37</sup> Comment by Sean Gaston (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Sue Madson (July 13, 2017) (eDocket No. 20177-133812-01); Comment by Lisa Hajek (July 13, 2017) (eDocket No. 20177-133847-01); Comment by Troy Hillman, Supervisor, Shell Rock Township Board (July 13, 2017) (eDocket No. 20177-133856-01); Comment by Mike and Alayna Rohne (July 13, 2017) (eDocket No. 20177-133854-01); Comment by Jim Nelson, Chair, Freeborn County Board of Commissioners (July 13, 2017) (eDocket No. 20177-133824-01); Comment by Bonnie Belshan (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Alexandra and Jake Schumacher (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Kate Houg (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Jenna Hanson (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Erin Hornberger (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Gary and Marcia Sola (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Kristopher Houg (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Sue VanPelt (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Kathy Nelson (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Shawn Ellingson (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Gary Richter (July 12, 2017) (eDocket No. 20177-133879-01); Comment by Ryan Hajek (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Dean and Sherry Adams (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Seth Buchanan (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Wayne Fett (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Gary Buchanan (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Steven Reese (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Stephanie Richter (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Darla Robbins (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Lance and Sharon Davis (July 13, 2017) (eDocket No. 20177-133879-01).

<sup>38</sup> Comment by Carol Overland on behalf of AFCL at 10-11 (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>39</sup> Comment by Jennifer Johnson at 2 (July 13, 2017) (eDocket No. 20177-133879-01).

<sup>40</sup> Comment by DOC-EERA (July 6, 2017) (eDocket No. 20177-133597-01).



29. Freeborn Wind responded to the comment regarding wetland setbacks. The Applicant stated that Turbine 31 is 2.9 rotor diameters from a Type III wetland, just shy of the three rotor diameter setback required by Freeborn County Ordinance No. 26-51. In response, Freeborn Wind asserts that good cause exists for the Commission not to strictly apply the three rotor diameter requirements here, as laid out in the Application.<sup>41</sup>

### VIII. Interference with Communications

30. Many commenters stated they rely on radio and television for news and in emergency situations.<sup>42</sup> Commenters expressed concerns with whether the turbines would interfere with radio and television signals. They wondered what their remedies would be if that were to occur.<sup>43</sup>

31. Commenters asked that Freeborn Wind be held accountable to perform the necessary studies to properly place turbines so they will not affect their television and radio reception. Some particularly expressed concerns about over the air (OTA) television.<sup>44</sup>

32. Rochester TV LLC, doing business as KIMT, notified the Commission that it had not been notified about the Freeborn Wind project nor had it been given any opportunity to discuss any concerns it might have as a broadcaster. KIMT was concerned about possible interference with broadcast transmissions.<sup>45</sup>

33. One resident commented, "Many of us live on gravel roads and are not close together[.] [W]hen we lose our cell phone reception, Dish TV, and our Internet is intermittent, we probably won't get fiber optic line to provide us our service we stand to lose . . . [i]f I wanted to live near 50 story structures I would live in Minneapolis not here."<sup>46</sup>

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<sup>41</sup> Comment by Christina Brusven on behalf of Freeborn Wind Energy LLC (July 13, 2017).

<sup>42</sup> Comment by Nancy Hajek (July 12, 2017); Comment by Mike and Alayna Rohne (July 13, 2017); Comment by Lance Davis (July 13, 2017); Comment by Lisa Hajek (July 13, 2017); Comment by Michelle Severtson (July 12, 2017); Comment by Tyler Nelson (July 12, 2017); Comment by Janice Helgeson (July 12, 2017); Comment by Gene Davis (July 12, 2017);

<sup>43</sup> Comment by Dorene Hansen (July 12, 2017) (eDocket No. 20177-133792-01).

<sup>44</sup> Comments by Allie Olson (July 3, 2017) (eDocket Nos. 20177-133545-01, 21077-133546-01, and 20177-133547-01); Comment by Clark Ericksen (July 12, 2017) (eDocket No. 20177-133798-01); Comment by Stephanie Richter (July 12, 2017) (eDocket No. 20177-133793-01); Comment by Rena Langowski, Oakland Township Chairperson (July 12, 2017) (eDocket No. 20177-133879-01); Comment by Cheryl Brandt, Clerk, on behalf of Oakland Township (July 13, 2017) (eDocket No. 20177-133858-01); Comment by Lance Davis (July 13, 2017) (eDocket No. 20177-133879-01); Comment by Lisa Hajek (July 13, 2017) (eDocket No. 20177-133847-01); Comment by Michelle Severtson (July 12, 2017) (eDocket No. 20177-133822-01); Comment by Tyler Nelson (July 12, 2017) (eDocket No. 20177-133820-01); Comment by Janice Helgeson (July 12, 2017) (eDocket No. 20177-133817-01); Comment by Greg and Kathy Nelson (July 12, 2017) (eDocket No. 20177-133813-01); Comment by Sue Madson (July 12, 2017) (eDocket No. 20177-133812-01); Comment by Dawn Broitzman (July 12, 2017) (eDocket No. 20177-133811-01).

<sup>45</sup> Comment by Steve Martinson, KIMT TV VP, GM (July 3, 2017) (eDocket No. 20177-133918-01).

<sup>46</sup> Comment by Clark Ericksen (July 3, 2017) (eDocket No. 20177-133503-01).

34. Another landowner stated, "This would detrimentally impact our small business, as we already have only one broadband choice in our rural neighborhood, and internet service is already intermittent!"<sup>47</sup>

35. The General Manager of Hector Communications Company wrote, explaining that Sleepy Eye Telephone Company has buried copper cables and fiber optic cables in the right of ways of Goodhue County Roads. The Company is concerned there is a possibility that transmission lines carrying the 34.5 kV wind generated electricity may render the copper telephone cables unusable due to interference. Any cost to mitigate or eliminate this interference should be the full responsibility of the wind farm and transmission line developers and owners. This includes any costs to re-route the copper cables or replace the copper cables with fiber optic cables and necessary electronics.<sup>48</sup>

36. Writing on behalf of the owner of FM radio station KQPR, Abby Leach stated that wind turbines can cause electromagnetic interference and affect TV and radio reception. From prior tests conducted, a wind farmer or developer has had to purchase cable or satellite services for neighborhoods whose signal has been impaired from wind farms. The letter added that AM radio transmissions are highly susceptible to interference, which would affect KQPR and KQAQ radio stations.<sup>49</sup>

37. The Application was submitted to the Commission without notice being provided to KAAL. Austin television station KAAL wrote that this lack of notice prevented KAAL from offering substantive observations on the Application. Some of the wind turbine generators and structures would be installed on land in the vicinity of KAAL's microwave radio transmission and reception tower systems. This might cause transmission interference problems related to the broadcast transmissions of KAAL, inhibiting the ability of the public to receive OTA broadcasts of KAAL.<sup>50</sup> KAAL broadcasts essential news and public affairs programming, and the potential interference would adversely affect the public. However, there was no complete and final project plan, so the microwave system could not be fully determined.<sup>51</sup> KAAL and Invenergy had held productive discussions which potentially might lead to necessary solutions to transmission interference problems that would be caused by the Project. KAAL maintained that Invenergy admitted in those discussions that substantial interference to KAAL and many other microwave and broadcasting operations would be caused by the Project. KAAL asserted that those discussions had unfortunately not been resolved.<sup>52</sup>

38. Freeborn Wind responded to some of the comments, stating that commenters sought information and specific data not included in the Application, but not required by the Commission's rules. For example, KAAL requested an updated study on

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<sup>47</sup> Comment by Bonnie Belshan (July 13, 2017) (eDocket No. 20177-133879-01).

<sup>48</sup> Comment by Allie Olson, with attached comment by Robert Weiss, Hector Comm. Corp. (July 6, 2017) (eDocket No. 20177-133592-01).

<sup>49</sup> Comment by Abby Leach, on behalf of Gregory D. Jensen (July 6, 2017) (eDocket No. 20177-133586-01).

<sup>50</sup> Comment by David Harbert, KAAL GM, VP (June 13, 2017) (eDocket No. 20176-132967-01).

<sup>51</sup> Comment by David Harbert, KAAL GM, VP (June 13, 2017) (eDocket No. 20176-132967-01) at 2.

<sup>52</sup> Comment by David Harbert, KAAL GM, VP (July 6, 2017) (eDocket No. 20177-134203-01).

potential interference with microwave stations. Freeborn Wind conducted an updated study consistent with KAAL's request, which showed none of the proposed turbines was "found to have potential obstruction with the microwave systems in the area."<sup>53</sup>

## IX. Noise

39. As set forth above, the Illinois family that moved out of their home and ultimately sold it, did so because of problems with noise. According to the description of their experience, Invenergy's claims about what to expect in terms of wind turbine noise were untrue. In the first five months, Invenergy shut down one to four wind turns at night because the noise prevented the family from sleeping. They state that Invenergy stopped wind turbines a total of 51 times between January and May of 2013, but after that, an attorney for the company got involved and the company refused to provide any further relief from the noise. The noise is described as "a thumping/rumbling noise which keeps a person from being able to relax that last little bit enough to fall asleep or stay asleep." Stating they were unable to fix the noise, the family ultimately moved because they were exhausted and suffering from health effects, as well as difficulties at work and school because of lack of sleep.<sup>54</sup>

40. According to the MDH Report, the National Research Council of the National Academies notes that different people have different values and levels of sensitivity to wind projects near one's home.<sup>55</sup> Noise originates from mechanical equipment inside the turbine and from interaction of turbine blades with the wind. The most problematic wind turbine noise is a broadband "whooshing" sound produced by interaction of turbine blades with the wind.<sup>56</sup> Newer turbines generate minimal noise from the equipment, as well as low frequency "infrasound."<sup>57</sup> However, during quiet conditions at night, low frequency modulation of higher frequency sounds is possible. Lower frequency stimulation may cause sensations including bone conduction as well as amplification of base frequency and/or harmonics by the eardrum in the ear. Cochlear sensitivity to infrasound (<20 hertz) is considerably less than cochlear sensitivity to audible frequencies.<sup>58</sup> The most common complaint is sleeplessness and headache. Most available evidence suggests that reported health effects are related to audible low frequency noise.<sup>59</sup> Noise produced by wind turbines is generally not a major concern beyond a half mile.<sup>60</sup>

41. Several landowners anticipated problems with noise from the Freeborn Wind project. A stage 4 cancer survivor was concerned because her medications cause

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<sup>53</sup> Comment by Christina Brusven on behalf of Freeborn Wind Energy LLC (eDocket No. 20177-133866-01). (July 13, 2017).

<sup>54</sup> Comment by Ted Hartke (July 6, 2017) (eDocket No. 20177-133562-03).

<sup>55</sup> MDH Environmental Health Division, Public Health Impacts of Wind Turbines (May 22, 2009).

<sup>56</sup> *Id.*

<sup>57</sup> *Id.*

<sup>58</sup> *Id.* at 10.

<sup>59</sup> *Id.* at 25.

<sup>60</sup> *Id.* at 10.

her to “suffer from heightened motion sickness and other sensitivities which I believe would be enhanced by the infrasound, flicker, and audible noise from the turbines.”<sup>61</sup>

42. A Vietnam veteran with PTSD and tinnitus believes he will be negatively impacted if unexpected sudden noise is created when ice chunks fly off the blades. This could traumatize him because they sound like fireworks and gunfire.<sup>62</sup>

43. Some commenters were concerned that the anticipated night time sound levels will be too high. Some homes will experience 45+ A-weighted decibels (dbA) from multiple turbines. One commenter pointed out that MDH said noise becomes an issue with sound dbA beginning at 30 dbA and the World Health Organization (WHO) recommends that nighttime dbA levels should never exceed 40 dbA.<sup>63</sup>

44. Infrasound was a big concern with some residents. One person stated that the critical part of the infrasound range is from 0-10 hertz for wind turbines, with 0-1 being the most important. One comment pointed out that the Department of Commerce Guidance does not attempt to measure or evaluate noise in this very low range. Minnesota Rule 7030 does not address wind turbine noise concerns and should not be used for wind projects. It does not address the low frequency noise that is of concern in MDH’s 2009 report. There is no science-based standard that protects human health when determining the distance between a turbine and a home.<sup>64</sup>

45. Another resident said, “I have a hard time sleeping and I’m afraid the noise and vibration could cause more problems with [my] anxiety and depression. I drove to the Bent Tree wind farm near Manchester, Minnesota . . . as we were getting closer to the area I could feel my ears start bothering me, my heart started racing, and I was sick to my stomach the 10 minutes we drove through the wind farm.”<sup>65</sup>

46. Hearing loss was a concern for one commenter. He states, “I will have a windmill less than a half mile from my home and suffering from hearing loss, this is only prone to make it worse . . . [It] will cause substantial ringing in my ears, and potentially cause my hearing aids to not do their job as they will be overcome by the loud sounds, according to The College of Family Physicians of Canada.”<sup>66</sup>

47. One commenter cited a 2009 report which concludes, “There is growing evidence that animals are affected even more severely than humans by the low frequency noise and vibrations from industrial wind turbines...examples of the effect of noise on animals: the reduction of egg laying by domestic poultry; injury and loss involving livestock; goats with reduced milk production; pigs with excessive hormonal secretion as well as water and sodium retention; sheep and lambs with increased heart rates,

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<sup>61</sup> Comment by Dorene Hanson (July 4, 2017) (eDocket No. 20177-133517-01).

<sup>62</sup> Comment by Holly and Chuck Clarke (July 4, 2017) (eDocket No. 20177-133515-01).

<sup>63</sup> Comment by Sean Gaston (July 4, 2017) (eDocket No. 20177-133511-03).

<sup>64</sup> Comment by Kristi Rosenquist (July 6, 2017) (eDocket No. 20177-133599-01).

<sup>65</sup> Comment by Kathy Nelson (July 4, 2017) (eDocket No. 20177-133467-01).

<sup>66</sup> Comment by Sandy Johnson (July 5, 2017) (eDocket No. 20177-133572-01).

respiratory changes and reduction in feeding.” The commenter added, “I have always planned on moving back home to take over the family farm and expand our herd of cattle...I will not live next to an eyesore like that and I know of many people who agree with me.”<sup>67</sup>

## **X. Ineffective and Coercive Public Outreach**

48. Many commenters have voiced concern as to how Invenergy purposefully mislead them into signing easements or “good neighbor” agreements, and have provided inaccurate or misleading information to them and to the Commission. Further, AFCL maintains public notice and participation has been intentionally suppressed and denied.<sup>68</sup>

49. AFCL maintains that landowners were “induced” into signing contract agreements. Landowners coerced into signing should be offered the opportunity to affirm their intent to sign the contracts or to terminate them without penalty.<sup>69</sup>

50. One landowner claimed, “Neither my wife nor myself received any communication from Invenergy despite their decision to place seven turbines within one mile of our home...A face-to-face meeting with Mr. Litchfield resulted in no cooperation besides giving me a schedule of shadow flicker times when I might want to avoid being at home.”<sup>70</sup>

51. Other landowners stated that Invenergy told people different things to get their cooperation. This pitted neighbors against each other by lying to everyone.<sup>71</sup>

52. Landowners complained that the Applicant made repeated high-pressure visits after being told that the landowners were not interested in having turbines on their property.<sup>72</sup>

53. There were commenters who complained of interactions with a land agent later fired by Freeborn Wind:

- “I am one of the ‘good neighbor’ agreement holders who was tricked by Howard Krueger, an Invenergy land agent, into believing all my neighbors had signed for turbines or good neighbor agreements. I

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<sup>67</sup> Comment by Kendra Davis (July 13, 2017) (eDocket No. 20177-133879-01).

<sup>68</sup> Comment by Carol Overland on behalf of AFCL (July 6, 2017) (eDocket No. 20177-133591-01).

<sup>69</sup> *Id.* at 12-13.

<sup>70</sup> Comment by Sean Gaston (July 3, 2017) (eDocket No. 20177-133481-01).

<sup>71</sup> Comment by Clark Ericksen (July 3, 2017) (eDocket No. 20177-133503-01); Comment by James Benesh, Jr. (July 5, 2017) (eDocket No. 20177-133548-01).

<sup>72</sup> Comment by Erik Nelson (July 5, 2017) (eDocket No. 20177-133552-01); Comment by Mike and Christine Lau (July 4, 2017) (eDocket No. 20177-133499-01); Comment by Mary VanPelt (July 5, 2017) (eDocket No. 20177-133503-01); Comment by Aaron and Tammy Cech (July 5, 2017) (eDocket No. 20177-133569-01); Comment by Dean and Sherry Adams (July 5, 2017) (eDocket No. 20177-133559-01).

would have never signed anything for wind turbines if he had not deceived me.”<sup>73</sup>

- “I wasn’t in favor of signing an easement . . . but then he told us that all the neighbors had signed easements so even if we (I and my siblings) didn’t sign an easement we would be surrounded by turbines . . . I and my siblings signed . . . Later we discovered that all of our neighbors had NOT signed easements.”<sup>74</sup>
- “The first representative that they sent out to my farm was Howard Krueger. Mr. Krueger lied to everyone . . . . With this issue, they hired a new person named David Johnson. Rather than addressing our concerns and speaking to us truly, he tried to use the firing of a fellow employee to sway us to have windmills.”<sup>75</sup>

54. One commenter noted that, “The [Commission] should order staff to give a more rigorous review of the initial Site Permit application addressing inaccuracies, incomplete information, and avoidance. The [Commission] should review section 8.0 and provide a detailed direct answer as to the use of the [Power Point Siting Act] PPSA in selection of the Project Area.”<sup>76</sup>

55. According to another commenter, Invenergy stopped six or more times to sign landowners up as “good neighbors” for the Project, but the landowners were never interested and never signed. However, the Invenergy map shows the landowners as signed up.<sup>77</sup>

56. The Shell Rock Township Board Chairman complained that Invenergy did not have a valid mailing address in Glenville, Minnesota, although they claimed they were doing business there and appeared to have a street address there.<sup>78</sup>

57. Finally, a commenter noted, “After going to church[,] I came to the conclusion that my small country congregation had been segregated by the wind turbines to the extent that families were not sitting the same pews together. The church family I had grown up with and come to love as much as my own was no longer speaking with one another because they did not want to start an argument about whether the turbines should be set in place or not.”<sup>79</sup>

## L. S.

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<sup>73</sup> Comment by Brad Struck (July 3, 2017) (eDocket No. 20177-133502-01).

<sup>74</sup> Comment by Dorene Hansen (July 4, 2017) (eDocket No. 20177-133501-01).

<sup>75</sup> Comment by Sandy Johnson (July 5, 2017) (eDocket No. 20177-133572-01).

<sup>76</sup> Comment by Marie McNamara (July 6, 2017) (eDocket No. 20177-133600-01).

<sup>77</sup> Comment by Gary Buchanan (July 3, 2017) (eDocket No. 20177-133879-01).

<sup>78</sup> Comment by Gary Richter, Shell Rock Township Board Chairman (July 6, 2017) (eDocket No. 20177-133570-01).

<sup>79</sup> Comment by Kendra Davis (July 13, 2017) (eDocket No. 20177-133879-01).

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of  
Freeborn Wind Energy, LLC for a Large  
Wind Energy Conversion System Site  
Permit for the 84 MW Freeborn Wind Farm  
in Freeborn County

**ATTACHMENT B:**  
**SUMMARY OF PUBLIC  
HEARING COMMENTS**

1. On February 20, 2018, a public hearing was held at the Albert Lea Armory, 410 Prospect Avenue, Albert Lea, Minnesota, beginning at 3:00 p.m. The public hearing concluded at 9:15 p.m.

**I. PARTY APPEARANCES AND OPENING STATEMENTS**

2. Christina Brusven and Lisa Agrimonti appeared on behalf of Freeborn Wind Farm, LLC (Freeborn Wind).<sup>1</sup>

3. Carol Overland appeared on behalf of Intervenors Association of Freeborn County Land Owners (AFCL).<sup>2</sup>

4. Richard Savelkoul appeared on behalf of Intervenor KAAL-TV (KAAL).<sup>3</sup>

5. Michael Kaluzniak, a Minnesota Public Utilities Commission (Commission) staff member, attended the public hearing and explained the Commission's role in the proceedings on the record.<sup>4</sup>

6. Rich Davis, Environmental Review Manager for the Minnesota Department of Commerce Energy Environmental Review and Analysis unit (DOC-EERA or EERA) attended the public hearing and spoke on behalf of the EERA regarding the EERA's role in the site permit process and the EERA's preliminary draft site permit.<sup>5</sup>

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<sup>1</sup> Public Hearing Transcript (Hr'g Tr.) at 21-22 (Feb. 20, 2018).

<sup>2</sup> *Id.* at 30.

<sup>3</sup> *Id.* at 32.

<sup>4</sup> *Id.* at 19-20.

<sup>5</sup> *Id.* at 20-21.

7. Dan Litchfield, senior manager of the Freeborn Wind project, appeared on behalf of Freeborn Wind, and provided an introduction to Freeborn Wind and Invenergy, and an overview of the project. Mr. Litchfield then introduced other representatives of Freeborn Wind who were present, each of whom made a brief statement regarding a particular area of concern.<sup>6</sup>

8. Mike Hankard appeared on behalf of Freeborn Wind. Mr. Hankard, an acoustical engineer, stated that he conducted the studies on the project to demonstrate compliance with the Minnesota standards.<sup>7</sup>

9. Dennis Jimeno appeared on behalf of Freeborn Wind. Mr. Jimeno stated that he performed engineering studies to assess the impact of the planned wind turbines on communications systems.<sup>8</sup>

10. Jeff Ellenbogen appeared on behalf of Freeborn Wind. Dr. Ellenbogen, a physician, neurologist, and sleep specialist, stated that he has expertise and experience with people who have raised concerns about medical problems due to wind turbines in their neighborhoods. Dr. Ellenbogen has been the lead author in a Massachusetts study reviewing wind turbines and human health.<sup>9</sup>

11. Kevin Parzyck appeared on behalf of Freeborn Wind. Mr. Parzyck, an acoustical engineer, stated that he conducted the studies on the project to demonstrate compliance with the Minnesota standards.<sup>10</sup>

12. Andrea Giampoli appeared on behalf of Freeborn Wind. Ms. Giampoli, an environmental permit manager with Invenergy, oversaw the wildlife and natural resources surveys in the project area.<sup>11</sup>

13. Mark Roberts appeared on behalf of Freeborn Wind. Dr. Roberts, a physician and epidemiologist, stated he is a consultant regarding “various exposures to communities and industrial settings.”<sup>12</sup> Dr. Roberts is an environmental permit manager with Invenergy, who oversaw the wildlife and natural resources surveys in the project area.<sup>13</sup>

14. Michael MaRous appeared on behalf of Freeborn Wind. Mr. MaRous and his company, MaRous and Company, performed a value impact study for Freeborn Wind’s proposed project.<sup>14</sup>

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<sup>6</sup> *Id.* at 22-26; see also Exhibit (Ex.) P-1 (eDocket No. 20183-140950-01).

<sup>7</sup> Public Hr’g Tr. at 26-27.

<sup>8</sup> *Id.* at 27.

<sup>9</sup> *Id.*

<sup>10</sup> *Id.* at 26-27.

<sup>11</sup> *Id.* at 28.

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> *Id.* at 28-29.



15. Dorene Hansen appeared on behalf of AFCL. Ms. Hansen is the “primary organizer” of AFCL.<sup>15</sup> AFCL’s concerns include doubts that the project will bring \$3.5 to \$4.0 million in economic benefit to Freeborn County. AFCL believes that that amount includes the economic benefit attributable to the entire project, including the 58 turbines to be located in Iowa. AFCL is concerned about the costs of the project in terms of “unwanted noise, noise stress, sleeplessness, shadow flicker, aggravation of conditions like motion sickness, autism, [and] damage to . . . homes.”<sup>16</sup> AFCL wants turbines sited in such a way that non-participants do not incur these costs.<sup>17</sup>

16. Dave Springer, the news director at KAAL, appeared on behalf of KAAL. KAAL has not participated in other Commission proceedings regarding wind farm permits. However, KAAL has become more concerned with increasing numbers of wind farms and increased complaints regarding problems with television signals. Mr. Springer acknowledged that KAAL has not tried to prove a connection between wind farms and problems with signals in the past. However, KAAL chose to participate in this docket to insure that its viewers in the project area, and in the town of Albert Lea, “do not lose reception as a result of this project.”<sup>18</sup>

17. KAAL’s main concern is over the air (OTA) signals. KAAL believes that those signals, which viewers receive through television antennae, can be affected by interference from wind farms. KAAL is particularly concerned about the distance between wind turbines and antennae, and what remedy is appropriate for any viewers whose reception might be affected by the Freeborn Wind project.<sup>19</sup> Mr. Springer stated that KAAL is concerned that its viewers may lose access to local news, weather, and school closing information. KAAL believes that satellite service is an insufficient remedy because it does not capture all local channels and it is vulnerable to interference from bad weather.<sup>20</sup> KAAL does not believe that adding antennae for viewers will fix the problem. KAAL requested that Freeborn Wind pay the cost for KAAL to construct a new signal tower, which would send the signal from another direction.<sup>21</sup> In addition, KAAL asked that Freeborn Wind underwrite the cost of a “door-to-door study to assess over-the-air reception within 20 kilometers of any wind turbine before and after the wind farm is constructed . . . .”<sup>22</sup>

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<sup>15</sup> *Id.* at 30.

<sup>16</sup> *Id.* at 31.

<sup>17</sup> *Id.*

<sup>18</sup> *Id.* at 33.

<sup>19</sup> *Id.* at 33-34.

<sup>20</sup> *Id.* at 34.

<sup>21</sup> *Id.* at 34-35.

<sup>22</sup> *Id.* at 35.

## II. PUBLIC COMMENTS

18. Approximately 163 members of the public attended the hearing<sup>23</sup> and 45 individuals spoke on the record.<sup>24</sup> All speakers were afforded a full opportunity to make a statement on the record and to ask questions. In addition to the oral comments, 34 exhibits were received as part of the public hearing record.<sup>25</sup>

### A. Speakers Opposed to Project

19. Linda Herman testified under oath on her own behalf, although she is affiliated with AFCL.<sup>26</sup> Ms. Herman, who resides in a suburb of Minneapolis, is an absentee landowner of property within the footprint of the Freeborn Wind project. The property in Freeborn County in which she has part ownership is a third-generation family farm, on which two of her siblings live.<sup>27</sup> Ms. Herman is concerned about a number of potential negative impacts from the Freeborn Wind turbines, including interference with OTA television, as well as radio, internet, cell telephone service, and interference with emergency communications. Ms. Herman is also concerned about the effect the turbines will have on human and animal health. She is aware of reports that people have suffered from headaches, sleeplessness, and other health issues as a result of the wind turbines' noise, infrasound, and shadow flicker.<sup>28</sup> In addition, Ms. Herman reported concerns about chickens laying soft-shelled or shell-less eggs, as well as impacts to wild bird and bat populations.<sup>29</sup> Ms. Herman stated she worries also about ice and snow being thrown from the turbine blades; the possibility of a turbine catching fire; property values decreasing near the wind turbines; and farmers being unable to perform aerial spraying because of the turbines.<sup>30</sup> Ms. Herman has doubts about how whether Xcel Energy will be responsive to complaints about the turbines or damages that occur during construction; is worried about maintenance of the turbines as they age; and decommissioning of the project once it is no longer in service.<sup>31</sup> Generally, Ms. Herman is concerned that the Freeborn Wind project will hurt the quality of life for people living within the footprint of the project. She testified that, in Denmark, the country where Vestas (the brand of turbine proposed in this project) the minimum setback is of 1,800 feet. Here, however, there is a turbine proposed to be as close as 1,189 feet from a residence in the Freeborn Wind project.<sup>32</sup>

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<sup>23</sup> Public Hearing Sign-In Sheet, Albert Lea, MN (Feb. 20, 2018).

<sup>24</sup> Public Hr'g Tr. at 2-3. The 45 individuals do not include representatives of parties, DOC-EERA, or Commission staff.

<sup>25</sup> *Id.* at 3-4.

<sup>26</sup> *Id.* at 44-50; see also Ex. P-4 (eDocket No. 20183-140950-04).

<sup>27</sup> Public Hr'g Tr. at 45.

<sup>28</sup> *Id.* at 49.

<sup>29</sup> *Id.* at 46.

<sup>30</sup> *Id.* at 47.

<sup>31</sup> *Id.* at 47-48.

<sup>32</sup> *Id.* at 48-49.

20. Brian Olson testified under oath on his own behalf. Mr. Olson lives on, and is part owner of, a family farm with land in Hayward and Shellrock Townships.<sup>33</sup> Mr. Olson is opposed to the Freeborn Wind project primarily because of concerns about wind turbine noise, and the health problems related to lack of sleep related to noise.<sup>34</sup> Mr. Olson is also concerned that the proximity of the turbines to residences will pose undue risks to health and safety from dangers such as ice chunks thrown from a spinning blade, turbine fires, or collapse. Mr. Olson shared others' concerns about impacts on birds and bats, communications interference, interference with agricultural aerial spraying, and reduced property values. Finally, Mr. Olson claimed that Freeborn Wind lacks adequate participating land to properly site the turbines and that a majority of people living within the project area do not want it built.<sup>35</sup>

21. Judy Olson testified under oath. Ms. Olson is affiliated with AFCL, but appeared on her own behalf. Ms. Olson is not opposed to wind turbines, but she does not think that the Freeborn Wind project is an appropriate place for them because the site is too heavily populated. There are 12 residences within a one-mile radius of Ms. Olson's home.<sup>36</sup> Ms. Olson shares many of the same concerns that others testified to during the public hearing, including sleep deprivation, interference with aerial spraying and seeding, impacts on OTA signals, noise pollution, and shadow flicker.<sup>37</sup>

22. Sue Madson testified under oath at the public hearing.<sup>38</sup> Ms. Madson is affiliated with AFCL, but spoke on her own behalf. Ms. Madson noted that she was "offered money" as part of the Freeborn Wind project, but that she turned down the offer.<sup>39</sup> She stated that there "has been pressuring and trespassing" going on in connection with the project.<sup>40</sup> Ms. Madson lives within the Freeborn Wind project area. She lives with her husband and grandson, and operates an in-home daycare. Freeborn Wind plans to site turbines to the north, northeast, south, southwest, and southeast of their home. The closest turbine is proposed to be 1,600 feet from their home.<sup>41</sup> Ms. Madson shares many of the concerns of some of her neighbors within the Freeborn Wind project footprint, including noise, low frequency noise, shadow flicker, television and other communications interference, construction vibration, impact on roads, danger to eagles and rivers, existence of bright flashing lights, possibility of ice throw, tornados, company responsiveness to concerns, and her daycare business "being in an industrial wind plant."<sup>42</sup> Ms. Madson is particularly anxious about health effects, and noise, given her in-home day care. Her home is located in a very quiet area, and she believes that she must be at least one-half mile from a turbine to be protected from most noise impacts. She believes she will also be subjected to about an hour of shadow flicker per day for months.

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<sup>33</sup> *Id.* at 54-55.

<sup>34</sup> *Id.* at 56-57.

<sup>35</sup> *Id.* at 57-59.

<sup>36</sup> *Id.* at 65.

<sup>37</sup> *Id.* at 66-68.

<sup>38</sup> *Id.* at 70; see also Ex. P-8 (eDocket No. 20183-140950-08).

<sup>39</sup> Public Hr'g Tr. at 70.

<sup>40</sup> *Id.* at 71.

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

She and the daycare children will not escape the shadow flicker during the day because she operates her daycare from her home.<sup>43</sup> She is also concerned about the impact of the turbine foundations on wells and water quality, and falling real estate value.<sup>44</sup> Ms. Madson does not believe that the economic benefits of the Freeborn Wind project will outweigh the concerns she and others have with the project. She believes the predictions of additional jobs in the area are exaggerated.<sup>45</sup>

23. Kathy Nelson testified under oath that “nearly 80 percent of the residents affected” by the Freeborn Wind project do not want the project for “varied reasons.”<sup>46</sup> Ms. Nelson stated that her small property “will be adversely affected by having turbines all around my home.”<sup>47</sup> Like others, Ms. Nelson is concerned for birds and wildlife and loss of peace and quiet at her home. She asserted that eight of the 42 turbines in the Freeborn Wind project are within three-quarters of a mile of her home, and that two of the closest, Turbines 40 and 41, are 1,700 and 2,500 feet from her house. She is also concerned about excessive shadow flicker, and television and internet reception.<sup>48</sup>

24. John Thisius testified regarding aerial application for crops within a wind farm.<sup>49</sup> Mr. Thisius has 39 years of aerial application experience and over 13,000 hours of agricultural aviation experience. Mr. Thisius stated that, while it is possible to treat crops on the outskirts of a wind facility, pilots cannot fly safely within a wind farm. According to Mr. Thisius, the turbulence, the moving blades, and problems with depth perception make flying within the perimeter of a wind farm too hazardous for Mr. Thisius and the pilots with whom he works.<sup>50</sup>

25. Sean Gaston spoke on behalf of his wife, Dr. Heidi Gaston. The Gastons will have seven turbines within about a mile of their home. Freeborn Wind has told them the sound modeling shows the turbine noise they hear will be at 45.3 decibels. Mr. Gaston asked whether Freeborn Wind’s sound modeling was based on best-case or worst-case scenarios. Freeborn Wind responded that the sound modeling was based on the worst-case (meaning the loudest sound) scenario.<sup>51</sup> The Gastons also had questions about the amount of shadow flicker they had been told to expect.<sup>52</sup> Freeborn Wind explained that a daily calendar showing up to 40 minutes of shadow flicker per day in June or July was a worst case scenario, but that a prediction of 22 hours, two minutes for the entire year was considered a realistic scenario (taking into account the time in which turbines are operational, operational direction of the turbines, and sunshine probabilities). Freeborn Wind stated that the realistic scenario it presented is conservative (worse than

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<sup>43</sup> *Id.* at 73.

<sup>44</sup> *Id.* at 74.

<sup>45</sup> *Id.* at 76.

<sup>46</sup> *Id.* at 85; *see also* Ex. P-9 (eDocket No. 20183-140950-09), Ex. AFCL-2 (AFCL Petition).

<sup>47</sup> Public Hr’g Tr. at 86.

<sup>48</sup> *Id.* at 86-88.

<sup>49</sup> *Id.* at 90.

<sup>50</sup> *Id.* at 90-91.

<sup>51</sup> *Id.* at 97-98.

<sup>52</sup> *Id.* at 93-95.

likely) because it assumes windows in every direction and no obstructions, such as trees or other buildings.<sup>53</sup>

26. Mike Hansen asked about two areas that appear to continue to require easements or agreements for collection lines to connect. Mr. Hansen stated that Mr. Litchfield from Freeborn Wind had told him the Applicant planned to use road right-of-way, which would require approval by the county and townships. Mr. Hansen believes that Freeborn Wind is not entitled to such approval because it is not a public service corporation.<sup>54</sup> Mr. Hansen also expressed concerns for eagle and bat safety generally, and specifically, regarding up to seven new eagle nests at five different locations.<sup>55</sup> Referencing the 2009 Minnesota Department of Health Report<sup>56</sup>, Mr. Hansen stated the Applicant's 1,000-foot setback is inadequate and should be changed to protect the health of landowners.<sup>57</sup>

27. Cheryl Hagen testified under oath.<sup>58</sup> Ms. Hagen and her husband own acreage in Hartland, Minnesota, within the Bent Tree wind farm. They are non-participants, but have 20 turbines within a mile of their home. The Hagens began to have difficulties with OTA television reception in 2010, before the Bent Tree wind farm went on line. Bent Tree offered to provide OTA coverage for the Hagen's for \$24 per month, but would have required them to sign a release of all claims for noise, radio frequency, and television interference. The Hagens declined the offer.<sup>59</sup> The Hagens have three turbines within a half-mile of their home. Ms. Hagen has had health issues with her ear since the turbines went on line. She has since retired and is at home much of the time, but struggles with low frequency noise. She and her husband have been told by her husband's doctor that they need to leave their home for the sake of their health.<sup>60</sup>

28. Bernie Hagen testified under oath. Mr. Hagen is married to Cheryl Hagen.<sup>61</sup> Mr. Hagen asserted that the Commission delayed the Bent Tree wind project in 2009 so it could "use the information from the Department of Health" in its permit decisions.<sup>62</sup> According to Mr. Hagen, the Commission ignored the Department of Health's recommendations in 2009 and has continued to do so since.<sup>63</sup> Mr. Hagen maintained that the Commission knew about his own health concerns in the Bent Tree wind farm case, and still allowed turbines to be sited within one-half mile of his home.<sup>64</sup> Mr. Hagen stated that he complained to the Commission about noise and health issues in 2011, and the Commission ordered outdoor audible noise testing, using equipment Mr. Hagen

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<sup>53</sup> *Id.* at 98-99.

<sup>54</sup> *Id.* at 103-104; *see also* Ex. P-10 (eDocket No. 20183-140950-10).

<sup>55</sup> Public Hr'g Tr. at 104-105.

<sup>56</sup> Ex. FR-6 at Schedule 7.

<sup>57</sup> Public Hr'g Tr. at 105.

<sup>58</sup> *Id.* at 108; *see also* Ex. P-11 (eDocket No. 20183-140951-01).

<sup>59</sup> Public Hr'g Tr. at 109.

<sup>60</sup> *Id.* at 111.

<sup>61</sup> *Id.* at 112.

<sup>62</sup> *Id.* at 113.

<sup>63</sup> *Id.*

<sup>64</sup> *Id.* at 113-14; *see also* Ex. P-11 (eDocket No. 20183-140951-01).

described as “visibly damaged.”<sup>65</sup> The Hagens’ attempts to work with the Commission and the operator of the Bent Tree wind farm have continued to be fruitless.<sup>66</sup>

29. Robert Van Pelt testified under oath on his own behalf. He is associated with AFCL.<sup>67</sup> He has lived on a four-acre property with his wife and four children since 2003. Mr. Van Pelt pointed out that a Berkley study regarding property values on which Freeborn Wind and DOC-EERA relied<sup>68</sup> was supported by the Department of Energy, and that Berkley hosts a renewable energy lab funded, in part, by Vestas, manufacturer of wind turbines. Mr. Van Pelt pointed out that the information on which DOC-EERA appears to have relied to conclude that a 2010 survey of six counties in southern Minnesota showed that “neither properties hosting wind turbines nor those adjacent to” them have been negatively affected does not support such a conclusion.<sup>69</sup> Mr. Van Pelt provided a number of studies to support his claim that property values are negatively affected by proximity to wind turbines.<sup>70</sup> Mr. Van Pelt suggested that the Applicant be required to provide a property value guarantee to landowners within three miles, or that the permit be denied.<sup>71</sup>

30. Wayne Brandt spoke about his concerns with the Freeborn Wind project. He focused on the language of the easement Freeborn Wind used.<sup>72</sup> Mr. Brandt expressed the following concerns with these paragraphs of the easement document:<sup>73</sup>

- 7.b. – Acquisition of interest:<sup>74</sup> any person or company from anywhere in the world could purchase the wind farm, including Iran.
- 9.c. – New Easement to Mortgagee:<sup>75</sup> if a new mortgagee is found, there would be no guarantee they would be required to purchase the old mortgage interest. Under 9.c. (iii), a new easement mortgagee would not have to assume burdens and obligations of the grantee.

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<sup>65</sup> Public Hr’g Tr. at 114.

<sup>66</sup> *Id.* at 114-115.

<sup>67</sup> *Id.* at 117. Ex. P-13.

<sup>68</sup> See Ex. EERA-8 (EERA’s Comments and Recommendations on a Preliminary Draft Site Permit (Dec. 5, 2017)), Ex. FR-9 at Schedules 4, 5 (MaRous Direct).

<sup>69</sup> Public Hr’g Tr. at 118-19; see Ex. EERA-8 (EERA’s Comments and Recommendations on a Preliminary Draft Site Permit at 13 (Dec. 5, 2017)); See *In the Matter of the Application of Paynesville Wind, LLC for a Large Wind Energy Conversion System (LWECS) Site Permit for the 95 MW Paynesville Wind Farm in Stearns County*, PUC Docket No. IP6830/WS-10-49, Stearns County Board of Commissioners Meeting, Stearns County Resolution #10-46 (June 8, 2010) (eDocket No. 20106-52067-01).

<sup>70</sup> See Ex. P-13 (eDocket Nos. 20183-140951-03, 20183-140951-04, 20183-140951-05, 20183-140951-06, 20183-140951-07, 20183-140951-08).

<sup>71</sup> Public Hr’g Tr. at 121-22.

<sup>72</sup> *Id.* at 133; see also Ex. P-14 (eDocket No. 20183-140951-09), Ex. FR-19 (Affidavit (Aff.) of Dan Litchfield and Freeborn Wind Easement Form).

<sup>73</sup> Public Hr’g Tr. at 133-35.

<sup>74</sup> Ex. P-14 at 10 (eDocket No. 20183-140951-09), Ex. FR-19 at 11 (Aff. of D. Litchfield and Freeborn Wind Easement Form).

<sup>75</sup> Ex. P-14 at 13 (eDocket No. 20183-140951-09), Ex. FR-19 at 14 (Aff. of D. Litchfield and Freeborn Wind Easement Form).

- 10.d. – Security for Removal of Windpower Facilities:<sup>76</sup> landowners should not have to be put in the position of having to remove the turbine and then go back to the grantee to try to recover removal costs, which are determined by the grantee “acting in good faith.”
- 11.b. – Confidentiality:<sup>77</sup> Mr. Brandt expressed suspicion about what Freeborn Wind wants to hide with its confidentiality clause, including payments made to individual landowners.

Mr. Brandt additionally stated he is concerned about Freeborn Wind leaving gravel roads in the fields, and questioned whether this company would live up to its promises, based on his understanding that other companies have not complied with representations to landowners.<sup>78</sup> Mr. Brandt is also concerned about migrating geese being killed by wind turbines, as well as impacts to nearby eagles’ nests.<sup>79</sup> Finally, Mr. Brandt related an incident when a tornado came near his farm. Had it not been for the warning he received through KAAL television, over the air, he might well have not gotten to safety in time.<sup>80</sup>

31. Clark Erickson testified under oath at the public hearing.<sup>81</sup> Mr. Erickson predicts that the cost to local people in terms of lost home sales, less new development, and loss of young buyers. Mr. Erickson believes the property costs will exceed any “boon” to the local economy brought by the Freeborn Wind project.<sup>82</sup> He shared the concerns of others about impacts on bats, wildlife, eagles, and other birds. He feels the Freeborn Wind project will destroy the quiet rural area he knows and loves.<sup>83</sup>

32. Michelle Severtson testified under oath at the public hearing.<sup>84</sup> Ms. Severtson is opposed to the Freeborn Wind project. She lives with her two children on a farm in Glenville that had belonged to her parents since 1964. Turbine 30 is proposed to be sited 1,680 feet from her front door and front bedroom window.<sup>85</sup> It is one of eight turbines proposed to be sited within one square mile of her home.<sup>86</sup> Ms. Severtson is especially concerned about one of her children, who has autism. Watching children throwing a baseball back and forth makes her child dizzy enough so that he no longer wants to play.<sup>87</sup> She is very concerned about the impact the turning blades of the turbine will have on him, as well as the impact of shadow flicker and the low

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<sup>76</sup> Ex. P-14 at 15 (eDocket No. 20183-140951-09), Ex. FR-19 at 16 (Aff. of D. Litchfield and Freeborn Wind Easement Form).

<sup>77</sup> Ex. P-14 at 16 (eDocket No. 20183-140951-09), Ex. FR-19 at 17 (Aff. of D. Litchfield and Freeborn Wind Easement Form).

<sup>78</sup> Public Hr’g Tr. at 136.

<sup>79</sup> *Id.* at 137.

<sup>80</sup> *Id.* at 138.

<sup>81</sup> *Id.* at 140; *see also* Ex. P-15 (eDocket No. 20183-140951-10).

<sup>82</sup> Public Hr’g Tr. at 140-41.

<sup>83</sup> *Id.* at 141-42.

<sup>84</sup> *Id.* at 145.

<sup>85</sup> *Id.* at 146-47.

<sup>86</sup> *Id.* at 151.

<sup>87</sup> *Id.* at 148.

frequency noise.<sup>88</sup> She is also concerned that the blinking lights on the towers right outside the bedroom windows will keep her family awake at night. For her autistic child, lack of sleep has especially dramatic repercussions in school. Ms. Severtson is aware that there are not many studies regarding the impacts of wind farms on people with autism.<sup>89</sup> She is concerned for her family's health and for her own health. Ms. Severtson believes she may need to sell her home and relocate to preserve her family's health. However, she does not believe she can receive full value for her home and land because of the turbines proposed to be built in close proximity to her property.<sup>90</sup> When Ms. Severtson asked Freeborn Wind to relocate the proposed Turbine 30 site, Freeborn Wind refused unless Ms. Severtson agreed to sign a Good Neighbor Agreement, which would require her to relinquish certain rights and agree not to say negative things about the Freeborn Wind project.<sup>91</sup>

33. Linda Goude did not testify, but she placed an exhibit into the public hearing exhibits, along with a note that she is opposed to the Freeborn Wind project.<sup>92</sup>

34. Dan Belshan testified under oath with several concerns about the Freeborn Wind project.<sup>93</sup> Mr. Belshan is a Freeborn County Commissioner.<sup>94</sup> Mr. Belshan was concerned about the eagle population, which he stated is doing well in the Albert Lea, Glenville, and Myrtle areas. He discussed the Pleasant Valley Wind Farm where, Mr. Belshan maintained, the DNR provided Xcel Energy with a permit to destroy all of the eagle habitat within the wind farm. He is concerned that a similar situation will occur on the Freeborn Wind project.<sup>95</sup> Mr. Belshan also questioned the proposed placement of Freeborn's Operations and Maintenance (O & M) building, which is considered a commercial building in a location that is zoned for agricultural use.<sup>96</sup> Mr. Belshan requested that the required setbacks be increased to protect people who do not support the wind farm from unwanted noise and shadow flicker.<sup>97</sup> Mr. Belshan maintained that the Applicant should be required to run digital fiber to every home and business in every neighborhood.<sup>98</sup> Finally, Mr. Belshan requested an independent sound consultant not paid for by Invenergy or Excel Energy.<sup>99</sup>

35. Becky Tews of Glenville, Minnesota, spoke against the Freeborn Wind project. She spoke about how the Freeborn Wind project has disturbed the peaceful way of life in London Township, dividing neighbor against neighbor, and church congregations. Ms. Tews is concerned that the turbines will "scar the landscape" with their "[b]linking red

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<sup>88</sup> *Id.*

<sup>89</sup> *Id.* at 149.

<sup>90</sup> *Id.* at 151.

<sup>91</sup> *Id.* at 146-47.

<sup>92</sup> *Id.* at 155; see also Ex. P-16 (eDocket No. 20183-140952-01).

<sup>93</sup> Public Hr'g Tr. at 155.

<sup>94</sup> *Id.* at 158.

<sup>95</sup> *Id.* at 156-57.

<sup>96</sup> *Id.* at 157-58.

<sup>97</sup> *Id.* at 159.

<sup>98</sup> *Id.*

<sup>99</sup> *Id.* at 160.



lights visible for 30 miles, flickering shadows, inescapable hum and vibration . . . lowering property values.” Ms. Tews stated that elected officials and community leaders chose money over people in welcoming the Freeborn Wind project.<sup>100</sup> She echoed Mr. Belshan’s fear that, if eagles build nests within the footprint of the wind farm, Xcel Energy will get a permit to destroy their nests.<sup>101</sup>

36. Jennifer Szymeczek spoke in opposition to the Freeborn Wind project.<sup>102</sup> Her property will be one-half mile from a turbine in the proposed wind farm. She is concerned about health issues and property values.<sup>103</sup> She submitted articles concerning the debate about whether wind turbines cause health problems and articles stating that turbines cause property values to decrease.<sup>104</sup> Ms. Szymeczek maintains that Invenergy should be required to protect every landowner with a property value guarantee, which is 100 percent of the assessed value of the property before the wind farm was built.<sup>105</sup>

37. Bonita Belshan testified under oath against the Freeborn Wind project. Ms. Belshan is not part of AFCL.<sup>106</sup> She and her husband originally signed up to participate in the project, but their original contract expired. In the meantime, they spoke with people who raised questions about wind farms. One issue is the amount of large cement that goes into the ground to build the turbines. Another problem she raised is the cranes used to put the turbines up will crush agricultural drain tile. The Belshans also heard about a man representing Freeborn Wind who had lied to landowners and trespassed in order to get people to sign easements or other agreements. Because of these concerns, the Belshans did not renew their agreement with Freeborn Wind.<sup>107</sup> Ms. Belshan also expressed concerns for internet connections and eagles.<sup>108</sup>

38. Allie Olson testified under oath against the granting of a site permit for the Freeborn Wind project.<sup>109</sup> Ms. Olson first recommended lowering the sound limit by 10 decibels for rural settings. She also asked for more restrictive siting distances.<sup>110</sup> Ms. Olson quoted a World Health Organization (WHO) report that includes in its definition of “health” “a state of complete physical, mental, and social well-being . . .” and “not merely the absence of disease or infirmity.” Based on this definition, Ms. Olson argues that “a high level of annoyance caused by environmental noise is considered as one of the environmental health burdens and, thus, taken into account when estimating the health effects of noise.” Ms. Olson proposes denying the site permit.<sup>111</sup> Ms. Olson provided a number of articles, letters, and papers showing wind turbine failures, oil leaks, and health

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<sup>100</sup> *Id.* at 161-62.

<sup>101</sup> *Id.* at 162-63.

<sup>102</sup> *Id.* at 166; see also Ex. P-17 (eDocket No. 20183-140952-02).

<sup>103</sup> Public Hr’g Tr. at 166.

<sup>104</sup> Ex. P-17 (eDocket No. 20183-140952-02).

<sup>105</sup> Public Hr’g Tr. at 166-67.

<sup>106</sup> *Id.* at 168.

<sup>107</sup> *Id.* at 169-70.

<sup>108</sup> *Id.* at 172-73.

<sup>109</sup> *Id.* at 174.

<sup>110</sup> *Id.* at 175.

<sup>111</sup> *Id.* at 176-77.

effects of wind turbines, including statements criticizing the Massachusetts study of wind turbine health effects in which Freeborn Wind's expert, Dr. Ellenbogen, participated.<sup>112</sup>

39. Marie McNamara spoke in opposition to the Freeborn Wind project. McNamara was previously involved with the Goodhue Wind project and has been learning about wind energy ever since that time.<sup>113</sup> Ms. McNamara referred to the "best practices" and "promising practices" standards set out in the 2012 Massachusetts Department of Environmental Protection study.<sup>114</sup> She stated that Minnesota needs a distance standard to assure the limits expressed in the study. In addition, Ms. McNamara urged that low frequency noise be added to the standards. She pointed out that, in the Clay County Lakeswind project, residents were provided with a half-mile setback. She encouraged the Administrative Law Judge and the Commission to consider the authority, pursuant to Minn. Stat. § 216F.04 and Minn. R. 7836.1000, to provide more generous setbacks than Freeborn Wind is proposing.<sup>115</sup> Ms. McNamara also requested that the Administrative Law Judge address the Commission's complaint process.<sup>116</sup>

40. Kristi Rosenquist of Mazeppa, Minnesota, spoke at the public hearing.<sup>117</sup> Ms. Rosenquist has been actively involved in issues concerning wind farms since 2010.<sup>118</sup> She pointed out that the Pollution Control Agency's (PCA) rule used to set the noise standards for wind farms, Minn. R. part 7030, was not designed to apply to wind turbines. Among other things, Minn. R. part 7030 does not apply to low frequency sound (infrasound). Furthermore, according to Ms. Rosenquist, the Commissioner of the PCA has consulted with the Departments of Health (MDH) and Commerce (DOC) to conclude that "the current understanding of wind turbine noise and its potential effects is insufficient to support rulemaking."<sup>119</sup> Ms. Rosenquist mentioned that the MDH has said that low frequency sound may affect some people in homes, especially at night. But there have been no health studies in Minnesota regarding the effects of low frequency noise from turbines of which she is aware. Ms. Rosenquist is aware that the most common complaints are sleeplessness and headaches. Ms. Rosenquist maintained that Minnesota's nighttime noise standard does not account for the penetration of low frequency sound in dwellings. Furthermore, this kind of sound is less attenuated by distance. Ms. Rosenquist asserted that there are fewer problems when the turbines are at least one-half mile away from the home.<sup>120</sup> Ms. Rosenquist claims that the MDH was asked to update their 2009 study, but have not done so. In addition, according to Ms. Rosenquist, the Commission promised, at a 2010 hearing, that the Commission would address low frequency noise at all future wind turbine siting cases, but that has not

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<sup>112</sup> Ex. P-19 (eDocket No. 20183-140952-04); see Ex. FR-6 at Schedule 6 (Roberts Direct).

<sup>113</sup> Public Hr'g Tr. at 187; Exs. P-20 (eDocket No. 20183-140952-05), P-27A thru P27H (eDocket No. 20183-140953-02).

<sup>114</sup> Ex. FR-6 at Schedule 6 at 79-81 (Roberts Direct).

<sup>115</sup> Public Hr'g Tr. at 190-92.

<sup>116</sup> *Id.* at 193-94.

<sup>117</sup> *Id.* at 197; see also Ex. P-22 (eDocket No. 20183-140952-07).

<sup>118</sup> Public Hr'g Tr. at 198.

<sup>119</sup> *Id.* at 199.

<sup>120</sup> *Id.* at 200.

been done.<sup>121</sup> Ms. Rosenquist advised that Minn. R. part 7030 should not be the standard used in this case, that a different standard “that makes sense” should be applied.<sup>122</sup> Even if the Minn. R. part 7030 standard is applied, Ms. Rosenquist argued that it is being applied incorrectly because the measurement is being taken from the center pole of the turbine rather than the end of the blades, which also are a source of noise. In addition, Ms. Rosenquist states an additional 500 feet must be added to the distance.<sup>123</sup>

41. Jacob Schumacher spoke in opposition to the Freeborn Wind project.<sup>124</sup> He is a nonparticipating landowner. There is a proposed turbine 1,340 feet from his property line. He lives with his wife and two children. They have horses, cattle, and chickens. They purchased the property just a little over two years ago, not knowing anything about the location of the proposed turbine.<sup>125</sup> Mr. Schumacher had a very difficult time getting information about where the turbine was to be located, and actually found out only when Freeborn Wind “trespassed” on his property, marked the location, and drilled there.<sup>126</sup> Mr. Schumacher is concerned about shadow flicker generally, although that will not affect his family because the turbine is to the north of his home. Mr. Schumacher has worked for a green energy company for years and supports it generally, but his concerns in this situation are health and safety concerns. He believes the setbacks are not healthy or safe. He has spoken with contractors who have left job sites over 1,500 feet from a turbine and still had flying ice from the turbine hit the building they were working on. He has spoken with bankers about his property and has been told his property would lose value significantly with the turbine in place.<sup>127</sup>

42. Lisa Hajek of Glenville, Minnesota, testified under oath at the public hearing, opposing the Freeborn Wind project.<sup>128</sup> Ms. Hajek asserted that Invenergy “has continued to be deceptive to the public regarding the project, specially relating to them having all necessary land rights . . . for the siting permit and for the transmission line project.”<sup>129</sup> Ms. Hajek raised the issue of the Freeborn Wind agent who lied to residents, claiming Invenergy has told those residents they have no recourse.<sup>130</sup> Ms. Hajek also questioned whether the claimed economic benefits apply to the Minnesota portion of the Freeborn Wind project only, or to the entire project, including the Iowa portion. She stated Invenergy has been unwilling to provide a breakdown of their numbers to show Minnesota-only impacts.<sup>131</sup> Ms. Hajek raised the concerns of shadow flicker, noise, wildlife, and waterways, invoking the issues that have arisen with Bent Tree Wind Farm

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<sup>121</sup> *Id.* at 201.

<sup>122</sup> *Id.* at 202.

<sup>123</sup> *Id.*

<sup>124</sup> *Id.* at 207; see also Ex. P-23 (eDocket No. 20183-140952-08).

<sup>125</sup> Public Hr’g Tr. at 207.

<sup>126</sup> *Id.* at 208.

<sup>127</sup> *Id.* at 209.

<sup>128</sup> *Id.* at 210; see also Ex. P-24 (eDocket No. 20183-140952-09).

<sup>129</sup> Public Hr’g Tr. at 211.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.* at 211-12.

and Big Blue. She asked that continued “experimentation” with wind farms not be imposed on Freeborn County.<sup>132</sup>

43. Stephanie Richter of Glenville, Minnesota, testified under oath at the public hearing.<sup>133</sup> Ms. Richter lives in the footprint of the proposed Freeborn Wind project. She and her husband have lived on “a perfect piece of paradise in the country” for about 12 years, after having raised a family in a small town. She is concerned about what the turbines in the area will do to the value of their property in the next 20 years. She looked at properties in the Bent Tree Wind Farm area and five miles away from it. She found that many properties declined in value from 2014 to 2017. She asked strangers, randomly, at local grocery store parking lots and a retail store, “If you were going to purchase a home in the country, would it make any difference to you if it was located in a wind farm?”<sup>134</sup> Twelve people answered yes and nine answered no. Of the nine who said no, three had family members working in the wind industry. Ms. Richter posted the question on Facebook, where she got 127 responses -- 112 said yes, it would matter, while 15 said it would not.<sup>135</sup> Ms. Richter is aware of expert articles on both sides, but it appears to her that the farther away from a turbine one is, the less of an impact it has.<sup>136</sup> Lower property values mean lower property taxes.<sup>137</sup> Ms. Richter would like to see a property value guarantee with the site permit, if it is granted.<sup>138</sup> Ms. Richter provided a flash drive with video of shadow flicker on it.<sup>139</sup> She asserted that “[t]he consensus among acoustic and health experts is that a safe setback is at least 6,600 feet to 1.24 miles.”<sup>140</sup> Ms. Richter provided statements from five additional residents regarding their concerns about losing OTA coverage. Ms. Richter’s family uses only OTA coverage as well. Ms. Richter’s recommendations for the site permit are: (a) a half-mile setback requirement; (b) a maximum of two wind turbines around a nonparticipating homeowner’s property; and (c) a property value guarantee.<sup>141</sup>

44. Gen Davis of Glenville, Minnesota, spoke at the public hearing. Mr. Davis lives in the footprint of the Freeborn Wind project and is a member of AFCL.<sup>142</sup> He relies on OTA television. He originally signed an agreement to participate in the project, but did not sign up again, even when offered more money. Now he is within one-half mile of a windmill on both sides of his farm.<sup>143</sup> He was encouraged to sign up so his neighbors, who do not live in Freeborn County, could get windmills. Mr. Davis said that only a few

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<sup>132</sup> *Id.* at 212-13.

<sup>133</sup> *Id.* at 213; see also Ex. P-25 (eDocket No. 20183-140952-10), Ex. P-26 (eDocket No. 20183-140953-01).

<sup>134</sup> Public Hr’g Tr. at 215.

<sup>135</sup> *Id.* The exact question Richter posted was “If you were going to buy a home in the country, would it make a difference in your decision if the home was surrounded by wind turbines?” Ex. P-26 at 3 (eDocket No. 20183-140953-01).

<sup>136</sup> Public Hr’g Tr. at 216-17.

<sup>137</sup> *Id.* at 217.

<sup>138</sup> *Id.* at 217-18.

<sup>139</sup> Ex. P-25 (eDocket No. 20183-140952-10).

<sup>140</sup> Public Hr’g Tr. at 219.

<sup>141</sup> *Id.* at 219-20.

<sup>142</sup> *Id.* at 231.

<sup>143</sup> *Id.*

people who live there are actually participating landowners. Most of the people in the footprint of the proposed Freeborn Wind project have lived there for a long time. Mr. Davis reiterated that those who live within the footprint are concerned by noise and health issues.<sup>144</sup>

## B. Speakers in Support of Project

45. Merlin Bartz, a county supervisor in Worth County, Iowa, spoke at the public hearing.<sup>145</sup> Mr. Bartz spoke both as a county supervisor and as a farmer with turbines property that he farms. The Iowa portion of the Freeborn Wind project would mostly be in the district Mr. Bartz represents as a county supervisor. According to Mr. Bartz, Worth County, Iowa already hosts 229 wind turbines, “which contribute close to \$172 million in assessed valuation to [the] county’s tax base.”<sup>146</sup> In addition to the property tax base value, the turbines have provided jobs and related business opportunities, “including a major offload intermodal transportation facility in Manly, Iowa and multiple industry maintenance businesses” working with wind farms throughout the Midwest.<sup>147</sup> Several counties in Iowa are utilizing tax increment financing based on the valuation of wind turbines in their county to finance needed infrastructure projects.<sup>148</sup> Mr. Bartz acknowledged that he has to “farm around the base of the turbine with [his] farm equipment.”<sup>149</sup> During construction, there were drainage, compaction, and drain tile issues. In addition, a turbine burned on Mr. Bartz’s property and there were debris recovery concerns. Nonetheless, Mr. Bartz believes that the benefits of the wind turbines outweigh the problems that they have presented. In addition to increased property valuations, Mr. Bartz noted that the inter-turbine road system helps with field access, and that the cash payment of \$10,000 per year for a half-acre on which the turbine sits is helpful for cash flow. Lending institutions view a turbine on the property as an asset.<sup>150</sup>

46. Gregg Mast spoke on behalf of Clean Energy Economy Minnesota in strong support of the Freeborn Wind project. Mr. Mast grew up about 30 miles from Albert Lea and values the economic opportunity that the Freeborn Wind project offers.<sup>151</sup> In addition, he supports the project because it would “help to further diversify our state’s power generation mix . . . to one that is even more clean, more affordable, and increasingly flexible and resilient . . . .”<sup>152</sup> Mr. Mast asserted that it is important to signal to companies and their investors “that Minnesota is indeed open to clean energy business . . . .”<sup>153</sup> Mr. Mast emphasized that the Freeborn Wind project will strengthen the Minnesota wind industry and the associated career opportunities. He stated, “The job of wind turbine

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<sup>144</sup> *Id.*

<sup>145</sup> *Id.* at 36-41; see also Ex. P-2 (eDocket No. 20183-140950-02).

<sup>146</sup> Public Hr’g Tr. at 37.

<sup>147</sup> *Id.*

<sup>148</sup> *Id.* at 37-38.

<sup>149</sup> *Id.* at 38.

<sup>150</sup> *Id.* at 38-39.

<sup>151</sup> *Id.* at 42; see also Ex. P-3 (eDocket No. 20183-140950-03).

<sup>152</sup> Public Hr’g Tr. at 42-43.

<sup>153</sup> *Id.* at 43.

technician is the second fastest growing occupation in the U.S., with jobs expected to double over the coming decade,” according to the U.S. Bureau of Labor Statistics.<sup>154</sup>

47. Kipp Hardison testified under oath, on his own behalf. Mr. Hardison testified in support of the Freeborn Wind project.<sup>155</sup> Mr. Hardison supports wind energy because it is clean, free, and renewable energy. It benefits the farmer, whose crops often cannot support them, and benefits the county as well. Mr. Hardison does not believe that science supports many of the predictions about the negative effects of wind farms.<sup>156</sup> Mr. Hardison stated that the majority of people in Freeborn County support the Freeborn Wind project and only a small, vocal minority oppose what is a unique opportunity that makes “good economic sense.”<sup>157</sup>

48. Susanne Crane spoke at the public hearing.<sup>158</sup> Ms. Crane is a commercial property and business owner in Freeborn County who supports the Freeborn Wind project because the project “is of great consequence economically” for the region.<sup>159</sup> Ms. Crane acknowledged that change is difficult for many people, and compared peoples’ responses to the new look of wind turbines to the revolutionary look of the Eiffel Tower, which was once considered such an eyesore that it could cause mental illness. As an artist, Ms. Crane finds wind turbines “awe inspiringly beautiful in form and color.”<sup>160</sup>

49. John Forman spoke at the public hearing in favor of the Freeborn Wind project. Mr. Forman supports the project for the environmental reasons that others do, but also because of the economic opportunities that the project presents, including an opportunity for townships to be able to pay for their own roads, including maintenance and equipment.<sup>161</sup> Mr. Forman also sees the Freeborn Wind project as a source of local jobs. According to Mr. Forman, a local company called Alamco Wood Products, a manufacturer of large wood beams, began about 10 to 15 years ago to make power poles. During those years, about 70 percent of Alamco’s poles were going to wind farm production. A number of similar wood products companies that did not make a parallel production shift went out of business, whereas Alamco has expanded.<sup>162</sup>

50. Ray Rauenhorst spoke at the public hearing in support of the Freeborn Wind project.<sup>163</sup> Mr. Rauenhorst lives in Easton, Minnesota, in the county just to the west, in Faribault County. A former Marine, Mr. Rauenhorst also flew with the South Dakota Air Guard and was an agricultural pilot who performed aerial applications for about 20 years, doing extensive spraying in Freeborn County daily.<sup>164</sup> His farm is “at ground zero for a

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<sup>154</sup> *Id.* at 43-44.

<sup>155</sup> *Id.* at 50; *see also* Ex. P-5 (eDocket No. 20183-140950-05).

<sup>156</sup> Pub. Hr’g Tr. at 51-52.

<sup>157</sup> *Id.* at 53-54.

<sup>158</sup> *Id.* at 60; *see also* Ex. P-7 (eDocket No. 20183-140950-07).

<sup>159</sup> Public Hr’g Tr. at 60.

<sup>160</sup> *Id.* at 60-61.

<sup>161</sup> *Id.* at 61-62.

<sup>162</sup> *Id.* at 62-64.

<sup>163</sup> *Id.* at 77.

<sup>164</sup> *Id.* at 77-78.

200 megawatt wind farm coming up in Faribault County.”<sup>165</sup> Mr. Rauenhorst sees the wind farm as a source of electrical energy for the country,<sup>166</sup> and a source of financial security for his family.<sup>167</sup> Mr. Rauenhorst was aware of the negative comments about wind farms, so he visited several himself to see how noisy they were. He did not personally find them noisy. He had conversations with a business owner and two residents in close proximity to turbines on three different wind farms. None of them had complaints about noise from the wind turbines.<sup>168</sup>

51. Sharon Rauenhorst spoke in support of the wind farm. Ms. Rauenhorst has been farming in Faribault County since 1970. She described how her own farm has changed since she began farming, including how there are “four or five hog buildings all around our farm, and we put up with manure and the smell, and we never thought anything of it because it’s part of farming.”<sup>169</sup> Ms. Rauenhorst recounted how a neighbor had installed irrigation, resulting in others having to put in new wells. She continued:

I do feel like if you come out in the farming community, you can’t control if your neighbor puts up a hog building or if your neighbor puts up huge bins you can’t see over, a grain dryer that makes a lot of noise. And I feel like the turbines that are coming out this day and age are a part of modernization. There isn’t anything we use that doesn’t take more electricity, whether it’s on our farms for energy, whether it’s the new homes we build.<sup>170</sup>

52. Richard Carroll testified under oath in support of the Freeborn Wind project. Carroll lives and farms just inside Mower County, close to Albert Lea. He believes the economic benefits of the wind farm would help stabilize the farm economy and alleviate high local taxes.<sup>171</sup>

53. Marjory Hamersly spoke in support of the Freeborn Wind project. She lives on the Hamersly family farm in Shellrock Township, as she has for most of her life, and is very familiar with the local economy.<sup>172</sup> Ms. Hamersly was the leader of United Way of Freeborn County for 18 years. She was also the executive director of the Albert Lea Freeborn County Chamber of Commerce for three years, and she is aware of the need in the area for economic development.<sup>173</sup> Ms. Hamersly sees the wind farm as a “great opportunity to increase the county’s tax base” for the long term. In addition, Ms. Hamersly believes it would demonstrate to potential investors that the county “is truly interested in having them invest and locate here.”<sup>174</sup>

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<sup>165</sup> *Id.* at 78.

<sup>166</sup> *Id.*

<sup>167</sup> *Id.* at 79.

<sup>168</sup> *Id.* at 80-81.

<sup>169</sup> *Id.* at 92.

<sup>170</sup> *Id.*

<sup>171</sup> *Id.* at 106.

<sup>172</sup> *Id.* at 116; see also Ex. P-12 (eDocket No. 20183-140951-02).

<sup>173</sup> Public Hr’g Tr. at 116.

<sup>174</sup> *Id.*

54. Gordan Goude spoke at the public hearing. Mr. Goude is a landowner who lives about a mile from proposed Turbine 25.<sup>175</sup> After first stating his general support for wind energy, Mr. Goude asked Freeborn Wind's representative, Mike Hankard, to provide examples of equivalent sounds to the 50-decibel limit assigned as the maximum noise level allowed for a wind turbine.<sup>176</sup> Mr. Hankard stated that "two people talking at three feet is about 60 [decibels]. The age-old refrigerator is 40 decibels." Further, Mr. Hankard explained that the ambient noise level in the project area on a calm night, with no turbines, is 20 to 30 decibels. On a windy night, the level could get as high as 55 decibels from the wind alone. So at times, depending on the wind, the turbines will be audible, and at other times, the wind will be far louder than the turbines.<sup>177</sup> Mr. Goude asked who is responsible for decommissioning costs.<sup>178</sup> Dan Litchfield answered on behalf of Freeborn Wind that the Applicant expects the site permit will include a condition requiring Freeborn Wind to provide assurance for decommissioning.<sup>179</sup> Finally, Mr. Goude asked who should be contacted in the event that television reception is interrupted.<sup>180</sup> Mr. Litchfield responded that the project contact would be the person who would initiate an evaluation and necessary repair or reception restoration service.<sup>181</sup>

55. Liova Forman spoke in support of the Freeborn Wind project. Ms. Forman asserted that there are thousands of Freeborn County residents who were not present at the hearing. She indicated that the majority of those residents support the Freeborn Wind project. Ms. Forman believes that supporting the wind farm will benefit the county and other energy users.<sup>182</sup>

56. John Hunter spoke on behalf of the American Lung Association in Minnesota. Mr. Hunter spoke to the air quality benefits of the renewable energy aspects of the Freeborn Wind project.<sup>183</sup> While Minnesota is considered a place with generally good air, Hunter pointed out that the EPA's standards are not as protective as the American Lung Association has recommended. In certain locations, including Rochester, St. Paul, and Marshall, the air exceeds the American Lung Association's recommended standards for ozone and health standards.<sup>184</sup> Mr. Hunter stated that projects like the Freeborn Wind project help to avoid the use of fossil fuels, which helps to protect the air quality. Mr. Hunter pointed to Freeborn Wind's Application, which says the project will help avoid the use of coal that would "produce 8,700 tons of [nitrogen oxide (NO<sub>x</sub>)] emissions, and tons of particulates . . . ."<sup>185</sup> These are pollutants that would otherwise be

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<sup>175</sup> *Id.* at 123.

<sup>176</sup> *Id.*

<sup>177</sup> *Id.* at 123-25

<sup>178</sup> *Id.* at 125.

<sup>179</sup> *Id.*

<sup>180</sup> *Id.* at 126.

<sup>181</sup> *Id.* at 126-27.

<sup>182</sup> *Id.* at 127.

<sup>183</sup> *Id.* at 128.

<sup>184</sup> *Id.*

<sup>185</sup> *Id.* at 129.



difficult to reduce, according to Mr. Hunter. Mr. Hunter added that ozone hurts crop yields. Thus, reducing ozone will help crop yields.<sup>186</sup>

57. Ron Davidson spoke in support of the Freeborn Wind project.<sup>187</sup> Mr. Davidson lives in Worth County, Iowa, but farms in Freeborn County as well, and he owns property in both places. Mr. Davidson thinks wind farms are “a great fit” with farms. He has seen the economic benefit to the farm economy in Iowa and believes it will help Freeborn County as well.<sup>188</sup>

58. Thomas Martinez spoke in support of the Freeborn Wind project.<sup>189</sup> Mr. Martinez is a candidate for House District 27A in Freeborn County and lives in Hayward, Minnesota. He is an environmentalist who supports sustainable energy that is produced locally, and he is a proponent of sustainable agriculture. He believes that payments by Freeborn Wind to the landowners will “act as a buffer against the volatile nature of crop yield and market fluctuations as we convert to a new greener economy.”<sup>190</sup> As the parent of children, Mr. Martinez values the support the schools will get from increased property tax revenue as a result of the wind farm.<sup>191</sup>

59. John Schipper spoke in favor of the Freeborn Wind project. He owns Schipp’s Pro Power Wash on the edge of Albert Lea. He supports the wind farm because of the revenue that turbines generate. As a business owner, Mr. Schipper sees the Freeborn Wind project as a revenue generator. Mr. Schipper asserted that the Freeborn Wind project will generate a dozen jobs for workers for his company to work for the project.<sup>192</sup>

60. Bill Gillen spoke in support of the project. He lives in Glenville, Minnesota, and is a landowner and participant. He also spoke for three of his landlords: Judy Funfair, of Cedar Rapids, Iowa; Meg Nielson, of Madison, Wisconsin; and Marjorie Antwerp, of Albert Lea, Minnesota, all of whom are landowners and participants.<sup>193</sup> Mr. Gillen works for Good Steward Consulting, which works for Invenergy, but he was a supporter of the project before he went to work for Good Steward Consulting.<sup>194</sup>

61. Paul Follmuth of Northland, Iowa spoke in support of the Freeborn Wind project.<sup>195</sup> Mr. Follmuth lives in the middle of a farm in Barton Township, with four windmills one-half mile from his house, eight windmills three-quarters of a mile from the house, and 12 windmills a mile from his house. Mr. Follmuth has experienced no negative effects from the windmills. He hears the windmills if the wind is blowing hard, but he

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<sup>186</sup> *Id.* at 129-30.

<sup>187</sup> *Id.* at 142.

<sup>188</sup> *Id.* at 142-43

<sup>189</sup> *Id.* at 143.

<sup>190</sup> *Id.* at 143-44.

<sup>191</sup> *Id.* at 144.

<sup>192</sup> *Id.* at 163-64.

<sup>193</sup> *Id.* at 165.

<sup>194</sup> *Id.*

<sup>195</sup> *Id.* at 180.

does not call them noisy.<sup>196</sup> He has bald eagles roosting in the trees around his home and has seen golden eagles, along with a number of other kinds of birds, in the wind farm itself, with no ill effects. He sees many bald eagles in London Township and crossing the Shellrock River to and from Glenville each day. He is not concerned for the eagles. Nor is he worried about bats. The wind farm uses aerial spraying for agriculture and the pilot is able to spray about 160 acres in 40 minutes.<sup>197</sup> Mr. Follmuth supports wind energy as a way for the United States becoming energy independent.<sup>198</sup>

62. Beth Soholt is the Executive Director of Wind on the Wires, a regional renewable energy advocacy organization based in St. Paul, Minnesota. Ms. Soholt spoke on behalf of Wind on the Wires.<sup>199</sup> According to Ms. Soholt, the Freeborn Wind project is part of a shift to renewable energy taking place across the United States. Ms. Soholt reported that the American Wind Energy Association stated that “over 7,000 megawatts of wind power was completed in 2017, representing \$11 billion of private investment in rural communities and states.”<sup>200</sup> Ms. Soholt pointed out that new wind farms employ factory and construction workers, and bring revenue to landowners and farm communities. The primary reason that Minnesota is moving to wind energy is because it is economical. Ms. Soholt stated that the Freeborn Wind project will help Xcel Energy reach its goal of 85 percent carbon-free generation by 2030.<sup>201</sup> Ms. Soholt maintained that there is a strong demand for renewable energy, and that Minnesota, and its communities, are well-situated to be able to meet that demand. Minnesota and its neighbors have excellent wind resources and transmission lines to get the power to market. Therefore, Ms. Soholt encouraged approval of the site permit.<sup>202</sup>

63. Jennifer Vogt-Erickson did not testify, but she offered an exhibit into the public hearing record. She indicated that she is in support of the proposed Freeborn Wind project.<sup>203</sup>

64. Elisha Marin spoke in support of the Freeborn Wind project.<sup>204</sup> Mr. Marin is an educator and an artist concerned about the future. He sees renewable clean energy as an integral part of his vision for a better future with responsible, sustainable energy solutions. As an artist, Mr. Marin sees beauty in wind farms. As a resident of Freeborn County, he cares about the economic impact of the Freeborn Wind project. Mr. Marin believes that Freeborn County needs the tax revenue and infrastructure improvements the Freeborn Wind project will bring in order to survive as a community.<sup>205</sup>

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<sup>196</sup> *Id.*

<sup>197</sup> *Id.* at 180-82.

<sup>198</sup> *Id.* at 182-83.

<sup>199</sup> *Id.* at 183.

<sup>200</sup> *Id.* at 184.

<sup>201</sup> *Id.* at 185.

<sup>202</sup> *Id.* at 185-86.

<sup>203</sup> *Id.* at 197; see also Ex. P-21 (eDocket 20183-140952-06).

<sup>204</sup> Public Hr'g Tr. at 204-05.

<sup>205</sup> *Id.* at 206.

65. Mariah Lynne, a resident of Hartland, Minnesota, spoke on her own behalf. Ms. Lynne is a paid local consultant doing public outreach for Invenergy for the Freeborn Wind project. However, she spoke at the public hearing on her own time and at her own initiative.<sup>206</sup> Ms. Lynne talked about how farming has changed over the years. She was born and raised in the Freeborn County area, but lived in the Twin Cities for a time. In 2009, she and her husband purchased a farm that had been built by her husband's grandfather. Since they moved to the farm, the landscape around them has changed, including the addition of a 100-plus turbine wind farm, with the nearest turbine 1.47 miles from their home; an anhydrous transfer station at the end of their quarter-mile long driveway; and a hog barn about one-mile south of their home.<sup>207</sup> Ms. Lynne sees the generation of power as another crop that farmers can raise to meet the needs of their own families and the society they live in. Having been around the Bent Tree Wind Farm for some years, she supports the wind farm.<sup>208</sup> Ms. Lynne has experienced the economic benefit of working with Invenergy, which terminated its contract with an out-of-state provider of public outreach and communication services, and hired Ms. Lynne's local business instead. She has added staff members to handle the work. Ms. Lynne supports the Freeborn Wind project because it presents economic benefits from wind energy in her community.<sup>209</sup> Ms. Lynne also supports the Freeborn Wind project because, as a Minnesotan, she supports the state's renewable energy goals. She believes "it is up to us to meet our own needs."<sup>210</sup>

66. Katie Pestorious, a resident of Albert Lea, Minnesota, spoke on her own behalf. Ms. Pestorious is a paid local subcontractor doing public outreach for Invenergy for the Freeborn Wind project. However, she spoke at the public hearing, not at Invenergy's request, but on her own time and at her own initiative.<sup>211</sup> Ms. Pestorious went to work for the project after having traveled to the World Expo on Future Energy last summer. There, she learned how much further advanced many countries are than the United States with renewable energy. On her return here, Ms. Pestorious was surprised to learn of the strong opposition in Freeborn County to the Freeborn Wind project. She recalled that people were also opposed in the 1990s to the local ethanol plant, in which Ms. Pestorious' family is highly invested. Ms. Pestorious stated that the ethanol plant has done much to help the local economy and community. She supports the Freeborn Wind project because she believes it is what the country, state, and county need for the future.<sup>212</sup>

**L. S.**

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<sup>206</sup> *Id.* at 221-22.

<sup>207</sup> *Id.* at 223-24.

<sup>208</sup> *Id.* at 224-25.

<sup>209</sup> *Id.* at 226.

<sup>210</sup> *Id.* at 228.

<sup>211</sup> *Id.* at 229.

<sup>212</sup> *Id.* at 229-30.

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of  
Freeborn Wind Energy, LLC for a Large  
Wind Energy Conversion System Site  
Permit for the 84 MW Freeborn Wind Farm  
in Freeborn County

**ATTACHMENT C:**  
**SUMMARY OF PUBLIC COMMENTS  
ON DRAFT SITE PERMIT**

**I. Background**

1. Freeborn Wind Energy, LLC (Applicant or Freeborn Wind) filed an Application with the Public Utilities Commission (Commission) for a Large Wind Energy Conversion System (LWECS) Site Permit on June 15, 2017, to build and operate the Freeborn Wind Farm (Project) in Freeborn County, Minnesota. The Project includes a wind turbine layout with up to 42 turbines, including associated facilities, gravel roads, electrical collection system, permanent meteorological towers, and other operations and maintenance facilities.<sup>1</sup>

2. On February 2, 2018, the Commission issued a Notice of Public Hearing and Draft Site Permit Availability.<sup>2</sup> The Notice included an opportunity for submission of public comments from February 1, 2018, through March 15, 2018. The public was requested to address the following questions in the comments:

- Should the Public Utilities Commission issue a site permit for the project?
- What are the environmental and human impacts of the project under consideration and how can these impacts be addressed in the site permit?
- Are there other project-related issues or concerns?

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<sup>1</sup> Ex. FR-1 at 3-4 (Application) (eDocket No. 20176-132804-01).

<sup>2</sup> Notice of Public Hearing and Draft Site Permit Availability (Feb. 2, 2018) (eDocket No. 20182-139716-01).

## II. Public Comments

3. Approximately 104 households, organizations, and public agencies submitted comments regarding the draft site permit. Of the comments submitted, 73 were supportive of the Freeborn Wind project, and 25 were opposed. Four were agency provided. Two comments were filed by a Congressman who did not take a specific position in favor of, or opposed to, the Freeborn Wind project.

## III. Comments in Support of the Project

4. Many of the comments in support of the Freeborn Wind project cited the help the project will bring to the local economy, including added jobs, an increased tax base, and payments to participating farmers.<sup>3</sup>

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<sup>3</sup> Comments of Kenneth Abrams (Feb. 19, 2018) (eDocket No. 20183-140810-01), Julie Acklend (Feb. 19, 2018) (eDocket No. 20183-140807-01), Brian Anderson (Feb. 19, 2018) (eDocket No. 20183-140800-01), Susan and Gary Arp (Feb. 8, 2018) (eDocket No. 20182-140153-02), Mike Bjorklund (Feb. 14, 2018) (eDocket No. 20182-140153-02), Clark and Valerie Cipra (Feb. 13, 2018) (eDocket No. 20182-140153-02), Ron Davidson (Feb. 15, 2018) (eDocket No. 20182-140153-02), Carolyn Davis (Feb. 12, 2018) (eDocket No. 20181-140055-01), Jerry Demmer (Feb. 19, 2018) (eDocket No. 20183-140984-01), Julie Demmer (Feb. 19, 2018) (eDocket No. 20183-140983-01), John Forman (Feb. 2, 2018) (eDocket No. 20182-140153-02), Lioba Forman (Feb. 2, 2018) (eDocket No. 20182-140153-02), Norman and Joyce Fredin (Feb. 13, 2018) (eDocket No. 20182-140402-01), Angie Hanson (Feb. 19, 2018) (eDocket No. 20183-140806-01), Devonlee Haugebak (Mar. 14, 2018) (eDocket No. 20183-141091-01), Mark Haugebak (Mar. 14, 2018) (eDocket No. 20183-141091-01), Brooke Jacobson (Mar. 14, 2018) (eDocket No. 20183-141091-01), Jan Jerdee (Mar. 2, 2018) (eDocket No. 20183-140800-01), Brad S. Kramer (Feb. 15, 2018) (eDocket No. 20182-140153-02), Marie and Alton Krikava (Feb. 12, 2018) (eDocket No. 20182-140153-02), Rev. James Krikava (Feb. 13, 2018) (eDocket No. 20182-140153-02), Steven Krikava (Feb. 12, 2018) (eDocket No. 20182-140068-01), Emily Light (Mar. 14, 2018) (eDocket No. 20183-141091-01), Chris Lynne (Feb. 19, 2018) (eDocket No. 20183-140808-01), Mariah Lynne (Feb. 25, 2018) (eDocket No. 20182-140458-01), Paul Lynne (Feb. 14, 2018) (eDocket No. 20182-140153-02), Thomas Martinez (Feb. 19, 2018) (eDocket No. 20182-140283-01), Garwin McNeilus (Feb. 15, 2018) (eDocket No. 20182-140153-02), Lindsey Nelson (Feb. 15, 2018) (eDocket No. 20183-140798-01), Thomas B. Newell (Feb. 9, 2018) (eDocket No. 20182-140153-02), Freeborn County Chamber of Commerce (Feb. 13, 2018) (eDocket No. 20182-140153-02), Ryan Nolander, Executive Director, Albert Lea Economic Development Agency (Feb. 20, 2018) (eDocket No. 20183-140823-01), Jennifer Ordalen-Paulson (Feb. 20, 2018) (eDocket No. 20183-140798-01), Brady Paulson (Feb. 20, 2018) (eDocket No. 20183-140798-01), Cole Pestorious (Mar. 15, 2018) (eDocket No. 20183-141126-01), Kris Pierce, Alamco Wood Producers, LLC (Feb. 15, 2018) (eDocket No. 20182-140153-02), Raymond Rauenhorst (Feb. 19, 2018) (eDocket No. 20183-140800-01), Sharon Rauenhorst (Feb. 19, 2018) (eDocket No. 20183-140800-01), Danielle Schipper (Feb. 20, 2018) (eDocket No. 20183-140798-01), John Schipper (Feb. 20, 2018) (eDocket No. 20183-140798-01), Josh Schipper (Feb. 20, 2018) (eDocket No. 20183-140798-01), Representative Joe Schomacker (Feb. 16, 2018) (eDocket 20182-140238-01), Mark Smely, Worth County Supervisor (Feb. 19, 2018) (eDocket No. 20183-141126-01), Lanae Thorstad (Feb. 19, 2018) (eDocket No. 20182-140283-01), Joseph L. Ubl (Feb. 19, 2018) (eDocket No. 20183-140800-01), Jennifer Vogt-Erickson (March 15, 2018) (eDocket No. 20183-141091-01), Mike Walker (Mar. 6, 2018) (eDocket No. 20183-140801-01), Gregg Mast on behalf of Clean Energy Economy MN (Feb. 19, 2018) (eDocket No. 20181-140283-01), MFG Wisconsin, LLC (Mar. 8, 2018) (eDocket No. 20183-140883-01), Teresa Nicholson on behalf of Winn-Worth Betco (Mar. 14, 2018) (eDocket No. 20183-141091-01).

5. Other commenters supporting the Freeborn Wind project want to promote wind energy because they believe it will benefit the environment and it is the way of the future for energy development.<sup>4</sup>

6. Some commenters already live on or near wind farms and are not bothered by the concerns raised by the Association of Freeborn County Landowners (AFCL) in this matter.<sup>5</sup>

7. One commenter wrote in response to the concerns about declines in property values around wind turbines. He was looking for land with a shed for storage. A piece of property came up for auction in the Freeborn Wind project area in early February 2018. The estimated tax value was \$35,000 and the writer hoped to buy it for \$40,000 to \$45,000. In the end, the property sold for \$59,000.<sup>6</sup>

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<sup>4</sup> Comments of Brian Anderson (Feb. 19, 2018) (eDocket No. 20183-140800-01), Susan and Gary Arp (Feb. 8, 2018) (eDocket No. 20182-140153-02), Derome J. Boatman (Feb. 20, 2018) (eDocket No. 20183-140798-01), Clark and Valerie Cipra (Feb. 13, 2018) (eDocket No. 20182-140153-02), Susanne Crane (Feb. 19, 2018) (eDocket No. 20183-140809-01), Sean Darcy (Feb. 20, 2018) (eDocket No. 20183-140798-01), Carolyn Davis (Feb. 12, 2018) (eDocket No. 20181-140055-01), Jerry Demmer (Feb. 19, 2018) (eDocket No. 20183-140984-01), Julie Demmer (Feb. 19, 2018) (eDocket No. 20183-140983-01), Lioba Forman (Feb. 2, 2018) (eDocket No. 20182-140153-02), eDocket No. 20182-140153-02), Lioba Forman (Feb. 2, 2018) (eDocket No. 20182-140153-02), Norman and Joyce Fredin (Feb. 13, 2018) (eDocket No. 20182-140402-01), Margaret Funfar Nielsen and Judi A. Funfar (Mar. 5, 2018) (eDocket No. 20185-140800-01), Even Goskeson (Feb. 20, 2018) (eDocket No. 20183-140798-01), Emily Hardison (Feb. 27, 2018) (eDocket No. 20183-140800-01), Gunnar Hardison (Feb. 27, 2018) (eDocket No. 20183-140800-01), Kipp Hardison, (Feb. 27, 2018) (eDocket No. 20183-140800-01), Merik Hardison (Feb. 27, 2018) (eDocket No. 20183-140800-01), Jan Jerdee (Mar. 2, 2018) (eDocket No. 20183-140800-01), Brad S. Kramer (Feb. 15, 2018) (eDocket No. 20182-140153-02), Steven Krikava (Feb. 12, 2018) (eDocket No. 20182-140068-01), Mariah Lynne (Feb. 25, 2018) (eDocket No. 20182-140458-01), Thomas Martinez (Feb. 19, 2018) (eDocket No. 20182-140283-01), Aaron C. Mason (Mar. 5, 2018) (eDocket No. 20183-140800-01), Dan Nielsen (Feb. 13, 2018) (20183-140800-01), Stephen Nielsen (Feb. 15, 2018) (20183-140800-01), Dave Olson (Feb. 23, 2018) (eDocket No. 20183-140801-01), Jennifer Ordalen-Paulson (Feb. 20, 2018) (eDocket No. 20183-140798-01), Brady Paulson (Feb. 20, 2018) (eDocket No. 20183-140798-01), Cole Pestorious (Mar. 15, 2018) (eDocket No. 20183-141126-01), Sharon Rauenhorst (Feb. 19, 2018) (eDocket No. 20183-140800-01), Chance Rhodes (Feb. 20, 2018) (eDocket No. 20183-140798-01), Danielle Schipper (Feb. 20, 2018) (eDocket No. 20183-140798-01), John Schipper, (Feb. 20, 2018) (eDocket No. 20183-140798-01), Josh Schipper, (Feb. 20, 2018) (eDocket No. 20183-140798-01), Jennifer Nielsen Snow (Feb. 15, 2018) (eDocket No. 20183-140800-01), Luke Snow (Mar. 5, 2018) (eDocket No. 20183-140800-01), Jeff Thorstad (Mar. 14, 2018) (eDocket No. 20183-141091-01), Lanae Thorstad (Feb. 19, 2018) (eDocket No. 20182-140283-01), Jim Trainer (Feb. 19, 2018) (eDocket No. 20183-140983-01), Jennifer Vogt-Erickson (March 15, 2018) (eDocket No. 20183-141091-01), Gregg Mast on behalf of Clean Energy Economy MN (Feb. 19, 2018) (eDocket No. 20181-140283-01), MFG Wisconsin, LLC (Mar. 8, 2018) (eDocket No. 20183-140883-01), Teresa Nicholson on behalf of Winn-Worth Betco (Mar. 14, 2018) (eDocket No. 20183-141091-01).

<sup>5</sup> Comments of Julie Acklend (Feb. 19, 2018) (eDocket No. 20183-140807-01), Jerry Demmer (Feb. 19, 2018) (eDocket No. 20183-140984-01), Julie Demmer (Feb. 19, 2018) (eDocket No. 20183-140983-01), Mark Haugebak (Mar. 14, 2018) (eDocket No. 20183-141091-01), Chris Lynne (Feb. 19, 2018) (eDocket No. 20183-140808-01), Mariah Lynne (Feb. 25, 2018) (eDocket No. 20182-140458-01), Garwin McNeilus (Feb. 15, 2018) (eDocket No. 20182-140153-02), Brady Paulson (Feb. 20, 2018) (eDocket No. 20183-140798-01), Mark Smely, Worth County Supervisor (Feb. 19, 2018) (eDocket No. 20183-141126-01)

<sup>6</sup> Comment of John Forman (Feb. 7, 2018) (eDocket No. 20182-140153-02).

8. One commenter focused on national security as a basis for supporting the Freeborn Wind project. An “unabridged supply of food and energy” underlies the security of a country, according to the commenter.<sup>7</sup>

9. The Minnesota Center for Environmental Advocacy (MCEA) wrote in support of the Freeborn Wind project because Minnesota missed its 2015 benchmark greenhouse gas (GHG) reduction goal, and is likely to miss its 2025 goal.<sup>8</sup> According to the MCEA, increased use “of wind and other renewable resources with near-zero life-cycle GHG emissions leads to a direct reduction in the use of fossil fuels like coal and natural gas.” MCEA points out that using wind energy also reduces other harmful air pollutants, including mercury, sulfur dioxide, nitrogen oxide, and particulate matter.<sup>9</sup> MCEA notes that wind energy requires virtually no water to operate, which is particularly important in an agricultural state such as Minnesota. Finally, MCEA reiterates that the Freeborn Wind project offers economic benefits to the local area.<sup>10</sup>

#### **IV. Comments Opposed to the Project**

10. Commenters wrote with concerns about ice throw from wind turbine blades. According to one commenter, as recently as February 22, 2018, a vehicle on Highway 13 was hit and damaged by ice flung from a turbine, and ice has previously hit a shed on the Bent Tree wind farm.<sup>11</sup>

11. Commenter Kristi Rosenquist pointed to the testimony of Dan Litchfield during the contested case hearing during which Mr. Litchfield acknowledged that Freeborn Wind does not have copies of the installation and operation safety manuals for the V110 and V116 Vesta model turbines it proposes to use in the Freeborn Wind project. Ms. Rosenquist asserted that Freeborn Wind’s failure to obtain and follow the manual instructions in siting the turbines is a basis to deny the site permit.<sup>12</sup>

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<sup>7</sup> Comment of Raymond Rauenhorst (Feb. 19, 2018) (eDocket No. 20183-140800-01).

<sup>8</sup> Comment of Carolyn Berninger on behalf of MCEA at 1-2 (Mar. 8, 2018) (eDocket No. 20183-140900-01).

<sup>9</sup> Comment of Carolyn Berninger on behalf of MCEA at 2 (Mar. 8, 2018) (eDocket No. 20183-140900-01).

<sup>10</sup> Comment of Carolyn Berninger on behalf of MCEA at 2 (Mar. 8, 2018) (eDocket No. 20183-140900-01).

<sup>11</sup> Comments of Bonita Belshan (Mar. 12, 2018) (eDocket No. 20183-141038-01), Dan Belshan (Mar. 13, 2018) (eDocket No. 20183-140987-01), Gregg Koch (Mar. 12, 2018) (eDocket No. 20183-141062-01), Dominic Madrigal (Mar. 15, 2018) (eDocket No. 20183-141035-01), Sue Madson (Mar. 15, 2018) (eDocket No. 20183-141033-01), Comment of Marie McNamara (Mar. 15, 2018) (eDocket No. 20183-141057-01). See Exs. P-27A-27H.

<sup>12</sup> Comment of Kristi Rosenquist (Mar. 14, 2018) (eDocket No. 20183-141096-01).

12. Commenters feared health consequences of living close to turbines, including internal pulsation, nervousness, fear, tightness of chest, increased heart rate, sleeplessness, and ear problems. Some comments regarding health issues also referred to the May 2, 2017, comments from the Minnesota Department of Health recommending that efforts should be made to mitigate health effects of wind turbine projects.<sup>13</sup>

13. Some commenters were concerned about noise from the wind turbines, including proper application of the existing noise standards and evaluation of low-frequency noise.<sup>14</sup>

14. Some commenters anticipated that shadow flicker will be a problem, and that Freeborn Wind failed to correctly calculate the exposure to shadow flicker of some of the homes in the Freeborn Wind project.<sup>15</sup>

15. Commenters were also concerned with farming disruptions caused by crushed drain tile, the concrete poured into the foundations for the turbines, and problems with aerial seeding and spraying.<sup>16</sup>

16. Commenters believed that Freeborn Wind has exaggerated the economic benefits of the Freeborn Wind project to Freeborn County.<sup>17</sup>

17. The threat to wildlife, especially to wild birds and bats, was the focus of some comments.<sup>18</sup>

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<sup>13</sup> Comments of Amanda Girouard (Mar. 10, 2018) (eDocket No. 20183-141058-01), Kara and Brien Heinemann (Mar. 8, 2018) (eDocket No. 20183-141041-01), Sue Madson (Mar. 15, 2018) (eDocket No. 20183-141033-01), Kristi Rosenquist (Mar. 14, 2018) (eDocket No. 20183-141096-01), Michelle A. Steene (Mar. 8, 2018) (eDocket No. 20183-140902-01).

<sup>14</sup> Comments of Sue Madson (Mar. 15, 2018) (eDocket No. 20183-141033-01), Marie McNamara (Mar. 15, 2018) (eDocket No. 20183-141050-01), Stephanie Richter (Mar. 12, 2018) (eDocket No. 20183-141042-01), Kristi Rosenquist (Mar. 14, 2018) (eDocket No. 20183-141096-01), Jean Schulte (Mar. 14, 2018) (eDocket No. 20183-141060-01).

<sup>15</sup> Comments of Lisa Hajek (Mar. 14, 2018) (eDocket No. 20183-141066-01), John Madson (March 15, 2018) (eDocket No. 20183-141039-01), Sue Madson (Mar. 15, 2018) (eDocket No. 20183-141033-01), Kathy Nelson (Mar. 12, 2018) (eDocket No. 20183-141036-01), Darla Robbins (Mar. 15, 2018) (eDocket No. 20183-141040-01).

<sup>16</sup> Comment of Bonita Belshan (Mar. 12, 2018) (eDocket No. 20183-141038-01), Luke Steier (Mar. 14, 2018) (eDocket No. 20183-140986-01).

<sup>17</sup> Comments of Lisa Hajek (Mar. 14, 2018) (eDocket No. 20183-141066-01), Stephanie Richter (Mar. 12, 2018) (eDocket No. 20183-141042-01).

<sup>18</sup> Comments of Mike Hansen (Mar. 14, 2018) (eDocket No. 20183-141043-01), John Madson (March 15, 2018) (eDocket No. 20183-141039-01), Michelle A. Steene (Mar. 8, 2018) (eDocket No. 20183-140902-01).



18. Commenter Rochelle Nygaard submitted a Federal Aviation Administration (FAA) Obstruction Evaluation, which determined “No Hazard to Air Navigation” and permitted the public to petition for review, with a deadline of March 14, 2018.<sup>19</sup>

19. Commenters with homes near turbines expressed concerns about declining property values.<sup>20</sup>

20. Commenters were also concerned about decommissioning of the turbines, and whether Freeborn Wind would bear financial and practical responsibility for decommissioning the turbines when the time comes.<sup>21</sup>

21. Some commenters reiterated their frustration with the way they felt Freeborn Wind personnel pressured them to agree to allow turbines on their land.<sup>22</sup>

22. Some commenters wrote with questions about whether their television, radio, or telephone service would be disrupted by the wind turbines.<sup>23</sup>

23. Other commenters were distressed about a loss of peace and quiet, and obstructions to their rural viewshed.<sup>24</sup>

24. One commenter from Ontario, Canada, wrote a letter describing her experience with a wind farm that apparently affected the well water in her community.<sup>25</sup>

25. Commenter Marie McNamara provided extensive comments, some of them having to do with the Freeborn Wind site permit application specifically, others having to do with standards for LWECs projects more generally.<sup>26</sup> Ms. McNamara specifically addressed the Freeborn Wind project regarding “[u]nforthright [sic] contract business practices,” maintaining that, although Freeborn Wind apologized for the earlier incidents involving its former employee, it continued, through the contested case process, to omit

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<sup>19</sup> Comment of Rochelle Nygaard (Mar. 15, 2018) (eDocket No. 20183-141063-01). Ms. Nygaard’s comment was accompanied by an FAA letter, titled “Determination of No Hazard to Air Navigation.” The first section of the letter addresses an aeronautical study under the provisions of 49 U.S.C. § 44718 concerning a wind turbine in Northwood, Iowa, and findings that the structure will have no substantial adverse effect on the utilization of the navigable airspace. The letter lists 41 additional wind turbines on the relevant wind farm. It is not clear whether this determination letter applies to the Worth County, Iowa wind farm, or to the proposed Freeborn County project. (Feb. 12, 2018) (eDocket No. 20183-141063-02).

<sup>20</sup> Comments of Gregg Koch (Mar. 12, 2018) (eDocket No. 20183-141062-01), John Madson (March 15, 2018) (eDocket No. 20183-141039-01), Comment of Marie McNamara (Mar. 15, 2018) (eDocket No. 20183-141055-01). Kristi Rosenquist (Mar. 14, 2018) (eDocket No. 20183-141096-01),

<sup>21</sup> Comments of Sue Madson (Mar. 15, 2018) (eDocket No. 20183-141033-01).

<sup>22</sup> Comments of Gregg Koch (Mar. 12, 2018) (eDocket No. 20183-141062-01); Ann and Lestor Stowe (Feb. 16, 2018) (eDocket No. 20182-140283-01).

<sup>23</sup> Comments by John Madson (March 15, 2018) (eDocket No. 20183-141039-01), Sue Madson (Mar. 15, 2018) (eDocket No. 20183-141033-01), Kristi Rosenquist (Mar. 14, 2018) (eDocket No. 20183-141096-01).

<sup>24</sup> Comments of Gordon Priest (Mar. 9, 2018) (eDocket No. 20183-141034-01), Linda M. Goude (Feb. 23, 2018) (eDocket No. 20183-140850-01), Michelle A. Steene (Mar. 8, 2018) (eDocket No. 20183-140902-01).

<sup>25</sup> Comment of Jessica Brooks (Feb. 26, 2018) (eDocket No. 20183-141037-01).

<sup>26</sup> Comment of Marie McNamara (Mar. 15, 2018) (eDocket No. 20183-141087-01).

needed information and disseminate “misinformation.”<sup>27</sup> Ms. McNamara asked how the Commission will deal with cross-Iowa border wind farm problems.<sup>28</sup> She asserted that Freeborn Wind failed to provide adequate information regarding decommissioning with its site permit application.<sup>29</sup> Ms. McNamara expressed concerns that appropriate data be supplied to calculate the 3x5 rotor diameter wind access buffer setbacks.<sup>30</sup>

26. Ms. McNamara also submitted questions regarding groundwater and springs in the footprint of the proposed Freeborn Wind project. She was concerned that, with wetlands nearby, the wind turbine installation could significantly affect ground water.<sup>31</sup>

27. Commenter Stephanie Richter wrote that AFCL’s petition was signed only by people “who are directly affected by the [Freeborn Wind] project, living within a mile of a turbine or owning land within the project area.” According to Ms. Richter, “[n]early 80% of affected project area landowners are opposed to the project.”<sup>32</sup>

28. Commenter Kristi Rosenquist expressed ongoing concerns regarding her perception that the Department of Commerce (DOC) staff is biased in favor of the wind industry. She asked the Commission and the Administrative Law Judge to consider a number of examples, which she outlined, where she believed DOC staff did not seriously consider issues brought to them in this Freeborn Wind site permit application process.<sup>33</sup>

## V. Other Comments

29. Minnesota First District Congressman Tim Walz submitted two letters during the comment period between February 2 and March 18, 2018. On February 6, 2018, Congressman Walz wrote a letter on behalf of “my constituent Melville Nickerson, Director of Government Relations for Invenergy.”<sup>34</sup> The letter asked that the Commission “provide fair and thorough consideration to Invenergy’s proposal . . . .” In addition, Congressman Walz stated he believed “Invenergy’s proposal would result in positive gains for Freeborn County and the State of Minnesota as a whole.”<sup>35</sup>

30. During the February 21, 2018, evidentiary hearing, Dan Litchfield, Senior Manager of Project Development with Invenergy, was asked on cross-examination about Congressman Walz’s February 6, 2018, letter.<sup>36</sup> Mr. Litchfield acknowledged that Mr. Nickerson is not Congressman Walz’s constituent, but was assigned by Mr. Litchfield

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<sup>27</sup> Comment of Marie McNamara at 1 (Mar. 15, 2018) (eDocket No. 20183-141087-01).

<sup>28</sup> Comment of Marie McNamara at 2 (Mar. 15, 2018) (eDocket No. 20183-141087-01).

<sup>29</sup> Comment of Marie McNamara at 3 (Mar. 15, 2018) (eDocket No. 20183-141087-01).

<sup>30</sup> Comment of Marie McNamara at 4 (Mar. 15, 2018) (eDocket No. 20183-141087-01).

<sup>31</sup> Comment of Marie McNamara (Mar. 15, 2018) (eDocket No. 20183-141052-01).

<sup>32</sup> Comment of Stephanie Richter (Mar. 12, 2018) (eDocket No. 20183-141042-01). See Ex. AFCL-2 (Mar. 1, 2018) (eDocket No. 201712-138411-03).

<sup>33</sup> Kristi Rosenquist (Mar. 15, 2018) (eDocket No. 20183-141098-01).

<sup>34</sup> Comment of Rep. Timothy J. Walz (Feb. 6, 2018) (eDocket No. 20182-139890-01).

<sup>35</sup> Comment of Rep. Timothy J. Walz (Feb. 6, 2018) (eDocket No. 20182-139890-01).

<sup>36</sup> Tr. Vol.1A at 63-64 (Litchfield).

to return a call Mr. Litchfield had received from a staffer in the Congressman's office. Mr. Litchfield thought that Congressman Walz had mistakenly referred to Mr. Nickerson as a constituent, when it would be more correct to refer to Freeborn Energy, LLC, as a constituent, since it is a business working in his district.<sup>37</sup>

31. Subsequently, on March 15, 2018, Congressman Walz filed a second letter, to correct the record.<sup>38</sup> First, Congressman Walz stated that Mr. Nickerson is not a southern Minnesota resident. Congressman Walz continued that, since his initial correspondence, he had "heard directly from my constituents in Freeborn County who have serious concerns about the siting of turbines in the Invenergy proposal. It is my wish that these concerns receive full and fair consideration as your Commissioner works through its permitting process." Congressman Walz continued to point out that, while he is a "firm supporter of renewable energy," he "also firmly believe[s] that we must balance our development of renewables with respect for individuals whose quality of life could be adversely affected by a specific project."<sup>39</sup>

32. Beth Soholt commented on behalf of Wind on the Wires (WOW), a renewable energy advocacy organization.<sup>40</sup> WOW specifically commented on the interpretation of Minn. R. 7030.0040, arguing that the rule is not meant to include ambient background noise, but is limited to the source (turbine) noise. According to Ms. Soholt, "[a] wind farm developer does not have the ability to control ambient background noise, but can design a wind turbine layout that meet the 50dBA L<sub>50</sub> requirement. WOW argues that is how the rule has been applied in Minnesota in the past, and, because winds farms are naturally developed in windy areas where the ambient noise alone can exceed the noise standard, [a]ny other interpretation . . . would have a chilling effect on the wind development . . . ."<sup>41</sup>

33. Cynthia Warzecha, Principal Planner at the Minnesota Department of Natural Resources (MDNR) filed a letter on March 15, 2018. Ms. Warzecha states that the MDNR reviewed the Draft Site Permit, and the revised Avian Bat Protection Plan (ABPP) for the Freeborn Wind project, along with the most recent shapeliness for the proposed turbine locations. The MDNR states that Freeborn Wind has "taken numerous measures . . . to minimize the risk of fatalities to birds and bats. Therefore, we have no recommendations concerning the proposed turbine locations." The MDNR suggests that Freeborn Wind "should discuss bald eagle fatalities that have occurred in Minnesota with Margaret Rhuede . . . of the United States Fish and Wildlife Service."<sup>42</sup>

## L. S.

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<sup>37</sup> Tr. Vol.1A at 64 (Litchfield).

<sup>38</sup> Comment of Rep. Timothy J. Walz (Mar. 15, 2018) (eDocket No. 20183-141076-01).

<sup>39</sup> Comment of Rep. Timothy J. Walz (Mar. 15, 2018) (eDocket No. 20183-141076-01).

<sup>40</sup> Comment of Beth Soholt on behalf of WOW (Mar. 15, 2018) (eDocket No. 20183-141082-01).

<sup>41</sup> Comment of Beth Soholt on behalf of WOW (Mar. 15, 2018) (eDocket No. 20183-141082-01).

<sup>42</sup> Comment of Cynthia Warzecha on behalf of MDNR (Mar. 15, 2018) (eDocket No. 20183-141051-01).

May 14, 2018

See Attached Service List

**Re: In the Matter of the Application of Freeborn Wind Energy, LLC for a  
Large Wind Energy Conversion System Site Permit for the 84 MW  
Freeborn Wind Farm  
OAH 80-2500-34633  
MPUC IP-6946/WS-17-410**

To All Persons on the Attached Service List:

Enclosed and served upon you is the Administrative Law Judge's **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION (with ATTACHMENTS A, B, and C)** and **ORDER DENYING MOTION BY AFCL FOR ADMINISTRATIVE NOTICE** in the above-entitled matter.

If you have any questions, please contact my legal assistant Lisa Armstrong at (651) 361-7888 or [lisa.armstrong@state.mn.us](mailto:lisa.armstrong@state.mn.us), or facsimile at (651) 539-0310.

Sincerely,



LAURASUE SCHLATTER  
Administrative Law Judge

LSS:la  
Enclosure  
cc: Docket Coordinator

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
PO BOX 64620  
600 NORTH ROBERT STREET  
ST. PAUL, MINNESOTA 55164

**CERTIFICATE OF SERVICE**

In the Matter of the Application of Freeborn Wind Energy, LLC for a Large Wind Energy Conversion System Site Permit for the 84 MW Freeborn Wind Farm	OAH Docket No.: 80-2500-34633 MPUC: IP-6946/WS-17-410
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Lisa Armstrong certifies that on May 14, 2018, she served the true and correct **FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION (with ATTACHMENTS A, B, and C)** and **ORDER DENYING MOTION BY AFCL FOR ADMINISTRATIVE NOTICE** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret
Lisa	Agrimonti	lagrimonti@fredlaw.com	Fredrikson & Byron, P.A.	200 South Sixth Street	Electronic Service	No
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000	Electronic Service	No
Richard	Davis	Richard.Davis@state.mn.us	Department of Commerce	85 7th Place East Suite 500	Electronic Service	Yes
Bret	Eknes	bret.eknes@state.mn.us	Public Utilities Commission	Suite 350	Electronic Service	Yes
Linda	Jensen	linda.s.jensen@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota	Electronic Service	Yes
Michael	Kaluzniak	mike.kaluzniak@state.mn.us	Public Utilities Commission	Suite 350	Electronic Service	Yes
Dan	Litchfield	DLitchfield@invenergyllc.com	Invenergy LLC	One S Wacker Dr Ste 1800	Electronic Service	No
Carol A.	Overland	overland@legalelectric.org	Legalelectric - Overland Law Office	1110 West Avenue	Electronic Service	No
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750	Electronic Service	No
LauraSue	Schlatter	LauraSue.Schlatter@state.mn.us	Office of Administrative Hearings	PO Box 64620	Electronic Service	Yes
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	7400 Lyndale Ave S Ste 190	Electronic Service	Yes
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East	Electronic Service	Yes

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben  
Dan Lipschultz  
Valerie Means  
Matthew Schuerger  
John A. Tuma

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

In the Matter of Freeborn Wind Energy  
LLC's Application for a Large Wind Energy  
Conversion System Site Permit for the 84  
MW Freeborn Wind Farm in Freeborn  
County

ISSUE DATE: May 10, 2019

DOCKET NO. IP-6946/WS-17-410

ORDER AMENDING SITE PERMIT

**PROCEDURAL HISTORY**

On December 19, 2018, the Commission issued its Order Issuing Site Permit and Taking Other Action (Site Permit Order), granting Freeborn Wind Energy LLC (Freeborn Wind or the Company) a permit to erect a collection of wind turbines and related facilities (a wind farm) in Freeborn County (the Project). In support of its decision, the Commission adopted with modifications the findings, conclusions, and recommendation prepared by an Administrative Law Judge (ALJ).

By January 9, 2019, the Commission had received petitions for reconsideration or clarification from the Association of Freeborn County Landowners (AFCL), Freeborn Wind, Sean and Heidi Gaston, Dorene Hansen, Sue Madson, and Allie Olson. The Commission had also received letters from State Senator Dan Sparks and State Representative Peggy Bennett. Among other topics, commenters raised concerns about provisions in the site permit—and in particular, about Section 7.4 and its subsections, addressing compliance with state noise standards.

On January 18, 2019, the Minnesota Department of Commerce (Department) filed comments and recommendations. In addition, Freeborn Wind filed answers to the petitions for reconsideration, and a motion to strike portions of AFCL's petition as untimely and unsupported by the record.

On January 28, 2019, AFCL filed a response to Freeborn Wind's motion to strike.

By February 14, 2019, the Department had filed revised comments, and AFCL had filed a motion to remand the docket to the Minnesota Office of Administrative Hearings for further proceedings.

On February 26, 2019, the Commission granted rehearing, and granted parties 14 days to provide rationales in support of their proposed changes to the site permit and to propose further revisions to Section 7.4.

On February 27, 2019, Freeborn Wind filed its response to AFCL's motion to remand.

On March 4, 2019, Freeborn Wind filed comments, including an attachment delineating proposed changes to the site permit.

By March 22, 2019, the Commission had received additional filings from AFCL, the Department, and Freeborn Wind.

On March 25, 2019, the Commission's staff filed briefing papers in this docket.

On March 26, 2019, AFLC filed objections to the briefing papers.

On April 1, 2019, the Commission met to consider the matter.

## **FINDINGS AND CONCLUSIONS**

### **I. Summary**

In this order, the Commission declines to act on the parties' motions. Instead, on its own motion, the Commission reconsiders its Site Permit Order and makes corrections in the permit language as recommended by the Department and Freeborn Wind.

### **II. Positions of the Parties and Commenters**

#### **A. Commenters**

Commenters raised concerns about a variety of matters, including the permit's site layout and setbacks, turbine noise, shadow flicker, decommissioning, and enforcement.

#### **B. AFCL**

AFCL raised a number of objections to the Commission's Site Permit Order, including the following allegations:

- The Department met privately with Freeborn Wind and the Minnesota Pollution Control Agency (MPCA) in violation of Minn. R. 7845.0400.
- The Commission declined to require Freeborn Wind to build its turbines set back at least 1,500 feet from any landowner who has not consented to the Project, as recommended by the ALJ.
- The Commission authorized Freeborn Wind to model its compliance with noise standards based on a 0.5 ground factor rather than the 0.0 ground factor that the Company had used in its application (where a higher factor means a greater tendency to absorb sound).
- The permit provides for Freeborn Wind and the Department to collaborate in developing a methodology for measuring noise arising from the project, rather than directing Freeborn Wind to use a methodology developed in the context of other wind farms.

- Freeborn Wind and the Commission have relied on the MPCA’s 2015 “A Guide to Noise Control in Minnesota; Acoustical Properties, Measurement, Analysis and Regulation” (2015 MPCA Guide), when no party had filed that document into the record.
- The address that Freeborn Wind provided for receiving complaints led to an unoccupied office.
- The Commission granted the site permit notwithstanding the claim that “[t]he community does not consent to the project.”<sup>1</sup>

In relief, AFCL asked the Commission to strike various filings from the record, reconsider its Site Permit Order, suspend the site permit, and remand the matter to the Administrative Law Judge for additional record development.

### **C. Freeborn Wind**

Freeborn Wind asked the Commission to deny AFCL’s petitions for relief. The Company also proposed a variety of changes to the permit, summarized below.

- Section 2.0 (Project Description)—Freeborn Wind proposed modifying this section to clarify the wind farm’s generating capacity in Iowa.
- Section 4.9 (Wind Turbine Towers)—Freeborn Wind proposed subdividing the discussion of restrictions related to setbacks and site layout to establish a heading for the discussion of wind turbine towers, and to re-number to subsequent headings accordingly.
- Section 6.2 (Post-Construction Noise Monitoring)—Freeborn Wind proposed correcting an error to substitute the word “monitoring” for “modeling.”
- Section 6.3. (Over-the-Air Television Interference Notice Requirements)—To better conform the language of the permit to the Commission’s order, Freeborn Wind proposed adding a subdivision summarizing the Commission’s requirement that the developer provide certain types of notice related to the risk that wind turbines may interfere with over-the-air television transmissions.
- Section 7.4. (Noise Studies)—Noting that Sections 6.1 and 6.2 already address pre- and post-construction noise regulation, Freeborn Wind proposed omitting much of the language at 7.4.1 and 7.4.2 which address the same topic, and instead restoring Section 7.4 from the Commission’s Draft Site Permit (January 30, 2018).

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<sup>1</sup> AFCL Motion for Reconsideration, at 18 (January 8, 2019).



- Section 7.5.1 (Avian and Bat Protection Plan)—While the site permit directs Freeborn Wind to comply with an Avian and Bat Protection Plan filed in 2017, Freeborn Wind proposes to substitute a later version approved by the Minnesota Department of Natural Resources (MDNR).
- Complaint Handling Procedures—Freeborn Wind proposed changing the people designated to receive complaints—and, in particular, to identify Northern States Power Company d/b/a Xcel Energy (Xcel) as the party that will be responsible for the project once construction begins.
- Table of Contents—Freeborn Wind proposed revising the table of contents to reflect the changes listed above.

#### **D. Department**

The Department expressed no objection to Freeborn Wind’s proposed changes to the permit—with one proviso. The Department recommended adding language to Section 7.4 to clarify the relationship between the Department, Freeborn Wind, and the independent consultant that would be hired to develop and conduct the study of the Project’s noise during operations, as follows:

The noise study methodology shall be developed by, and the noise monitoring shall be conducted by, an independent consultant approved by the Department of Commerce at Freeborn Wind’s expense.

With this addition, the Department concluded that revised Section 7.4 would provide clear and enforceable language that would help ensure that the necessary noise monitoring is performed and filed.

### **III. Commission Action**

#### **A. Motions**

AFCL and Freeborn Wind each filed motions to exclude portions of the other party’s filings from the record, and AFCL moved to remand this matter to the ALJ for further record development. The Commission finds that the record is well developed already, and that the Commission can take each party’s concerns into account when evaluating the appropriate weight to give to the filings. Accordingly the Commission will decline to grant the motions to strike or to refer for further proceeding.

#### **B. *Ex Parte* Meetings**

AFCL objects to the fact that the Department met with Freeborn Wind and the MPCA outside the presence of AFCL. AFCL cited Minn. R. 7845.0400 for the proposition that such meetings violated the Commission’s rule requiring Commission employees to avoid actions that might

result in the appearance of impropriety, and the rule limiting *ex parte* communications during contested cases.<sup>2</sup>

By its terms, the rules applying to the propriety of Commission employees and *ex parte* communications apply to Commissioners and employees of the Commission.<sup>3</sup> The rules do not constrain any party or participant—not the Department, not AFCL—from convening meetings, including meetings with other parties, participants, or government agencies, *except* where those meetings would include a Commissioner or employee of the Commission. The record provides no basis for applying Minn. R. 7845.0400 or 7845.7400 to any meeting or meetings between the Department, Freeborn Wind, and/or the MPCA.<sup>4</sup>

## C. Noise

### 1. Introduction

The Commission initially issued a draft Site Permit on January 30, 2018. On September 19, 2018, Freeborn Wind offered its Late Filed Proposed Special Conditions Related to Noise, reflecting permit language agreed to by the Company, the Department, and MPCA. At its September 20, 2018 meeting, the Commission combined the language from the draft Site Permit with language from other sources and incorporated them into Permit Sections 4.3, 6.1, 6.2, 7.4.1, and 7.4.2.<sup>5</sup> This language prompted requests for reconsideration or clarification from AFCL, Freeborn Wind, and other commenters. At the Commission’s February 15, 2019 meeting, the Commission invited comments specifically about how to reconcile the permit’s terms regulating noise,<sup>6</sup> and subsequently received comments from AFCL, Freeborn Wind, and the Department.

The Commission finds that Freeborn Wind’s proposed changes to the Permit’s provisions governing noise are reasonable. This proposal would retain the Draft Site Permit’s Section 4.3, correct a typographical error in Section 6.2, and restore the draft Site Permit’s Section 7.4 (replacing Sections 7.4.1 and 7.4.2). In addition, the Commission finds that the Department’s proposed language—clarifying that the consultant that will develop and conduct the noise monitoring must meet with the Department’s approval—is also reasonable. Accordingly the Commission will adopt all these changes.

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<sup>2</sup> AFCL Response to Freeborn Wind Energy LLC’s Request for Clarification/Motion for Reconsideration, at 2 (January 18, 2019).

<sup>3</sup> Minn. R. 7845.0400, subp. 2; *see also* Minn. R. 7845.7000 and .7400.

<sup>4</sup> *See also* Minn. Stat. § 216A.037, subd. 3 (“[T]he commission shall adopt rules prescribing a code of conduct for commissioners and employees of the commission.”).

<sup>5</sup> Site Permit Order, Attachment 2 (Site Permit).

<sup>6</sup> Order Continuing Proceedings, Tolling Deadline and Soliciting Comments (February 26, 2019).

## 2. Distinguishing background noise

AFCL objected that the Commission lacked record support to adopt Sections 6.1 (Pre-Construction Noises Modeling) and 6.2 (Post-Construction Noise Monitoring). These sections limit turbine noise to no more than 47 A-weighted decibels (that is, decibels measured in a manner that reflects the sensitivities of the human ear) for 50 percent of the time during a one-hour testing period (denoted 47 dB(A) L<sub>50</sub>-one hour).<sup>7</sup>

The Commission's decision is well grounded in the record. According to Freeborn Wind's application, the Company's noise models demonstrated that the Project would meet the state noise standards:

[T]hrough the careful placement of turbines and the selective use of the quieter V110 turbines, *noise levels are approximately 47 dB(A) or less at all non-participating residences*. It should be noted that the noise levels shown in Figure 8 and listed in Table 8.3-4 are the maximum that are ever expected to occur. Noise levels will be less than those shown when the turbines are not operating near full capacity, are off, or when atmospheric conditions are less conducive to sound propagation.<sup>8</sup>

In support of its application, Freeborn Wind's Dr. Mark Roberts filed testimony including a document identifying other jurisdictions that had adopted a noise standard of 47 dB(A).<sup>9</sup>

But more generally, limiting the Project's noise to no more than 47 dB has the desired effect of ensuring that the Project would never contribute more than a barely perceptible amount of noise in an environment with background noise of 47 dB or more. This conclusion results from two facts. First, outside of laboratory conditions, most people cannot perceive a noise increase of less

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<sup>7</sup> AFCL also objected that Freeborn Wind's proposed language for Sections 6.1 and 6.2 would use a 47 dB(A) limit rather than the 45 dB(A) limit set forth in the Site Permit issued by the Commission. While this claim is accurate, the 45 dB(A) limit reflected a typographical error; the Commission approved a noise limit of 47 dB(A). See Minutes—September 20, 2018 Agenda Meeting, at 3 (April 12, 2019).

<sup>8</sup> Ex. FR-1 (Freeborn Wind Site Permit application) at 34 (emphasis added).

<sup>9</sup> Ex. FR-6 (Roberts Direct), Sch 22 (Report on Health Impacts of Wind Turbines), at 44 (citing, for example, the Netherlands) (December 22, 2017).

than 3 dB(A).<sup>10</sup> Second, noise combines logarithmically, such that a doubling of noise results in an increase of only 3 dB.<sup>11</sup>

Thus, adding a 47 dB wind farm to an environment with 47 dB of background noise would increase aggregate noise levels to no more than 50 dB. If background noise levels increase from that point, a 47 dB windfarm's contribution to the total would be less than 3 dB; if background noise levels decrease from that point, then the windfarm's contribution would be more than 3 dB—but not enough to cause aggregate noise levels to exceed 50 dB. In support of this analysis, Freeborn Wind cited the testimony of Mike Hankard and the MPCA's 2015 "A Guide to Noise Control in Minnesota; Acoustical Properties, Measurement, Analysis and Regulation" (2015 MPCA Guide), among other things.<sup>12</sup>

AFCL objected to Freeborn Wind relying on the 2015 MPCA Guide, arguing that the document was not in the record. Freeborn Wind incorporated the 2015 MPCA Guide into its initial application by reference.<sup>13</sup> The Commission may consider documentary evidence that is incorporated by reference to be part of the record.<sup>14</sup> Because the 2015 MPCA Guide is a public document published by a state agency for the purpose of implementing state noise standards, and was incorporated by reference into a document in the record, the Commission considers the Guide to be part of the record, too.<sup>15</sup>

### 3. Ground factor

In addition, AFCL objected that the Commission authorized Freeborn Wind to model noise from the Project based on a 0.5 ground factor, rather than the 0.0 factor discussed in much of the record. The Commission finds no merit to this objection.

Freeborn Wind boasted that its project would meet noise standards even under the "very

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<sup>10</sup> *Id.*, Sch. 22 at 28 ("Human subjects under normal conditions, and for sounds of a similar temporal and spectral nature, are generally only capable of noticing changes in noise levels of no less than 3 dB(A)."); Sch. 25 (Analysis of the Research on the Health Effects from Wind Turbines, including Effects from Noise) at 6 ("[A] 3 dB increase correlates to a doubling in objective sound energy levels, but is considered the threshold of perceivable difference in sound levels."); Sch. 26 (Strategic Health Impact Assessment on Wind Energy Development in Oregon) at 12, 32, 57; Tr. Vol. 1B at 115 (Hankard); Site Permit Order, Attachment 1 (Modifications to the ALJ Report), Finding 197.

<sup>11</sup> Tr. Vol. 1B at 65 (Hankard).

<sup>12</sup> MPCA 2015 Noise Guide at 11 (Nov. 2015) available at <https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf>. Ex. FR-1 (Freeborn Wind Site Permit application), Appendix B (Pre-Construction Noise Analysis); Ex. FR-5 (Hankard Direct); Ex. FR-18 (Aff. of Mike Hankard and Noise Tables); Evid. Hr'g Trans. Vol 1B (February 21, 2018) at 114-115 (Hankard); Freeborn Wind's Late-Filed Proposed Special Conditions Related to Noise (September 19, 2018); Freeborn Wind handout "Special Condition—Example" (October 3, 2018).

<sup>13</sup> Ex. FR-1 (Freeborn Wind Site Permit application), Appendix B (Pre-Construction Noise Analysis) at 2.

<sup>14</sup> Minn. Stat. § 14.60, subp. 2.

<sup>15</sup> See Site Permit Order, Attachment 1 (Modifications to the ALJ Report), Finding 207A.

conservative” assumptions of a 0.0 ground factor and that all homes being modeled would be downwind of the turbines. When the ALJ found that the record did not support Freeborn Wind’s claim, the Company abandoned its needlessly stringent argument and switched to arguing that the Project would meet the noise standards under the more realistic assumption of a 0.5 ground factor. As Freeborn Wind explained in its application:

A ground factor of 0.0 represents a completely reflective surface such as pavement, which would result in a higher level of sound reaching a receiver. A ground factor of 1.0 represents absorptive ground such as thick grass or fresh snow, resulting in a lower level of sound reaching the receiver. For this Project, a ground factor of 0.0 (completely reflective) was used to be conservative. *Actual ground conditions* could, at rare times, be 0.0 when the ground is completely frozen and bare, but *would generally be closer to 0.5 when the ground is covered with vegetation or is bare and unfrozen.*<sup>16</sup>

The Commission never understood Freeborn Wind to argue that the ground factor *would* be 0.0. Rather, the Commission understood the Company to offer its analysis with a 0.0 ground factor to demonstrate that its Project would cross any regulatory hurdle with room to spare. Freeborn Wind now argues that the Project will merely comply with the noise standard. Because the noise standard requires compliance, not “room to spare,” the Commission finds no fault with Freeborn Wind’s position. The Commission finds that the Company has fulfilled its regulatory obligations.

#### 4. World Health Organization study

AFCL argued that the Commission should reconsider its decision based on the Environmental Noise Guidelines issued by the World Health Organization.<sup>17</sup>

However, the text of the portion of the study filed by AFCL states that the WHO’s recommendations are “conditional” and based on low-quality studies with no association, or

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<sup>16</sup> Ex. FR-1 (Freeborn Wind Site Permit application), Appendix B (Pre-Construction Noise Analysis) at 12 (emphasis added). *See also* EERA-9 (Department’s 2012 Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report), including Appendix B which references, among other documents, the National Association of Regulatory Utility Commissioners’ *Assessing Sound Emissions from Proposed Wind Farms and Measuring the Performance of Completed Projects*, October 2011 (“Assume a ground absorption coefficient (Ag from ISO 9613-2) appropriate to the site area (a moderate value of 0.5 generally works well as an annual average for rural farmland, although higher values specifically for farm fields during summer conditions may be appropriate. A value of 0 (100% reflective ground) is likely to produce highly conservative results.”).

<sup>17</sup> AFCL Petition for Reconsideration, Ex. G.

statistically insignificant association, with public health outcomes.<sup>18</sup> Accordingly the Commission will decline to reconsider its decision on this basis.

## 5. Low-Frequency Noise and Infrasound

Commentors objected to the Commission's failure to establish conditions on low frequency noise and/or infrasound.

The Commission considered this matter in its Site Permit Order and concluded that there was insufficient basis to include any specific conditions in the Site Permit related to low-frequency noise/infrasound. The MPCA has established no standard explicitly limiting infrasound. Because wind turbine noise has a relatively consistent spectral shape, once any part of the spectrum of sound is limited, this effectively limits the rest of the spectrum.<sup>19</sup>

## 6. Noise Studies

Finally, AFCL objected that Section 7.4 (with language proposed by the Department) requires Freeborn Wind to work with the Department in developing a study to measure noise coming from the Project after it is in operation. AFCL argued that this process is unnecessary as the Department has already developed such studies for purposes of evaluating other wind farms. In support of this argument, AFCL cites prior wind farm projects.<sup>20</sup>

The Commission acknowledges that the Department has developed some experience in post-construction noise monitoring. Nevertheless, circumstances and the state of technology change with each project. Accordingly the Commission will continue its practice of offering wind farm developers the opportunity of working with the Department in developing a noise-monitoring methodology—just as the Commission did in the prior wind farm dockets that AFCL cites with approval.<sup>21</sup>

### D. Setbacks

AFCL and others objected that the Site Permit authorizes Freeborn Wind to erect wind turbines within 1,000 feet of residences, rather than set back 1,500 feet as recommended by the ALJ. AFCL argued that 1,000 feet is arbitrary and may lead to residents experiencing excessive noise from the turbine's operation.

First, the Commission clarifies that the setback standard is not a substitute for the noise standards; Freeborn Wind must comply with both standards. Permit Section 4.2 states that the turbine towers "shall not be located closer than 1,000 feet from all residences *or the distance*

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<sup>18</sup> *Id.*, Ex. G at 77–78 and 84–85.

<sup>19</sup> Site Permit Order at 16.

<sup>20</sup> *See. e.g., In the Matter of the Site Permit Issued to the Wisconsin Power and Light Company for the Bent Tree Wind Project in Freeborn County, Minnesota*, Docket No. ET-6657/WS-08-573, Order (October 20, 2009).

<sup>21</sup> *See. e.g., id.*, Site Permit Section III.F.2.

*required to comply with the noise standards ..., whichever is greater.*” (Emphasis added). Likewise, Section 4.3 states, “The wind turbine towers shall be placed such that the Permittee shall, at all times, comply with noise standards....”

Second, as the Commission explained in its Site Permit Order,<sup>22</sup> the ALJ’s finding was based on an erroneous interpretation of the Commission’s Order Establishing General Wind Permit Standards (Wind Standards Order),<sup>23</sup> and ran contrary to the setback requirements the Commission had adopted in other wind farm siting dockets.<sup>24</sup> Instead, Freeborn Wind agreed—with one exception, related to a wetland<sup>25</sup>—to set back its turbines in the manner prescribed by the county’s ordinances.<sup>26</sup> Ultimately the Commission found that Freeborn Wind and the Department provided the most reasonable assessment of the appropriate trade-offs in establishing a setback requirement.<sup>27</sup> Implementing this trade-off provides good cause to deviate from strict adherence to the standard articulated in the County ordinance.<sup>28</sup>

Likewise, the Commission finds no new arguments for reconsidering its setbacks from public road rights-of-way or designated public trails.<sup>29</sup>

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<sup>22</sup> Site Permit Order at 9–10, 18.

<sup>23</sup> See *In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*, Docket No. E,G-999/M-07-1102, Order Establishing General Wind Permit Standards (January 11, 2008).

<sup>24</sup> See *In the Matter of the Application of Red Pine Wind Farm, LLC for a Site Permit for the 200.1 Megawatt Red Pine Wind Project in Lincoln County, Minnesota*, Docket No. WS-16-618, Order Issuing Site Permit for Large Wind Energy Conversion System, at Site Permit Section 4.2 (June 27, 2017) (“Wind turbine towers shall not be located closer than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040 ..., whichever is greater.”); *In the Matter of the Application of Blazing Star Wind Farm, LLC for a Site Permit for the up to 200 Megawatt Blazing Star Wind Project in Lincoln County*, Docket No. WS-16-686, Order Issuing Site Permit for Large Wind Energy Conversion System, at Site Permit Section 4.2 (August 3, 2017); *In the Matter of the Application of Odell Wind Farm, LLC for a Site Permit for a 200 MW Large Wind Energy Conversion System for the Odell Wind Farm in Cottonwood, Jackson, Martin, and Watonwan Counties*, Docket No. WS-13-843, Order Issuing Site Permit. at Site Permit Section 4.2 (July 17, 2014); *In the Matter of the Application of Prairie Rose Wind, LLC for a Site Permit for a 200 Megawatt Large Wind Energy Conversion System in Rock and Pipestone Counties*, Docket No. WS-10-425, Order Approving Findings of Fact and Issuing Permit, at Site Permit Section 4.2 (September 16, 2011).

<sup>25</sup> Ex. FR-1 (Freeborn Wind Site Permit application) at 6.

<sup>26</sup> Freeborn County Ordinance § 26-51.

<sup>27</sup> See, e.g., Department Comments at 13–15 (December 5, 2017).

<sup>28</sup> Minn. Stat. § 216F.081.

<sup>29</sup> Site Permit Order at 8–10.

### **E. Shadow Flicker**

The ALJ recommended that Freeborn Wind design its wind farm in a manner that would limit shadow flicker at nearby residences to no more than 27 hours per year, emphasizing the need to err on the side of caution. But Permit Section 7.2 does not require the Company to monitor shadow flicker at any residence unless that location is expected to receive at least 30 hours per year. AFCL argued that this change was arbitrary.

To the contrary, the 30 hour per year standard arose from Freeborn County's own ordinance.<sup>30</sup> Given that Freeborn Wind has committed to using software designed to shut down any turbine that would cause a home to experience more than 30 hours of shadow flicker per year,<sup>31</sup> the Commission found no support for adopting a 27 hour standard.<sup>32</sup> That said, if the Project generates an abnormal level of complaints, Section 7.2 also provides that the Commission may require shadow flicker monitoring at any time throughout the life of the permit.

### **F. Decommissioning**

AFCL and others objected that the Commission found Freeborn Wind's siting application complete even though the application lacked a decommissioning plan, and argued that the Site Permit's remedial decommissioning terms were insufficient.

The Commission finds no new information or argument in these objections. The Commission acknowledged its error in finding the application substantially complete without a decommissioning plan, but noted that parties had the authority to request the relevant information via discovery. Moreover, the Commission quadrupled the period for reviewing the plan before the pre-operation meeting, and required Freeborn Wind to send copies to the local zoning authorities. Finally, the Commission required that Freeborn Wind identify all surety and financial securities established for decommissioning and site restoration, and demonstrate that it will have the necessary resources to decommission the project.<sup>33</sup>

With these remedial measures, the Commission finds no need to reconsider its findings regarding decommissioning.

### **G. Property Values**

A commenter argued that the record contained insufficient evidence regarding the consequences of wind farms on the value of adjacent properties.

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<sup>30</sup> Freeborn County Ordinance § 26-56.

<sup>31</sup> See Tr. Vol. 1A at 33 (Litchfield); Ex. FR-1 at 40 (Application) and Ex. AFCL-19 at 2 (Freeborn Wind Response to AFCL IR No. 7).

<sup>32</sup> Site Permit Order at 21–22.

<sup>33</sup> *Id.* at 28; Site Permit Section 11.1.



The Commission considered this matter and concurred with the ALJ that the preponderance of the evidence did not demonstrate that wind farms reduced property values.<sup>34</sup> The Commission finds no basis to reconsider that decision.

#### **H. Interference with Over-the-Air Signals**

A commenter expressed concern that wind turbines would interfere with over-the-air television signals.

The Commission addressed this matter in its Site Permit Order, and adopted specific Site Permit conditions related to this matter.<sup>35</sup> The Commission finds no basis to reconsider that decision.

#### **I. Freeborn Wind Complaint Procedures**

AFCL objected that the address that Freeborn Wind provided for receiving complaints led to an unoccupied office.

The Commission finds merit in this objection. Accordingly the Commission will, on its own motion, accept Freeborn Wind's proposal to revise and maintain the contact information set forth in the Site Permit, providing a new location for sending complaints to the Company and, significantly, for sending complaints to Xcel once construction is complete. Xcel will then assume responsibility for maintaining this contact information.

#### **J. Enforcement**

Various commenters posed questions about how the Permit's terms would be enforced.

In brief, Section 5.2.1 provides for a Field Representative to oversee compliance with permit conditions during construction, and Section 5.2.2 provides for a Site Manager to oversee compliance during operation and decommissioning. Moreover, the Commission retains jurisdiction over the project throughout its life. At Attachment A, the permit provides a process for anyone to file a complaint about the project. Freeborn Wind must file reports monthly—or, in the case of substantial complaints filed under the complaint procedures, by the following business day—regarding the complaints it receives.

Regarding remedies, Section 3.1 states that the final turbine layout may change “to accommodate requests by landowners, local government units, federal and state agency requirements, and unforeseen conditions encountered during the detailed engineering and design process.” Section 12.4 provides for modifying or amending the permit to address any threats to human health or the environment, while Section 4.3 states that “[t]urbine operation shall be modified or turbines shall be removed from service if necessary to comply with ... noise standards.”

More generally, the Commission emphasizes that granting a permit does not give a developer a free hand in erecting and operating its windfarm. To the contrary:

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<sup>34</sup> ALJ Report, Finding 174.

<sup>35</sup> Site Permit Order at 22–26.

- The permit requires Freeborn Wind to comply with the standards of the Minnesota Department of Agriculture; the MDNR; the MPCA; U.S. Army Corps of Engineers; the U.S. Environmental Protection Agency; the U.S. Fish and Wildlife Service; the Federal Aviation Administration; the Federal Communications Commission; the Institute of Electrical and Electronics Engineers, Inc.; the National Electric Safety Code; the North American Electric Reliability Corporation; local and state safety codes; federal, state, county, city, or municipal permits (except where pre-empted); and landowner agreements.
- The permit specifies various circumstances under which Freeborn Wind will not be able to proceed without first securing additional approval from the Commission, the MDNR, the MPCA, the Minnesota State Archeologist, Gopher State One Call, the U.S. Army Corps of Engineers, local units of government, local law enforcement, and affected landowners.
- Finally, the permit requires Freeborn Wind to give various types of notice—not only to the entities and groups listed above, but also to the U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; Freeborn County Environmental Services Office; emergency responders; Public Safety Answering Points; regional development commission; and county auditor or county environmental office.

In sum, over time the Commission has gained experience in anticipating and addressing a variety of circumstances that may arise, and has incorporated into its draft site permit (and the resulting final permits) the necessary language to address those circumstances.

### **K. Community Consent**

Finally, AFCL objected to the Commission issuing the site permit on the grounds that “[t]he community does not consent to the project.”<sup>36</sup>

The Commission evaluates applications for a site permit using criteria set forth at Minn. Stat. Ch. 216F; Minn. Stat. § 216E.03, subd. 7; and Minn. R. Ch. 7854.<sup>37</sup> Applying these criteria, the Commission finds that the site permit should be granted subject to the conditions discussed herein and in prior orders.<sup>38</sup>

### **L. Conclusion**

The Commission has reviewed the entire record and the arguments presented in the comments and petitions for reconsideration.

Except as otherwise specified above, the Commission finds that the comments and petitions do not raise new issues, do not point to new and relevant evidence, do not expose errors or ambiguities in the Site Permit Order, and do not otherwise persuade the Commission that it

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<sup>36</sup> AFCL Motion for Reconsideration, at 18 (January 8, 2019).

<sup>37</sup> Site Permit Order at 3–5.

<sup>38</sup> *See generally* Site Permit Order.

should rethink the decision set forth in that order. The Commission concludes that its decision is consistent with the facts, the law, and the public interest, and will therefore deny the comments and petitions.

On its own motion, the Commission will modify the Site Permit to incorporate the changes recommended by Freeborn Wind and the Department, as set forth in the attached revised permit.

The Commission will so order.

### ORDER

1. The motions of the parties and participants are denied.
2. The Commission, on its own motion, reconsiders its Order Issuing Site Permit and Taking Other Action (December 19, 2018) to make corrections in the permit language.
3. The Commission hereby modifies the Site Permit for a Large Wind Energy Conversion System issued on December 19, 2018, to incorporate all the changes recommended by Freeborn Wind Energy LLC as modified by the Minnesota Department of Commerce, and set forth in the revised Site Permit, attached.
4. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



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**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

**SITE PERMIT FOR A  
LARGE WIND ENERGY CONVERSION SYSTEM**

**IN  
FREEBORN COUNTY**

**ISSUED TO  
FREEBORN WIND ENERGY LLC**

**PUC DOCKET NO. IP-6946\WS-17-410**

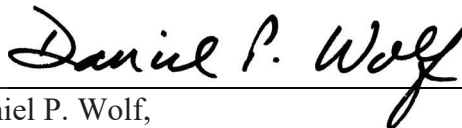
In accordance with the requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854, this site permit is hereby issued to:

**FREEBORN WIND ENERGY LLC**

The Permittee is authorized by this site permit to construct and operate an up to 84 megawatt nameplate capacity Large Wind Energy Conversion System in Freeborn County, Minnesota. The Large Wind Energy Conversion System and associated facilities shall be built within the site identified in this permit and as portrayed on the official site maps, and in compliance with the conditions specified in this permit.

This site permit shall expire 30 years from the date of initial approval, December 19, 2018.

BY ORDER OF THE COMMISSION



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Daniel P. Wolf,  
Executive Secretary

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**ATTACHMENTS**

Official Site Permit Maps

Attachment A - Complaint Procedures for Permitted Energy Facilities

Attachment B - Compliance Filing Procedures for Permitted Energy Facilities

## **1.0 SITE PERMIT**

The Minnesota Public Utilities Commission (Commission) hereby issues this site permit to Freeborn Wind Energy LLC (Permittee) pursuant to Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854. This permit authorizes the Permittee to construct and operate the Freeborn Wind Farm (Project), an 84 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Freeborn County. The LWECS and associated facilities shall be built within the site identified in this permit and as identified in the attached official site permit map(s), hereby incorporated into this document.

### **1.1 Preemption**

Pursuant to Minn. Stat. § 216F.07, this permit shall be the sole site approval required for the location, construction, and operation of this project and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments.

## **2.0 PROJECT DESCRIPTION**

The Freeborn Wind Farm, when fully constructed and operational will have a nameplate capacity up to 200 MW, of which, 84 MW will be located in Freeborn County, Minnesota and the remaining ~~106~~116 MW will be located in Worth County, Iowa. The Project will consist of 42 2-MW wind turbines, consisting solely of one turbine model or a combination of turbine models, which may include Vestas V110 and Vestas V116 as identified in the Permittee's Site Permit Application.

The project area includes approximately 26,273 acres of land, of which the Project currently holds leases on 17,435 acres. Upon completion, the project site will include no more than 100 acres of land converted to wind turbines and associated facilities approved by this site permit.

### **2.1 Associated Facilities**

Associated facilities for the Project will include access roads, an operations and maintenance (O&M) facility, project substation, permanent meteorological tower and associated weather collection data systems, electrical collection lines, and fiber optic communication lines.

The Project substation will interconnect to the Glenworth Substation with an approximately seven mile long 161 kilovolt (kV) high voltage transmission line (HVTL). The Freeborn Wind Transmission Line Project 161 kV HVTL is under PUC Docket No. IP-~~6946~~/TL-17-322, and issuance of the HVTL Route Permit is independent of this site permit process.



## 2.2 Project Location

The project is located in the following:

County	Township Name	Township	Range	Section
Freeborn	Hayward	102	20	12-15, 22-26, 35, 36
Freeborn	London	101	19	13, 14, 19-24, 27-33
Freeborn	Oakland	102	19	7-9, 16-21
Freeborn	Shell Rock	101	20	1, 2, 8, 11-17, 21-28, 35, 36

## 3.0 DESIGNATED SITE

The site designated by the Commission for the Freeborn Wind Farm is the site depicted on the official site permit maps attached to this permit. Within the site permit boundary, the Project and associated facilities shall be located on lands for which the permittee has obtained wind rights. Wind rights or easements have been obtained by the Permittee and include approximately 17,435 acres of land under easement and with participation agreements.

### 3.1 Turbine 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 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.

#### **4.0 SETBACKS AND SITE LAYOUT RESTRICTIONS**

##### **4.1 Wind Access Buffer**

Wind turbine towers shall not be placed less than five rotor diameters on the prevailing wind directions and three rotor diameters on the non-prevailing wind directions from the perimeter of the property where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

##### **4.2 Residences**

Wind turbine towers shall not be located closer than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040, established by the Minnesota Pollution Control Agency, whichever is greater.

##### **4.3 Noise**

The wind turbine towers shall be placed such that the Permittee shall, at all times, comply with noise standards established by the Minnesota Pollution Control Agency as of the date of this permit and at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with Minnesota Pollution Control Agency noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

##### **4.4 Roads**

Wind turbines and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way and the nearest designated public trail.

##### **4.5 Public Lands**

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in publicly-owned lands that have been designated for recreational or conservation purposes, including, but not limited to, Waterfowl Production Areas, State Wildlife Management Areas, Scientific and Natural Areas or county parks, except in the event that the public entity owning those lands enters into a land lease and easement with the Permittee. Wind turbine towers shall also comply with the setbacks of Section 4.1.

#### **4.6 Wetlands**

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources and the United States Army Corps of Engineers, and local units of government as implementers of the Minnesota Wetlands Conservation Act.

#### **4.7 Native Prairie**

Wind turbines and associated facilities including foundations, access roads, collector and feeder lines, underground cable, and transformers shall not be placed in native prairie, as defined in Minn. Stat. § 84.02, subd. 5, unless addressed in a prairie protection and management plan and shall not be located in areas enrolled in the Native Prairie Bank Program. Construction activities, as defined in Minn. Stat. § 216E.01, shall not impact native prairie unless addressed in a prairie protection and management plan.

The Permittee shall prepare a prairie protection and management plan in consultation with the Minnesota Department of Natural Resources if native prairie, as defined in Minn. Stat. § 84.02, subd. 5, is identified within the site boundaries. The Permittee shall file the plan 30 days prior to submitting the site plan required by Section 10.3 of this permit. The plan shall address steps that will be taken to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee, the Minnesota Department of Natural Resources, and the Commission.

#### **4.8 Sand and Gravel Operations**

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner Wind Turbine Towers.

#### **4.9 Wind Turbine Towers**

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 80 meters (262.5 feet) above grade measured at hub height.

#### **4.9.10 Turbine Spacing**

The turbine towers shall be constructed within the site boundary as shown in the official site maps. The turbine towers shall be spaced no closer than three rotor diameters in the non-

diameters on the prevailing wind directions. If required during final micro-siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

#### **4.104.11 Meteorological Towers**

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or other development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration. There shall be no lights on the meteorological towers other than what is required by the Federal Aviation Administration. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

All meteorological towers shall be fitted with the necessary equipment to deploy/attach acoustic recording devices to monitor wildlife activity.

#### **4.114.12 Aviation**

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and private airports (as defined in Minn. R. 8800.0100, subp. 24(a) and 24(b)) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minn. R. 8800.1900, subp. 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation, Department of Aviation, and the Federal Aviation Administration. The Permittee shall notify owners of all known airports within six miles of the project prior to construction.

#### **4.13 Footprint Minimization**

The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, transformers, and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner.

## **5.0 GENERAL CONDITIONS**

The Permittee shall comply with the following conditions during construction and operation of the LWECS and associated facilities over the life of this permit.

### **5.1 Notification**

Within 14 days of permit issuance, the Permittee shall send a copy of the permit and the complaint procedures to any regional development commission, county auditor and environmental office, and city and township clerk in which any part of the site is located. Within 30 days of permit issuance, the Permittee shall provide all affected landowners with a copy of this permit and the complaint procedures. In no case shall the landowner receive this site permit and complaint procedures less than five days prior to the start of construction on their property. The Permittee shall contact landowners prior to entering the property or conducting maintenance within the site, unless otherwise negotiated with the affected landowner.

### **5.2 Construction and Operation Practices**

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the Freeborn Wind Farm Site Permit Application for a LWECS filed with the Commission on June 15, 2107, and the record of the proceedings unless this permit establishes a different requirement in which case this permit shall prevail.

#### **5.2.1 Field Representative**

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during construction of the project. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative 14 days prior to commencing construction. The Permittee shall provide the field representative's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commencing construction. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### **5.2.2 Site Manager**

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of the

project. This person shall be accessible by telephone or other means during normal business hours for the life of this permit.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the site manager 14 days prior to commercial operation of the facility. The Permittee shall provide the site manager's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commercial operation of the facility. The Permittee may change the site manager at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### 5.2.3 Employee Training and Education of Permit Terms and Conditions

The Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the LWECs of the terms and conditions of this permit.

#### 5.2.4 Topsoil Protection

The Permittee shall implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with the affected landowner.

#### 5.2.5 Soil Compaction

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the project's life and shall confine compaction to as small an area as practicable.

#### 5.2.6 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency Construction Stormwater Program.

If construction of the facility disturbs more than one acre of land, or is sited in an area designated by the Minnesota Pollution Control Agency as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit from the Minnesota Pollution Control Agency that provides for the development of a Stormwater Pollution Prevention Plan (SWPPP) that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage,

blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the facilities shall be returned to pre-construction conditions.

#### 5.2.7 Wetlands

Construction in wetland areas shall occur during frozen ground conditions to minimize impacts, to the extent feasible. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and managed in accordance with all applicable wetland permits. Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

Wetland and water resource areas disturbed by construction activities shall be restored to pre-construction conditions, in accordance with all applicable wetland permits. Restoration of the wetlands will be performed by the Permittee in accordance with the requirements of applicable state and federal permits or laws and landowner agreements.

#### 5.2.8 Vegetation Management

The Permittee shall disturb or clear the project site only to the extent necessary to assure suitable access for construction, safe operation and maintenance of the project. The Permittee shall minimize the number of trees to be removed in selecting the site layout specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation, to the extent that such actions do not violate sound engineering principles.

#### 5.2.9 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture, Minnesota Department of Natural Resources, and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner or designee to obtain approval for the use of pesticide at least 14 days prior to any application on their property. The landowner may request that there be no application of pesticides on any part of the site within the landowner's property. The Permittee shall provide notice of pesticide application to affected landowners, and known beekeepers operating apiaries within three miles of the project site at least 14 days prior to such application.

#### 5.2.10 Invasive Species

The Permittee shall employ best management practices to avoid the potential spread of invasive

species on lands disturbed by project construction activities. The Permittee shall develop an Invasive Species Prevention Plan to prevent the introduction and spread of invasive species on lands disturbed by project construction activities and file with the Commission 14 days prior to the pre-construction meeting.

#### 5.2.11 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil, the Permittee shall select site appropriate seed certified to be free of noxious weeds. The Permittee shall consult with landowners on the selection and use of seed for replanting. To the extent possible, the Permittee shall use native seed mixes.

#### 5.2.12 Public Roads

At least 14 days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components. The Permittee shall notify the Commission of such arrangements upon request.

#### 5.2.13 Turbine Access Roads

The Permittee shall construct the least number of turbine access roads necessary to safely and efficiently operate the project and satisfy landowner requests. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ditches without required permits and approvals. When access roads are constructed across streams, drainage ways, or drainage ditches, the access roads shall be designed and constructed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Any access roads that are constructed across streams or drainage ditches shall be designed and constructed in a manner that maintains existing fish passage. Access roads that are constructed across grassed waterways, which provide drainage for surface waters that are ephemeral in nature, are not required to maintain or provide fish passage. Access roads shall be



constructed in accordance with all necessary township, county or state road requirements and permits.

#### 5.2.14 Private Roads

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner.

#### 5.2.15 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when constructing the LW ECS. In the event that a resource is encountered, the Permittee shall contact and consult with the State Historic Preservation Office and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction at such location and promptly notify local law enforcement and the State Archaeologist. Construction at such location shall not proceed until authorized by local law enforcement and the State Archaeologist.

#### 5.2.16 Interference

At least 14 days prior to the pre-construction meeting, the Permittee shall submit to the Commission, an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law. In the event the project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

#### 5.2.17 Livestock Protection

The Permittee shall take precautions to protect livestock during all phases of the project's life.

#### 5.2.18 Fences

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the project's life unless otherwise negotiated with the affected landowner. When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

#### 5.2.19 Drainage Tiles

The Permittee shall take into account, avoid, promptly repair or replace all drainage tiles broken or damaged during all phases of project's life unless otherwise negotiated with affected landowner.

#### 5.2.20 Equipment Storage

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner. Temporary equipment staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

#### 5.2.21 Restoration

The Permittee shall, as soon as practical following construction of each turbine, restore the areas temporarily affected by construction to the condition that existed immediately before construction began, to the extent possible. The time period to complete restoration may be no longer than 12 months after completion of the construction, unless otherwise negotiated with the affected landowner. Restoration shall be compatible with the safe operation, maintenance and inspection of the project. Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities.

#### 5.2.22 Cleanup

All waste and scrap that is the product of construction shall be removed from the site and all premises on which construction activities were conducted and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.

#### 5.2.23 Pollution and Hazardous Waste

All appropriate precautions to protect against pollution of the environment shall be taken by the Permittee. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all wastes generated during construction and restoration of the site.

#### 5.2.24 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

#### 5.2.25 Public Safety

The Permittee shall provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the project and any restrictions or dangers associated with the project. The Permittee shall also provide any necessary safety measures such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minn. Stat. § 216D.01, subd. 11, to Gopher State One Call following the completion of construction at the site.

#### 5.2.26 Tower Identification

All turbine towers shall be marked with a visible identification number.

#### 5.2.27 Federal Aviation Administration Lighting

Towers shall be marked as required by the Federal Aviation Administration. There shall be no lights on the towers other than what is required by the Federal Aviation Administration. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

### **5.3 Communication Cables**

The Permittee shall place all communication and supervisory control and data acquisition cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

### **5.4 Electrical Collector and Feeder Lines**

Collector lines that carry electrical power from each individual transformer associated with a wind turbine to an internal project interconnection point shall be buried underground. Collector lines shall be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

Feeder lines that carry power from an internal project interconnection point to the project substation or interconnection point on the electrical grid may be overhead or underground. Feeder line locations shall be negotiated with the affected landowner. Any overhead or underground feeder lines that parallel public roads shall be placed within the public rights-of-way or on private land immediately adjacent to public roads. If overhead feeder lines are located

within public rights-of-way, the Permittee shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited, to existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shields shall be placed on all guy wires associated with overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 10.3.

## **5.5 Other Requirements**

### **5.5.1 Safety Codes and Design Requirements**

The LWECs and associated facilities shall be designed to meet or exceed all relevant local and state codes, Institute of Electrical and Electronics Engineers, Inc. standards, the National Electric Safety Code, and North American Electric Reliability Corporation requirements. The Permittee shall report to the Commission on compliance with these standards upon request.

### **5.5.2 Other Permits and Regulations**

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. At least 14 days prior to the preconstruction meeting, the Permittee shall submit a filing demonstrating that it has obtained such permits. The Permittee shall provide a copy of any such permit upon Commission request.

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the project that do not conflict with or are not preempted by federal or state permits and regulations.

## **6.0 SPECIAL CONDITIONS**

Special conditions shall take precedence over other conditions of this permit should there be a conflict.

### **6.1 Pre-Construction Noise Modeling**

Freeborn Wind Energy LLC shall file a plan, including modeling and/or proposed mitigation, at least 60 days prior to the pre-construction meeting that demonstrates it will not cause or significantly contribute to an exceedance of the MPCA Noise Standards.

To ensure that the turbine-only noise does not cause or significantly contribute to an exceedance of the MPCA Noise Standards, modeled wind turbine-only sound levels (NARUC ISO 9613-2 with 0.5 ground) at receptors shall not exceed 47 dB(A) L50-one hour. Given this, at no time will turbine-only noise levels exceed the MPCA Noise Standards, and when total sound does exceed the limits it will be primarily the result of wind or other non-turbine noise sources. Under these conditions, the contribution of the turbines will be less than 3 dB(A), which is the generally recognized minimum detectible change in environmental noise levels (non-laboratory setting). For example, when nighttime background sound levels are at 50 dB(A) L50-one hour, a maximum turbine-only contribution of 47 dB(A) L50-one hour would result in a non-significant increase in total sound of less than 3 dB(A).

## **6.2 Post-Construction Noise Monitoring**

If the Noise Studies conducted under Section 7.4 document an exceedance of the MPCA Noise Standards where turbine-only noise levels produce more than 47 dB(A) L50-one hour at nearby receptors, then the Permittee shall work with the Department of Commerce to develop a plan to minimize and mitigate turbine-only noise impacts.

## **6.3 Over-the-Air Television Interference Notice Requirements**

Freeborn Wind must provide notice which includes a description of the Project's potential to interfere with OTA TV service, Freeborn Wind's mitigation program, and availability of the Site Permit and Complaint Procedure to households in the following areas:

- All households in "at risk" areas identified for all six local television stations, as identified in Appendix D of the Site Permit Application;
- Each local government office in the communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow; and
- Local over-the-air television broadcasters serving the Project area.

## **7.0 SURVEYS AND REPORTING**

### **7.1 Biological and Natural Resource Inventories**

The Permittee, in consultation with the Commission and the Department of Natural Resources, shall design and conduct pre-construction desktop and field inventories of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the project site and assess the presence of state- or federally-listed, or threatened, species. The results of the inventories shall be filed with the Commission at least 30 days prior to the pre-construction meeting to confirm compliance of conditions in this permit. The Permittee shall file with the Commission any

biological surveys or studies conducted on this project, including those not required under this permit.

## **7.2 Shadow Flicker**

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure. A Shadow Flicker Management Plan will be prepared by the Permittee, which will include the results of any shadow flicker modeling, assumptions made, levels of exposure prior to implementation of planned minimization and mitigation efforts, planned minimization and mitigation efforts, and planned communication and follow up with residence. The Shadow Flicker Management Plan shall be filed with the Commission at least 14 days prior to the pre-construction meeting to confirm compliance with conditions of this permit.

Should shadow flicker modeling identify any residence that will experience in 30 hours, or more, of shadow flicker per year, the Permittee must specifically identify these residences in the Shadow Flicker Management Plan. If through minimization and mitigation efforts identified in the Shadow Flicker Management Plan the Permittee is not able to reduce a residence's anticipated shadow flicker exposure to less than 30 hours per year a shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at the residence. The Shadow Flicker Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of any shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

Commission staff and EERA staff will be responsible for the review and approval of the Shadow Flicker Management Plan. The Commission may require the Permittee to conduct shadow flicker monitoring at any time during the life of this Permit.

## **7.3 Wake Loss Studies**

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the pre-construction micro-siting analysis leading to the final tower locations and an estimate of total project wake losses. As part of the annual report on project energy production required under Section 10.8 of the permit the Permittee shall file with the Commission any

operational wake loss studies conducted on this project during the calendar year preceding the report.

#### **7.4 Noise Studies**

The Permittee shall file a proposed methodology for the conduct of a post-construction noise study at least 14 days prior to the pre-construction meeting. The Permittee shall develop the post-construction noise study methodology in consultation with the Department of Commerce. The study must incorporate the most current Department of Commerce Noise Study Protocol to determine the operating LWECs noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds.

The noise study methodology shall be developed by, and the noise monitoring shall be conducted by, an independent consultant approved by the Department of Commerce at Freeborn Wind's expense.

The Permittee must conduct the post-construction noise study and file with the Commission the completed post-construction noise study within 18 months of commencing commercial operation.

#### **7.5 Avian and Bat Protection**

##### **7.5.1 Avian and Bat Protection Plan**

The Permittee shall comply with the provisions of the Avian and Bat Protection Plan (ABPP), as submitted in Giampoli Rebuttal Schedule 1, filed on January 22, 2018, and revisions resulting from the annual audit of ABPP implementation. The first annual audit and revision will be filed with the Commission 14 days before the preconstruction meeting and revisions should include any updates associated with final construction plans. The ABPP must address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the project. The ABPP shall also include formal and incidental post-construction fatality monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the project.

The Permittee shall, by the 15th of March following each complete or partial calendar year of operation, file with the Commission an annual report detailing findings of its annual audit of ABPP practices. The annual report shall include summarized and raw data of bird and bat fatalities and injuries and shall include bird and bat fatality estimates for the project using agreed upon estimators from the prior calendar year. The annual report shall also identify any deficiencies or recommended changes in the operation of the project or in the ABPP to reduce avian and bat fatalities and shall provide a schedule for implementing the corrective or modified

actions. The Permittee shall provide a copy of the report to the Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

#### 7.5.2 Quarterly Incident Reports

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15th of January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian and bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols. If a dead or injured avian or bat species is found, the report shall describe the potential cause of the occurrence (if known) and the steps taken to address future occurrences. The Permittee shall provide a copy of the report to the Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

#### 7.5.3 Immediate Incident Reports

The Permittee shall notify the Commission, U.S. Fish and Wildlife Service, and the Minnesota Department of Natural Resources within 24 hours of the discovery of any of the following:

- (a) five or more dead or injured birds or bats within a five day reporting period;
- (b) one or more dead or injured state threatened, endangered, or species of special concern;
- (c) one or more dead or injured federally listed species, including species proposed for listing; or
- (d) one or more dead or injured bald or golden eagle(s).

In the event that one of the four discoveries listed above should be made, the Permittee must file with the Commission within seven days, a compliance report identifying the details of what was discovered, the turbine where the discovery was made, a detailed log of agencies and individuals contacted, and current plans being undertaken to address the issue.

#### 7.5.4 Turbine Operational Curtailment

The Permittee shall operate all facility turbines so that all turbines are locked, or feathered, up to the manufacturer's standard cut-in speed from one-half hour before sunset to one-half hour after sunrise of the following day, from April 1 to October 31 of each year of operation.

All operating turbines at the facility must be equipped with operational software that is capable of allowing for adjustment of turbine cut-in speeds.



### 7.5.5 Karst Geology Investigations

Should initial geotechnical and soils testing at proposed turbine locations identify areas with karst bedrock within 50 feet or less of the soil surface, which may lead to sinkhole formation, additional geotechnical investigations will be performed to insure the area safe for the construction of a wind turbine.

Additional geotechnical investigations may include the following:

1. A geophysical investigation (electrical resistivity) to explore for voids in the bedrock.
2. Soil/bedrock borings to check and confirm the results of the electrical resistivity survey.
3. A series of electric cone penetrometer (CPT) soundings if the potential for loose zones in the soil overburden are suspected.

The Permittee must file with the Commission, a report for all geotechnical investigations completed. The reports must include methodology, results, and conclusions drawn from the geotechnical investigation.

## **8.0 AUTHORITY TO CONSTRUCT LWECS**

### **8.1 Wind Rights**

At least 14 days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the project within the boundaries authorized by this permit. Nothing in this permit shall be construed to preclude any other person from seeking a permit to construct a wind energy conversion system in any area within the boundaries of the project covered by this permit if the Permittee does not hold exclusive wind rights for such areas.

### **8.2 Power Purchase Agreement**

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason for not having such commitment. In such event, the

Commission may determine whether this permit should be amended or revoked. No amendment or revocation of this permit may be undertaken except in accordance with Minn. R. 7854.1300.

### **8.3 Failure to Commence Construction**

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction of the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this permit should be amended or revoked. No revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minn. R. 7854.1300.

## **9.0 COMPLAINT PROCEDURES**

Prior to the start of construction, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the Freeborn Wind Farm Docket No. IP-6946\WS-17-410 complaint procedures attached to this permit (Attachment A).

## **10.0 COMPLIANCE REQUIREMENTS**

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be electronically filed with the Commission. Attachment B to this permit contains a summary of compliance filings, which is provided solely for the convenience of the Permittee. If this permit conflicts, or is not consistent with Attachment B, the conditions in this permit will control.

### **10.1 Pre-Construction Meeting**

Prior to the start of any construction, the Permittee shall participate in a pre-construction meeting with the Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the construction start date.

### **10.2 Pre-Operation Meeting**

At least 14 days prior to commercial operation of the facility, the Permittee shall participate in a pre-operation meeting with the Department of Commerce and Commission staff to coordinate field monitoring of operation activities for the project. Within 14 days following the pre-

operation meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees.

### **10.3 Site Plan**

At least 14 days prior to the pre-construction meeting, the Permittee shall provide the Commission, the Department and the Freeborn County Environmental Services Office with a site plan that includes specifications and drawings for site preparation and grading; specifications and locations of all turbines and other structures to be constructed including all electrical equipment, collector and feeder lines, pollution control equipment, fencing, roads, and other associated facilities; and procedures for cleanup and restoration. The documentation shall include maps depicting the site boundary and layout in relation to that approved by this permit. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to Minnesota Rules Chapter 7030. At the same time, the Permittee shall notify affected landowners and city and town clerks that the site plan is on file with the Commission and Freeborn County Environmental Services Office. The Permittee may submit a site plan and engineering drawings for only a portion of the project if the Permittee intends to commence construction on certain parts of the project before completing the site plan and engineering drawings for other parts of the project.

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes to its site plan or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, the Department, the Freeborn County Environmental Services Office, city and town clerks, and the affected landowners at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

In the event that previously unidentified human and environmental conditions are discovered during construction that by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine site. Under these circumstances, the Permittee shall notify the Commission, the Department, the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, the Freeborn County Environmental Services Office, city and town clerks, and the affected landowners of any turbines that are to be relocated, and provide the previously unidentified environmental conditions and how the movement of the turbine mitigates the human and environmental impact at least five days before implementing the changes. No changes shall be made that would be in violation of any terms of this permit.

#### **10.4 Status Reports**

The Permittee shall file status reports with the Commission on progress regarding site construction. The Permittee need not report more frequently than monthly. Reports shall begin with the commencement of site construction and continue until completion of site restoration.

#### **10.5 Notification to the Commission**

At least three days before the project is to commence commercial operation, the Permittee shall file with the Commission the date on which the project will commence commercial operation and the date on which construction was completed.

#### **10.6 As-Builts**

Within 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

#### **10.7 GPS Data**

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (e.g., ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the large wind energy conversion system.

#### **10.8 Project Energy Production**

The Permittee shall, by February 1st following each complete or partial year of project operation, file a report with the Commission on the monthly energy production of the project including:

- (a) the installed nameplate capacity of the permitted project;
- (b) the total monthly energy generated by the project in MW hours;
- (c) the monthly capacity factor of the project;
- (d) yearly energy production and capacity factor for the project;
- (e) the operational status of the project and any major outages, major repairs, or turbine performance improvements occurring in the previous year; and
- (f) any other information reasonably requested by the Commission.

This information shall be considered public and must be filed electronically.

## **10.9 Wind Resource Use**

The Permittee shall, by February 1st following each complete or partial calendar year of operation, file with the Commission the average monthly and average annual wind speed collected at one permanent meteorological tower during the preceding year or partial year of operation. This information shall be considered public and must be filed electronically.

## **10.10 Emergency Response**

The Permittee shall prepare an Emergency Response Plan in consultation with the emergency responders having jurisdiction over the facility prior to project construction. The Permittee shall submit a copy of the plan, along with any comments from emergency responders, to the Commission at least 14 days prior to the pre-construction meeting and a revised plan, if any, at least 14 days prior to the pre-operation meeting. The Permittee shall provide as a compliance filing confirmation that the Emergency Response Plan was provided to the emergency responders and Public Safety Answering Points (PSAP) with jurisdiction over the facility prior to commencement of construction. The Permittee shall obtain and register the facility address or other location indicators acceptable to the emergency responders and PSAP having jurisdiction over the facility.

## **10.11 Extraordinary Events**

Within 24 hours of discovery of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, acts of sabotage, collector or feeder line failure, and injured worker or private person. The Permittee shall, within 30 days of the occurrence, file a report with the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

## **11.0 DECOMMISSIONING, RESTORATION, AND ABANDONMENT**

### **11.1 Decommissioning Plan**

The Permittee shall submit a decommissioning plan to the Commission at least 60 days prior to the pre-operation meeting, and provide updates to the plan every five years thereafter.

The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan

may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall demonstrate that it will provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

### **11.2 Site Restoration**

Upon expiration of this permit, or upon earlier termination of operation of the project, or any turbine within the project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. To the extent feasible, the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained. All such agreements between the Permittee and the affected landowner shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months of termination.

### **11.3 Abandoned Turbines**

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the project. The project, or any turbine within the project, shall be considered abandoned after one year without energy production and the land restored pursuant to Section 11.2 unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the project, or any turbine within the project, to service.

## **12.0 COMMISSION AUTHORITY AFTER PERMIT ISSUANCE**

### **12.1 Final Boundaries**

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this project in accordance with Minn. R. 7854.1300, subp. 1. If done, this permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this permit.

## **12.2 Expansion of Site Boundaries**

No expansion of the site boundaries described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

## **12.3 Periodic Review**

The Commission shall initiate a review of this permit and the applicable conditions at least once every five years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

## **12.4 Modification of Conditions**

After notice and opportunity for hearing, this permit may be modified or amended for cause, including but not limited to the following:

- (a) violation of any condition in this permit;
- (b) endangerment of human health or the environment by operation of the project; or
- (c) existence of other grounds established by rule.

## **12.5 More Stringent Rules**

The Commission's issuance of this permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

## **12.6 Right of Entry**

Upon reasonable notice, presentation of credentials, and at all times in compliance with the Permittee's site safety standards, the Permittee shall allow representatives of the Commission to perform the following:

- (a) to enter upon the facilities easement of the site property for the purpose of obtaining information, examining records, and conducting surveys or investigations;
- (b) to bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;
- (c) to sample and monitor upon the facilities easement of the property; and

- (d) to examine and copy any documents pertaining to compliance with the conditions of this permit.

### **12.7 Proprietary Information**

Certain information required to be filed with the Commission under this permit may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

### **13.0 PERMIT AMENDMENT**

This permit may be amended at any time by the Commission in accordance with Minn. R. 7854.1300, subp. 2. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

### **14.0 TRANSFER OF PERMIT**

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit. The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required. The Commission may impose additional conditions on any new permittee as part of the approval of the transfer.

Within 20 days after the date of the notice provided in Section 10.5, the Permittee shall file a notice describing its ownership structure, identifying, as applicable:

- (a) the owner(s) of the financial and governance interests of the Permittee;
- (b) the owner(s) of the majority financial and governance interests of the Permittee's owners;  
and
- (c) the Permittee's ultimate parent entity (meaning the entity which is not controlled by any other entity).

The Permittee shall immediately notify the Commission of:



- (a) a change in owner(s) of the majority\* financial or governance interests in the Permittee;
- (b) a change in owner(s) of the majority\* financial or governance interests of the Permittee's owners; or
- (c) a sale which changes the parent entity of the Permittee.

*\*When there are only co-equal 50/50 percent interests, any change shall be considered a change in majority interest.*

The Permittee shall notify the Commission of:

- (a) the sale of a parent entity or a majority interest in the Permittee;
- (b) the sale of a majority interest of the Permittee's owners or majority interest of the owners; or
- (c) a sale which changes the entity with ultimate control over the Permittee.

#### **15.0 REVOCATION OR SUSPENSION OF PERMIT**

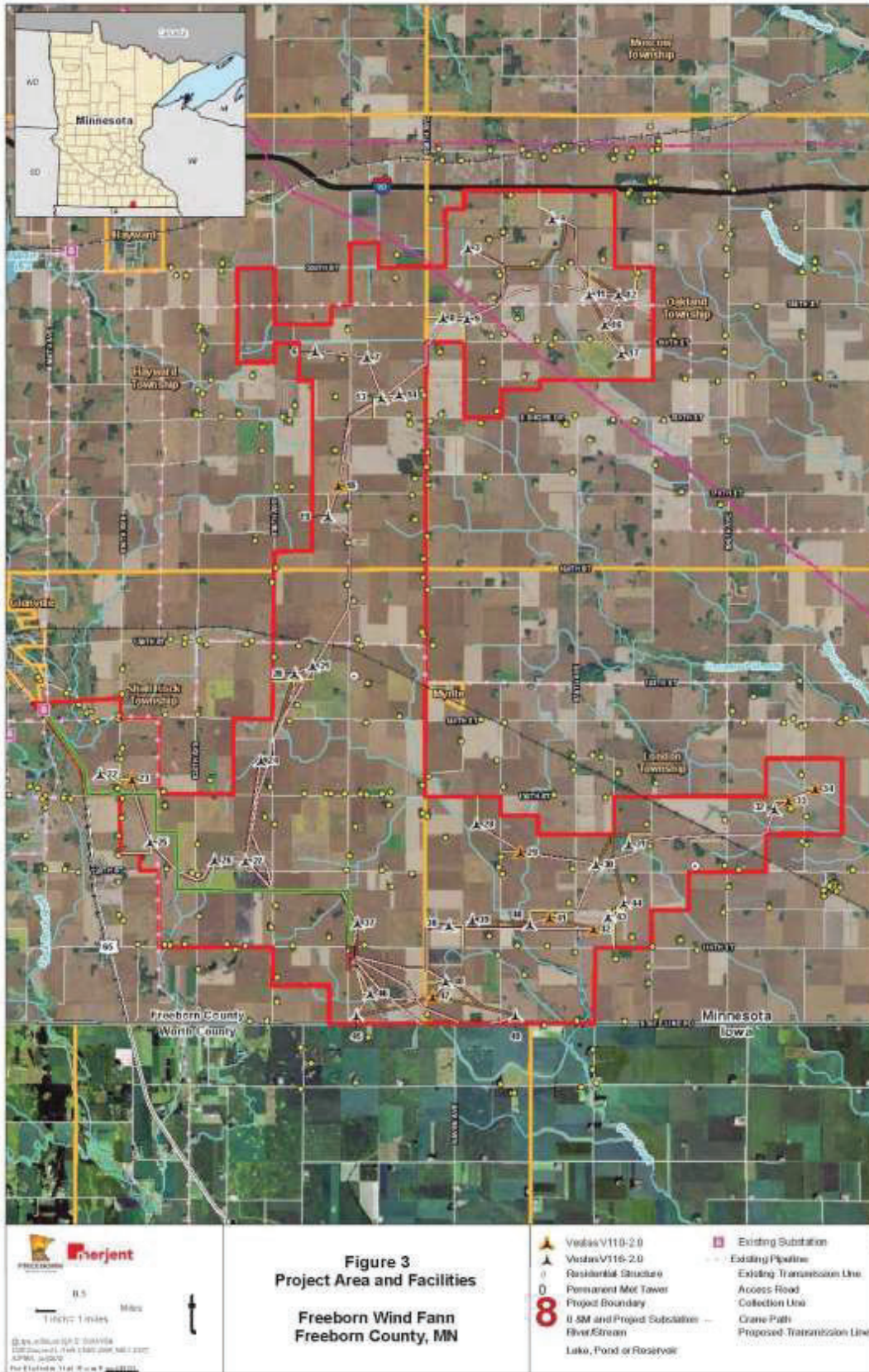
The Commission may take action to suspend or revoke this permit upon the grounds that:

- (a) a false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;
- (b) there has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards;
- (c) there has been a material violation of a provision of an applicable statute, rule, or an order of the Commission; or
- (d) the Permittee has filed a petition with the Commission requesting that the permit be revoked or terminated.

In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minn. R. 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked.

**16.0 EXPIRATION DATE**

This permit shall expire 30 years after the date this permit was approved and adopted.



**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLAINT HANDLING PROCEDURES FOR  
PERMITTED ENERGY FACILITIES**

**A. Purpose**

To establish a uniform and timely method of reporting and resolving complaints received by the permittee concerning permit conditions for site preparation, construction, cleanup, restoration, operation, and maintenance.

**B. Scope**

This document describes complaint reporting procedures and frequency.

**C. Applicability**

The procedures shall be used for all complaints received by the permittee and all complaints received by the Minnesota Public Utilities Commission (Commission) under Minn. R. 7829.1500 or Minn. R. 7829.1700 relevant to this permit.

**D. Definitions**

**Complaint:** A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration or, television or communication signals, or other site and associated facilities permit conditions. Complaints do not include requests, inquiries, questions or general comments.

**Substantial Complaint:** A written complaint alleging a violation of a specific permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

**Unresolved Complaint:** A complaint which, despite the good faith efforts of the permittee and a person, remains unresolved or unsatisfactorily resolved to one or both of the parties.

**Person:** An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

## **E. Complaint Documentation and Processing**

1. The permittee shall designate an individual to summarize complaints for the Commission. This person's name, phone number and email address shall accompany all complaint submittals.
2. A person presenting the complaint should to the extent possible, include the following information in their communications:
  - a. name, address, phone number, and email address;
  - b. date of complaint;
  - c. tract or parcel number; and
  - d. whether the complaint relates to a permit matter or a compliance issue.
3. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:
  - a. docket number and project name;
  - b. name of complainant, address, phone number and email address;
  - c. precise description of property or parcel number;
  - d. name of permittee representative receiving complaint and date of receipt;
  - e. nature of complaint and the applicable permit condition(s);
  - f. activities undertaken to resolve the complaint; and
  - g. final disposition of the complaint.

## **F. Reporting Requirements**

The permittee shall commence complaint reporting at the beginning of project construction and continue through the term of the permit. The permittee shall report all complaints to the Commission according to the following schedule:

**Immediate Reports:** All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to the Commission's Consumer Affairs Office at 1-800-657-3782 (voice messages are acceptable) or [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us). For e-mail reporting, the email subject line should read "PUC EFP Complaint" and include the appropriate project docket number.

**Monthly Reports:** During project construction and restoration, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be filed by the 15th of each month to Daniel P. Wolf, Executive Secretary, Public Utilities Commission, using the eDockets system. The eDockets system is located at:  
<https://www.edockets.state.mn.us/EFiling/home.jsp>

If no complaints were received during the preceding month, the permittee shall file a summary indicating that no complaints were received.

**G. Complaints Received by the Commission**

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the permittee.

**H. Commission Process for Unresolved Complaints**

Commission staff shall perform an initial evaluation of unresolved complaints submitted to the Commission. Complaints raising substantial permit issues shall be processed and resolved by the Commission. Staff shall notify the permittee and appropriate persons if it determines that the complaint is a substantial complaint. With respect to such complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the staff notification. The complaint will be presented to the Commission for a decision as soon as practicable.

**I. Permittee Contacts for Complaints and Complaint Reporting**

Complaints may be filed by mail or email to:

Prior to construction:

Dan Litchfield  
Freeborn Wind Energy LLC  
One South Wacker Drive, Suite 1800  
Chicago, IL 60606  
dlitchfield@invenergyllc.com

Upon commencement of construction, complaints should instead be directed here:

Sean Lawler  
Xcel Energy  
414 Nicollet Mall  
Minneapolis, MN 55401  
Sean.w.lawler@xcelenergy.com

This information shall be maintained current by informing the Commission of any changes as they become effective.

**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLIANCE FILING PROCEDURE FOR  
PERMITTED ENERGY FACILITIES**

**A. Purpose**

To establish a uniform and timely method of submitting information required by Commission energy facility permits.

**B. Scope and Applicability**

This procedure encompasses all known compliance filings required by permit.

**C. Definitions**

**Compliance Filing:** A filing of information to the Commission, where the information is required by a Commission site or route permit.

**D. Responsibilities**

1. The permittee shall file all compliance filings with Daniel P. Wolf, Executive Secretary, Public Utilities Commission, through the eDockets system. The eDockets system is located at: <https://www.edockets.state.mn.us/EFiling/home.jsp>

General instructions are provided on the eDockets website. Permittees must register on the website to file documents.

2. All filings must have a cover sheet that includes:
  - a. Date
  - b. Name of submitter/permittee
  - c. Type of permit (site or route)
  - d. Project location
  - e. Project docket number
  - f. Permit section under which the filing is made
  - g. Short description of the filing
3. Filings that are graphic intensive (e.g., maps, engineered drawings) must, in addition to being electronically filed, be submitted as paper copies and on CD. Paper copies and CDs should be sent to: 1) Daniel P. Wolf, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147, and 2) Department of Commerce, Energy Environmental Review and Analysis, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben  
Valerie Means  
Matthew Schuerger  
John A. Tuma

Chair  
Commissioner  
Commissioner  
Commissioner

In the Matter of the Application of Northern States Power Company for a Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County, Minnesota

ISSUE DATE: March 31, 2020

DOCKET NO. E-002/WS-17-410

ORDER DENYING AFCL's PETITIONS AND AMENDING SITE PERMIT

**PROCEDURAL HISTORY**

On December 19, 2018, the Commission issued an order granting Freeborn Wind Energy LLC a site permit to erect a collection of wind turbines and related facilities, known as a Large Wind Energy Conversion System (LWECS or wind farm), in Freeborn County (the Freeborn Wind Project).<sup>1</sup>

On May 10, 2019, the Commission issued an order amending the site permit.<sup>2</sup>

On July 2, 2019, the Commission issued an order denying the petition of the Association of Freeborn County Landowners (AFCL) to reconsider the May 10, 2019 order.<sup>3</sup>

On October 22, 2019, the Commission issued an order transferring the site permit to the project's new owner, Northern States Power Company d/b/a Xcel Energy (Xcel).<sup>4</sup>

On October 23, 2019, the Commission solicited comments on a) Xcel's petition to amend the site permit to change the number, type, and layout of the turbines to be used, and to incorporate additional land, and b) Xcel's supplemental environmental impact analysis offered in support of its proposed amendments.<sup>5</sup>

By November 15, 2019, the Commission had received comments from the Minnesota Department of Commerce (the Department), and various members of the public.

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<sup>1</sup> Order Issuing Site Permit and Taking Other Action (December 19, 2018).

<sup>2</sup> Order Amending Site Permit (May 10, 2019).

<sup>3</sup> Order Denying Reconsideration (July 2, 2019).

<sup>4</sup> Order Granting Request to Transfer Site and Route Permits (October 22, 2019).

<sup>5</sup> Citing Xcel petition for site permit amendments (August 20, 2019).



On November 19, 2019, the Commission received reply comments from AFCL and Xcel, and another comment from a member of the public.

On December 12, 2019, the Department filed additional comments. Also, AFCL filed a petition for preparation of an Environmental Impact Statement under Minn. Stat. § 116D.03, subd. 3, and Minn. Stat. § 116D.04, subd. 2a; and to transfer the proceedings to the Office of Administrative Hearings for a contested case proceeding.

On December 19, 2019, the Commission met to consider AFCL's and Xcel's petitions. The Commission voted to deny AFCL's petitions, and approve Xcel's petition to amend the Site Permit.

On January 3, 2020, the Minnesota Environmental Quality Board (EQB) informed the Commission that AFCL had petitioned for the preparation of an Environmental Assessment Worksheet for the project, and that the EQB identified the Commission as the appropriate agency to determine if a worksheet is required. This action barred the Commission from issuing its order effectuating its December 19, 2019 decision pending further action on the petition for the worksheet.<sup>6</sup>

On January 15, 2020, the AFCL petition to the EQB was filed with the Commission.

On February 3, 2020, Minnesota Center for Environmental Advocacy (MCEA) and Fresh Energy filed a letter opposing AFCL's petition for an Environmental Assessment Worksheet, and AFCL filed a letter opposing the letter of MCEA and Fresh Energy.

On February 6, 2020, the Commission met to consider the matter.

## **FINDINGS AND CONCLUSIONS**

### **I. Summary**

Having reviewed the record of the proceedings, the Commission will decline to order the preparation of an Environmental Impact Statement or an Environmental Assessment Worksheet, or to refer the matter to the Office of Administrative Hearings for a contested case proceeding.

Finding Xcel's petition to amend the site permit to be reasonable, the Commission will approve it.

### **II. Xcel's Petition**

#### **A. Overview**

Xcel seeks to amend the Freeborn Wind Project's site permit to allow the use of a different combination of wind turbines and a different layout. The initial permit provides for installing 42 turbines, including 32 Vestas V116s and 10 Vestas 110s. Xcel now proposes to install only 41 turbines, replacing the 32 Vestas V116s with 31 Vestas V120s. Xcel does not expect the new

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<sup>6</sup> Minn. R. 4410.3100, subp. 1.

turbine model to generate more power than the old model, but the V120's longer turbine blade would enable the new model to harvest wind power from a broader area, resulting in more electricity generation over time.

This change in turbine models, combined with advanced engineering, geotechnical data, landowner input, and environmental field information, prompted Xcel to propose a change to the turbine layout. Xcel proposed to remove one turbine and reposition 21 others.

## **B. Revised Permit Language**

### **1. Site Permit Section 2.0 – Project Description**

Site Permit Section 2.0 currently reads as follows:

The Freeborn Wind Farm, when fully constructed and operational will have a nameplate capacity of up to 200 MW, of which, 84 MW will be located in Freeborn County, Minnesota and the remaining 116 MW will be located in Worth County, Iowa. The Project will consist of 42 2-MW wind turbines, consisting solely of one turbine model or a combination of turbine models, which may include Vestas V110 and Vestas V116 as identified in the Permittee's Site Permit Application.

Xcel proposed amending this section to read as follows:

The Freeborn Wind Farm will be a 200 MW nameplate capacity LWECs, 82 MW of which will be located in Freeborn County, Minnesota. The LWECs portion in Minnesota will consist of 10 Vestas V110 and 31 Vestas V120 turbines. Both turbine models are 2 MW in size.

### **2. Site Permit Section 3.0 – Designated Site**

The last sentence of Site Permit Section 3.0 states that the Permittee had obtained wind rights or easements for approximately 17,435 acres under easement and with participation agreements. Xcel proposed amending this language to read as follows:

Wind rights or easements have been obtained by the Permittee and include approximately 21,313 acres of land under easement and with participation agreements.

### **3. Site Permit Section 3.1 – Turbine Layout**

Xcel did not propose changing any of the language of this section of the Site Permit, but asked to replace the existing site layout maps with revised maps reflecting the selection of Vestas V110 and V120 turbines.

### C. Environmental Impact Analysis

In support of its petition, Xcel reported on how its analysis of the project's environmental consequences has changed over time—partially due to Xcel's proposed changes, but mostly due to changes arising from other sources. Xcel's discussion is summarized below:

*Demographics:* Xcel stated that it does not anticipate that its proposed changes would produce any significant change to the project's consequences for demographics.

*Land use:* Xcel stated that it does not anticipate that its proposed changes would produce any significant change to land use. Xcel still proposes to erect the turbines generally in Freeborn County's Agricultural District, consistent with local zoning policies.

*Noise:* Xcel noted that it was removing one of the turbines from the current project layout to comply with noise restrictions, and proposed to install Serrated Trailing Edge technology on certain turbines to reduce their noise. Xcel's acoustical consultants updated the noise assessment to reflect the new turbines and layout, and predicted that the changes would not generate much change in noise output. The model estimated that the noise from the turbines reaching a residence would not exceed 45 A-weighted decibels—that is, decibels weighted to reflect the sensitivity of the human ear—for 50 percent of the time during a one-hour testing period (denoted 45 dBA (L<sub>50</sub>)). The model also estimated that noise from all sources at any of the project's noise receptor locations would not exceed 47 dBA. These values conform to the requirements of Site Permit Section 6.1.

*Visual impact:* Xcel concluded that the new turbines and layout would not appreciably change the project's visual impact from public lands, private lands, or homes. The new turbine blades would be two meters longer than the old ones, but their towers would remain the same height. Xcel acknowledged its duty to limit shadow flicker as required by Site Permit Section 7.4. Consistent with the duty, Xcel's consultant updated the shadow flicker model to reflect the new turbines and layout, and identified houses that could potentially require additional mitigation efforts to reduce shadow flicker.

*Public services and infrastructure:* Xcel reported that the proposed changes would not change the resources, impacts, or mitigative measures for public services and infrastructure, telecommunications, communication systems, television, roads, or other infrastructure.

*Cultural and archaeological resources:* Xcel reported that the Phase I archaeological reconnaissance surveys were complete and filed with the Minnesota State Historic Preservation Office (SHPO), and a follow-up survey of an additional 123 acres was conducted. While the project would be visible from some archeological sites—including one site listed on the National Register of Historic Places—SHPO agreed that the project's visual impact would have no adverse effect and that the project would not affect any known or suspected significant archeological properties in the area. Xcel states that it has been coordinating its efforts with SHPO and the Office of State Archaeologist, and pledges to implement the mitigative measures set forth in its application, as appropriate.

*Recreation:* Xcel reported that the amended site permit's consequences for recreational land would be little different than the impact of the current site permit. Xcel noted a change in the

name of one land parcel, and a revised map of a snowmobile trail. And Xcel reported that all turbines would be more than 500 feet away from the nearest snowmobile trail.

*Public health and safety:* Xcel noted the addition of a new turf airport 1.6 miles outside the project's boundaries, and pledged to pursue the necessary coordination with the Federal Aviation Administration. While this is a new development, it is not clear that the revised project would have any larger impact than the currently permitted project.

*Hazardous materials:* Xcel reported conducting a Phase 1 Environmental Site Assessment at the site—but denied that the proposed change had any bearing on this category.

*Land-based economies:* Xcel reported that land use in the project area has changed little—mostly agricultural—and Xcel did not anticipate any change resulting from its proposed site permit amendments. However, Xcel anticipates that its new layout will slightly reduce the amount of agricultural land and prime farmland permanently affected by the project. Xcel projected that its proposed amendments would have little consequence for forestry or mining.

*Tourism:* Xcel's proposed permit changes would have little consequence for tourism. While Xcel noted a recent change in the location of a snowmobile trail, it would still be more than 500 feet from the nearest turbine.

*Local economies:* Xcel stated that it does not anticipate that its proposed changes would produce any change to local economies.

*Topography:* Xcel stated that it does not anticipate that its proposed changes would produce any change to the topography.

*Soils:* Xcel stated that it does not anticipate that its proposed changes would produce any change to the soils.

*Geologic and Groundwater Resources:* Xcel stated that it does not anticipate that its proposed changes would produce any change to the surficial geology, bedrock geology and aquifers.

*Surface Water and Floodplain Resources:* Xcel reported on its progress in pursuing a License to Cross Public Waters and a Public Waters Work Permit with the Minnesota Department of Natural Resources and the Cedar Watershed District. But given that Xcel does not propose to move any turbines into public waters or impaired waters, Xcel stated that it does not anticipate that its proposed changes would produce any change to the surface water or floodplain.

*Wetlands:* Xcel reported that the 2019 National Wetland Inventory has identified a new freshwater pond/reverine within the project area, but concluded that the project would not affect it. Xcel noted that its ability to reduce consequences for wetlands will improve as project staff complete ever more field surveys, in coordination with the U.S. Army Corps of Engineers and local units of government. Indeed, under the new layout, the amount of wetlands affected would drop from 0.1 acres to 0.0 acres.

*Vegetation:* Xcel revised the list of land covers existing in and around the project, incorporated new data from the Department of Natural Resources, and distinguished lands that have been

previously plowed from lands that have not. Xcel estimated that the revised project would affect one site of moderate biodiversity and three sites of below-moderate biodiversity. Out of a project area of 24,700 acres, Xcel estimated the revised layout would permanently affect 38.3 acres, comparable to the 38.2 acres under the current layout. And 93 percent of these permanently affected acres would be cultivated farmland.

In sum, Xcel did not anticipate any significant environmental effect resulting from its proposed site permit amendments. In addition to retaining all the mitigation measures applicable to the current permit and layout, Xcel reported that its Native Prairie Protection and Management Plan—developed in coordination with the Department and the Department of Natural Resources—will help resolve issues related to avoidance, minimization, and mitigation measures for native prairie, native plant communities, and sites of biodiversity significance.

*Wildlife:* Xcel reported that newly-completed studies have resulted in a revised draft for the Avian and Bat Protection Plan. But in other respects, Xcel stated that it does not anticipate that its proposed changes would produce any change in the project’s consequences for wildlife.

*Rare and unique resources:* Xcel stated that it does not anticipate its proposed changes would produce any change related to rare or unique resources.

In sum, Xcel generally argued that the description of resources, impacts, and mitigating measures described as part of its proposed amendment to the site permit and project layout are consistent with the existing record supporting the existing permit and layout.

Finally, Xcel noted its progress in preparing pre-construction filings as required by the site permit. These included the following:

- Section 5.4 Electrical Collector and Feeder Lines
- Section 7.5.1 Avian and Bat Protection Plan (in coordination with the Department and the Minnesota Department of Natural Resources)
- Section 10.3 Site Plan
- Section 11.1 Decommissioning Plan

### **III. AFCL’s Petitions**

#### **A. Contested Case Proceedings**

Noting that Xcel has made a variety of factual claims in support of its proposed permit amendments, AFCL asked the Commission to refer this matter to the Office of Administrative Hearings for a contested case proceeding.

Contested case proceedings have many qualities of a trial, where parties call and cross-examine witnesses. The Commission refers a docket for a contested case proceeding under Minn. Stat. §§ 14.57–.62 only if (a) the proceeding involves contested material facts and a party has a statutory or regulatory right to the hearing, or (b) the Commission finds that all significant issues have not been resolved to its satisfaction.<sup>7</sup>

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<sup>7</sup> Minn. R. 7829.1000.

## **B. Environmental Impact Statement**

AFCL also petitioned that an Environmental Impact Statement be prepared for the project.

The Minnesota Environmental Protection Act provides for preparation of an Environmental Impact Statement when a state agency, private entity, or local government proposes a major governmental action (including granting a permit) that could significantly affect the quality of the environment.<sup>8</sup>

Where there is potential for significant environmental effects resulting from any major governmental action, the action must be preceded by a detailed environmental impact statement prepared by the responsible governmental unit. The environmental impact statement must be an analytical rather than an encyclopedic document that describes the proposed action in detail, analyzes its significant environmental impacts, discusses appropriate alternatives to the proposed action and their impacts, and explores methods by which adverse environmental impacts of an action could be mitigated. The environmental impact statement must also analyze those economic, employment, and sociological effects that cannot be avoided should the action be implemented.<sup>9</sup>

## **C. Environmental Assessment Worksheet**

Alternatively, AFCL petitioned the EQB to provide for preparation of an Environmental Assessment Worksheet—“a brief document which is designed to set out the basic facts necessary to determine whether an Environmental Impact Statement (EIS) is required for a proposed project.”<sup>10</sup>

The Minnesota Environmental Policy Act authorizes EQB to exempt projects from environmental review, and to adopt rules identifying alternative forms of environmental review to be used in lieu of an Environmental Impact Statement.<sup>11</sup> The EQB adopted Minnesota Rules Chapter 4410. Under these rules, a private party may petition the EQB for preparation of an Environmental Assessment Worksheet, and the EQB designates the responsible governmental unit to rule on the petition. AFCL petitioned the EQB for preparation of a worksheet, and the EQB designated the Commission as the responsible governmental unit for evaluating petitions related to LWECs capable of generating 25 megawatts or more.<sup>12</sup>

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<sup>8</sup> Minn. Stat. Ch. 116D.

<sup>9</sup> Minn. Stat. § 116D.04, subd. 2a(a).

<sup>10</sup> Minn. R. 4410.0200, subp. 24.

<sup>11</sup> Minn. Stat. § 116D.04, subd. 4a.

<sup>12</sup> Minn. R. 4410.4300, subp. 3.D.

#### **IV. Public Comments**

Comments received from the public expressed concerns regarding potential impacts of the project similar to those received and considered prior to issuance of the site permit. These commenters raised concerns about the health effects of noise, shadow flicker, television reception, internet connectivity, setback adequacy, decommissioning, communication interference, nonparticipating landowners, bird strikes, data validity, property values, aesthetic impacts, and the selection of an appropriate ground factor for noise analysis. Commenters variously recommended the Commission provide additional process for reviewing the amendment petitions, adopt additional permit requirements, or deny the amendments.

#### **V. Department Comments**

The Department disagreed with AFCL's legal analysis alleging the need for additional environmental review. The Department argued that environmental review for the Freeborn Wind Farm, both as originally proposed and as amended, has been completed in accordance with Minn. R. Ch. 7854.

The Department provided a summary of Xcel's petition and evaluated the consequences of Xcel's proposed changes. For example, the Department evaluated the consequences of Xcel's proposed changes for noise—both from the operation of the turbines themselves, and when that noise would be combined with ambient noise—and found support for the proposition that the revised project would be able to comply with the site permit's requirements. Also, the Department concurred with Xcel's analysis that the project could be expected to cause six residences to experience more than 30 hours of shadow flicker per year, arguably triggering the need for remedial measures—although the study did not take into account the effects of trees, buildings, or specific building designs in blocking the shadow.

Based on its analysis, the Department recommended granting Xcel's petition. The Department concluded that the amendment's consequences for people and the environment appeared comparable to, or less than, the consequences anticipated from the existing site permit. But the Department recommended that Xcel file more detailed maps of its revised site layout, demonstrating appropriate distance between the new turbine locations and the location of neighboring houses—especially houses of people who have not consented to the project.

#### **VI. MCEA and Fresh Energy Comments**

MCEA and Fresh Energy opposed AFCL's petition for an Environmental Assessment Worksheet. These parties argued that Minn. Stat. § 116D.04, subd. 4a, authorizes the EQB to approve alternative means for conducting environmental review, that the EQB used this power in adopting Minn. R. 7854.0500, and that the Freeborn Wind project had fulfilled the requirements of that rule.

#### **VII. Xcel Comments**

In its comments, Xcel provided the revised maps as requested by the Department, noting that it had moved one turbine approximately 80 feet to maintain the necessary distance from

neighboring houses. In addition, Xcel provided additional documentation that it had secured the necessary wind rights and other land rights for the project.

Xcel opposed AFCL's petition to refer the matter for a contested case proceeding, or to generate an Environmental Impact Statement or Environmental Assessment Worksheet, arguing that these efforts would be redundant of the efforts already undertaken in the docket. Xcel opposed efforts to use its amendment petition as an occasion for making improper collateral attacks on the Commission's prior decisions.

Xcel reaffirmed its commitment to comply with the site permit conditions, including conditions governing noise, shadow flicker, reception of over-the-air television signals, and plans for eventually decommissioning the wind farm. Xcel argued that its proposed changes are not expected to generate any changes in the project's effects on communications signals or other infrastructure. Finally, Xcel argued that no party had alleged any deficit in its methods for generating decommissioning estimates. In any event, Xcel was committed to revisiting its decommissioning plan every five years, thereby providing the opportunity to revise cost estimates or adjust funding balances over time.

## **VIII. Commission Action**

### **A. Referral for Contested Case Proceeding**

The Commission notes that it approved the Freeborn Wind Project after analyzing and approving Xcel's resource plan, and then approving the resulting competitive bidding process for acquiring new resources.<sup>13</sup> As such, the record supporting this project stretches back to 2015.

Moreover, the Commission already referred this docket to the Office of Administrative Hearings for a contested case proceeding. With one exception, the Administrative Law Judge found that the project, with appropriate conditions, did "not present a potential for significant adverse environmental effects pursuant to the Minnesota Environmental Rights Act and/or the Minnesota Environmental Policy Act."<sup>14</sup> The one exception pertained to compliance with noise standards, and the Commission addressed that concern when it approved the initial site permit.<sup>15</sup>

Finally, the Commission has solicited and received public comments on Xcel's petition. No party has demonstrated a statutory or regulatory right for a contested case proceeding on Xcel's permit amendments; additionally, the Commission finds no significant issues of material fact that require resolution before acting on Xcel's petition.

As discussed further below, the site permit imposes stringent requirements on Xcel regarding the construction and operation of the project, and none of Xcel's proposed amendments would alter this fact. Xcel's duty to comply with these requirements is not in dispute—and whether Xcel will

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<sup>13</sup> See *In the Matter of Xcel Energy's 2016–2030 Integrated Resource Plan*, Docket No. E-002/RP-15-21; *In the Matter of the Petition of Xcel Energy for Approval of the Acquisition of Wind Generation from the Company's 2016-2030 Integrated Resource Plan*, Docket No. E-002/M-16-777.

<sup>14</sup> Findings of Fact, Conclusions of Law, and Order, at Recommendations 10 (May 14, 2018).

<sup>15</sup> Order Issuing Site Permit and Taking Other Action, at 10–16 (December 19, 2018).



actually comply with these requirements in the future is not a matter that can be established via a contested case proceeding. Accordingly, AFCL's petition for an additional contested case proceeding will be denied.

### **B. Environmental Review—Scope**

In evaluating the need for environmental review for the Freeborn Wind Project, the Commission notes that the EQB's list of projects that are exempt from further environmental review includes projects for which all governmental decisions have been made.<sup>16</sup> Long before the AFCL's petition to the EQB, all Commission decisions had been made regarding Freeborn's December 19, 2018 site permit, its May 10, 2019 site permit amendments, and the October 22, 2019 permit transfer to Xcel. The only matter that remains before the Commission is action on Xcel's petition to amend the site permit to authorize installation of a different turbine model and updating the project layout. While the Commission voted to approve the permit amendments on December 19, 2019, AFCL's petition to the EQB put the issuance of the order memorializing that decision in abeyance.

Accordingly, the Commission will evaluate the need for environmental review for Xcel's proposed site permit amendments.

### **C. Environmental Review—Legal Analysis**

The Commission concurs with the Department, Fresh Energy, and the MCEA that no additional environmental review is required for the Freeborn Wind Project as a matter of law.

When the EQB designated the Commission the responsible governmental unit for evaluating proposals to build wind farms capable of generating 25 megawatts or more, the EQB specified that environmental review would be governed by Minn. R. Ch. 7854.<sup>17</sup> Minn. R. 7854.0500, subp. 7, states in part that “[n]o environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.”<sup>18</sup> In adopting this rule, the EQB stated as follows:

Because the environmental and human consequences of wind turbines are relatively minor and can be minimized by appropriate permit conditions, the EQB is not requiring in these rules that an Environmental Assessment Worksheet or an Environmental Impact Statement be prepared on a proposed LWECS. It is sufficient that the environmental impacts and mitigative measures be discussed in the application itself. If an issue of concern were to be raised specific

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<sup>16</sup> Minn. R. 4410.4600, subp 1 and 2.B.

<sup>17</sup> Minn. R. 4410.4300, subp. 3(D).

<sup>18</sup> Minn. R. 7854.0500, subp. 7. The EQB drafted and adopted the rules set forth in Minn. R. Ch. 7854 in 2002; *see* Environmental Quality Board's Adopted Permanent Rules Relating to Wind Siting, 26 SR 1394 (April 22, 2002). The rules became subject to the Commission's jurisdiction after a subsequent change in statutory authority. Laws of Minnesota 2005, ch. 97, art 3.

to a particular wind project, the EQB could ask for additional examination of those impacts and could address the concern through permit conditions or by moving some of the turbines.<sup>19</sup>

As the EQB anticipated, review of the environmental concerns related to the proposed LWECS has already resulted in the appropriate permit conditions and the relocation of turbines. No further review is required by law.

#### **D. Environmental Review—Factual Analysis**

The Commission also finds that no additional environmental review is required for the Freeborn Wind Project as a matter of fact because the record fails to demonstrate that the proposed permit amendments and site layout revision have the potential to produce significant environmental effects.<sup>20</sup> In its entirety, Minn. R. 7854.0500, subp. 7, states as follows:

An applicant for a site permit shall include with the application an analysis of the potential impacts of the project, proposed mitigative measures, and any adverse environmental effects that cannot be avoided, in the following areas:

- A. demographics, including people, homes, and businesses;
- B. noise;
- C. visual impacts;
- D. public services and infrastructure;
- E. cultural and archaeological impacts;
- F. recreational resources;
- G. public health and safety, including air traffic, electromagnetic fields, and security and traffic;
- H. hazardous materials;
- I. land-based economics, including agriculture, forestry, and mining;
- J. tourism and community benefits;
- K. topography;
- L. soils;
- M. geologic and groundwater resources;
- N. surface water and floodplain resources;
- O. wetlands;
- P. vegetation;
- Q. wildlife; and
- R. rare and unique natural resources.

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<sup>19</sup> EQB's Statement of Need and Reasonableness, at 20 (2001), included in AFCL's petition for preparation of an Environmental Assessment Worksheet, Exhibit V (filed in the Commission's docketing system on January 15, 2020).

<sup>20</sup> Minn. R. 4410.1100, subp. 6.

The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of [Minnesota Rules] chapter 4410 [EQB rules], parts 7849.1000 to 7849.2100 [rules for obtaining a Certificate of Need for power plants], and Minnesota Statutes, chapter 116D [the Minnesota Environmental Policy Act]. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.

Xcel provided the listed information when it petitioned for amending the project's site permit, and all parties have had the opportunity to analyze it. This information identifies the type, extent, and reversibility of environmental effects.<sup>21</sup>

Based on this record, the Commission concludes that the potential effects of Xcel's proposed permit amendments and turbine layout revisions (including cumulative potential effects) are not significant, even when viewed in connection with other factors. The Commission finds that Xcel has demonstrated a concerted effort to minimize the project's environmental effects.<sup>22</sup> For example, Xcel has developed models in order anticipate the project's environmental effects such as noise and shadow flicker, and has modified its plans to moderate these effects.

But most significantly, the Commission emphasizes that government agencies will retain jurisdiction over this project well after the point that the Commission issues the site permit.<sup>23</sup> As the Commission explained in a previous order, parties do not have to rely on prospective second-guessing of Xcel's performance; the site permit establishes the standards Xcel must meet, and establishes mechanisms for enforcing those standards:

[Site Permit] Section 5.2.1 provides for a Field Representative to oversee compliance with permit conditions during construction, and Section 5.2.2 provides for a Site Manager to oversee compliance during operation and decommissioning. Moreover, the Commission retains jurisdiction over the project throughout its life. At Attachment A, the permit provides a process for anyone to file a complaint about the project. Freeborn Wind must file reports monthly—or, in the case of substantial complaints filed under the complaint procedures, by the following business day—regarding the complaints it receives.

Regarding remedies, Section 3.1 states that the final turbine layout may change “to accommodate requests by landowners, local government units, federal and state agency requirements, and unforeseen conditions encountered during the detailed engineering and design process.” Section 12.4 provides for modifying or

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<sup>21</sup> Minn. R. 4410.1700, subp. 7.A. and B.

<sup>22</sup> *Id.*, at B. and D.

<sup>23</sup> *Id.*, at C.

amending the permit to address any threats to human health or the environment, while Section 4.3 states that “[t]urbine operation shall be modified or turbines shall be removed from service if necessary to comply with ... noise standards.”

More generally, the Commission emphasizes that granting a permit does not give a developer a free hand in erecting and operating its windfarm. To the contrary:

- The permit requires Freeborn Wind to comply with the standards of the Minnesota Department of Agriculture; the MDNR; the MPCA; U.S. Army Corps of Engineers; the U.S. Environmental Protection Agency; the U.S. Fish and Wildlife Service; the Federal Aviation Administration; the Federal Communications Commission; the Institute of Electrical and Electronics Engineers, Inc.; the National Electric Safety Code; the North American Electric Reliability Corporation; local and state safety codes; federal, state, county, city, or municipal permits (except where pre-empted); and landowner agreements.
- The permit specifies various circumstances under which Freeborn Wind will not be able to proceed without first securing additional approval from the Commission, the MDNR, the MPCA, the Minnesota State Archeologist, Gopher State One Call, the U.S. Army Corps of Engineers, local units of government, local law enforcement, and affected landowners.
- Finally, the permit requires Freeborn Wind to give various types of notice—not only to the entities and groups listed above, but also to the U.S. Environmental Protection Agency; U.S. Fish and Wildlife Service; Freeborn County Environmental Services Office; emergency responders; Public Safety Answering Points; regional development commission; and county auditor or county environmental office.<sup>24</sup>

This ability to remedy actual problems as they arise, rather than to seek to anticipate and guard against every possible problem that might arise, provides a reasonable and lawful safeguard for the public interest.

In short, the Commission finds that the environmental effects arising from Xcel’s proposed changes are subject to monitoring by public regulatory authorities, and subject to specific remedial measures that can be reasonably expected to effectively mitigate the identified environmental impacts.<sup>25</sup> This order and its supporting materials comprise the record of decision under Minn. R. 4410.1100, subp. 6.

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<sup>24</sup> Order Amending Site Permit, at 12–13 (May 10, 2019).

<sup>25</sup> Minn. R. 4410.1700, subp. 7.C.

## **E. Conclusion**

Minn. R 7854.1300, subp. 2, provides for the Commission to amend a LWECS site permit at any time for good cause. And Site Permit Condition 13.0 provides that the Commission will afford Xcel and interested persons an opportunity to comment on a proposed amendment.

Having received comments and reviewed the record of the case, the Commission finds the filings of the Department and Xcel—especially Xcel’s August 20, 2019 supplemental environmental analysis—to persuasively demonstrate good cause to grant the proposed amendments. The record demonstrates that Xcel’s proposed changes in turbine model and site layout would likely generate effects on people and the environment that are comparable to, or less consequential than, the effects of the existing site permit. Xcel’s revised maps demonstrate that the turbines will be located the appropriate distance from neighboring houses. Moreover, the pre- and post-construction compliance process will provide the Commission with additional opportunities to oversee the project’s progress. Accordingly, the Commission will adopt the supplementary environmental analysis and approve the permit amendments to sections 2.0, 3.0 and 3.1.

The Commission will so order.

## ORDER

1. The Commission denies the petitions of the Association of Freeborn County Landowners for—
  - A. the preparation of an Environmental Assessment Worksheet;
  - B. the preparation of an Environmental Impact Statement; and
  - C. a referral to the Office of Administrative Hearings for a contested case proceeding.
2. The Commission grants the petition of Northern States Power Company d/b/a Xcel Energy to amend the Freeborn Wind Farm Site Permit by amending Section 2.0 and 3.0, and replace the maps identified in Section 3.1, as set forth in Appendix A, the revised site permit.
3. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Will Seuffert  
Executive Secretary



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In the Matter of the Application of Northern  
States Power Company for a Site Permit for  
the 84 MW Freeborn Wind Farm in Freeborn  
County, Minnesota

DOCKET NO. E-002/WS-17-410

APPENDIX A:  
REVISED SITE PERMIT

**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

**SITE PERMIT FOR A  
LARGE WIND ENERGY CONVERSION SYSTEM**

**IN  
FREEBORN COUNTY**

**ISSUED TO  
NORTHERN STATES POWER COMPANY d/b/a XCEL ENERGY  
(XCEL ENERGY)**

**PUC DOCKET NO. E-002\WS-17-410**

In accordance with the requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854, this site permit is hereby issued to:

**XCEL ENERGY**

The Permittee is authorized by this site permit to construct and operate an up to 84 megawatt nameplate capacity Large Wind Energy Conversion System in Freeborn County, Minnesota. The Large Wind Energy Conversion System and associated facilities shall be built within the site identified in this permit and as portrayed on the official site maps, and in compliance with the conditions specified in this permit.

This site permit shall expire thirty (30) years from the date of this approval.

Approved and adopted this 31st day of March, 2020

BY ORDER OF THE COMMISSION



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Will Seuffert,  
Executive Secretary

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**ATTACHMENTS**

Official Site Permit Maps

Attachment A - Complaint Procedures for Permitted Energy Facilities

Attachment B - Compliance Filing Procedures for Permitted Energy Facilities

## **1.0 SITE PERMIT**

The Minnesota Public Utilities Commission (Commission) hereby issues this site permit to Northern States Power Company d/b/a Xcel Energy (Permittee) pursuant to Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854. This permit authorizes the Permittee to construct and operate the Freeborn Wind Farm (Project), an 82 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Freeborn County. The LWECS and associated facilities shall be built within the site identified in this permit and as identified in the attached official site permit map(s), hereby incorporated into this document.

### **1.1 Preemption**

Pursuant to Minn. Stat. § 216F.07, this permit shall be the sole site approval required for the location, construction, and operation of this project and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments.

## **2.0 PROJECT DESCRIPTION**

The Freeborn Wind Farm will be a 200 MW nameplate capacity LWECS, 82 MW of which will be located in Freeborn County, Minnesota. The LWECS portion in Minnesota will consist of 10 Vestas V110 and 31 Vestas V120 turbines. Both turbine models are 2 MW in size.

The project area includes approximately 26,273 acres of land, of which the Project currently holds easement and participation agreements on 21,313 acres. Upon completion, the project site will include no more than 100 acres of land converted to wind turbines and associated facilities approved by this site permit.

### **2.1 Associated Facilities**

Associated facilities for the Project will include access roads, an operations and maintenance (O&M) facility, project substation, permanent meteorological tower and associated weather collection data systems, electrical collection lines, and fiber optic communication lines.

The Project substation will interconnect to the Glenworth Substation with an approximately seven mile long 161 kilovolt (kV) high voltage transmission line (HVTL). The Freeborn Wind Transmission Line Project 161 kV HVTL is under PUC Docket No. E-002/TL-17-322 and issuance of the HVTL Route Permit is independent of this site permit process.

## 2.2 Project Location

The project is located in the following:

County	Township Name	Township	Range	Section
Freeborn	Hayward	102	20	12-15, 22-26, 35, 36
Freeborn	London	101	19	13, 14, 19-24, 27-33
Freeborn	Oakland	102	19	7-9, 16-21
Freeborn	Shell Rock	101	20	1, 2, 8, 11-17, 21-28, 35, 36

## 3.0 DESIGNATED SITE

The site designated by the Commission for the Freeborn Wind Farm is the site depicted on the official site permit maps attached to this permit. Within the site permit boundary, the Project and associated facilities shall be located on lands for which the permittee has obtained wind rights. Wind rights or easements have been obtained by the Permittee and include approximately 21,313 acres of land under easement and with participation agreements.

## 3.1 Turbine 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 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.

## 4.0 SETBACKS AND SITE LAYOUT RESTRICTIONS

#### **4.1 Wind Access Buffer**

Wind turbine towers shall not be placed less than five rotor diameters on the prevailing wind directions and three rotor diameters on the non-prevailing wind directions from the perimeter of the property where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

#### **4.2 Residences**

Wind turbine towers shall not be located closer than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040, established by the Minnesota Pollution Control Agency, whichever is greater.

#### **4.3 Noise**

The wind turbine towers shall be placed such that the Permittee shall, at all times, comply with noise standards established by the Minnesota Pollution Control Agency as of the date of this permit and at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines as close as the minimum setback required in this permit, but in all cases shall comply with Minnesota Pollution Control Agency noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

#### **4.4 Roads**

Wind turbines and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way and the nearest designated public trail.

#### **4.5 Public Lands**

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in publicly-owned lands that have been designated for recreational or conservation purposes, including, but not limited to, Waterfowl Production Areas, State Wildlife Management Areas, Scientific and Natural Areas or county parks, except in the event that the public entity owning those lands enters into a land lease and easement with the Permittee. Wind turbine towers shall also comply with the setbacks of Section 4.1.

#### **4.6 Wetlands**

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as shown on the public water inventory maps prescribed by Minnesota Statutes Chapter 103G, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources and the United States Army Corps of Engineers, and local units of government as implementers of the Minnesota Wetlands Conservation Act.

#### **4.7 Native Prairie**

Wind turbines and associated facilities including foundations, access roads, collector and feeder lines, underground cable, and transformers shall not be placed in native prairie, as defined in Minn. Stat. § 84.02, subd. 5, unless addressed in a prairie protection and management plan and shall not be located in areas enrolled in the Native Prairie Bank Program. Construction activities, as defined in Minn. Stat. § 216E.01, shall not impact native prairie unless addressed in a prairie protection and management plan.

The Permittee shall prepare a prairie protection and management plan in consultation with the Minnesota Department of Natural Resources if native prairie, as defined in Minn. Stat. § 84.02, subd. 5, is identified within the site boundaries. The Permittee shall file the plan 30 days prior to submitting the site plan required by Section 10.3 of this permit. The plan shall address steps that will be taken to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee, the Minnesota Department of Natural Resources, and the Commission.

#### **4.8 Sand and Gravel Operations**

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner.

#### **4.9 Wind Turbine Towers**

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 80 meters (262.5 feet) above grade measured at hub height.

#### **4.10 Turbine Spacing**

The turbine towers shall be constructed within the site boundary as shown in the official site maps. The turbine towers shall be spaced no closer than three rotor diameters in the non-prevailing wind directions and five rotor diameters on the prevailing wind directions. If required during final micro-siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

#### **4.11 Meteorological Towers**

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or other development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration. There shall be no lights on the meteorological towers other than what is required by the Federal Aviation Administration. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

All meteorological towers shall be fitted with the necessary equipment to deploy/attach acoustic recording devices to monitor wildlife activity.

#### **4.12 Aviation**

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and private airports (as defined in Minn. R. 8800.0100, subp. 24(a) and 24(b)) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minn. R. 8800.1900, subp. 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation, Department of Aviation, and the Federal Aviation Administration. The Permittee shall notify owners of all known airports within six miles of the project prior to construction.

#### **4.13 Footprint Minimization**



The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, transformers, and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner.

## **5.0 GENERAL CONDITIONS**

The Permittee shall comply with the following conditions during construction and operation of the LWECS and associated facilities over the life of this permit.

### **5.1 Notification**

Within 14 days of permit issuance, the Permittee shall send a copy of the permit and the complaint procedures to any regional development commission, county auditor and environmental office, and city and township clerk in which any part of the site is located. Within 30 days of permit issuance, the Permittee shall provide all affected landowners with a copy of this permit and the complaint procedures. In no case shall the landowner receive this site permit and complaint procedures less than five days prior to the start of construction on their property. The Permittee shall contact landowners prior to entering the property or conducting maintenance within the site, unless otherwise negotiated with the affected landowner.

### **5.2 Construction and Operation Practices**

The Permittee shall comply with the construction practices, operation and maintenance practices, and material specifications described in the Freeborn Wind Farm Site Permit Application for a LWECS filed with the Commission on June 15, 2107, and the record of the proceedings unless this permit establishes a different requirement in which case this permit shall prevail.

#### **5.2.1 Field Representative**

The Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during construction of the project. This person shall be accessible by telephone or other means during normal business hours throughout site preparation, construction, cleanup, and restoration.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the field representative 14 days prior to commencing construction. The Permittee shall provide the field representative's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commencing

construction. The Permittee may change the field representative at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### 5.2.2 Site Manager

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of the project. This person shall be accessible by telephone or other means during normal business hours for the life of this permit.

The Permittee shall file with the Commission the name, address, email, phone number, and emergency phone number of the site manager 14 days prior to commercial operation of the facility. The Permittee shall provide the site manager's contact information to affected landowners, residents, local government units and other interested persons 14 days prior to commercial operation of the facility. The Permittee may change the site manager at any time upon notice to the Commission, affected landowners, residents, local government units and other interested persons.

#### 5.2.3 Employee Training and Education of Permit Terms and Conditions

The Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the LWECs of the terms and conditions of this permit.

#### 5.2.4 Topsoil Protection

The Permittee shall implement measures to protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with the affected landowner.

#### 5.2.5 Soil Compaction

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the project's life and shall confine compaction to as small an area as practicable.

#### 5.2.6 Soil Erosion and Sediment Control

The Permittee shall implement those erosion prevention and sediment control practices recommended by the Minnesota Pollution Control Agency Construction Stormwater Program.

If construction of the facility disturbs more than one acre of land, or is sited in an area designated by the Minnesota Pollution Control Agency as having potential for impacts to water resources, the Permittee shall obtain a National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit from the Minnesota Pollution Control Agency that provides for the development of a Stormwater Pollution Prevention Plan (SWPPP) that describes methods to control erosion and runoff.

The Permittee shall implement reasonable measures to minimize erosion and sedimentation during construction and shall employ perimeter sediment controls, protect exposed soil by promptly planting, seeding, using erosion control blankets and turf reinforcement mats, stabilizing slopes, protecting storm drain inlets, protecting soil stockpiles, and controlling vehicle tracking. Contours shall be graded as required so that all surfaces provide for proper drainage, blend with the natural terrain, and are left in a condition that will facilitate re-vegetation and prevent erosion. All areas disturbed during construction of the facilities shall be returned to pre-construction conditions.

#### 5.2.7 Wetlands

Construction in wetland areas shall occur during frozen ground conditions to minimize impacts, to the extent feasible. When construction during winter is not possible, wooden or composite mats shall be used to protect wetland vegetation. Soil excavated from the wetlands and riparian areas shall be contained and managed in accordance with all applicable wetland permits. Wetlands and riparian areas shall be accessed using the shortest route possible in order to minimize travel through wetland areas and prevent unnecessary impacts.

Wetland and water resource areas disturbed by construction activities shall be restored to pre-construction conditions, in accordance with all applicable wetland permits. Restoration of the wetlands will be performed by the Permittee in accordance with the requirements of applicable state and federal permits or laws and landowner agreements.

#### 5.2.8 Vegetation Management

The Permittee shall disturb or clear the project site only to the extent necessary to assure suitable access for construction, safe operation and maintenance of the project. The Permittee shall minimize the number of trees to be removed in selecting the site layout specifically preserving to the maximum extent practicable windbreaks, shelterbelts, living snow fences, and vegetation, to the extent that such actions do not violate sound engineering principles.

#### 5.2.9 Application of Pesticides

The Permittee shall restrict pesticide use to those pesticides and methods of application approved by the Minnesota Department of Agriculture, Minnesota Department of Natural Resources, and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. All pesticides shall be applied in a safe and cautious manner so as not to damage adjacent properties including crops, orchards, tree farms, apiaries, or gardens. The Permittee shall contact the landowner or designee to obtain approval for the use of pesticide at least 14 days prior to any application on their property. The landowner may request that there be no application of pesticides on any part of the site within the landowner's property. The Permittee shall provide notice of pesticide application to affected landowners, and known beekeepers operating apiaries within three miles of the project site at least 14 days prior to such application.

#### 5.2.10 Invasive Species

The Permittee shall employ best management practices to avoid the potential spread of invasive species on lands disturbed by project construction activities. The Permittee shall develop an Invasive Species Prevention Plan to prevent the introduction and spread of invasive species on lands disturbed by project construction activities and file with the Commission 14 days prior to the pre-construction meeting.

#### 5.2.11 Noxious Weeds

The Permittee shall take all reasonable precautions against the spread of noxious weeds during all phases of construction. When utilizing seed to establish temporary and permanent vegetative cover on exposed soil, the Permittee shall select site appropriate seed certified to be free of noxious weeds. The Permittee shall consult with landowners on the selection and use of seed for replanting. To the extent possible, the Permittee shall use native seed mixes.

#### 5.2.12 Public Roads

At least 14 days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall prior to the use of such roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over roads to be

used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components. The Permittee shall notify the Commission of such arrangements upon request.

#### 5.2.13 Turbine Access Roads

The Permittee shall construct the least number of turbine access roads necessary to safely and efficiently operate the project and satisfy landowner requests. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ditches without required permits and approvals. When access roads are constructed across streams, drainage ways, or drainage ditches, the access roads shall be designed and constructed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Any access roads that are constructed across streams or drainage ditches shall be designed and constructed in a manner that maintains existing fish passage. Access roads that are constructed across grassed waterways, which provide drainage for surface waters that are ephemeral in nature, are not required to maintain or provide fish passage. Access roads shall be constructed in accordance with all necessary township, county or state road requirements and permits.

#### 5.2.14 Private Roads

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner.

#### 5.2.15 Archaeological and Historic Resources

The Permittee shall make every effort to avoid impacts to identified archaeological and historic resources when constructing the LWECs. In the event that a resource is encountered, the Permittee shall contact and consult with the State Historic Preservation Office and the State Archaeologist. Where feasible, avoidance of the resource is required. Where not feasible, mitigation must include an effort to minimize project impacts on the resource consistent with State Historic Preservation Office and State Archaeologist requirements.

Prior to construction, workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If human remains are encountered during construction, the Permittee shall immediately halt construction at such location and promptly notify local law enforcement and the State Archaeologist. Construction at such location shall not proceed until authorized by local law enforcement and the State Archaeologist.

### 5.2.16 Interference

The Permittee must provide notice which includes a description of the Project's potential to interfere with OTA TV service, Freeborn Wind's mitigation program and Complaint Procedure to local over-the-air television stations, townships, cities and county in the project area, and all households in "at risk" areas identified for all six local television stations, as identified in Appendix D of the Site Permit Application.

At least 14 days prior to the pre-construction meeting, the Permittee shall submit to the Commission, an assessment of television and radio signal reception, microwave signal patterns, and telecommunications in the project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television or radio reception, microwave patterns, or telecommunications in the event residents should complain about such disruption or interference after the turbines are placed in operation. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law. In the event the project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

### 5.2.17 Livestock Protection

The Permittee shall take precautions to protect livestock during all phases of the project's life.

### 5.2.18 Fences

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the project's life unless otherwise negotiated with the affected landowner. When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

### 5.2.19 Drainage Tiles

The Permittee shall take into account, avoid, promptly repair or replace all drainage tiles broken or damaged during all phases of project's life unless otherwise negotiated with affected landowner.

#### 5.2.20 Equipment Storage

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner. Temporary equipment staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

#### 5.2.21 Restoration

The Permittee shall, as soon as practical following construction of each turbine, restore the areas temporarily affected by construction to the condition that existed immediately before construction began, to the extent possible. The time period to complete restoration may be no longer than 12 months after completion of the construction, unless otherwise negotiated with the affected landowner. Restoration shall be compatible with the safe operation, maintenance and inspection of the project. Within 60 days after completion of all restoration activities, the Permittee shall advise the Commission in writing of the completion of such activities.

#### 5.2.22 Cleanup

All waste and scrap that is the product of construction shall be removed from the site and all premises on which construction activities were conducted and properly disposed of upon completion of each task. Personal litter, including bottles, cans, and paper from construction activities shall be removed on a daily basis.

#### 5.2.23 Pollution and Hazardous Waste

All appropriate precautions to protect against pollution of the environment shall be taken by the Permittee. The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of all wastes generated during construction and restoration of the site.

#### 5.2.24 Damages

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

#### 5.2.25 Public Safety

The Permittee shall provide educational materials to landowners adjacent to the site and, upon request, to interested persons about the project and any restrictions or dangers associated with the project. The Permittee shall also provide any necessary safety measures such as warning signs

and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minn. Stat. § 216D.01, subd. 11, to Gopher State One Call following the completion of construction at the site.

#### 5.2.26 Tower Identification

All turbine towers shall be marked with a visible identification number.

#### 5.2.27 Federal Aviation Administration Lighting

Towers shall be marked as required by the Federal Aviation Administration. There shall be no lights on the towers other than what is required by the Federal Aviation Administration. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

### 5.3 Communication Cables

The Permittee shall place all communication and supervisory control and data acquisition cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

### 5.4 Electrical Collector and Feeder Lines

Collector lines that carry electrical power from each individual transformer associated with a wind turbine to an internal project interconnection point shall be buried underground. Collector lines shall be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner.

Feeder lines that carry power from an internal project interconnection point to the project substation or interconnection point on the electrical grid may be overhead or underground. Feeder line locations shall be negotiated with the affected landowner. Any overhead or underground feeder lines that parallel public roads shall be placed within the public rights-of-way or on private land immediately adjacent to public roads. If overhead feeder lines are located within public rights-of-way, the Permittee shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner as to minimize interference with agricultural operations including, but not limited to, existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shields shall be placed on all guy wires associated with



overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 10.3.

## **5.5 Other Requirements**

### **5.5.1 Safety Codes and Design Requirements**

The LW ECS and associated facilities shall be designed to meet or exceed all relevant local and state codes, Institute of Electrical and Electronics Engineers, Inc. standards, the National Electric Safety Code, and North American Electric Reliability Corporation requirements. The Permittee shall report to the Commission on compliance with these standards upon request.

### **5.5.2 Other Permits and Regulations**

The Permittee shall comply with all applicable state rules and statutes. The Permittee shall obtain all required permits for the project and comply with the conditions of those permits unless those permits conflict with or are preempted by federal or state permits and regulations. A list of the permits known to be required is included in the permit application. At least 14 days prior to the preconstruction meeting, the Permittee shall submit a filing demonstrating that it has obtained such permits. The Permittee shall provide a copy of any such permit upon Commission request.

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the project that do not conflict with or are not preempted by federal or state permits and regulations.

## **6.0 SPECIAL CONDITIONS**

Special conditions shall take precedence over other conditions of this permit should there be a conflict.

### **6.1 Pre-Construction Noise Modeling**

Xcel Energy shall file a plan, including modeling and/or proposed mitigation, at least 60 days prior to the pre-construction meeting that demonstrates it will not cause, or significantly contribute to an exceedance of the MPCA Noise Standards.

To ensure that the turbine-only noise does not cause or significantly contribute to an exceedance of the MPCA Noise Standards, modeled wind turbine-only sound levels (NARUC ISO 9613-2 with 0.5 ground) at receptors shall not exceed 47 dB(A) L50-one hour. Given this, at no time will turbine-only noise levels exceed the MPCA Noise Standards, and when total sound does exceed the limits it will be primarily the result of wind or other non-turbine noise sources. Under these

conditions, the contribution of the turbines will be less than 3 dB(A), which is the generally recognized minimum detectable change in environmental noise levels (non-laboratory setting). For example, when nighttime background sound levels are at 50 dB(A) L50-one hour, a maximum turbine-only contribution of 47 dB(A) L50-one hour would result in a non-significant increase in total sound of less than 3 dB(A).

## **6.2 Post-Construction Noise Monitoring**

If the Noise Studies conducted under Section 7.4 document an exceedance of the MPCA Noise Standards where turbine-only noise levels produce more than 47 dB(A) L50-one hour at nearby receptors, then the Permittee shall work with the Department of Commerce to develop a plan to minimize and mitigate turbine-only noise impacts.

## **6.3 Over-the-Air Television Interference Notice Requirements**

Freeborn Wind must provide notice which includes a description of the Project's potential to interfere with OTA TV service, Freeborn Wind's mitigation program, and availability of the Site Permit and Complaint Procedure to households in the following areas:

- All households in "at risk" areas identified for all six local television stations, as identified in Appendix D of the Site Permit Application;
- Each local government office in the communities of Albert Lea, Northwood, Silver Lake, Gordonsville, Glenville, Hayward, and Moscow; and
- Local over-the-air television broadcasters serving the Project area.

## **7.0 SURVEYS AND REPORTING**

### **7.1 Biological and Natural Resource Inventories**

The Permittee, in consultation with the Commission and the Department of Natural Resources, shall design and conduct pre-construction desktop and field inventories of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the project site and assess the presence of state- or federally-listed or threatened species. The results of the inventories shall be filed with the Commission at least 30 days prior to the pre-construction meeting to confirm compliance of conditions in this permit. The Permittee shall file with the Commission, any biological surveys or studies conducted on this project, including those not required under this permit.

## 7.2 Shadow Flicker

At least 14 days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker for each residence of non-participating landowners and participating landowners within and outside of the project boundary potentially subject to turbine shadow flicker exposure. Information shall include the results of modeling used, assumptions made, and the anticipated levels of exposure from turbine shadow flicker for each residence. The Permittee shall provide documentation on its efforts to avoid, minimize, and mitigate shadow flicker exposure. A Shadow Flicker Management Plan will be prepared by the Permittee, which will include the results of any shadow flicker modeling, assumptions made, levels of exposure prior to implementation of planned minimization and mitigation efforts, planned minimization and mitigation efforts, and planned communication and follow up with residence. The Shadow Flicker Management Plan shall be filed with the Commission at least 14 days prior to the preconstruction meeting to confirm compliance with conditions of this permit.

Should shadow flicker modeling identify any residence that will experience in 30 hours, or more, of shadow flicker per year, the Permittee must specifically identify these residences in the Shadow Flicker Management Plan. If through minimization and mitigation efforts identified in the Shadow Flicker Management Plan the Permittee is not able to reduce a residence's anticipated shadow flicker exposure to less than 30 hours per year a shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at the residence. The Shadow Flicker Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of any shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

Commission staff and EERA staff will be responsible for the review and approval of the Shadow Flicker Management Plan. The Commission may require the Permittee to conduct shadow flicker monitoring at any time during the life of this Permit.

## 7.3 Wake Loss Studies

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission the pre-construction micro-siting analysis leading to the final tower locations and an estimate of total project wake losses. As part of the annual report on project energy production required under Section 10.8 of the permit the Permittee shall file with the Commission any operational wake loss studies conducted on this project during the calendar year preceding the report.

## 7.4 Noise Studies

The Permittee shall file a proposed methodology for the conduct of a post-construction noise study at least 14 days prior to the pre-construction meeting. The Permittee shall develop the post-construction noise study methodology in consultation with the Department of Commerce. The study must incorporate the most current Department of Commerce Noise Study Protocol to determine the operating LWECs noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds.

The noise study methodology shall be developed by, and the noise monitoring shall be conducted by, an independent consultant approved by the Department of Commerce at Freeborn Wind's expense.

The Permittee must conduct the post-construction noise study and file with the Commission the completed post-construction noise study within 18 months of commencing commercial operation.

## **7.5 Avian and Bat Protection**

### **7.5.1 Avian and Bat Protection Plan**

The Permittee shall comply with the provisions of the Avian and Bat Protection Plan (ABPP) submitted for this project as Appendix H of the June 15, 2017 site permit application and revisions resulting from the annual audit of ABPP implementation. The first annual audit and revision will be filed with the Commission 14 days before the preconstruction meeting and revisions should include any updates associated with final construction plans. The ABPP must address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the project. The ABPP shall also include formal and incidental post-construction fatality monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the project.

The Permittee shall, by the 15th of March following each complete or partial calendar year of operation, file with the Commission an annual report detailing findings of its annual audit of ABPP practices. The annual report shall include summarized and raw data of bird and bat fatalities and injuries and shall include bird and bat fatality estimates for the project using agreed upon estimators from the prior calendar year. The annual report shall also identify any deficiencies or recommended changes in the operation of the project or in the ABPP to reduce avian and bat fatalities and shall provide a schedule for implementing the corrective or modified actions. The Permittee shall provide a copy of the report to the Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

### **7.5.2 Quarterly Incident Reports**

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15th of January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian and bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols. If a dead or injured avian or bat species is found, the report shall describe the potential cause of the occurrence (if known) and the steps taken to address future occurrences. The Permittee shall provide a copy of the report to the Minnesota Department of Natural Resources and to the U.S. Fish and Wildlife Service at the time of filing with the Commission.

### 7.5.3 Immediate Incident Reports

The Permittee shall notify the Commission, U.S. Fish and Wildlife Service, and the Minnesota Department of Natural Resources within 24 hours of the discovery of any of the following:

- (a) five or more dead or injured birds or bats within a five day reporting period;
- (b) one or more dead or injured state threatened, endangered, or species of special concern;
- (c) one or more dead or injured federally listed species, including species proposed for listing; or
- (d) one or more dead or injured bald or golden eagle(s).

In the event that one of the four discoveries listed above should be made, the Permittee must file with the Commission within seven days, a compliance report identifying the details of what was discovered, the turbine where the discovery was made, a detailed log of agencies and individuals contacted, and current plans being undertaken to address the issue.

### 7.5.4 Turbine Operational Curtailment

The Permittee shall operate all facility turbines so that all turbines are locked, or feathered, up to the manufacturer's standard cut-in speed from one-half hour before sunset to one-half hour after sunrise of the following day, from April 1 to October 31 of each year of operation.

All operating turbines at the facility must be equipped with operational software that is capable of allowing for adjustment of turbine cut-in speeds.

### 7.5.5 Karst Geology Investigations

Should initial geotechnical and soils testing at proposed turbine locations identify areas with karst bedrock within 50 feet or less of the soil surface, which may lead to sinkhole

formation, additional geotechnical investigations will be performed to insure the area safe for the construction of a wind turbine.

Additional geotechnical investigations may include the following:

1. A geophysical investigation (electrical resistivity) to explore for voids in the bedrock.
2. Soil/bedrock borings to check and confirm the results of the electrical resistivity survey.
3. A series of electric cone penetrometer (CPT) soundings if the potential for loose zones in the soil overburden are suspected.

The Permittee must file with the Commission, a report for all geotechnical investigations completed. The reports must include methodology, results, and conclusions drawn from the geotechnical investigation.

## **8.0 AUTHORITY TO CONSTRUCT LWECS**

### **8.1 Wind Rights**

At least 14 days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the project within the boundaries authorized by this permit. Nothing in this permit shall be construed to preclude any other person from seeking a permit to construct a wind energy conversion system in any area within the boundaries of the project covered by this permit if the Permittee does not hold exclusive wind rights for such areas.

### **8.2 Power Purchase Agreement**

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason for not having such commitment. In such event, the Commission may determine whether this permit should be amended or revoked. No amendment or revocation of this permit may be undertaken except in accordance with Minn. R. 7854.1300.

### **8.3 Failure to Commence Construction**

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction of the project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this permit should be amended or revoked. No revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minn. R. 7854.1300.

## **9.0 COMPLAINT PROCEDURES**

Prior to the start of construction, the Permittee shall submit to the Commission the procedures that will be used to receive and respond to complaints. The procedures shall be in accordance with the requirements of Minn. R. 7829.1500 or Minn. R. 7829.1700, and as set forth in the Freeborn Wind Farm Docket No. E-002\WS-17-410 complaint procedures attached to this permit (Attachment A).

## **10.0 COMPLIANCE REQUIREMENTS**

Failure to timely and properly make compliance filings required by this permit is a failure to comply with the conditions of this permit. Compliance filings must be electronically filed with the Commission. Attachment B to this permit contains a summary of compliance filings, which is provided solely for the convenience of the Permittee. If this permit conflicts, or is not consistent with Attachment B, the conditions in this permit will control.

### **10.1 Pre-Construction Meeting**

Prior to the start of any construction, the Permittee shall participate in a pre-construction meeting with the Department of Commerce and Commission staff to review pre-construction filing requirements, scheduling, and to coordinate monitoring of construction and site restoration activities. Within 14 days following the pre-construction meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees. The Permittee shall indicate in the filing the construction start date.

### **10.2 Pre-Operation Meeting**

At least 14 days prior to commercial operation of the facility, the Permittee shall participate in a pre-operation meeting with the Department of Commerce and Commission staff to coordinate field monitoring of operation activities for the project. Within 14 days following the pre-operation meeting, the Permittee shall file with the Commission, a summary of the topics reviewed and discussed and a list of attendees.

### **10.3 Site Plan**

At least 14 days prior to the pre-construction meeting, the Permittee shall provide the Commission, the Department and the Freeborn County Environmental Services Office with a site plan that includes specifications and drawings for site preparation and grading; specifications and locations of all turbines and other structures to be constructed including all electrical equipment, collector and feeder lines, pollution control equipment, fencing, roads, and other associated facilities; and procedures for cleanup and restoration. The documentation shall include maps depicting the site boundary and layout in relation to that approved by this permit. The Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to Minnesota Rules Chapter 7030. At the same time, the Permittee shall notify affected landowners and city and town clerks that the site plan is on file with the Commission and Freeborn County Environmental Services Office. The Permittee may submit a site plan and engineering drawings for only a portion of the project if the Permittee intends to commence construction on certain parts of the project before completing the site plan and engineering drawings for other parts of the project.

The Permittee may not commence construction until the 30 days has expired or until the Commission has advised the Permittee in writing that it has completed its review of the documents and determined that the planned construction is consistent with this permit. If the Permittee intends to make any significant changes to its site plan or the specifications and drawings after submission to the Commission, the Permittee shall notify the Commission, the Department, the Freeborn County Environmental Services Office, city and town clerks, and the affected landowners at least five days before implementing the changes. No changes shall be made that would be in violation of any of the terms of this permit.

In the event that previously unidentified human and environmental conditions are discovered during construction that by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine site. Under these circumstances, the Permittee shall notify the Commission, the Department, the Minnesota Pollution Control Agency, the Minnesota Department of Natural Resources, the Freeborn County Environmental Services Office, city and town clerks, and the affected landowners of any turbines that are to be relocated, and provide the previously unidentified environmental conditions and how the movement of the turbine mitigates the human and environmental impact at least five days before implementing the changes. No changes shall be made that would be in violation of any terms of this permit.

### **10.4 Status Reports**



The Permittee shall file status reports with the Commission on progress regarding site construction. The Permittee need not report more frequently than monthly. Reports shall begin with the commencement of site construction and continue until completion of site restoration.

### **10.5 Notification to the Commission**

At least three days before the project is to commence commercial operation, the Permittee shall file with the Commission the date on which the project will commence commercial operation and the date on which construction was completed.

### **10.6 As-Builts**

Within 90 days after completion of construction, the Permittee shall submit copies of all final as-built plans and specifications developed during the project.

### **10.7 GPS Data**

Within 90 days after completion of construction, the Permittee shall submit to the Commission, in the format requested by the Commission, geo-spatial information (e.g., ArcGIS compatible map files, GPS coordinates, associated database of characteristics) for all structures associated with the large wind energy conversion system.

### **10.8 Project Energy Production**

The Permittee shall, by February 1st following each complete or partial year of project operation, file a report with the Commission on the monthly energy production of the project including:

- (a) the installed nameplate capacity of the permitted project;
- (b) the total monthly energy generated by the project in MW hours;
- (c) the monthly capacity factor of the project;
- (d) yearly energy production and capacity factor for the project;
- (e) the operational status of the project and any major outages, major repairs, or turbine performance improvements occurring in the previous year; and
- (f) any other information reasonably requested by the Commission.

This information shall be considered public and must be filed electronically.

### **10.9 Wind Resource Use**

The Permittee shall, by February 1st following each complete or partial calendar year of operation, file with the Commission the average monthly and average annual wind speed collected at one permanent meteorological tower during the preceding year or partial year of operation. This information shall be considered public and must be filed electronically.

### **10.10 Emergency Response**

The Permittee shall prepare an Emergency Response Plan in consultation with the emergency responders having jurisdiction over the facility prior to project construction. The Permittee shall submit a copy of the plan, along with any comments from emergency responders, to the Commission at least 14 days prior to the pre-construction meeting and a revised plan, if any, at least 14 days prior to the pre-operation meeting. The Permittee shall provide as a compliance filing confirmation that the Emergency Response Plan was provided to the emergency responders and Public Safety Answering Points (PSAP) with jurisdiction over the facility prior to commencement of construction. The Permittee shall obtain and register the facility address or other location indicators acceptable to the emergency responders and PSAP having jurisdiction over the facility.

### **10.11 Extraordinary Events**

Within 24 hours of discovery of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, acts of sabotage, collector or feeder line failure, and injured worker or private person. The Permittee shall, within 30 days of the occurrence, file a report with the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

## **11.0 DECOMMISSIONING, RESTORATION, AND ABANDONMENT**

### **11.1 Decommissioning Plan**

The Permittee shall submit a decommissioning plan to the Commission at least sixty (60) days prior to the pre-operation meeting, and provide updates to the plan every five years thereafter.

The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

### **11.2 Site Restoration**

Upon expiration of this permit, or upon earlier termination of operation of the project, or any turbine within the project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. To the extent feasible, the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained. All such agreements between the Permittee and the affected landowner shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months of termination.

### **11.3 Abandoned Turbines**

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the project. The project, or any turbine within the project, shall be considered abandoned after one year without energy production and the land restored pursuant to Section 11.2 unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the project, or any turbine within the project, to service.

## **12.0 COMMISSION AUTHORITY AFTER PERMIT ISSUANCE**

### **12.1 Final Boundaries**

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this project in accordance with Minn. R. 7854.1300, subp. 1. If done, this permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this permit.

### **12.2 Expansion of Site Boundaries**

No expansion of the site boundaries described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

### **12.3 Periodic Review**

The Commission shall initiate a review of this permit and the applicable conditions at least once every five years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

### **12.4 Modification of Conditions**

After notice and opportunity for hearing, this permit may be modified or amended for cause, including but not limited to the following:

- (a) violation of any condition in this permit;
- (b) endangerment of human health or the environment by operation of the project; or
- (c) existence of other grounds established by rule.

### **12.5 More Stringent Rules**

The Commission's issuance of this permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

### **12.6 Right of Entry**

Upon reasonable notice, presentation of credentials, and at all times in compliance with the Permittee's site safety standards, the Permittee shall allow representatives of the Commission to perform the following:

- (a) to enter upon the facilities easement of the site property for the purpose of obtaining information, examining records, and conducting surveys or investigations;
- (b) to bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;
- (c) to sample and monitor upon the facilities easement of the property; and
- (d) to examine and copy any documents pertaining to compliance with the conditions of this permit.

### **12.7 Proprietary Information**

Certain information required to be filed with the Commission under this permit may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

### **13.0 PERMIT AMENDMENT**

This permit may be amended at any time by the Commission in accordance with Minn. R. 7854.1300, subp. 2. Any person may request an amendment of the conditions of this permit by submitting a request to the Commission in writing describing the amendment sought and the reasons for the amendment. The Commission will mail notice of receipt of the request to the Permittee. The Commission may amend the conditions after affording the Permittee and interested persons such process as is required.

### **14.0 TRANSFER OF PERMIT**

The Permittee may request at any time that the Commission transfer this permit to another person or entity. The Permittee shall provide the name and description of the person or entity to whom the permit is requested to be transferred, the reasons for the transfer, a description of the facilities affected, and the proposed effective date of the transfer. The person to whom the permit is to be transferred shall provide the Commission with such information as the Commission shall require to determine whether the new Permittee can comply with the conditions of the permit.

The Commission may authorize transfer of the permit after affording the Permittee, the new Permittee, and interested persons such process as is required. The Commission may impose additional conditions on any new permittee as part of the approval of the transfer.

Within 20 days after the date of the notice provided in Section 10.5, the Permittee shall file a notice describing its ownership structure, identifying, as applicable:

- (a) the owner(s) of the financial and governance interests of the Permittee;
- (b) the owner(s) of the majority financial and governance interests of the Permittee's owners;  
and
- (c) the Permittee's ultimate parent entity (meaning the entity which is not controlled by any other entity).

The Permittee shall immediately notify the Commission of:

- (a) a change in owner(s) of the majority\* financial or governance interests in the Permittee;
- (b) a change in owner(s) of the majority\* financial or governance interests of the Permittee's owners; or
- (c) a sale which changes the parent entity of the Permittee.

*\*When there are only co-equal 50/50 percent interests, any change shall be considered a change in majority interest.*

The Permittee shall notify the Commission of:

- (a) the sale of a parent entity or a majority interest in the Permittee;
- (b) the sale of a majority interest of the Permittee's owners or majority interest of the owners; or
- (c) a sale which changes the entity with ultimate control over the Permittee.

## **15.0 REVOCATION OR SUSPENSION OF PERMIT**

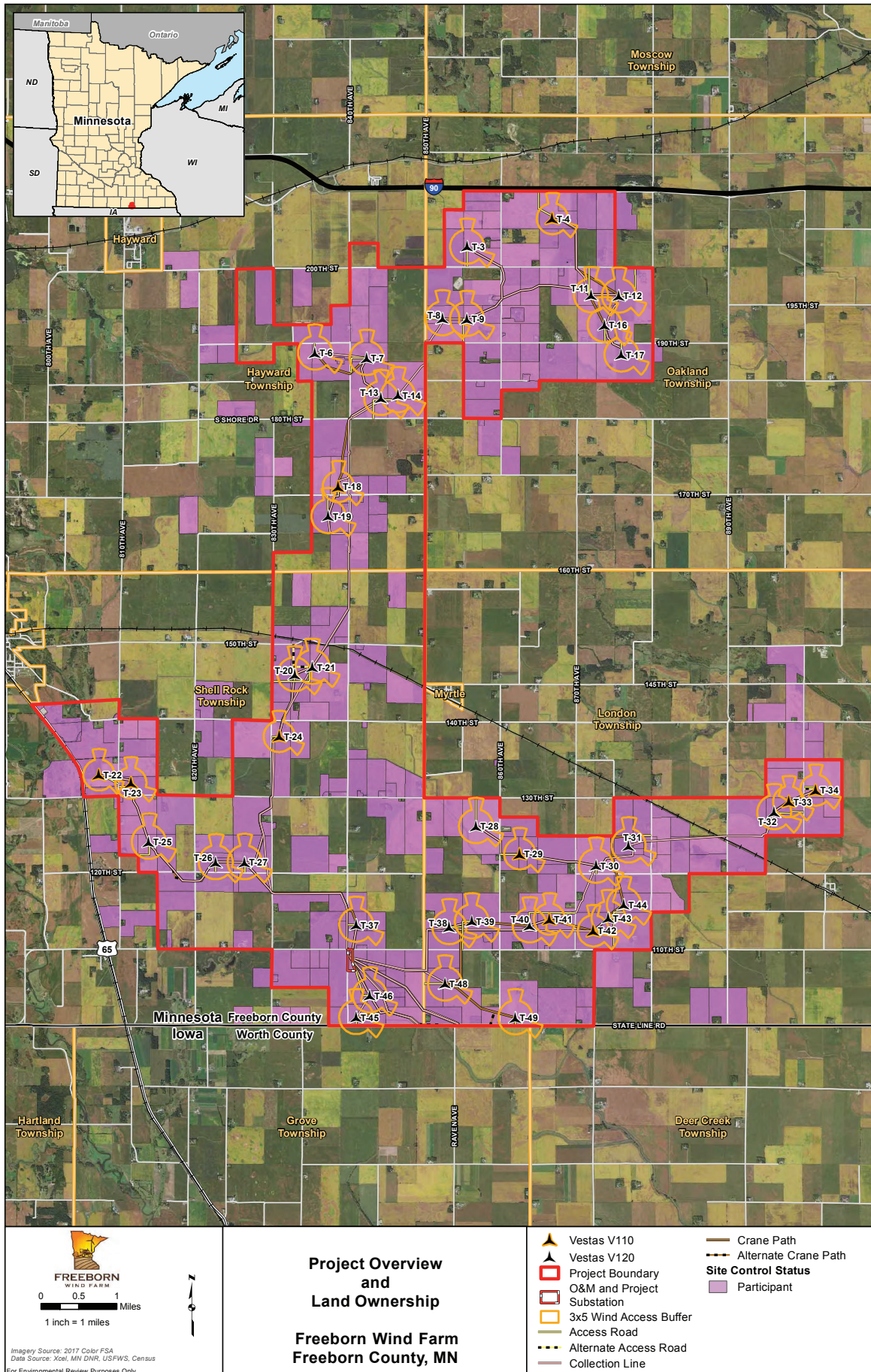
The Commission may take action to suspend or revoke this permit upon the grounds that:

- (a) a false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;
- (b) there has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards;
- (c) there has been a material violation of a provision of an applicable statute, rule, or an order of the Commission; or
- (d) the Permittee has filed a petition with the Commission requesting that the permit be revoked or terminated.

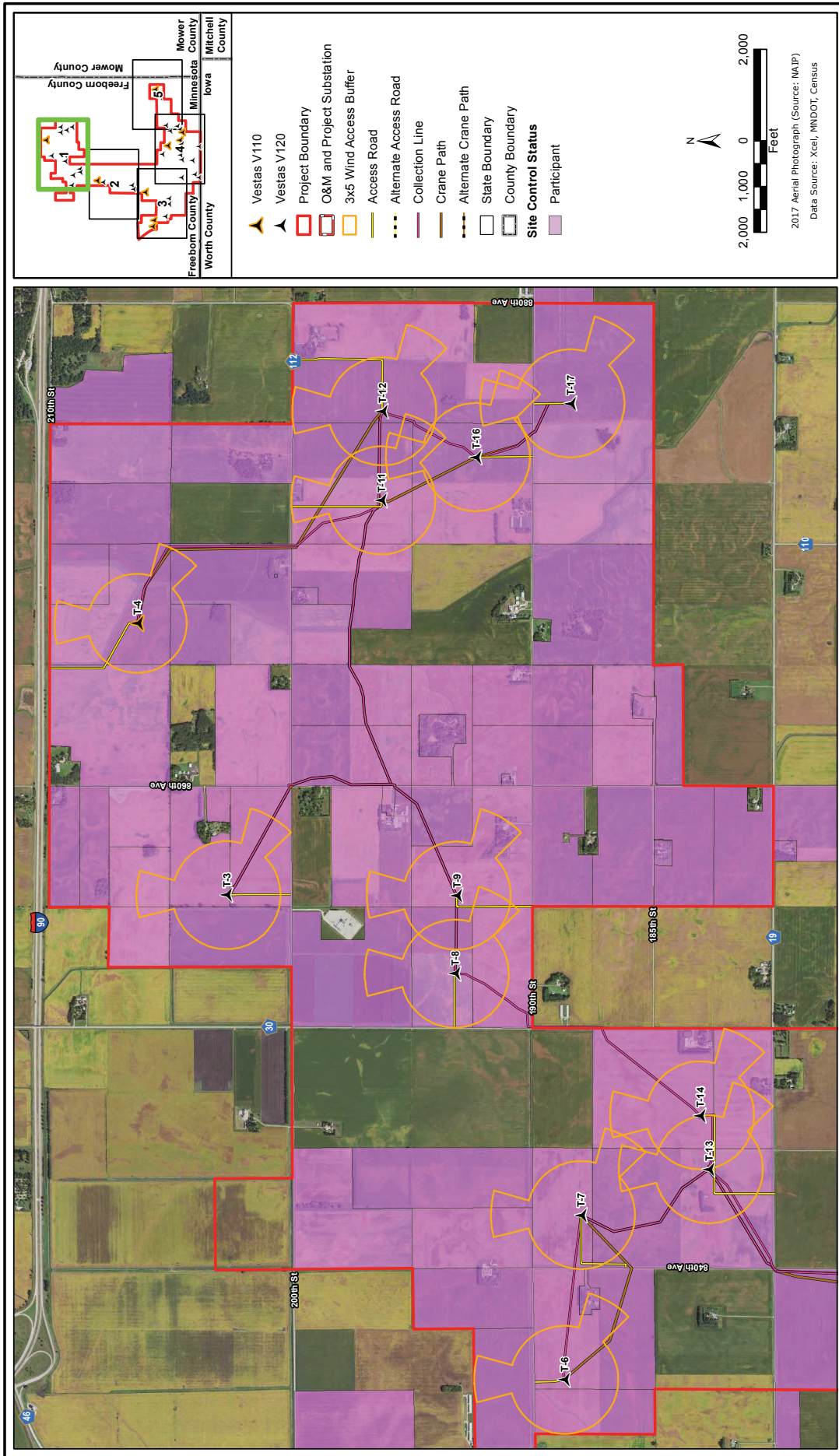
In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minn. R. 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked.

#### **16.0 EXPIRATION DATE**

This permit shall expire 30 years after the date this permit was approved and adopted.







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Map 1 of 5



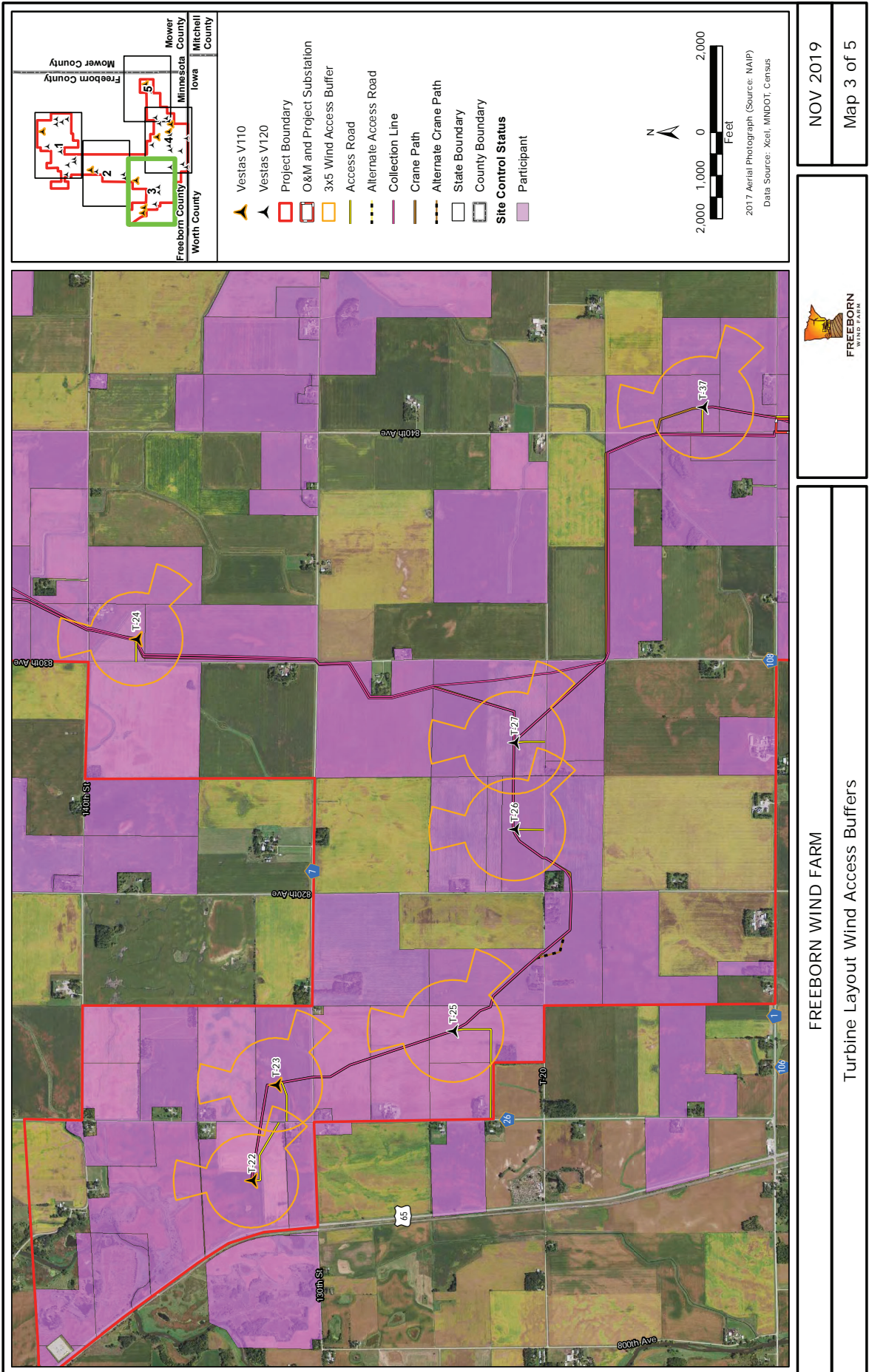
FREEBORN WIND FARM  
Turbine Layout Wind Access Buffers



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Map 2 of 5

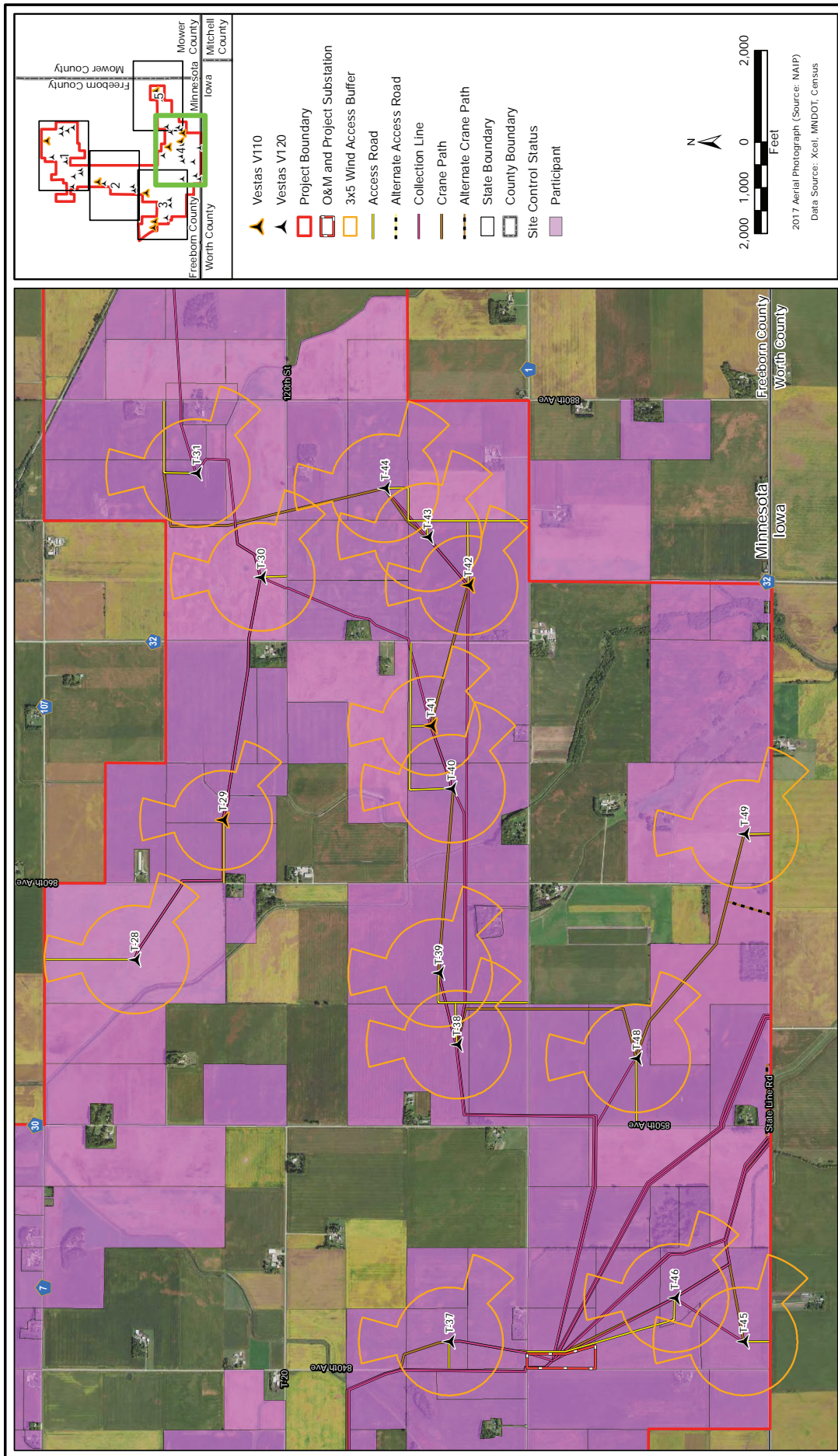


FREEBORN WIND FARM  
Turbine Layout Wind Access Buffers



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 Map 3 of 5

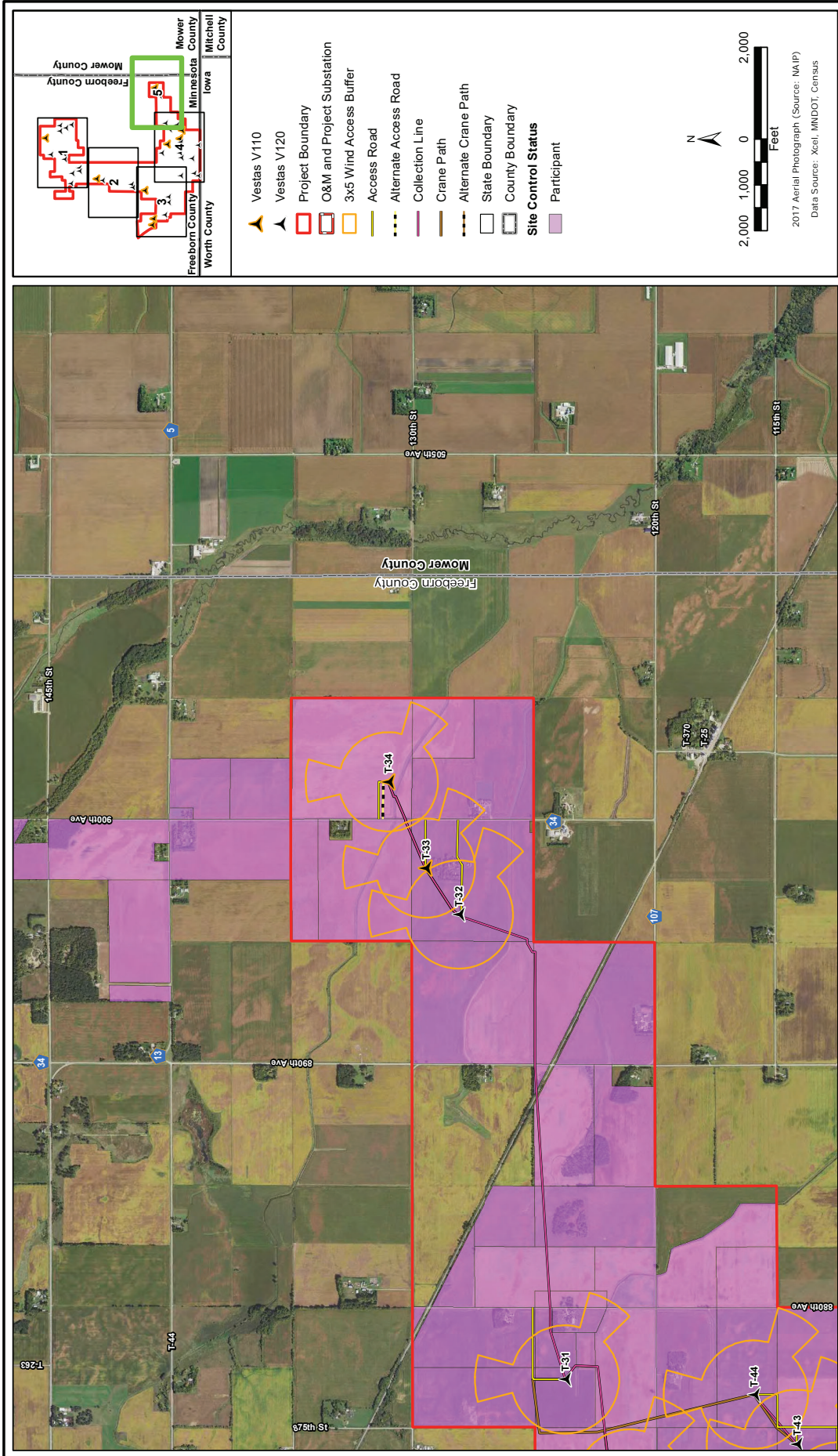
FREEBORN WIND FARM  
 Turbine Layout Wind Access Buffers



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FREEBORN WIND FARM  
Turbine Layout Wind Access Buffers



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FREEBORN WIND FARM

Turbine Layout Wind Access Buffers



**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLAINT HANDLING PROCEDURES FOR  
PERMITTED ENERGY FACILITIES**

**A. Purpose**

To establish a uniform and timely method of reporting and resolving complaints received by the permittee concerning permit conditions for site preparation, construction, cleanup, restoration, operation, and maintenance.

**B. Scope**

This document describes complaint reporting procedures and frequency.

**C. Applicability**

The procedures shall be used for all complaints received by the permittee and all complaints received by the Minnesota Public Utilities Commission (Commission) under Minn. R. 7829.1500 or Minn. R. 7829.1700 relevant to this permit.

**D. Definitions**

**Complaint:** A verbal or written statement presented to the permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration or, television or communication signals, or other site and associated facilities permit conditions. Complaints do not include requests, inquiries, questions or general comments.

**Substantial Complaint:** A written complaint alleging a violation of a specific permit condition that, if substantiated, could result in permit modification or suspension pursuant to the applicable regulations.

**Unresolved Complaint:** A complaint which, despite the good faith efforts of the permittee and a person, remains unresolved or unsatisfactorily resolved to one or both of the parties.

**Person:** An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

**E. Complaint Documentation and Processing**

1. The permittee shall designate an individual to summarize complaints for the Commission. This person's name, phone number and email address shall accompany all complaint submittals.
2. A person presenting the complaint should to the extent possible, include the following information in their communications:
  - a. name, address, phone number, and email address;
  - b. date of complaint;
  - c. tract or parcel number; and
  - d. whether the complaint relates to a permit matter or a compliance issue.
3. The permittee shall document all complaints by maintaining a record of all applicable information concerning the complaint, including the following:
  - a. docket number and project name;
  - b. name of complainant, address, phone number and email address;
  - c. precise description of property or parcel number;
  - d. name of permittee representative receiving complaint and date of receipt;
  - e. nature of complaint and the applicable permit condition(s);
  - f. activities undertaken to resolve the complaint; and
  - g. final disposition of the complaint.

**F. Reporting Requirements**

The permittee shall commence complaint reporting at the beginning of project construction and continue through the term of the permit. The permittee shall report all complaints to the Commission according to the following schedule:

**Immediate Reports:** All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to the Commission's Consumer Affairs Office at 1-800-657-3782 (voice messages are acceptable) or [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us). For e-mail reporting, the email subject line should read "PUC EFP Complaint" and include the appropriate project docket number.

**Monthly Reports:** During project construction and restoration, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be filed by the 15th of each month to Daniel P. Wolf, Executive Secretary, Public Utilities Commission, using the eDockets system. The eDockets system is located at:  
<https://www.edockets.state.mn.us/EFiling/home.jsp>

If no complaints were received during the preceding month, the permittee shall file a summary indicating that no complaints were received.

**G. Complaints Received by the Commission**

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the permittee.

**H. Commission Process for Unresolved Complaints**

Commission staff shall perform an initial evaluation of unresolved complaints submitted to the Commission. Complaints raising substantial permit issues shall be processed and resolved by the Commission. Staff shall notify the permittee and appropriate persons if it determines that the complaint is a substantial complaint. With respect to such complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the staff notification. The complaint will be presented to the Commission for a decision as soon as practicable.

**I. Permittee Contacts for Complaints and Complaint Reporting**

Complaints may be filed by mail or email to:

Sean Lawler  
Xcel Energy  
414 Nicollet Mall  
Minneapolis, MN 55401  
FreebornWind@xcelenergy.com

This information shall be maintained current by informing the Commission of any changes as they become effective.



**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLIANCE FILING PROCEDURE FOR  
PERMITTED ENERGY FACILITIES**

**A. Purpose**

To establish a uniform and timely method of submitting information required by Commission energy facility permits.

**B. Scope and Applicability**

This procedure encompasses all known compliance filings required by permit.

**C. Definitions**

**Compliance Filing:** A filing of information to the Commission, where the information is required by a Commission site or route permit.

**D. Responsibilities**

1. The permittee shall file all compliance filings with Will Seuffert, Executive Secretary, Public Utilities Commission, through the eDockets system. The eDockets system is located at: <https://www.edockets.state.mn.us/EFiling/home.jsp>

General instructions are provided on the eDockets website. Permittees must register on the website to file documents.

2. All filings must have a cover sheet that includes:
  - a. Date
  - b. Name of submitter/permittee
  - c. Type of permit (site or route)
  - d. Project location
  - e. Project docket number
  - f. Permit section under which the filing is made
  - g. Short description of the filing

3. Filings that are graphic intensive (e.g., maps, engineered drawings) must, in addition to being electronically filed, be submitted as paper copies and on CD. Paper copies and CDs should be sent to: 1) Will Seuffert, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN 55101-2147, and 2) Department of Commerce, Energy Environmental Review and Analysis, 85 7th Place East, Suite 500, St. Paul, MN 55101-2198.

**PERMIT COMPLIANCE FILINGS<sup>1</sup>**

PERMITTEE: Xcel Energy  
 PERMIT TYPE: LWECS Site Permit  
 PROJECT LOCATION: Freeborn County  
 PUC DOCKET NUMBER: E002/WS-17-410

Filing Number	Permit Section	Description of Compliance Filing	Due Date
1	4.7	Prairie Protection and Management Plan	30 days prior to submitting Site Plan, as deemed necessary
2	4.12	Notification to Airports	Prior to project construction
3	5.1	Notification of Permit and Complaint Procedures	30 days of permit issuance
4	5.2.1	Field Representative	14 days prior to commencing construction
5	5.2.2	Site Manager	14 days prior to commercial operation
6	5.2.6	National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Construction Stormwater Permit	In accordance with Minnesota Pollution Control Agency
7	5.2.9	Notification of Pesticide Application	14 days prior to application
8	5.2.10	Invasive Species Protection Plan	14 days prior to pre-construction meeting
9	5.2.12	Identification of Roads	14 days prior to pre-construction meeting

<sup>1</sup> This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. It is not a substitute for the permit; the language of the permit controls.

Filing Number	Permit Section	Description of Compliance Filing	Due Date
10	5.2.16	Assessment of Television and Radio Signal Reception, Microwave Signal Patterns, and Telecommunications	60 days prior to pre-construction meeting
11	5.2.21	Site Restoration	60 days after completion of restoration
12	5.2.25	Public Safety/Education Materials	Upon request
13	5.4	Engineered Drawings of Collector and Feeder Lines	Submit with the Site Plan
14	5.5.2	Filing Regarding Other Required Permits	14 days prior to pre-construction meeting
15	7.1	Biological and Natural Resource Inventories	30 days prior to pre-construction meeting
16	7.2	Shadow Flicker Data	14 days prior to pre-construction meeting
17	7.3	Wake Loss Studies	14 days prior to pre-construction meeting and annual wake loss with annual report
18	7.4	Post-Construction Noise Methodology	14 days prior to pre-construction meeting
19	7.4	Post-Construction Noise Study	14 months of commercial operation
20	7.5.1	First Annual Audit and Revision of Avian and Bat Protection Plan	14 days prior to pre-construction meeting
21	7.5.1	Annual Report - Avian and Bat Protection Plan	15th of March each year or partial year

Filing Number	Permit Section	Description of Compliance Filing	Due Date
22	7.5.2	Quarterly Incident Reports	15th of January, April, July, and October the day following commercial operation
23	7.5.3	Immediate Incident Reports	24 hours of discovery and a report within 7 days
24	8.1	Demonstration of Wind Rights	14 days prior to pre-construction meeting
25	8.2	Power Purchase Agreement	If not obtained within two years issuance of permit
26	8.3	Failure to Construct	If within two years issuance of permit
27	10.0	Complaint Procedures	Prior to start of construction
28	10.1	Pre-Construction Meeting Summary	14 days following meeting
29	10.2	Pre-Operation Meeting Summary	14 days following meeting
30	10.3	Site Plan	14 days prior to pre-construction meeting
31	10.4	Construction Status Reports	Monthly
32	10.5	Commercial Operation	3 days prior to commercial operation
33	10.6	As-Builts	90 days after completion of construction

## ATTACHMENT B

Filing Number	Permit Section	Description of Compliance Filing	Due Date
34	10.7	GPS Data	90 days after completion of construction
35	10.8	Project Energy Production	February 1st following each complete or partial year of project operation
36	10.9	Wind Resource Use	February 1st following each complete or partial year of project operation
37	10.10	Emergency Response Plan	14 days prior to pre-construction meeting and revisions 14 days prior to pre-operation meeting
38	10.11	Extraordinary Event	Within 24 hours of discovery
39	11.1	Decommissioning Plan	60 days prior to pre-operation meeting
40	14.0	Notice of Ownership	14 days after operation

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben  
Valerie Means  
Matthew Schuerger  
John A. Tuma

Chair  
Commissioner  
Commissioner  
Commissioner

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

ISSUE DATE: January 30, 2020

DOCKET NO. IP-6997/CN-18-699

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties

DOCKET NO. IP-6997/WS-18-700

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

DOCKET NO. IP-6997/TL-18-701

ORDER ACCEPTING APPLICATIONS,  
ESTABLISHING PROCEDURAL  
FRAMEWORK, VARYING RULES,  
AND NOTICE OF AND ORDER FOR  
HEARING

**PROCEDURAL HISTORY**

On November 12, 2019, Plum Creek Wind Farm, LLC (Plum Creek or the Applicant) filed separate applications for a certificate of need, a site permit, and a route permit for its proposed 414 megawatt (MW) Plum Creek Wind Farm Project in Cottonwood, Murray, and Redwood Counties.

On November 20, 2019, the Commission issued a notice seeking comments on the completeness of the applications, whether an Environmental Impact Statement (EIS) should be prepared, whether the applications should be referred to the Office of Administrative Hearings for contested case proceedings, and whether an advisory task force should be appointed.

By December 4, 2019, initial comments on the applications were filed by the Minnesota Department of Commerce Division of Energy Resources (Department), the Department of Commerce Energy Environmental Review and Analysis (EERA) unit, the Laborers International Union of North America, Minnesota (LIUNA), the Southwest Regional Development Commission, and letters from Laurie Johnson and Cory Schmidt.

On December 11, 2019, the Applicant and LIUNA filed reply comments.

On January 3, 2020, the applications came before the Commission.

## **FINDINGS AND CONCLUSIONS**

### **I. Summary of Commission Action**

Finding that Plum Creek has substantially fulfilled the relevant filing requirements for a certificate of need, a site permit, and a route permit, the Commission finds that the applications are complete. The Commission will establish the procedural steps for acting on the applications. These steps include the following:

- Requesting that an administrative law judge conduct joint public hearings as set forth herein.
- Conducting joint public hearings and combined environmental review of the certificate of need, site permit, and route permit applications to the extent practical.
- Establishing additional procedural requirements.
- Varying rules to extend certain procedural timelines.
- Requesting the EERA to prepare an Environmental Impact Statement in lieu of an Environmental Report.
- Delegating administrative authority, including timing issues, to the Executive Secretary.
- Designating a public advisor.

### **II. Introduction**

Under Minn. Stat. § 216B.243, subd. 2, no large energy facility shall be sited or constructed in Minnesota without the issuance of a certificate of need by the Commission. The proposed project meets the definition of a large energy facility under Minn. Stat. § 216B.2421, subd. 2 (1), which includes “any power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system.” The proposed project would include a Large Wind Energy Conversion System (LWECS) of up to 414 MW and a 345 kilovolt (kV) high-voltage transmission line.

In addition to the certificate of need requirements, a site permit is required from the Commission to construct an LWECS of 5,000 kilowatts (kW) or more.<sup>1</sup> Finally, a route permit is required for construction of the 345 kV high-voltage transmission line.<sup>2</sup>

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<sup>1</sup> Minn. Stat. § 216F.04 and 01.

<sup>2</sup> Minn. Stat. § 216E.03 and 01.



### **III. The Plum Creek Wind Project**

Plum Creek, an affiliate of Geronimo Energy, LLC, has filed separate applications for a certificate of need, a site permit, and a route permit for a proposed 414 MW large wind energy conversion system consisting of 74 to 110 wind turbines ranging from 2.8 to 5.6 MW in size and an associated 31-mile 345 kilovolt (kV) transmission line. The purpose of the project is to produce renewable energy for purchase by electric utilities or other entities to satisfy the Minnesota Renewable Energy Standard under Minn. Stat. § 216B.1691, or other clean energy standards and sustainability goals.

The proposed facility would include above-or below-ground electric collection and communications line towers, a sonic detection and light detection and ranging unit, two aircraft detection lighting system radars, an operation and maintenance building, and new gravel access roads.

The associated transmission line would be constructed on single circuit monopole structures within a 150-foot right-of-way and would connect the wind facility to the existing Brookings-to-Hampton 345 kV transmission line via a new switching station. The proposed project would be located in portions of Cottonwood, Murray, and Redwood counties.

### **IV. Applications Completeness**

The Department reviewed the application for a certificate of need for completeness and initially found that the application was complete save for a discussion of the availability of alternatives to the facility. At the Commission's meeting on January 3, 2020, after Applicant's submission of additional information, the Department stated its agreement that the application is complete.

The EERA reviewed the LWECS site permit application pursuant the requirements of Minn. R. 7854 (Wind Siting Rules) and stated that the application provides the information required by Minn. R. 7854.0500. The EERA also evaluated the HVTL route permit application against the application completeness requirements of Minn. R. 7850.1900 and found that the application contains appropriate and substantially complete information with respect to these requirements, including descriptions of the proposed project and potential environmental impacts and mitigation measures.

The EERA also reviewed the certificate of need application under Minn. R. 7849.0310. The EERA found that the information contained in the certificate of need application, combined with the more detailed information in the LWECS and HVTL applications is sufficient to begin review of the project.

### **V. Rule Variances to Consider the Applications**

Under Minn. R. 7849.0200, subp. 5, the Commission must determine the completeness of the certificate of need application within 30 days of the filing, and under Minn. R. 7854.0600, subp. 1, must determine the completeness of the site permit application within 30 days of the filing. Under Minn. R. 7854.0800, subp. 1, the Commission must determine whether to issue a

draft site permit for the proposed LWECS within 45 days of acceptance of the permit application.

In this Order, the Commission finds the applications are complete. That decision is as to form only and implies no judgement on the merits of the applications.

Under Minn. R. 7829.3200, the Commission must vary its rules upon making the following findings:

1. enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
2. granting the variance would not adversely affect the public interest; and
3. granting the variance would not conflict with standards imposed by law.

The Commission finds that the requirements for a variance to Minn. R. 7849.0200, subp. 5, to Minn. R. 7854.0600, subp. 1, and to 7854.0800, subp. 1, in this case are met. Enforcement of the 30-day completeness determinations and enforcement of the 45-day draft site permit requirement would impose an excessive burden on those affected by the rule by unreasonably limiting the time period for comments on the completeness of the application and on potential impacts and alternatives. Further, granting the variance would not adversely affect the public interest and would, in fact, further the public interest by ensuring sufficient time for interested persons to provide input. Finally, granting a variance would not conflict with standards imposed by law.

For these reasons, the Commission will vary Minn. R. 7849.0200, subp. 5; Minn. R. 7854.0600, subp. 1; and Minn. R. 7854.0800, subp. 1.

## **VI. Comments on a Contested Case**

The EERA noted that a contested case proceeding is required for the high-voltage transmission line permit application and that an Environmental Impact Statement is also required.<sup>3</sup> To facilitate record development on all three applications, the EERA recommended joint proceedings, including joint public hearings and joint environmental review. While the Department recommended the informal review process for the certificate of need, it also stated that it had no objections to a Commission-ordered contested case.

## **VII. Environmental Review and Joint Proceedings**

Under Minn. R. 7849.1900, subp. 2, the Commission has authority to conduct joint proceedings on a certificate of need and a route/site permit application, following the procedures of Minn. R. 7850.1000 to 7850.5600. This may include combining environmental review by preparing an Environmental Impact Statement on both applications (in lieu of a separate environmental report on the certificate of need application under Minn. R. 7849.1200). In this case, the Commission concurs with the EERA that it is reasonable to conduct concurrent review of all three applications by combining environmental review and holding joint proceedings.

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<sup>3</sup> Minn. Stat. 216E.03, subds. 5 and 6.

To facilitate joint proceedings, the Commission will delegate administrative authority to the Executive Secretary and will take the following steps:

- Appoint the Commission’s public advisor, Charley Bruce, as the public advisor in this case;
- Direct Commission staff to contact state agency representatives regarding their participation in the review process;
- Request that the Department continue to study issues and indicate during the hearing process its position on the reasonableness of granting a certificate of need, site permit, and route permit;
- Require the Applicant to facilitate in every reasonable way the continued examination of the issues raised by the Department, the EERA, and Commission staff;
- Require the Applicant to place a copy of each application (print and/or electronic) for review in at least one governmental center or public library in each county where the proposed project would be located;
- Direct the Applicant to work with Commission staff and the EERA to arrange for publication of the notices related to public information meetings and public hearings in newspapers of general circulation under the timelines prescribed in rule and statute, that such notice be in the form of visible display ads, and that proof of publication be obtained from the newspapers selected.

### **VIII. Jurisdiction and Referral for Contested Case Procedures**

The Commission finds that it cannot resolve the issues raised in the applications on the basis of the record before it. The issues turn on specific facts that are best developed in formal evidentiary hearings. The Commission will therefore refer the applications to the Office of Administrative Hearings for contested case proceedings.

The Administrative Law Judge (ALJ) assigned to this matter will conduct hearings as described in this order and submit a report to the Commission. Following receipt of the Administrative Law Judge’s Report, the Commission will proceed to make its final decision in accordance with Minn. Stat. Ch. 14 and 216B, 216E, and 216F.

### **IX. Issues to be Addressed**

The Commission authorizes the ALJ to develop and define the scope of the issues to be addressed in these proceedings.

### **X. Procedural Outline**

#### **A. Administrative Law Judge**

The Administrative Law Judge assigned to this case is Jessica Palmer-Denig. Her address is as follows: Office of Administrative Hearings, 600 North Robert Street, St. Paul, Minnesota 55101. Her mailing address is P.O. Box 64620, St. Paul, Minnesota 55164-0620. She can be reached through her legal assistant, Sara Smith at 651-361-7900.

## **B. Hearing Procedure**

- *Controlling Statutes and Rules*

Hearings in this matter will be conducted in accordance with the Administrative Procedure Act, Minn. Stat. §§ 14.57-14.62; the rules of the Office of Administrative Hearings, Minn. R. 1405.0200 to 1405.2700. Regarding any issue on which Chapter 1405 is silent, the provisions of Minn. R. 1400.5100 to 1400.8400 regarding contested cases shall apply, and to the extent they are not superseded by those rules, the Commission's rules of Practice and Procedure, Minn. R. 7829.0100 to 7829.4000. Hearings may be recessed and reset by the Administrative Law Judge pursuant to Minn. R. 1405.1400 to .2300.

Copies of these rules and statutes may be purchased from the Minnesota Bookstore of the Department of Administration, 660 Olive Street, St. Paul, Minnesota 55155; (651) 297-3000. These rules and statutes also appear on the State of Minnesota's website at [www.revisor.mn.gov/pubs](http://www.revisor.mn.gov/pubs).

The Office of Administrative Hearings conducts contested case proceedings in accordance with the Minnesota Rules of Professional Conduct and the Professionalism Aspirations adopted by the Minnesota State Bar Association.

- *Right to Counsel and to Present Evidence*

In these proceedings, parties may be represented by counsel, may appear on their own behalf, or may be represented by another person of their choice, unless otherwise prohibited as the unauthorized practice of law. They have the right to present evidence, conduct cross-examination, and make written and oral argument. Under Minn. R. 1405.1300, they may obtain subpoenas to compel the attendance of witnesses and the production of documents.

Parties should bring to the hearing all documents, records, and witnesses necessary to support their positions.

- *Discovery and Informal Disposition*

Any questions regarding discovery under Minn. R. 1400.6700 to 1400.6800 or informal disposition under Minn. R. 1400.5900 should be directed to Scott Ek (651) 201-2255, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, Minnesota, 55101-2147.

- *Protecting Not-Public Data*

State agencies are required by law to keep some data not public. Parties must advise the Administrative Law Judge if not-public data is offered into the record. They should take note that any not-public data admitted into evidence may become public unless a party objects and requests relief under Minn. Stat. § 14.60, subd. 2.

- *Accommodations for Disabilities; Interpreter Services*

At the request of any individual, this agency will make accommodations to ensure that the hearing in this case is accessible. The agency will appoint a qualified neutral interpreter if necessary. Persons must promptly notify the Administrative Law Judge if an interpreter is needed.

- *Scheduling Issues*

The times, dates, and places of evidentiary hearings in this matter will be set by order of the Administrative Law Judge after consultation with the Commission and intervening parties.

- *Notice of Appearance*

Any party intending to appear at the hearing must file a notice of appearance (Attachment A) with the Administrative Law Judge within 20 days of the date of this Notice and Order for Hearing.

- *Sanctions for Non-compliance*

Failure to appear at a prehearing conference, a settlement conference, or the hearing, or failure to comply with any order of the Administrative Law Judge, may result in facts or issues being resolved against the party who fails to appear or comply.

### **C. Parties and Intervention**

The current parties to this case are the Applicant and the Department. Other persons wishing to become formal parties must do so pursuant to Minn. R. 1405.0900. Subpart 1 of that rule prescribes the timing and contents of a petition to intervene. Subpart 2 prescribes the timing and content of any objection to the petition, and subpart 3 sets forth the standards for granting, denying, or requiring consolidation of similar petitions.

The hearing process established under Rule Chapter 1405 is designed to facilitate public participation, and persons need not intervene as parties to participate. All public participants have significant procedural rights, including but not limited to the right to be present throughout the proceeding, to offer direct testimony in oral or written form, to question all persons who testify, and to submit comments to the Administrative Law Judge and the Commission.

Persons who intervene and are granted party status have additional rights and responsibilities, including, but not limited to, the right to object to another's petition for intervention, the right to submit direct testimony and conduct cross-examination of other parties' witnesses, and the duty to submit testimony, comply with discovery requests, produce witnesses, file briefs, and serve all documents on all other parties.

The description of rights in this section is summary in nature, as required by Minn. R. 1405.0500, subpart 1(I), and is not intended to be comprehensive. Interested parties are encouraged to review Chapter 1405 to identify the scope of rights and authority to act given to "persons" or restricted to "parties" under the various provisions of that chapter.

**D. Prehearing Conference**

A prehearing conference at a date, time, and place will be set by the ALJ in consultation with Commission staff. The hearing will occur in the Large Hearing Room at the office of the Public Utilities Commission, 121 Seventh Place East, Suite 350, St. Paul, Minnesota 55101-2147.

**E. Ex Parte communications**

Restrictions on ex parte communications with Commissioners and reporting requirements regarding such communications with Commission staff apply to this proceeding from the date of this Order. Those restrictions and reporting requirements are set forth in Minn. R. 7845.7300 – 7845.7400, which all parties are urged to consult.

**ORDER**

1. The Commission accepts the Plum Creek certificate of need, the site permit, and the route permit applications as substantially complete.
2. The Commission hereby refers the Plum Creek certificate of need, site permit, and HVTL route permit applications to the Office of Administrative Hearings for contested case proceedings pursuant to Chapter 14.
3. The Commission hereby authorizes the ALJ to define the scope of the issues to be considered in all three matters.
4. The Commission hereby authorizes joint public hearings and combined environmental review of the certificate of need site permit, and route permit applications to the extent practical.
5. The Commission hereby requests the EERA to prepare an Environmental Impact Statement in lieu of an Environmental Report.
6. The Commission requests a prehearing conference at a date, time, and place to be set by the ALJ in consultation with Commission staff.
7. The Commission requests that the ALJ assigned to the case prepare a report setting forth findings of fact, conclusions of law, and a recommendation on the merits of the proposed project, applying the certificate of need, siting, and routing criteria set forth in statute and rule, and provide comments and recommendations, if any, on the conditions and provisions of a certificate of need, site permit, and route permit.
8. The Commission hereby delegates administrative authority to the Executive Secretary to determine timing issues.
9. The Commission designates Charley Bruce as the Commission's Public Advisor who will facilitate citizen participation in the process.

10. Commission staff shall contact state agency representatives regarding their participation in the review proceeding.
11. The Commission requests that the Department of Commerce continue to study the issues and indicate during the hearing process through testimony or comment its position on the reasonableness of granting a certificate of need, site permit, and a route permit.
12. Applicant shall facilitate in every reasonable way the continued examination of the issues.
13. Applicant shall place a print or electronic copy of the certificate of need, site permit, and route permit applications in a government center or public library located closest to the proposed project site.
14. Applicant shall work with Commission staff to arrange for publication of the notices related to public information meetings and public hearings in newspapers of general circulation under the timelines prescribed in rule and statute, that such notice be in the form of visible display ads, and that proof of publication be obtained from the newspapers selected.
15. The Commission grants variances to Minn. R. 7849.0200, subp. 5; to Minn. R. 7854.0600, subp. 1; and to Minn. R. 7854.0800, subp. 1.
16. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Will Seuffert  
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing or speech impairment may call using their preferred Telecommunications Relay Service or email [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us) for assistance.

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

**NOTICE OF APPEARANCE**

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

**PLEASE TAKE NOTICE that:**

1. The party/agency named below (Party/Agency) will appear at the prehearing conference and all subsequent proceedings in the above-entitled matter.

2. By providing its email address below, the Party/Agency acknowledges that it has read and agrees to the terms of the Office of Administrative Hearings' e-Filing policy and chooses to opt into receiving electronic notice from the Office of Administrative Hearings in this matter. **Note: Provision of an email address DOES NOT constitute consent to electronic service from any opposing party or agency in this proceeding.**<sup>4</sup>

3. The Party/Agency agrees to use best efforts to provide the Office of Administrative Hearings with the email address(es) for opposing parties and their legal counsel.

**Party's/Agency's Name:** \_\_\_\_\_

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

**Party's/Agency's Attorney:** \_\_\_\_\_

Firm Name: \_\_\_\_\_

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

**Respondent's/Opposing Party's Name:** \_\_\_\_\_

Email: \_\_\_\_\_ Telephone: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

Dated: \_\_\_\_\_

\_\_\_\_\_  
**Signature of Party/Agency or Attorney**

<sup>4</sup> In order to opt in to electronic notice, this form must be emailed to [OAH.efiling.support@state.mn.us](mailto:OAH.efiling.support@state.mn.us). If the party does not wish to opt in to electronic notice, this form may be filed with the Office of Administrative Hearings via facsimile, U.S. Mail, or personal service. See 2015 Minn. Laws Ch. 63, Minn. R. 1400.5550, subps. 2-5 (2017).



OAH 71-2500-36664  
OAH 71-2500-36665  
OAH 71-2500-36666  
MPUC IP-6997/CN-18-699  
MPUC IP-6997/WS-18-700  
MPUC IP-6997/TL-18-701

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Plum  
Creek Wind Farm, LLC for a Certificate of  
Need for an up to 414 MW Large Wind  
Energy Conversion System and 345 kV  
Transmission Line in Cottonwood, Murray,  
and Redwood Counties

**FIRST PREHEARING ORDER**

In the Matter of the Application of Plum  
Creek Wind Farm, LLC for a Site Permit for  
an up to 414 MW Large Wind Energy  
Conversion System in Cottonwood, Murray,  
and Redwood Counties

In the Matter of the Application of Plum  
Creek Wind Farm, LLC for a Route Permit  
for a 345 kV Transmission Line in  
Cottonwood, Murray, and Redwood  
Counties

These matters came before Administrative Law Judge Jessica A. Palmer-Denig for a prehearing conference, held by telephone, on July 7, 2020.

Christina K. Brusven and Lisa M. Agrimonti, Fredrikson & Byron, P.A., appeared on behalf of Plum Creek Wind Farm, LLC (Applicant) along with Jenny Monson-Miller of Geronimo Energy, LLC.

Richard Dornfeld, Assistant Attorney General, appeared on behalf of the Minnesota Department of Commerce-Energy Environmental Review and Analysis (DOC EERA), along with Bill Storm, Environmental Review Manager, and Louise Miltich, Unit Supervisor.

Cha Xiong and Katherine Hinderlie, Assistant Attorneys General, appeared on behalf of the Minnesota Department of Commerce, Division of Energy Resources (DOC DER).

Scott Ek, Energy Facilities Planner, and Bret Eknes, Energy Facilities Supervisor, appeared as members of Public Utilities Commission (Commission) staff.

Kevin Pranis participated in the prehearing conference on behalf of the Laborers' International Union of North America-Minnesota & North Dakota

Based upon the record and the parties' agreement during the prehearing conference, the Administrative Law Judge issues the following:

## **ORDER**

### **I. Governing Rules**

1. The procedural rules in Minn. R. ch. 1405 (2019) govern the proceedings in this docket. To the extent that they are consistent with chapter 1405, Minn. R. chs. 7849, 7850, 7854, and 7829 (2019) shall also apply. To the extent that the foregoing rules are silent as to procedure, the Administrative Law Judge will rely on Minn. R. 1400.5010-.8400 (2019) for the contested case portion of this docket.

2. The contested case proceedings will be conducted in accordance with the Minnesota Rules of Professional Conduct, and the Professionalism Aspirations approved and endorsed by the Minnesota Supreme Court.

### **II. Parties, Intervention, and Public Participation**

3. The Commission's Order Accepting Applications, Establishing Procedural Framework, Varying Rules, and Notice of and Order for Hearing, issued January 30, 2020, identified the parties in this matter as the Applicant and the Department of Commerce (Department).

4. It is not necessary to be an intervenor or party to participate in these proceedings. Members of the public may submit written comments during the comment periods, appear at all hearings and forums, and participate in the public hearing. The public hearing will provide an opportunity for individuals and groups to present evidence and argument on the issues in this case, and to question all persons testifying. Members of the public:

- (a) may offer testimony with or without the benefit of oath or affirmation;
- (b) are not required to pre-file their testimony;
- (c) may offer testimony or other material in written form, at or following the hearing;
- (d) may question any person testifying or who has offered pre-filed testimony, either directly or by submitting questions to the

Administrative Law Judge, who will then ask the questions of the witness.

5. Oral or written testimony provided without benefit of oath or affirmation, and which is not subject to cross-examination, shall be given such weight as the Administrative Law Judge deems appropriate.

6. All persons may be represented by legal counsel, but such representation is not required.

7. As of the date of the prehearing conference, no person has filed a Petition to Intervene in this matter. If a person wishes to intervene in this proceeding, such a person must file a Petition to Intervene with the Administrative Law Judge not later than **September 2, 2020**. Such Petition to Intervene must comply with Minn. R. 1405.0900. A Notice of Appearance shall be filed with the Petition. Petitioners shall also provide an email address on the Petition or Notice of Appearance. Any objection to a petition shall be filed within seven (7) days of the filing of the Petition. The Petition shall be served upon all existing parties and the Commission.

### **III. Service List**

8. A copy of this First Prehearing Order shall be served according to the service list maintained by the Commission. Thereafter, the service list shall be established by the Administrative Law Judge and the Office of Administrative Hearings (OAH List). The OAH List shall include the parties (the Applicant and DOC DER), DOC EERA,<sup>1</sup> Commission staff, and the court reporter, and any persons who are later granted intervenor status. All documents filed in this contested case proceeding shall be served in accordance with the OAH List.

9. Members of the public may receive notices of all filings and access to all public documents filed in the case by subscribing to these dockets on the Commission's eDockets system: <https://www.edockets.state.mn.us/EFiling/security/login.do?method=showLogin>. To subscribe, enter the docket numbers for this action, which are found on the first page of this First Prehearing Order. Upon subscribing to a docket, you will be provided with electronic notice of all filings, as well as access to the public documents filed in the case.

### **IV. Schedule**

10. The parties have agreed to a procedural schedule in this matter as follows:

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<sup>1</sup> The DOC EERA is not a party to this proceeding, but performs an environmental review of the proposed project on behalf of the Commission.

<b>Event</b>	<b>Date</b>
Proposed EIS Scope and Proposed Draft Site Permit Submitted	July 28, 2020*
EIS Scope Issued	August 21, 2020*
Applicant's Written Direct Testimony Filed	August 28, 2020
Deadline to Intervene	September 2, 2020
Written Direct Testimony by all other Parties Filed	September 28, 2020
Rebuttal Testimony by all Parties Filed	October 28, 2020
Surrebuttal Testimony by all Parties Filed	November 12, 2020
Draft EIS Issued	December 9, 2020*
Draft EIS and Draft Site Permit Meeting	December 29, 2020*
All Parties File and Exchange Prehearing Filings (See Section VII. below)	December 30, 2020
Draft EIS Comment Period Closes	January 8, 2021*
Public Hearings	January 11, 2021
Contested Case Hearing	January 12-13, 2021
Public/Contested Case Comment Period Closes	February 2, 2021
Post Hearing Briefing by All Parties and Proposed Findings Submitted by Applicant	February 12, 2021
Post Hearing Reply Briefs and Revised Findings Submitted by All Parties (All Parties to Submit Redlines of Applicant's Draft of Proposed Findings)	March 1, 2021
Final EIS Issued	April 1, 2021*
ALJ Report Issued	April 15, 2021
Exceptions to ALJ Report Filed	April 30, 2021

\* Environmental review milestones listed herein are DOC EERA's estimated dates and are noted for the convenience of the parties and the public.

## **V. Publication of Notice**

11. The Applicant shall work with Commission staff and the Administrative Law Judge to develop the notice of public and evidentiary hearings in order to ensure publication of the notice pursuant to Commission rules.

## **VI. Discovery**

12. Information requests and responses shall **not** be eFiled into the official record or served on the Administrative Law Judge or Court Reporter. A party may serve requests for information on any other party. All requests for information shall be made in writing by email. The Department may use the eService function of the eFiling system to facilitate email service of information requests on any other party.

13. The party responding to the request shall provide the requested information to the requesting party within ten (10) days of receipt of the information request. In accordance with Minn. R. 1400.6100. subp. 1 (2019), the day that the information request is received is not counted in the ten-day period.

14. Responses to information requests shall be submitted by electronic message, and the responding party shall follow the electronic message with a copy of the response sent by regular U.S. mail or other delivery service, if requested. The Department of Commerce may use the eService function of the eFiling software system to facilitate email service of public information request responses on any other party. To the extent that a response includes material designated as trade secret or not public, an email response is required only between the requesting party and the responding party. Any response received before 4:30 p.m. is considered to be received on the same day. Any response that is received after 4:30 p.m. is considered to be received the following business day.

15. In the event that the responding party is unable to send the response by email due to the volume or nature of information included in a response, the responding party shall send the response by facsimile, regular U.S. mail, or other delivery service so that the requesting party receives the entire response by the date due, including any material designated as trade secret or not public. The responding party will notify the requesting party by e-mail that the remainder of the response follows by a separate delivery method and describe the method it was sent. There shall be a continuing obligation to update and supplement information responses with any responsive material that may subsequently be discovered or acquired by the responding party. The responsive information need not be supplied to other parties unless specifically requested by a party.

16. In the event the information cannot be supplied within ten (10) days, the responding party shall notify the requesting party as soon as reasonably possible in advance of the deadline of the reasons for not being able to supply the information and shall attempt to work out a schedule of compliance with the requesting party.

17. All disputes concerning the reasonableness of discovery requests and the timing and sufficiency of responses shall be resolved by the Administrative Law Judge upon motion of a party. Hearings on such motions may be conducted by telephone conference call.

## **VII. Prehearing Filings**

18. By **4:30 p.m. on December 30, 2020**, each party shall file a Proposed Exhibit List identifying all documents (including pre-filed testimony) that the party intends to offer into the hearing record. The court reporter will e-mail a Microsoft Word template to all parties to use in preparing this document. Also by **4:30 p.m. on December 30, 2020**, the parties shall provide a courtesy copy of their Proposed Exhibit Lists to the Administrative Law Judge via e-mail at [jessica.palmer-denig@state.mn.us](mailto:jessica.palmer-denig@state.mn.us) and to the court reporter at [jshaddix@janetshaddix.com](mailto:jshaddix@janetshaddix.com).

19. Each party shall provide one paper copy of each exhibit for the Administrative Law Judge and a second paper copy of each exhibit for the court reporter.

20. Each party shall mark its pre-filed testimony and offer it for admission into the record at the opening of the hearing. The front page of each exhibit shall be pre-marked, as follows:

- (a) An exhibit number displayed in the lower right-hand corner of the first page of the exhibit. Exhibit numbers are assigned as follows:
  - (1) Applicant beginning at 100;
  - (2) DOC EERA beginning at 200;
  - (3) DOC DER beginning at 300.
- (b) The eDocket unique identifier, taken from the eDocket list when the document is electronically filed. The eDocket unique identifier shall be displayed in the upper right-hand corner of the first page of the exhibit.

21. Except for good cause shown, all revisions or corrections to any pre-filed testimony shall be in writing and served upon the Administrative Law Judge and the parties no later than three (3) days prior to the commencement of the public hearing. Corrections to any pre-filed testimony shall be identified and marked on the paper copy of the exhibit which is entered into the hearing record.

22. Pre-filed testimony that is not offered into the record, or stricken portions of pre-filed testimony that is offered, shall be considered withdrawn and no witness shall be cross-examined concerning the withdrawn testimony. Any new affirmative matter that is not offered in reply to another party's direct case will not be allowed in rebuttal testimony and exhibits. Any new affirmative matter that is not offered in reply to another party's rebuttal testimony and exhibits will not be allowed in surrebuttal testimony and exhibits.

23. Except for good cause shown, objections by any party related to the qualifications of a witness or to that witness' direct, rebuttal, or surrebuttal testimony shall be considered waived unless the objecting party states its objection by motion made to the Administrative Law Judge, and serves a copy of such objections on the parties, no later than **December 14, 2020**.

### **VIII. Order of Testimony**

24. The tentative order of testimony in the evidentiary hearing shall be: Applicant, DOC EERA, and DOC DER. The DOC EERA will then summarize its recommended draft site permit. Questioning of the witnesses shall proceed in the same order, followed by Commission Staff and the Administrative Law Judge. This

provision is subject to change by agreement of the parties or further order of the Administrative Law Judge. Each party shall advise other parties and the Administrative Law Judge of the order in which it will call witnesses for cross examination no less than 48 hours before the witness is called to testify.

25. If a sponsoring party needs a date certain to offer the testimony of a witness, the sponsoring party should submit a request to the Administrative Law Judge and other parties.

## **IX. Subpoenas**

26. Requests for subpoenas to compel the attendance of a witness or for the production of documents shall be made in writing to the Administrative Law Judge pursuant to Minn. R. 1405.1300 (2019). The subpoena request shall contain a brief statement demonstrating the potential relevance of the testimony or evidence sought and shall identify any documents sought with specificity. The request shall also include the full name and home or business address of each person to be subpoenaed and, to the extent known, the date, time, and place for responding to the subpoena. A copy of the subpoena request shall be served on the other parties. A subpoena request form is available at <https://mn.gov/oah/forms-and-filing/forms/>.

## **X. Hearings**

27. Public hearings shall be held on **January 11, 2021**, beginning at **1:00 p.m.** and **6:00 p.m.**, at a location to be determined. The evidentiary hearing shall be held on **January 12-13, 2021**, at a location to be determined.

28. Each party shall provide five copies of the pre-filed testimony of each of its witnesses for review by the public at the public and evidentiary hearings. Testimony that is identified as Trade Secret or Nonpublic need not be provided. The Applicant shall also provide five copies of its Application for a Site Permit and the DOC EERA shall provide five copies of its Recommendation for a Draft Permit.

29. Each witness who offers pre-filed testimony must be available for questioning by interested persons at the evidentiary hearing. Each witness who offers pre-filed testimony relating to the site or route permit must be available for questioning by interested persons at each of the public hearings.<sup>2</sup> If a witness cannot be available throughout the hearing process, the witness' sponsoring party shall file a request with the Administrative Law Judge for an exemption from this requirement before the publication of the Notice of Hearing. The written request shall meet the requirements of Minn. R. 1405.2000.

30. At the beginning of the public hearing, the Administrative Law Judge will offer a short introduction. This will be followed by presentations by Commission staff,

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<sup>2</sup> Note that the DOC DER is a party only to the certificate of need proceeding. A representative of the DOC DER will be available at the public hearings, but comments made on its behalf there do not constitute testimony for the purposes of the evidentiary hearing.

the Applicant, the DOC EERA, and DOC DER, each explaining their roles in the process. Participants should plan to limit their presentations to approximately ten (10) minutes each. Each party may then briefly summarize their pre-filed testimony. All parties to this action shall withhold their questioning of other parties' witnesses until the evidentiary hearing.

31. Following these introductions, the public hearings will open for comments and questions by the public, according to the entries on a sign-up sheet. Members of the public will be called in the order that they sign up on the sign-up sheet. Depending on the number of individuals who wish to speak, the Judge may place a time limit on speakers. Members of the public will be reminded that they may submit written comments as exhibits into the hearing record, or file comments with the Commission.

32. Public hearings will adjourn with the last speaker, even if it is prior to a stated hearing end time. Members of the public who wish to speak should arrive at the beginning of the public hearing and put their names on the sign-up sheet. To the extent practicable, the public hearings will end at the stated end time, but may be extended, depending on the number of individuals wishing to provide comment.

33. At the evidentiary hearing, parties shall examine and cross-examine witnesses through their attorneys, if they are represented by counsel. Any party not represented by counsel may examine and cross-examine each witness through one representative chosen by the party.

34. The Administrative Law Judge may hold a prehearing conference shortly before the public and evidentiary hearings to address logistics and final details for the hearings.

35. Note that some or all of the public hearings may be conducted remotely, with alternative procedures appropriate to a remote public hearing.

## **XI. Filing of Documents (Excluding Information Requests and Responses)**

36. Documents shall be filed using the Commission's eDockets e-Filing system where feasible, in accordance with Minn. Stat. § 216.17, subd. 3 (2018), and the Commission's standards, but may also file by personal delivery or U.S. Mail. At this time, electronic filing is strongly encouraged.

37. Pre-filed testimony and exhibits may be in any reasonable format that is understandable, logically organized, and capable of being cited by page and line number, paragraph number, or similar identifier.

38. An oversized exhibit may be received into the hearing record, with approval of the Administrative Law Judge, provided that a duplicate original of the exhibit conforming to the standards of Minn. R. 1400.5275, is submitted into the record and e-Filed.



39. The effective date of filing shall be the date the document is e-Filed or delivered to the Administrative Law Judge. Parties using the e-Filing system should retain the unique document identifier as proof of filing through that system. Proof of service to the service list in this proceeding shall be filed with each document or within three (3) business days thereafter.

40. The parties agree that e-Filing through the eDockets system shall constitute service in this matter. Any document that cannot be e-Filed shall be served by U.S. mail or delivered to the persons indicated on the official service list by the date the document is required to be served. The service list will be revised as necessary by the Office of Administrative Hearings.

41. The parties shall provide the Administrative Law Judge with a paper courtesy copy of all pre-filed testimony. A courtesy copy of all briefs, motions, memoranda, and proposed findings shall be sent to the Administrative Law Judge and court reporter by electronic mail. Proposed findings and post-hearing briefs should also be sent by electronic mail to the Administrative Law Judge in a Microsoft Word format that permits revision.

42. A Protective Order has been issued in this proceeding and that Order governs access to information designated Trade Secret or Nonpublic Data. Material designated Trade Secret or Nonpublic Data shall be prepared and marked in accordance with the Protective Order.

## **XII. Court Reporter**

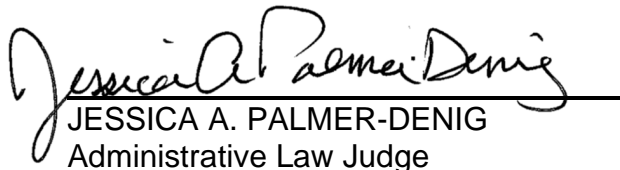
43. The Commission will arrange to have a court reporter present at the hearings. Parties must make arrangements with the court reporter to obtain a copy of the transcripts.

44. The Applicant shall ensure that the Administrative Law Judge is provided with a copy of all transcripts, with the cost to be borne by the Applicant.

## **XIII. Request for Accommodation**

45. No person has requested accommodation for a disability or appointment of an interpreter. The Office of Administrative Hearings shall be notified promptly if either an accommodation or interpreter is needed.

Dated: July 23, 2020

  
JESSICA A. PALMER-DENIG  
Administrative Law Judge

July 23, 2020

See Attached Service List

**Re:** In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties

In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties

OAH 71-2500-36664  
OAH 71-2500-36665  
OAH 71-2500-36666  
MPUC IP-6997/CN-18-699  
MPUC IP-6997/WS-18-700  
MPUC IP-6997/TL-18-701

To All Persons on the Attached Service List:

Enclosed and served upon you is the Administrative Law Judge's **FIRST PREHEARING ORDER** in the above-entitled matter.

If you have any questions, please contact me at (651) 361-7881, Anne.Laska@state.mn.us, or via facsimile at (651) 539-0310.

Sincerely,



ANNE LASKA  
Legal Assistant

Enclosure  
cc: Docket Coordinator

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
PO BOX 64620  
600 NORTH ROBERT STREET  
ST. PAUL, MINNESOTA 55164

**CERTIFICATE OF SERVICE**

<p>In the Matter of the Application of Plum Creek Wind Farm, LLC for a Certificate of Need for an up to 414 MW Large Wind Energy Conversion System and 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties</p> <p>In the Matter of the Application of Plum Creek Wind Farm, LLC for a Site Permit for an up to 414 MW Large Wind Energy Conversion System in Cottonwood, Murray, and Redwood Counties</p> <p>In the Matter of the Application of Plum Creek Wind Farm, LLC for a Route Permit for a 345 kV Transmission Line in Cottonwood, Murray, and Redwood Counties</p>	<p>OAH 71-2500-36664  OAH 71-2500-36665  OAH 71-2500-36666  MPUC IP-6997/CN-18-699  MPUC IP-6997/WS-18-700  MPUC IP-6997/TL-18-701</p>
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Anne Laska certifies that on July 23, 2020, she served the true and correct **FIRST PREHEARING ORDER** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

Last Name	First Name	Email	Company Name	Delivery Method
Agrimonti	Lisa	lagrimonti@fredlaw.com	Fredrikson & Byron, P.A.	Electronic Service
Brusven	Christina	cbrusven@fredlaw.com	Fredrikson Byron	Electronic Service
Commerce Attorneys	Generic Notice	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	Electronic Service
Ek	Scott	scott.ek@state.mn.us	Public Utilities Commission	Electronic Service
Eknes	Bret	bret.eknes@state.mn.us	Public Utilities Commission	Electronic Service

Ferguson	Sharon	sharon.ferguson@state.mn.us	Department of Commerce	Electronic Service
Franco	Lucas	lfranco@liunagroc.com	LIUNA	Electronic Service
Hinderlie	Katherine	katherine.hinderlie@ag.state.mn.us	Office of the Attorney General-DOC	Electronic Service
Miltich	Louise	louise.miltich@state.mn.us	Department of Commerce	Electronic Service
Overland	Carol A.	overland@legalelectric.org	Legalelectric - Overland Law Office	Electronic Service
Palmer Denig	Jessica	jessica.palmer-Denig@state.mn.us	Office of Administrative Hearings	Electronic Service
Pranis	Kevin	kpranis@liunagroc.com	Laborers' District Council of MN and ND	Electronic Service
Residential Utilities Division	Generic Notice	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	Electronic Service
Seuffert	Will	Will.Seuffert@state.mn.us	Public Utilities Commission	Electronic Service
Shaddix Elling	Janet	jshaddix@janetshaddix.com	Shaddix And Associates	Electronic Service
Storm	William	bill.storm@state.mn.us	Department of Commerce	Electronic Service
Xiong	Cha	cha.xiong@ag.state.mn.us	Office of the Attorney General-DOC	Electronic Service

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Dan Lipschultz	Commissioner
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
John A. Tuma	Commissioner

In the Matter of the Application of Buffalo Ridge Wind Energy, LLC for a Site Permit for the 109 MW Large Wind Energy Conversion System in Lincoln County

ISSUE DATE: November 12, 2019

DOCKET NO. IP-7006/WS-19-394

ORDER ACCEPTING APPLICATION, ESTABLISHING PROCEDURAL FRAMEWORK, AND VARYING RULES

**PROCEDURAL HISTORY**

On July 17, 2019, Buffalo Ridge Wind Energy, LLC (Buffalo Ridge or Applicant) filed a site permit application for the Buffalo Ridge Wind Energy, Project (Project), a 109.2 megawatt (MW) large wind energy conversion system (LWECS).<sup>1</sup>

On July 24, 2019, the Commission filed a notice that requested comments on: 1) whether the site permit application contained the information required under Minnesota Rule 7854.0500; 2) whether there are any contested issues of fact with respect to the representations made in the application; 3) whether the application should be referred to the Office of Administrative Hearings for contested case proceedings; and 4) whether there are any other issues or concerns related to the application. Initial comments were accepted until August 13, 2019, and reply comments were accepted until August 20, 2019.

On August 12, 2019, Buffalo Ridge submitted updates to the Site Permit application reflecting Applicant's refinement of its turbine array to optimize the sound levels of the Project following input from the Minnesota Department of Commerce.

On August 13, 2019, the Department of Commerce Energy Environmental Review and Analysis (EERA) staff filed comments on the application.

On August 13, 2019, the Minnesota Pollution Control Agency (MPCA) filed comments on the application regarding Section 8.3 (Sound), Section 8.17 (Wetlands), and Section 11 (Identification of Other Potential Permits) of the site permit application. MPCA did not have

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<sup>1</sup> Buffalo Ridge filed a certificate-of-need application for the Project on July 12, 2019. Docket No. IP-7006/CN-19-309.

specific concerns related to noise, but recommended that the developer pay close attention to turbine location/micro-siting in the area around receptors #244 and #26.<sup>2</sup>

On August 20, 2019, Applicant submitted reply comments, supporting the MPCA's comments and recommendations.

On August 22, 2019, the Laborers' International Union of North America (LIUNA) filed a petition for intervention in this matter.

On September 10, 2019, Buffalo Ridge filed a letter stating it did not object to LIUNA's request for full party status. Buffalo Ridge also clarified that, although a contractor has not yet been selected for the Project, it committed to use reasonable efforts to use no less than 60 percent local labor during construction, with local labor defined as residing within Minnesota.

On October 24, 2019, the Commission met to consider the matter.

## FINDINGS AND CONCLUSIONS

### I. Summary of Commission Action

Finding that Buffalo Ridge has substantially fulfilled the relevant filing requirements for a site permit, the Commission will establish the procedural steps for acting on the application. These steps include the following:

- Requesting that an administrative law judge conduct public hearings as set forth herein.
- Establishing additional procedural requirements.
- Varying rules to extend certain procedural timelines.
- Delegating administrative authority, including timing issues, to the Executive Secretary.
- Designating a public advisor.

### II. The Project

The Project is requesting a certificate of need and a site permit for a 109.2 MW LWECs. The Project's footprint covers approximately 16,893 acres primarily in Lincoln County. Buffalo Ridge has filed the certificate of need application for the Project in Docket IP-7006/CN-19-309.

Buffalo Ridge is a wholly-owned indirect subsidiary of NextEra Energy Resources, LLC (NEER), a national renewable energy company. Buffalo Ridge has entered into a power purchase agreement (PPA) with Great River Energy to sell the entire output of the Project for a 25-year term. The Project will assist Great River Energy in meeting its self-imposed goal of 50 percent of total retail electric sales from eligible renewable resources by 2030.

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<sup>2</sup> These receptors belong to participating landowners and could be engaged directly by the Project developer regarding potential impacts or mitigation. In addition, Receptor #44 was modeled in a way that showed potential exceedances and belongs to a non-participating landowner.

### **III. Jurisdiction**

Before building a large wind energy conversion system—that is, a system with a combined nameplate capacity of 5 MW or more—a developer must acquire a site permit from the Commission.<sup>3</sup> Because the Buffalo Ridge Wind Project would have a generating capacity exceeding 5 MW, Applicant must obtain an LWECS site permit from the Commission. Minn. R. Ch. 7854 contains the application requirements and criteria for granting an LWECS site permit.

### **IV. Application Completeness**

EERA reviewed the application for completeness under Minn. R. 7854.0500 and concluded that the Application provides sufficient information to begin the Site Permit review process. The EERA recommended that the Commission find the application substantially complete.

Having reviewed the application and the parties' comments, the Commission concurs with EERA and will therefore accept the application as substantially complete.

### **V. LIUNA Intervention Request**

The Commission has considered LIUNA's request to intervene as a full party in this matter. LIUNA asserted that no other party can adequately represent the interests of their union and their members. LIUNA has experience as a party in similar wind permitting cases, and is prepared to meet their obligations as a party. The Applicant raised no objections to LIUNA's request, and the Commission will grant LIUNA's petition to intervene.

### **VI. Review Process**

#### **A. Request Appointment of an Administrative Law Judge**

To facilitate development of the record, the Commission will ask the Office of Administrative Hearings to assign an administrative law judge (ALJ) to conduct a public hearing. Specifically, the Commission will ask that the ALJ do the following:

1. Conduct the public hearing in accordance with Minn. R. 7850.3800, subs. 2 to 4, and, as the ALJ deems appropriate, with Minn. R. 1405.0500, .0600, .0800, .1900, and .2200.
2. Direct that intervention as a party is not required. Parties to the proceeding are the Department, the Applicant, and LIUNA. Other persons may participate as public participants or as otherwise prescribed.
3. Contact state agencies who are authorized to issue permits for construction or operation of large wind energy conversion systems to encourage their participation in the site permit review in accordance with the provisions of Minn. Stat. § 216E.10, subd. 3.

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<sup>3</sup> Minn. Stat. § 216F.04 and 01.

4. Request that the ALJ establish the types of filings necessary to facilitate proper record development (i.e., testimony, briefs, reply briefs, proposed findings and site permit recommendations) and a schedule for submitting those filings through the scheduling of a prehearing conference in accordance with Minn. R. 1405.1100.
5. Request that the ALJ assigned to the matter emphasize the statutory time frame for the Commission to make a final decision on the application and encourage the applicant and other interested persons to adhere to a schedule that conforms to the statutory timeframe.
6. Request that the ALJ ask the applicant and other interested parties to address whether the proposed LWECS project meets the criteria established under Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.
7. Request that the ALJ prepare a report setting forth findings of fact, conclusions of law, and recommendations on the merits of the LWECS site permit application, and provide recommendations, if any, on conditions and provisions of the proposed site permit.

**B. Additional Procedural Requirements**

To further facilitate the review process, the Commission will require the following administrative steps:

1. Delegate administrative authority, including timing issues, to the Executive Secretary.
2. Provide the name, telephone number, and email address of the Commission's Public Advisor who will facilitate citizen participation in the process: Charley Bruce, (651) 201-2251, publicadvisor.puc@state.mn.us.
3. Request that the Department continue to study the issues and indicate during the hearing process through testimony or comment its position on the reasonableness of granting a site permit.
4. Require the applicant to facilitate in every reasonable way the continued examination of the issues requested by the Department and Commission staff.
5. Require the applicant to place a print or electronic copy of the site permit application in the government center or public library located closest to the proposed project site.
6. Direct the applicant to work with Commission staff and the ALJ to arrange for publication of the notice of hearing in newspapers of general circulation at least ten days prior to the hearing, that such notice be in the form of visible display ads and that proof of publication be obtained from the newspapers selected.



7. Direct that all noticing requirements in these matters provided for under Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 include delivery to all affected landowners. An affected landowner is any landowner or designee that is within or adjacent to the proposed LWECS site boundary.

## **VII. Request for Variances**

### **A. Variance Standard**

Under Minn. R. 7829.3200, the Commission will vary any of its rules upon making the following findings:

1. Enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
2. Granting the variance would not adversely affect the public interest; and
3. Granting the variance would not conflict with standards imposed by law.

### **B. Extension of Timeline**

Minn. R. 7854.0600, subp. 1, requires the Commission to decide on the completeness of an LWECS site permit application within 30 days of filing.

The Commission concludes that the requirements for a variance to Minn. R. 7854.0600, subp. 1, are met, and makes the following findings:

1. Enforcement of the rule would impose an excessive burden upon the Commission, EERA, and the public, because the rule does not allow enough time to review the Application, solicit comments, schedule a Commission meeting, and prepare a written order.
2. Varying the timeframe serves the public interest by allowing more time for public comment on, and for the Commission to consider, the Application.
3. Granting the variance does not conflict with standards imposed by law.

Accordingly, the Commission will vary Minn. R. 7854.0600, subp. 1, to extend the timeline contained in the rule.

Additionally, Minn. R. 7854.0800, subp. 1, requires the Commission to make a preliminary determination regarding the issuance or denial of a draft site permit within 45 days of accepting the application. A 45-day time-frame does not allow for adequate time to conduct a public information meeting, provide for a comment period on issues to be considered for inclusion in a

draft site permit, preparation of the draft site permit and a Commission determination on whether a draft permit should be issued.

The Commission concludes that the requirements for a variance to Minn. R. 7854.0800, subp. 1, are met, and makes the following findings:

1. Enforcement of the 45-day timeframe would impose an excessive burden upon the Commission, the EERA, and the public, because it would not allow sufficient time to schedule and hold public information meetings, provide for an adequate public comment period, prepare a draft site permit, schedule a Commission meeting, and prepare a written order.

2. Varying the 45-day timeframe would serve the public interest by allowing more time for public comment on issues to be considered in the draft site permit.

3. Granting the variance does not conflict with standards imposed by law.

Accordingly, the Commission will grant a variance to Minn. R. 7854.0800, subp. 1, to extend the timeline contained in the rule.

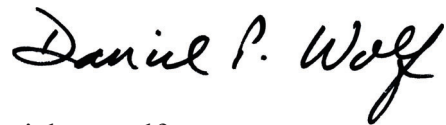
### **ORDER**

1. The Commission accepts the Buffalo Ridge Wind Energy, LLC's site permit as substantially complete.
2. The Commission grants LIUNA's petition to intervene as a party in this docket.
3. The Commission requests that an Administrative Law Judge (ALJ) from the Office of Administrative Hearings preside over the hearing. The Commission also asks that the ALJ:
  - A. conduct the public hearing in accordance with Minn. R. 7850.3800, subp. 2 to 4, and as the administrative judge determines appropriate, Minn. R. 1405.0500; 1405.0600; 1405.0800; 1405.1900; and 1405.2200;
  - B. direct that intervention as a party is not required. Parties to the proceeding are the Department of Commerce, the Applicant, and LIUNA. Other persons may participate as public participants or as otherwise prescribed;
  - C. request that state agencies participate in accordance with Minn. Stat. § 216E.10, subd. 3.

- D. establish the types of filings necessary to facilitate proper record development (i.e., testimony, briefs, reply briefs, proposed findings and site permit recommendations) and a schedule for submitting those filings through the scheduling of a prehearing conference in accordance with Minn. R. 1405.1100, as determined appropriate;
  - E. emphasize the statutory time frame for the Commission to make final decisions on the application and encourage the applicant and others to adhere to a schedule that conforms to the statutory timeframe;
  - F. request interested persons to address whether the proposed LWECS project meets the criteria established under Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854;
  - G. prepare a report setting forth findings of fact, conclusions of law, and recommendations on the merits of the LWECS site permit application, and provide recommendations, if any, on conditions and provisions of the proposed site permit; and
  - H. direct that the hearing record be maintained through the Commission's electronic e-Dockets filing system.
4. The Commission delegates administrative authority, including timing issues, to the Executive Secretary.
  5. The Commission requests that the Department continue to study the issues and indicate during the hearing process through testimony or comment its position on the reasonableness of granting a site permit.
  6. The Applicant shall facilitate in every reasonable way the continued examination of the issues requested by the Department and Commission staff.
  7. The Applicant shall place a print or electronic copy of the site permit application in the government center or public library located closest to the proposed project site.
  8. The Applicant shall work with Commission staff and the ALJ to arrange for publication of the notice of hearing in newspapers of general circulation at least ten days prior to the hearing, that such notice be in the form of visible display ads, and that proof of publication be obtained from the newspapers selected.
  9. All noticing requirements in these matters provided for under Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 shall be delivered to all affected landowners. An affected landowner is any landowner or designee that is within or adjacent to the proposed LWECS site boundary.
  10. Minn. R. 7854.0600, subp. 1, is varied to extend the 30-day time frame for Commission decision on application completeness.

11. Minn. R. 7854.0800, subp. 1, is varied to extend the 45-day time frame for Commission decision on the issuance of a draft site permit.
12. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing or speech impairment may call using their preferred Telecommunications Relay Service or email [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us) for assistance.

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Dan Lipschultz	Commissioner
Valerie Means	Commissioner
Matthew Schuenger	Commissioner
John A. Tuma	Commissioner

In the Matter of the Application of Three Waters Wind Farm, LLC for a Site Permit for the up to 201 MW Large Wind Energy Conversion System in Jackson County, Minnesota

ISSUE DATE: December 23, 2019

DOCKET NO. IP-7002/WS-19-576

ORDER ACCEPTING APPLICATION, ESTABLISHING PROCEDURAL FRAMEWORK, AND VARYING RULES

### PROCEDURAL HISTORY

On September 30, 2019, Three Waters Wind, LLC (Three Waters), filed a site permit application for its Three Waters Wind Project, a large wind energy conversion system<sup>1</sup> (LWECS or wind farm) including up to 71 wind turbines and related facilities. Three Waters filed occasional revisions to its application through October 22.

On October 3 and 22, 2019, the Commission issued notices establishing schedules for interested persons to file comments and replies regarding the application's completeness.

On November 5, 2019, the Commission received comments on the application from the Energy Environmental Review and Analysis staff (EERA) of the Minnesota Department of Commerce (Department).

On November 12, 2019, Three Waters filed reply comments.

On December 12, 2019, the Commission met to consider the matter.

### FINDINGS AND CONCLUSIONS

#### I. Summary of Commission Action

Finding that Three Waters has substantially fulfilled the relevant filing requirements for a site permit, the Commission will establish the procedural steps for acting on the application. These steps include the following:

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<sup>1</sup> See Minn. R. 7854.0100, subp. 7.

- Requesting that an administrative law judge conduct public hearings as set forth herein.
- Establishing additional procedural requirements.
- Varying rules to extend certain procedural timelines.
- Delegating administrative authority, including timing issues, to the Executive Secretary.
- Designating a public advisor.

## **II. The Three Waters Wind Project**

Three Waters seeks a site permit for a wind farm with a generating capacity of up to 201 MW in Jackson County—specifically, in 48,087 acres southwest of Lakefield, in Jackson County’s Ewington, Round Lake, Sioux Valley, Rost, Hunter, and Minnesota Townships.<sup>2</sup> The Minnesota Municipal Power Agency (MMPA) signed a 30-year contract to buy the energy produced by the project.

Three Waters’s application includes a model estimating how much noise people near the project would hear from the wind farm’s operations. For purposes of this model, Three Waters assumes a ground absorption factor of 0.7 on a scale from 0.0 to 1.0—where 0.0 equals to the noise absorption level of pavement or ice, while 1.0 refers to the absorption level of tall grass or snow.

## **III. Jurisdiction**

Before building a large wind energy conversion system—that is, a wind farm with a combined nameplate capacity of 5 MW or more—a developer must acquire a site permit from the Commission.<sup>3</sup> Because Three Waters proposes to build a wind farm capable of generating 201 MW, it has applied for a site permit.

Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 set forth the criteria for granting a wind farm site permit.

Minn. R. 7854.0500 lists the information that a wind farm site permit must contain. Minn. R. 7854.0600, subp. 1, provides for the Commission to make a determination on the application’s completeness within 30 days of filing. Minn. R. 7854.0700 provides for the Commission, upon accepting an application for a site permit, to designate a staff person to act as the Public Advisor for the project. And Minn. R. 7854.0800, subp. 1, provides 45 days for the Commission to make a preliminary determination on issuing a draft site permit.

Minn. Stat. § 216F.05(3) and Minn. R. 7854.0900 provide for the Commission to convene a public hearing on a site permit application. The Commission may ask the Office of

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<sup>2</sup> Three Waters states that it expects to erect additional wind turbines in an adjoining 11,000 acres in Osceola and Dickinson Counties in northern Iowa.

<sup>3</sup> Minn. Stat. § 216F.01 and .04; Minn. R. Ch. 7854. Likewise, before constructing a large electric generating facility—that is, a plant or combination of plants capable of generating 50 MW or more—a developer must obtain a Certificate of Need from the Commission under Minn. Stat. § 216B.243, subd. 2, and Minn. R. 7849.0030. Consequently Three Waters has filed for a Certificate of Need. *See In the Matter of the Application for a Certificate of Need for the Up-to-201 Megawatt Three Waters Wind Farm, LLC in Jackson County*, Docket No. IP-7002/CN-19-154.

Administrative Hearings to assign an administrative law judge (ALJ) to preside over the hearing in accordance with Minn. R. Ch. 1405.

#### **IV. Application Completeness**

The EERA reviewed the application for completeness under Minn. R. 7854.0500 and concluded that the application provides sufficient information to begin the site permit review process. The EERA recommends that the Commission find the application substantially complete.

Having reviewed the application and the EERA's comments, the Commission concurs with the EERA that the application is substantially complete.

#### **V. Review Process**

##### **A. Request Appointment of an Administrative Law Judge**

The Commission finds that it cannot resolve all issues raised by the application on the basis of the record before it. The issues turn on specific facts that are best developed in proceedings conducted by an administrative law judge. The Commission will therefore request that an administrative law judge from the Office of Administrative Hearings conduct summary proceedings under Minn. R. 7850.3800 to facilitate development of the factual record.

The Commission will ask the administrative law judge to conduct the proceeding in the manner described below:

- Conduct the public hearing in accordance with Minn. R. 7850.3800, subs. 2 to 4, and, as the ALJ deems appropriate, with Minn. R. 1405.0500, .0600, .0800, .1900, and .2200.
- Clarify that interested persons may participate in this docket without intervening as a party. Parties to the proceeding are Three Waters and the EERA. Other persons may participate as public participants or as otherwise prescribed.
- Ask parties and other interested persons to address whether the proposed wind farm meets the criteria established under Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854. In particular, Three Waters estimated the project's noise levels assuming a ground absorption factor of 0.7 on a scale from 0.0 to 1.0. While this assumption is not unprecedented,<sup>4</sup> it is more common for wind farm

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<sup>4</sup> See *In the Matter of the Application of Blazing Star Wind Farm, LLC for a Site Permit for the up to 200 Megawatt Blazing Star Wind Project in Lincoln County*, Docket No. IP-6985/WS-16-686; *In the Matter of the Site Permit for the up to 200 MW Blazing Star 2 Wind Farm in Lincoln County*, Docket No. IP-6985/WS-17-700.

developers in Minnesota to assume a ground absorption factor of 0.5.<sup>5</sup> The Commission welcomes further exploration of this issue.

- Establish the types of filings necessary to facilitate proper record development (i.e., testimony, briefs, reply briefs, proposed findings and site permit recommendations) and a schedule for submitting those filings through the scheduling of a prehearing conference in accordance with Minn. R. 1405.1100, as determined appropriate.
- Emphasize the statutory time frame for the Commission to make a final decision on the application and encourage Three Waters and other interested persons to adhere to a schedule that conforms to the statutory timeframe.
- Prepare a report setting forth findings of fact, conclusions of law, and recommendations on the merits of the wind farm site permit application, and provide recommendations, if any, on conditions and provisions of the proposed site permit.
- Direct that the hearing record be maintained through the Commission's electronic e-Dockets filing system.

#### **B. Additional Procedural Requirements**

To further facilitate the review process, the Commission will take the following administrative steps:

- Delegate administrative authority, including timing issues, to its Executive Secretary.
- Ask the Department to continue studying the issues and indicate during the hearing process through testimony or comment its position on the reasonableness of granting a site permit.
- Require Three Waters to facilitate in every reasonable way the continued examination of the issues requested by the Department and Commission staff.

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<sup>5</sup> See *In the Matter of Lake Benton Power Partners II, LLC for a Site Permit Amendment for the 100.2 MW Lake Benton Wind II Repowering Project and Associated Facilities in Pipestone County*, Docket No. IP-6903/WS-18-179, Application Appendix C, at 6-4; *In the Matter of the Application of Buffalo Ridge Wind Energy, LLC for a Site Permit for the 109 MW Large Wind Energy Conversion System in Lincoln County*, Docket No. IP-7006/WS-19-394, Application Appendix C, at 6-5; *In the Matter of the Application of Dodge County Wind, LLC for a Site Permit for the 170 MW Dodge County Wind Project and Associated Facilities in Dodge and Steele Counties, Minnesota*, Docket No. IP-6981/WS-17-307, Application Appendix D, at 6-4; *In the Matter of Freeborn Wind Energy LLC's Application for a Large Wind Energy Conversion System Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County*, Docket No. IP-6946/WS-17-410, Site Permit Section 6.1.



- Require Three Waters to place a print or electronic copy of the site permit application in the government center or public library located closest to the proposed project site.
- Direct Three Waters to work with Commission staff and the ALJ to arrange for publishing visible display ads giving notice of the hearing in newspapers of general circulation at least ten days before the hearing, and to obtain proof that the newspapers published the notices.
- Direct that all noticing requirements in these matters provided for under Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 include delivery to all affected landowners. An affected landowner is any landowner or designee that is within or adjacent to the proposed LWECS site boundary.

## **VI. Request for Variances**

### **A. Variance Standard**

Under Minn. R. 7829.3200, the Commission will vary any of its rules upon making the following findings:

1. Enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule;
2. Granting the variance would not adversely affect the public interest; and
3. Granting the variance would not conflict with standards imposed by law.

### **B. Extension of Timeline**

Minn. R. 7854.0600, subp. 1, requires the Commission to decide on the completeness of an LWECS site permit application within 30 days of filing.

The Commission concludes that the requirements for a variance to Minn. R. 7854.0600, subp. 1, are met, and makes the following findings:

1. Enforcement of the rule would impose an excessive burden upon the Commission, EERA, and the public, because the rule does not allow enough time to review the application, solicit comments, schedule a Commission meeting, and prepare a written order.
2. Varying the timeframe serves the public interest by allowing more time for public comment on, and for the Commission to consider, the application.

3. Granting the variance does not conflict with standards imposed by law.

Accordingly, the Commission will vary Minn. R. 7854.0600, subp. 1, to extend the timeline contained in the rule.

Additionally, Minn. R. 7854.0800, subp. 1, requires the Commission to make a preliminary determination regarding the issuance or denial of a draft site permit within 45 days of accepting the application. Forty-five days is not enough time to conduct a public information meeting, provide for a comment period on issues to be considered for inclusion in a draft site permit, prepare the draft permit, conduct Commission deliberations, and issue the draft permit.

The Commission concludes that the requirements for a variance to Minn. R. 7854.0800, subp. 1, are met, and makes the following findings:

1. Enforcement of the 45-day timeframe would impose an excessive burden upon the Commission, the EERA, and the public, because it would not allow sufficient time to schedule and hold public information meetings, provide for an adequate public comment period, prepare a draft site permit, schedule a Commission meeting, and prepare a written order.
2. Varying the 45-day timeframe would serve the public interest by allowing more time for public comment on issues to be considered in the draft site permit.
3. Granting the variance does not conflict with standards imposed by law.

Accordingly, the Commission will grant a variance to Minn. R. 7854.0800, subp. 1, to extend the timeline contained in the rule.

## **VII. Public Advisor**

Finally, upon acceptance of an application for a site permit, the Commission designates a staff person to act as the Public Advisor on the project under Minn. R. 7854.0700. The Public Advisor is available to answer questions from the public about the permitting process. In this role, the Public Advisor may not act as an advocate on behalf of any person.

The Commission will designate Charley Bruce to facilitate and coordinate public participation in this proceeding. His contact information is as follows:

Charley Bruce, Public Advisor, Minnesota Public Utilities Commission  
121 Seventh Place East, Suite 350, Saint Paul, Minnesota 55101-2147  
651.221.2251  
PublicAdvisor.PUC@state.mn.us

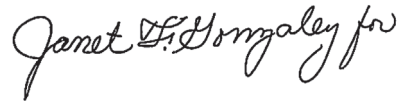
The Commission will so order.

## ORDER

1. The Commission accepts the site permit application of Three Waters Wind Farm, LLC, as substantially complete.
2. The Commission asks that an Administrative Law Judge from the Office of Administrative Hearings preside over the hearing, and asks the ALJ to take the following actions:
  - A. Conduct the public hearing in accordance with Minn. R. 7850.3800, subp. 2 to 4, and as the administrative judge determines appropriate, Minn. R. 1405.0500; 1405.0600; 1405.0800; 1405.1900; and 1405.2200.
  - B. Establish the types of filings necessary to facilitate proper record development (i.e., testimony, briefs, reply briefs, proposed findings and site permit recommendations) and a schedule for submitting those filings through the scheduling of a prehearing conference in accordance with Minn. R. 1405.1100, as determined appropriate.
  - C. Direct that intervention as a party is not required to participate in this docket. Interested persons may participate as public participants or as otherwise prescribed.
  - D. Emphasize the statutory timeframe for the Commission to make final decisions on the application and encourage Three Waters and others to adhere to a schedule that conforms to the statutory timeframe.
  - E. Ask interested persons to address whether the proposed wind farm meets the criteria established under Minn. Stat. Ch. 216F and Minn. R. Ch. 7854—including issues related to wind farm noise and the appropriate ground absorption factor to be used for modeling noise.
  - F. Prepare a report setting forth findings of fact, conclusions of law, and recommendations on the merits of the wind farm site permit application, and provide recommendations, if any, on conditions and provisions of the proposed site permit.
  - G. Direct that the hearing record be maintained through the Commission's electronic e-Dockets filing system.
3. The Commission delegates administrative authority, including timing issues, to its Executive Secretary.
4. The Commission asks the Department to continue studying the issues and indicate during the hearing process through testimony or comment its position on the reasonableness of granting a site permit.
5. Three Waters shall facilitate in every reasonable way the continued examination of the issues requested by the Department and Commission staff.

6. Three Waters shall place a print or electronic copy of the site permit application in the government center or public library located closest to the proposed project site.
7. Three Waters shall work with Commission staff and the ALJ to arrange for publishing visible display ads giving notice of the hearing in newspapers of general circulation at least ten days before the hearing, and shall obtain proof that the newspapers published the notices.
8. All notices provided for under Minn. Stat. Ch. 216F and Minn. R. Ch. 7854 shall be delivered to all affected landowners—that is, any landowner or designee within or adjacent to the proposed wind farm site boundary.
9. The Commission varies its rules as follows:
  - A. Minn. R. 7854.0600, subp. 1, is varied to extend the 30-day timeframe for Commission decision on application completeness.
  - B. Minn. R. 7854.0800, subp. 1, is varied to extend the 45-day timeframe for Commission decision on the issuance of a draft site permit.
10. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing or speech impairment may call using their preferred Telecommunications Relay Service or email [consumer.puc@state.mn.us](mailto:consumer.puc@state.mn.us) for assistance.

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Buffalo Ridge Wind, LLC for a Site Permit for the 109 MW Large Wind Energy Conversion System in Lincoln County, Minnesota

**REVISED SCHEDULING ORDER**

In the Matter of the Application of Buffalo Ridge Wind, LLC for a Certificate of Need for the 109 MW Large Wind Energy Conversion System in Lincoln County, Minnesota

An Amended Scheduling Order was filed in this matter on February 11, 2020. On March 16, 2020, the Commission suspended all public meetings from March 16 through March 27, 2020. Consequently, the schedule previously issued in this matter had to be revised.

Brian Meloy, Stinson LLP, appears on behalf of Buffalo Ridge Wind, LLC (Applicant). Ray Kirsch, appears on behalf of the Minnesota Department of Commerce, Environmental Review and Analysis division (DOC-EERA). Kevin Pranis, Marketing Manager, appears on behalf of the intervenor, Laborers' International Union of North America (LIUNA).

Based upon the record herein and the agreement of the parties,

**IT IS HEREBY ORDERED THAT:**

1. The parties to this proceeding are the Department of Commerce (Department),<sup>1</sup> the Applicant, and LIUNA.<sup>2</sup> Other interested persons may participate as public participants or as otherwise directed. Intervention as a party is not required in this matter.

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<sup>1</sup> The Department of Commerce, Division of Energy Resources (DER) is a party to this proceeding. The Department of Commerce, Energy Environmental Review and Analysis unit (DOC-EERA) has an advisory role in environmental review and technical assistance in this proceeding and is not a party.

<sup>2</sup> The Commission granted LIUNA's petition to intervene in its order accepting the site permit application, dated November 11, 2019.

2. The period for persons to intervene in this matter passed on February 14, 2020, by previous order.

3. The PUC's order accepting the site permit application, dated November 11, 2019, requested that the Administrative Law Judge request the participation of state agencies pursuant to Minn. Stat. § 216E.10, subd. 3 (2018). At the Prehearing Conference, Mr. Panait clarified that the PUC will request the participation of state agencies pursuant to that statute.

4. The Commission anticipates making a final decision regarding its review of the Certificate of Need and Site Permit applications in late November or early December 2020. The parties have agreed to a schedule that conforms to this timeframe, and the parties and other interested persons are encouraged to adhere to all deadlines to permit full consideration of this matter by the deadline.

5. The following deadlines were previously established and have passed:

<b>January 13, 2020</b>	Environmental review scope issued by DOC-EERA
<b>January 31, 2020</b>	Preliminary draft site permit issued by DOC-EERA
<b>January 31, 2020</b>	Initial comments period on the merits of the certificate of need application closes
<b>February 14, 2020</b>	Reply comment period on the merits of the certificate of need application and deadline for requesting a contested case closed
<b>February 20, 2020</b>	PUC meeting on the draft site permit
<b>March 6, 2020</b>	PUC order issuing the draft site permit
<b>March 6, 2020</b>	Environmental review issued by DOC-EERA

6. A public hearing on the Site Permit application will be held on **Wednesday, July 22, 2020**, in Lincoln County, Minnesota, by a method to be determined (including consideration of holding the meeting remotely). Notice of the public hearing will be issued by the Commission by **June 19, 2020**. The Applicant, staff of the Department, and Commission staff will be available to answer questions and provide information on the Site Permit application and the Draft Site Permit. Written testimony by the parties may be submitted at the public hearing.

7. Written comments from the public and state agencies on the Site Permit application will be accepted until **4:30 p.m. on August 3, 2020**.

8. By **August 10, 2020**, the Administrative Law Judge will file in the e-Dockets system all written public comments received by the August 3, 2020, deadline.

9. The parties shall submit written responses to comments received at the public hearing by **4:30 p.m. on August 10, 2020**.

10. By **4:30 p.m. on August 21, 2020**, the applicant shall submit: (1) written responses to comments received at the public hearing; (2) proposed Findings of Fact, Conclusions of Law, and Recommendation on the LWECs Site Permit application; and (3) any suggestions as to appropriate permit conditions. The parties are encouraged to enter into stipulations to the extent that matters are not in dispute.


11. By **4:30 p.m. on September 4, 2020**, the Department will submit comments and recommendations regarding appropriate permit conditions.

12. The report of the Administrative Law Judge shall be filed and served on or before **4:30 p.m. on October 5, 2020**.

13. The parties shall file any exceptions to the Administrative Law Judge's report by **4:30 p.m. on October 19, 2020**.

14. The hearing record in this matter will be maintained through the Commission's electronic e-Dockets system. All documents filed by the Applicant and the Department will be filed electronically using the e-Dockets system.

Dated: June 10, 2020

  
BARBARA J. CASE  
Administrative Law Judge

June 10, 2020

See Attached Service List

**Re: *In the Matter of the Application of Buffalo Ridge Wind Energy, LLC  
for a Site Permit for the 109 MW Large Wind Energy Conversion  
System in Lincoln County, Minnesota***

***In the Matter of the Application of Buffalo Ridge Wind Energy, LLC  
for a Certificate of Need for the 109 MW Large Wind Energy  
Conversion System in Lincoln County, Minnesota***

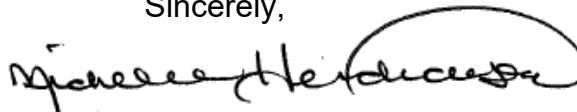
**OAH 82-2500-36550  
MPUC IP-7006/WS-19-394  
MPUC IP-7006/CN-19-309**

To All Persons on the Attached Service List:

Enclosed and served upon you is the Administrative Law Judge's **REVISED SCHEDULING ORDER** in the above-entitled.

If you have any questions, please contact me at (651) 361-7896, [Michelle.L.Hendrickson@state.mn.us](mailto:Michelle.L.Hendrickson@state.mn.us), or via facsimile at (651) 539-0310.

Sincerely,



MICHELLE HENDRICKSON  
Legal Assistant

Enclosure

cc: Docket Coordinator



STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
PO BOX 64620  
600 NORTH ROBERT STREET  
ST. PAUL, MINNESOTA 55164

**CERTIFICATE OF SERVICE**

<p>In the Matter of Buffalo Ridge Wind, LLC 109 MW Buffalo Ridge Wind Project in Lincoln and Pipestone Counties</p> <p>In the Matter of the Application of Buffalo Ridge Wind Energy, LLC for a Certificate of Need for the 109 MW Large Wind Energy Conversion System in Lincoln County, Minnesota</p>	<p>OAH Docket No.: 82-2500-36550 MPUC IP-7006/WS-19-394 MPUC IP-7006/CN-19-309</p>
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Michelle Hendrickson certifies that on June 10, 2020 she served the true and correct **REVISED SCHEDULING ORDER** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

See Attached Service List

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret
Barbara	Case	barbara.case@state.mn.us	Office of Administrative Hearings	600 N. Robert St. St. Paul, Mn. 55101	Electronic Service	Yes
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General- DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No
Danell	Herzig	danell.herzig@nexteraenergy.com	NextEra Energy Resources, LLC	700 Universe Blvd Juno Beach, FL 33408	Electronic Service	No
Brian	Meloy	brian.meloy@stinson.com	STINSON LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No
Brian J	Murphy	Brian.J.Murphy@nee.com	Nextera Energy Resources, LLC	700 Universe Blvd LAW-JB Juno Beach, FL 33408	Electronic Service	No
Kevin	Pranis	kpranis@liunagroc.com	Laborers' District Council of MN and ND	81 E Little Canada Road St. Paul, Minnesota 55117	Electronic Service	No
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General- RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes
Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th PI E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	7400 Lyndale Ave S Ste 190 Richfield, MN 55423	Electronic Service	Yes

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trad Secret
Barbara	Case	barbara.case@state.mn.us	Office of Administrative Hearings	600 N. Robert St. St. Paul, Mn. 55101	Electronic Service	Yes
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1400 St. Paul, MN 55101	Electronic Service	Yes
Kate	Fairman	kate.frantz@state.mn.us	Department of Natural Resources	Box 32 500 Lafayette Rd St. Paul, MN 551554032	Electronic Service	No
Annie	Felix Gerth	annie.felix-gerth@state.mn.us		Board of Water & Soil Resources 520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No
Sharon	Ferguson	sharon.ferguson@state.mn.us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No
Andrew	Gibbons	andrew.gibbons@stinson.com	STINSON LLP	50 S 6th St Ste 2600 Minneapolis, MN 54002	Electronic Service	No
Kari	Howe	kari.howe@state.mn.us	DEED	332 Minnesota St, #E200 1ST National Bank Bldg St. Paul, MN 55101	Electronic Service	No
Ray	Kirsch	Raymond.Kirsch@state.mn.us	Department of Commerce	85 7th Place E Ste 500 St. Paul, MN 55101	Electronic Service	No
Karen	Kromar	karen.kromar@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No
Susan	Medhaug	Susan.medhaug@state.mn.us	Department of Commerce	Suite 280, 85 Seventh Place East St. Paul, MN 551012198	Electronic Service	No
Brian	Meloy	brian.meloy@stinson.com	STINSON LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No
Brian J	Murphy	Brian.J.Murphy@nee.com	Nextera Energy Resources, LLC	700 Universe Blvd LAW-JB Juno Beach, FL 33408	Electronic Service	No
Kevin	Pranis	kpranis@liunagroc.com	Laborers' District Council of MN and ND	81 E Little Canada Road St. Paul, Minnesota 55117	Electronic Service	No
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes
Stephan	Roos	stephan.roos@state.mn.us	MN Department of Agriculture	625 Robert St N Saint Paul, MN 55155-2538	Electronic Service	No

Will	Seuffert	Will.Seuffert@state.mn.us	Public Utilities Commission	121 7th Pl E Ste 350 Saint Paul, MN 55101	Electronic Service	Yes
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	7400 Lyndale Ave S Ste 190 Richfield, MN 55423	Electronic Service	Yes
Cynthia	Warzecha	cynthia.warzecha@state.mn.us	Minnesota Department of Natural Resources	500 Lafayette Road Box 25 St. Paul, Minnesota 55155- 4040	Electronic Service	N

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Applications of Three  
Waters Wind Farm, LLC for a Certificate of  
Need and Site Permit for the up to 201 MW  
Large Wind Energy Conversion System in  
Jackson County

**SECOND CONTINUANCE ORDER**

Two public hearings are scheduled to occur in the afternoon and evening of July 28, 2020, on the Certificate of Need and Site Permit for the proposed Three Waters Wind large wind energy conversion system in Jackson County, Minnesota. On July 14, 2020, Three Waters Wind Farm, LLC (Applicant) was sold by Scout Clean Energy to Twin Wind, LLC. Applicant is now evaluating the impact of the change in ownership on the Certificate of Need and Site Permit. On July 17, 2020, Applicant filed a Motion to Suspend the current procedural schedule for the pending matter.

Administrative Law Judge Jim Mortenson has determined there are no objections to the Motion following discussions with the Applicant and The Department of Commerce Energy Environmental Review and Analysis unit (Department).<sup>1</sup> Further, the Applicant “commits to provide the [Public Utilities] Commission. . . and all parties with an update within thirty (30) days, explaining [the Applicant’s] plans to move forward with the wind project” and the necessary procedural steps.

Pursuant to Minn. R. 1400.5500, .7500, 1405.1100 (2019), for good cause, and because there is no objection to the Motion,

**IT IS HEREBY ORDERED:**

1. The two public hearings previously scheduled 1:00 p.m. and 6:00 p.m. on Tuesday, July 28, 2020, are continued until rescheduled by the Judge or the applications are withdrawn.

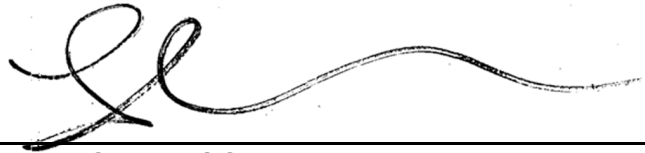
2. The Applicant and Department will confer on any proposed changes to the applications and the procedural steps to follow including, if Applicant chooses to proceed, a proposed schedule for any additional environmental review, if necessary, and the schedule for the public hearings and related deadlines.

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<sup>1</sup> This method was used due to the short time span between the filing of the Motion and the scheduled hearings and because the Department is the only other party to this proceeding.

3. Either party may request a conference call with the Judge, if necessary, to resolve any dispute or to confirm stipulated proposals. Applicant is encouraged to contact the Judge's Legal Assistant, Anne Laska ([anne.laska@state.mn.us](mailto:anne.laska@state.mn.us)) to confirm the Judge's availability for proposed hearing dates and times.

Dated: July 23, 2020

A handwritten signature in black ink, appearing to read 'JM', with a long, wavy horizontal line extending to the right.

---

JIM MORTENSON  
Administrative Law Judge

July 23, 2020

See Attached Service List

**Re: *In the Matter of the Applications of Three Waters Wind Farm, LLC for a Certificate of Need and Site Permit for the up to 201 MW Large Wind Energy Conversion System in Jackson County***

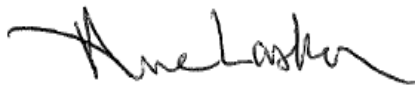
**OAH 5-2500-36624  
MPUC Docket Nos. IP-7002/CN-19-154, WS-19-576**

To All Persons on the Attached Service List:

Enclosed and served upon you is the Administrative Law Judge's **SECOND CONTINUANCE ORDER** in the above-entitled matter.

If you have any questions, please contact me at (651) 361-7881, Anne.Laska@state.mn.us, or via facsimile at (651) 539-0310.

Sincerely,



ANNE LASKA  
Legal Assistant

Enclosure

cc: Docket Coordinator

STATE OF MINNESOTA  
OFFICE OF ADMINISTRATIVE HEARINGS  
PO BOX 64620  
600 NORTH ROBERT STREET  
ST. PAUL, MINNESOTA 55164

**CERTIFICATE OF SERVICE**

In the Matter of the Applications of Three Waters Wind Farm, LLC for a Certificate of Need and Site Permit for the up to 201 MW Large Wind Energy Conversion System in Jackson County	OAH Docket No.: 5-2500-36624 MPUC Docket Nos. IP-7002/CN-19-154, WS-19-576
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Anne Laska certifies that on July 23, 2020, she served the true and correct

**SECOND CONTINUANCE ORDER** by eService, and U.S. Mail, (in the manner indicated below) to the following individuals:

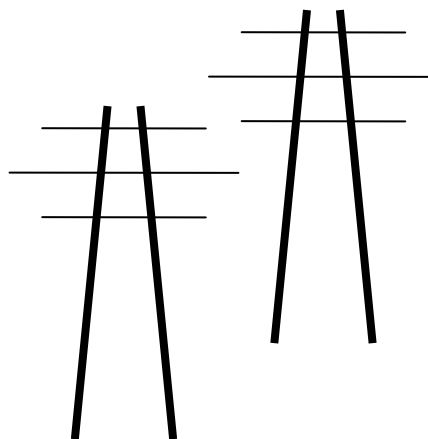
Electronic Service Member(s)				
Last Name	First Name	Email	Company Name	Delivery Method
Behrends	Thomas	thomas.behrends@gmail.com	N/A	Electronic Service
Commerce Attorneys	Generic Notice	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DC	Electronic Service
Davis	Richard	Richard.Davis@state.mn.us	Department of Commerce	Electronic Service
Duehr	Jeremy	jduehr@fredlaw.com	Fredrikson & Byron, P.A.	Electronic Service
Fairman	Kate	kate.frantz@state.mn.us	Department of Natural Resources	Electronic Service
Felix Gerth	Annie	annie.felix-gerth@state.mn.us	N/A	Electronic Service
Ferguson	Sharon	sharon.ferguson@state.mn.us	Department of Commerce	Electronic Service
Hanson	Kipp	khanson@local49.org	International Union of Operating	Electronic Service
Howe	Kari	kari.howe@state.mn.us	DEED	Electronic Service
Kirsch	Ray	Raymond.Kirsch@state.mn.us	Department of Commerce	Electronic Service
Kromar	Karen	karen.kromar@state.mn.us	MN Pollution Control Agency	Electronic Service
Landess	Pat	pat@scoutcleanenergy.com	Scout Clean Energy	Electronic Service
Medhaug	Susan	Susan.medhaug@state.mn.us	Department of Commerce	Electronic Service
Mortenson	James	james.mortenson@state.mn.us	Office of Administrative Hearings	Electronic Service
Overland	Carol A.	overland@legalelectric.org	Legalelectric - Overland Law Office	Electronic Service
Panait	Cezar	Cezar.Panait@state.mn.us	Public Utilities Commission	Electronic Service
Residential Utilities	Generic Notice	residential.utilities@ag.state.mn.us	Office of the Attorney General-RL	Electronic Service
Roos	Stephan	stephan.roos@state.mn.us	MN Department of Agriculture	Electronic Service
Rucker	Mike	mruckerb@gmail.com	Three Waters Wind Farm	Electronic Service
Seuffert	Will	Will.Seuffert@state.mn.us	Public Utilities Commission	Electronic Service
Shaddix Elling	Janet	jshaddix@janetshaddix.com	Shaddix And Associates	Electronic Service
Warzecha	Cynthia	cynthia.warzecha@state.mn.us	Minnesota Department of Natural Resources	Electronic Service
Wengierski	Mark	mark@scoutcleanenergy.com	Scout Clean Energy	Electronic Service



# Legalelectric, Inc.

Carol Overland Attorney at Law, MN #254617  
Energy Consultant—Transmission, Power Plants, Nuclear Waste  
overland@legalelectric.org

1110 West Avenue  
Red Wing, Minnesota 55066  
612.227.8638



December 18, 2019

Daniel Wolf, Executive Secretary  
Minnesota Public Utilities Commission  
121 – 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

via email and eDockets

John Wachtler, Energy Program Director  
Commerce – EERA  
85 – 7<sup>th</sup> Place East, Suite 500  
St. Paul, MN 55101

via email and eDockets

**RE: Improper Ground Factors Skew Modeling and Misrepresent Probability of Compliance in ALL 13 Projects Identified by EERA as “LWECS In Permitting Process” or “LWECS Permitted”**

Nobles 2 (WS-17-597)  
Freeborn (WS-17-410)  
Blazing Star (WS-16-686)  
Lake Benton II (WS-18-179)  
Community Wind North (WS-08-1494)  
Jeffers Wind (WS-05-1220)  
Fenton Wind (WS-05-1707)  
Buffalo Ridge (WS-19-394)  
Three Waters (WS-19-576)  
Plum Creek (WS-18-700)  
Mower County (WS-06-91)  
Dodge County (WS-17-307)  
Bitter Root/Flying Cow (WS-17-749)

Dear Mr. Wolf and Mr. Wachtler:

In reviewing the EERA 2019 Project Status handout for the Power Plant Siting Act Annual Hearing,<sup>1</sup> I’ve noticed that every project listed by Commerce-EERA as “LWECS Permitted” and “LWECS in the Permitting Process” all utilize, improperly, ground factors of 0.5, and in three

---

<sup>1</sup>  
<https://www.edockets.state.mn.us/EFiling/edockets/searchDocuments.do?method=showPoup&documentId={90D27E6E-0000-C116-8738-B4CA09BD8487}&documentTitle=201911-157604-01>

instances, an absurd 0.7 ground factor. This is not acceptable. Why is this occurring? It's not hard to guess. In both Minnesota and Wisconsin, projects utilizing the appropriate ground factor of 0.0 were not able to demonstrate compliance with the states' noise standards, and subsequently, the developers provided modeling at 0.5 ground factor in those dockets rather than adjust the design of the project to allow for compliance with state law. **This is particularly important where the turbines are now larger and noisier than those of Bent Tree, where exceedences were demonstrated at 1,150 and 1,525 feet.**

A ground factor of 0.0 is to be used for wind modeling because the wind noise source is elevated high in the air, and ground conditions do not impede the direct path from a greatly elevated source to the "receptor." See attached testimony of Dr. Paul D. Schomer, from the Highland Wind CPCN proceeding (WI PSC Docket 2535-CE-100) and testimony of Mike Hankard, from the Badger Creek Solar CPCN proceeding (WI PSC Docket 9697-CE-100).

Below are the 13 projects listed in the "EERA 2019 Project Status" handout for the PPSA Annual Hearing, pps 3-4 (not including the withdrawn Bitter Root project), and I've listed the dockets, by name and number, the ground factor used, and the citation:

Name	Docket	G.F.	Cite	eDockets ID
Nobles 2	WS-17-597	0.5	p 3, Appendix C	201710-136496-03
Freeborn Wind	WS-17-410	0.5	p 7, Attachment E	20198-155331-04
Blazing Star	WS-16-686	0.7	p 52, Attachment B	20189-146376-01
Lake Benton II	WS-18-179	0.5	p 6-4, Appendix C	20185-142740-01
Community Wind	WS-08-1494	0.5	p 2, Appendix F	20193-151362-03
Jeffers Wind	WS-05-1220	0.5	p 2, Appendix F	20193-151486-04
Fenton Wind	WS-05-1707	0.5	p 2,4 Attachment 6	20191-149027-08
Buffalo Ridge	WS-19-394	0.5	p 6-5, Appendix C	20197-154454-07
Three Waters	WS-19-576	0.7	p 8-13, 43, Appendix D	201910-156475-03
Plum Creek	WS-18-700	0.7	p 48, Appendix B	201911-157475-05 201911-157475-06
Mower County	WS-06-91	0.5	p D-5, Appendix D	201912-157979-03
Dodge County	WS-17-307	0.5	p 6-4, Appendix C	201910-156623-03
Bitter Root	WS-17-749	0.5	P 8, Part 4	20184-141999-08 20184-141999-04

Below is a lightly edited summary of the wind modeling ground factor that I'd filed earlier in the Power Plant Annual Siting Act Annual Hearing record, explaining why ground factor matters:

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**I. BECAUSE NOISE MODELING WOULD DEMONSTRATE LWECS IN THE SITING PROCESS ARE LIKELY TO VIOLATE STATE NOISE STANDARDS, DEVELOPERS ARE USING WRONG GROUND FACTOR FOR MODELING, GIVING FALSE IMPRESSION OF PROBABLE COMPLIANCE.**

Freeborn Wind (PUC Docket 17-410) was the first wind project to be sited acknowledging application of the PPSA, and more importantly, the first contested case for siting. Two prior

contested cases were held on wind projects, one a territorial dispute between developers circa 1995, and more recently, the Goodhue Wind project and applicability of county ordinance under Minn. Stat. §216F.081.

The ALJ's Recommendation in the Freeborn Wind case was that the permit be denied:

#### SUMMARY OF RECOMMENDATIONS

The Administrative Law Judge concludes that Freeborn Wind has failed to demonstrate that the proposed Project will meet the requirements of Minn. R. 7030.0040, the applicable Minnesota Noise Standards. Therefore, the Administrative Law Judge respectfully recommends that the Commission either deny Freeborn Wind's Application for a Site Permit, or in the alternative, provide Freeborn Wind with a period of time to submit a plan demonstrating how it will comply with Minnesota's Noise Standards at all times throughout the footprint of the Freeborn Wind Project.

The wind promotional lobby was horrified that they might have to demonstrate compliance with the rules, and flat out stated they could not:

#### **[Judge's ruling against Minnesota wind farm causes alarm for advocates](#)**<sup>2</sup>

From that article:

*Freeborn Wind's developer, Invenergy, has objected, saying Schlatter's interpretation of state noise rules would be "impossible" to meet. Last week, two wind-industry trade groups and three of Invenergy's competitors also filed objections to Schlatter's recommendation, as did four clean-energy and environmental groups.*

*The judge's "interpretation of the Minnesota Pollution Control Agency's (MPCA) noise standards would have a detrimental impact on other current and future wind-energy projects throughout the state," the Minnesota Center for Environmental Advocacy wrote in its objection.*

#### **[Wind industry says Minnesota pollution control stance will stifle its growth](#)**<sup>3</sup>

And from that article:

*The wind-energy industry said an opinion filed by Minnesota pollution-control regulators defining wind-turbine noise will stifle its growth.*

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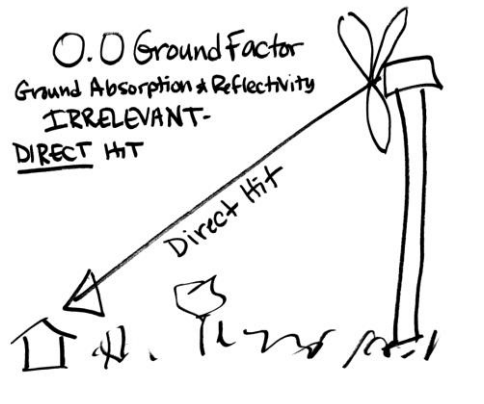
<sup>2</sup> <http://www.startribune.com/judge-s-ruling-against-minnesota-wind-farm-causes-alarm-for-advocates/485312391/>

<sup>3</sup> <http://www.startribune.com/wind-industry-says-minnesota-pollution-control-stance-will-stifle-its-growth/493181151/>

*The Minnesota Pollution Control Agency (MPCA) said the state's limit for wind-farm noise applies not only to sounds from turbines but also should include background noise such as road traffic, said the filing with the Minnesota Public Utilities Commission (PUC).*

The MPCA comment, filed September 11, 2018, and referred to in this article is attached below.

For Freeborn Wind, ground factor, a primary input assumption for noise modeling, was set at 0.0, and all evidence and testimony regarding the predictive modeling was based on this 0.0 ground factor. In an apparent admission that these many wind projects cannot comply with noise standards and cannot demonstrate compliance through modeling utilizing a 0.0 ground factor, the industry is now uniformly improperly utilizing a 0.5 or 0.7 ground factor. Why is this improper? Because wind turbines are elevated, and the sound goes directly to the “receptor” on the ground:



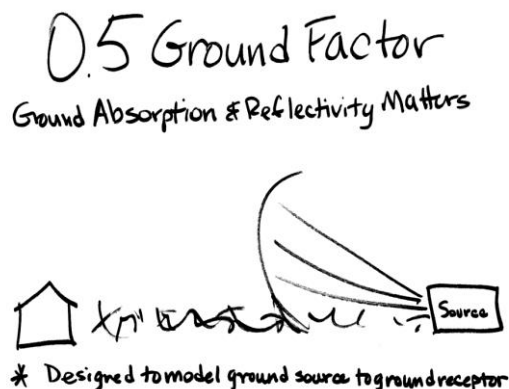
Ground factor represents conditions on the ground and things that can come between the noise source and the “receptor.” See ISO 9613-2 (standards for noise modeling):

### 7.3 Ground effect ( $A_{gr}$ )

#### 7.3.1 General method of calculation

Ground attenuation,  $A_{gr}$ , is mainly the result of sound reflected by the ground surface interfering with the sound propagating directly from source to receiver.

From ISO 9613-2. Here’s a depiction of how that works, from ground source to ground receptor:



As the chart on page 2 above shows, 0.5 and 0.7 are currently being used in all projects before the Commission. The use 0.0 of ground factor for wind is what should be standard practice, and a 0.5 ground factor is NOT appropriate for wind because the source is elevated. Use of a 0.7 ground factor is not scientifically justified.

That use of a 0.5 ground factor is not appropriate for wind turbine noise modeling was inadvertently confirmed by Applicant's Mike Hankard in the [Badger Hollow solar docket, also in Wisconsin \(PSC Docket 9697-CE-100\)](#)<sup>4</sup>:

7 A The model that we use has been shown to predict  
8 conservatively with 0.5. I mean, 0.5 ground factor  
9 is used in probably -- well, with the exception  
10 perhaps of wind turbine projects which are different  
11 because the source is elevated. But for projects  
12 like a typical power plant, a solar plant where the  
13 sources are relatively close to the ground, I would  
14 say 90 to 99 percent of the studies use 0.5. And  
15 when consultants like myself go out and measure these  
16 plants after they're constructed to verify our  
17 modeling assumptions, that assumption checks out as  
18 being, if anything, overpredicting the levels. So  
19 there's no need to -- there would be no justification  
20 to use something like a .2 or .3 which would predict  
21 yet higher levels because we're already demonstrating  
22 that the model is probably overpredicting. So that  
23 would not be justified for those reasons.  
24 MR. NOWICKI: Thank you. No further  
25 questions.

The testimony of Dr. Paul D. Schomer in the Wisconsin Highland Wind docket<sup>5</sup> elaborates on the development of ISO 9613-2, that it is for measuring a ground source to a ground "receptor," and not designed for elevated noise sources with a direct path to "receptors," the purpose and use of the ISO 9613-2 standard and modeling assumptions, and the inappropriateness of use of a 0.5 ground factor for modeling predicted noise from wind turbines. Attached. I have also attached the AFCL Comment in the Freeborn Wind docket (WS-17-410) that addresses 0.5 ground factor improperly used in that docket.

<sup>4</sup> <http://apps.psc.wi.gov/vs2017/dockets/content/detail.aspx?id=9697&case=CE&num=100>

<sup>5</sup> Online, selected pages from hearing transcript: [https://legalelectric.org/f/2019/11/Schomer\\_Pages-from-Transcript-Schomer-see-p-572.pdf](https://legalelectric.org/f/2019/11/Schomer_Pages-from-Transcript-Schomer-see-p-572.pdf)

The statements of probable compliance and justifications made in the noise modeling “studies” for the projects listed above are false and misleading, as are any statements that 0.5 is the generally accepted ground factor.

Like the Freeborn Wind project, the Highland Wind project could not meet Wisconsin’s state noise standards (45 dB(A) in Wisconsin) using the 0.0 ground factor assumption, and so the developers moved the goal posts and produced noise modeling using a 0.5 ground factor with a claim that the project did meet state noise standards. This is deception, garbage in-garbage out modeling, backwards engineering, moving the goalposts until the desired result appears.

I have asked the Commissioners, on the record, whether they understand what 0.5 ground factor means, and have received repeated, and feisty, assurances that yes, they do know what it means. If Commissioners do understand, they are accepting this deception, and by permitting projects that likely will not comply, they’re inflicting sound exceedences on those living near the turbines.

In Bent Tree, we’ve seen buyouts of two landowner families due to noise exceedences at **1,150** and **1,525** feet from the nearest turbine. The buyouts were hammered out only after SEVEN years of complaining with no action by the Commission until pushed by landowner persistence. Unfortunately, the rights of landowners are funneled through an ineffective and inadequate Complaint process, reliant on repeated landowner complaints and extreme efforts, rather than the Commission holding applicants to state standards at the outset, in permitting. By allowing use of a 0.5 ground factor, by issuing permits for projects despite developer unwillingness and/or inability to demonstrate that they can meet the noise standards, the Commission is inviting further legal action.

Worse yet than acceptance of modeling based on a 0.5 ground factor is the utter absurdity of use of a 0.7 ground factor, as is seen for the Three Waters (WS-19-576) and Plum Creek (WS-18-700). There is no excuse for this.

The Power Plant Siting Act’s directive regarding public participation, applicable to siting of wind projects, is particularly important, as the Commission is failing to deal with the need for compliance with noise standards, leaving it to the public to address this failure. Also a problem is moving the filing of noise, shadow flicker, decommissioning and complaint process to “compliance filings,” after a permit has been granted. At that point, the public is shut out, and there’s no iterative substantive or critical review of the filings. Landowners and residents are at a severe disadvantage, as most members of the public have no way to identify these problems, and certainly cannot afford to intervene, much less hire expert witnesses to address these issues.

+++++

I am filing this letter in all of the above-identified dockets to provide actual and constructive notice of the deceptions present in each of the projects utilizing other than 0.0 ground factor. Minn. R. 7829.0250.

It should not fall to the public to spot this, or other, deceptions and inadequacies – that is the job of the Commission and Commerce-EERA. Further, no project should be permitted without agency vetting, independent verification of studies, particularly noise, shadow flicker, and decommissioning, etc.. The Commission should hold public and contested case hearings for discovery and cross-examination of witnesses presenting the studies and application.

Wind projects can be designed to comply with Minnesota's noise standard. It is the Commission's job to regulate utilities, to assure that projects comply with state law. The Commission must not site non-compliant projects, must require demonstration of probable compliance, and must use precautionary and preventative siting to avoid impacts and consequences. Once a turbine is up and not in compliance, then what? There aren't many options other than removing the turbine or buying out the landowner. With Bent Tree exceedences at 1,150 and 1,525 feet, careful siting makes good sense.

Very truly yours

A handwritten signature in cursive script that reads "Carol A. Overland".

Carol A. Overland  
Attorney at Law

cc: All parties to all above-identified dockets via eDockets  
Dorene Hansen, Association of Freeborn County Landowners  
Marie McNamara, Goodhue Wind Truth



520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | Use your preferred relay service | info.pca@state.mn.us | Equal Opportunity Employer

September 11, 2018

Daniel P. Wolf, Executive Secretary  
Minnesota Public Utilities Commission  
127 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101-2147

*Filed electronically via edockets.state.mn.us*

Re: In the Matter of the Application for Freeborn Wind Energy, LLC for a Large Wind Energy Conversion System Site Permit for 84 MW in Freeborn  
County Docket No. MPUC IP-6946/WS-17-410

Dear Mr. Wolf:

Freeborn Wind Energy, LLC (Freeborn) and others have filed comments in this docket regarding the interpretation of Minnesota's noise standards, as applied to Large Wind Energy Conversion System (LWECS) projects. The Minnesota Pollution Control Agency (MPCA) has the authority to adopt or amend state noise standards (Minn. Rules Ch. 7030) under Minnesota Statutes 116.07. This letter is intended to help the Commission understand the MPCA's position regarding the application of the state noise standards to LWECS projects.

First, Freeborn and other wind developers contend that LWECS projects meet the state noise standards in Minn. Rules Ch. 7030.0040 as long as the noise generated from any individual turbine, or a combination of turbines, is below the applicable noise standard, absent the consideration of other sound or noise sources. The MPCA disagrees with this position. The plain language of the adopted standards support the MPCA's position, as the scope of the standards reads "These standards describe the limiting *levels of sound* established...for the preservation of *public health and welfare*." (Minn. Rule 7030.0040, emphasis added). This position is consistent with the letter sent from the MPCA to the Department of Commerce (DOC) on October 8, 2012, where the MPCA states our interpretation of standards as health-based standards for *total, ambient* sound. Thus, the MPCA recommends that the Commission should determine compliance of LWECS projects under the state noise standards by determining if *total* sound levels at nearby residences or other receptors – that is, existing sound levels plus the additional noise from a given turbine or LWECS project – exceed the standards in Minn. Rules Ch. 7030.0040.

We understand that the Commission and the DOC may have, or appear to have, applied the state noise standards in Minn. Rules Ch. 7030 differently in the past for some LWECS site permit actions. Nevertheless, as stated above, the MPCA has historically, and consistently, interpreted and applied said noise standards for *total* sound. The total sound levels at a residential receptor, or any receptor, should meet state standards as laid out in Minn. Rules Ch. 7030.0040, regardless of the source(s) contributing to the total sound levels.



The MPCA also recommends that the Commission continue to include compliance with the state noise standards in its site permits for LWECS projects. Maintaining the compliance provision ensures that a state agency retains regulatory authority to compel compliance with the state noise standards. Since the MPCA for noise standard exceedances would be very difficult. Currently, the MPCA only engages with facilities on compliance with noise standards for facilities that have an air quality permit from the MPCA. In the case of LWECS projects, we do not have a regulatory relationship with LWECS project developers or owners, and would have a very difficult time enforcing the state noise standards on LWECS project developers or owners. The Commission's siting permits include a provision requiring compliance with the state noise standards, which provides a direct mechanism to ensure ongoing compliance.

Finally, the MPCA finds that the Department of Commerce's proposed a reasonable "cause or contribute" approach to address compliance in situations where ambient/background sound is already near or exceeding state standards at one or more nearby residential receptors. The MPCA worked with the Department of Commerce on the approach, and it represents the approach the MPCA uses for the consideration of total, ambient sound standard. Noise from individual wind turbines, LWECS projects in general, or other non-natural sources may only comprise a small fraction of the *total* sound level; completely restricting noise from these projects would, therefore, be an undue burden to developers and utilities. We believe EERA's proposed approach, which allows individual turbines or LWECS projects to contribute to a total sound of no greater than one dBA above the relevant noise standard (as described in Minn. Rules Ch. 7030.0040), is reasonable and appropriate, and that the Commission should apply the approach to siting permits, going forward.

The MPCA appreciates the opportunity to provide this feedback. If you have any questions, feel free to contact me directly at 651-757-2500 or [Frank.Kohlasch@state.mn.us](mailto:Frank.Kohlasch@state.mn.us).

Sincerely,



Frank L. Kohlasch, Manager  
Air Assessment Section  
Environmental Analysis and Outcomes Division

FLK:cbg

cc: John Wachtler, DOC  
Louise Miltich, DOC  
David Thornton, MPCA  
James Kelly, MDH  
Jessie Shmool, MDH



1 A Yes.

2 MR. REYNOLDS: Okay.

3 EXAMINER NEWMARK: And these Exhibits 1  
4 through 4 as well?

5 MR. WILSON: Your Honor, I think given the  
6 discussion of this document, it probably ought to go  
7 in as an exhibit.

8 MR. McKEEVER: Yes.

9 MR. LORENCE: I'm going to ask a couple  
10 questions on it, so you may want to hold off on  
11 that.

12 EXAMINER NEWMARK: Okay. Let me just have  
13 him answer. Are Exhibits 1 through 4 -- sir?  
14 Mr. Schomer, Exhibits 1 through 4, were they  
15 filed -- are they correct to the best of your  
16 knowledge?

17 THE WITNESS: I'm sorry?

18 EXAMINER NEWMARK: Your Exhibits 1 through  
19 4, are they correct to the best of your knowledge?

20 THE WITNESS: Yes.

21 EXAMINER NEWMARK: Okay. Thanks.

22 All right. Commission staff.

23 CROSS-EXAMINATION

24 BY MR. LORENCE:

25 Q Dr. Schomer, on page 12 of your surrebuttal

1 testimony, and I'm looking on lines 6 through 8.

2 A Uh-huh. I guess I'm not fast enough. All right. I  
3 got to page 12.

4 Q On lines 6 through 8 you say, ISO 1996 requires what  
5 is termed "downwind" or weather-enhanced propagation  
6 conditions so that model predictions are only  
7 infrequently exceeded. Do you see that sentence?

8 A Yes.

9 Q I have never seen ISO 9613-2 before today. Could you  
10 tell me where that's required in this -- in this ISO  
11 9613?

12 A Those are the questions we just answered, but I can  
13 go through it again.

14 Q Well, you talked about the downwind stuff, but you  
15 say it says that it's only infrequently exceeded, and  
16 I'm wondering if it says that in here anywhere?

17 A That's what the downwind nomenclature means, and I  
18 believe it's in either 9613 -- I know it's in either  
19 9613 or in 1996, which 9613 incorporates by  
20 reference.

21 Q I have one more question, and again this shows my  
22 complete ignorance on this standard. In Section 7.3,  
23 that's called ground effects, and again there's not a  
24 page number here, but if you could turn to that.

25 A Okay. 7.3. 7.3, ground effects, yes.

1 Q Is this section equivalent of the ground factor that  
2 we've been talking about the last two days?

3 A This section is -- makes use of the ground factor.  
4 It's not equivalent. This is where the ground factor  
5 comes in. What you have is on the next page there's  
6 graphs showing the -- what the sound propagation is  
7 in different octave bands. And then in the  
8 implementation there's a table on the next page,  
9 Table 3, and in Table 3 if you look in there, there's  
10 A sub S or A sub R in the middle column at the top,  
11 and that's for the source or receiver region. We've  
12 been talking about there's really three factors, the  
13 .5 or the zero whatever. You have a factor for the  
14 source region, a factor for the middle, and a factor  
15 for the receiver region. And if you look at the  
16 formulas under A sub R of the middle column, you'll  
17 see a G. That's the ground factor that goes between  
18 zero and 1.

19 Q And that's the ground factor we have been talking  
20 about for two days?

21 A There's three of them technically: one for the  
22 source, one for the receiver, and one for the middle.

23 Q So if we turn back one page where it begins with the  
24 letter A, then it says hard ground.

25 A Hard ground, yes.

1 Q That first paragraph ends -- it says, for hard ground  
2 G equals zero. So this is the ground factor zero  
3 that we've been talking about, correct?

4 A Correct.

5 Q And then for porous ground in B, it's G equals 1?

6 A Correct.

7 Q And then for mixed ground, it says it's someplace in  
8 between zero and 1. Do you see that?

9 A I see that.

10 Q So this is the ground factor we've been talking about  
11 here?

12 A Yes. But to understand that is a question that was  
13 earlier. You've got a source up in the air and not  
14 on the ground, so does this standard really apply.  
15 And my answer was, it's the best we have, but you  
16 can't apply it exactly the way you would if it was on  
17 the ground because the source is as high in the air,  
18 it changes what the propagation is. So that the  
19 definition of what is hard and what is soft, you have  
20 a source that's 100 meters in the air on average.  
21 That's not on the ground as one of the other  
22 counsel's pointed out.

23 Q But it has to get to the ground -- the sound has to  
24 get to the ground eventually, doesn't it?

25 A It has to get to the ground eventually.

1 Q And once it's on the ground, won't it travel along  
2 the ground?

3 A No. It's only -- the only thing you have is an  
4 effect of the microphone height at your receiver.  
5 The other -- it doesn't -- it doesn't come down to  
6 the ground and then travel across the ground like  
7 this. It doesn't do that. What you're interested in  
8 is the path that goes straight from this up in the  
9 air source to your receiver, which may be near the  
10 ground, but you don't have any other path. If you  
11 do, it's because you don't have good propagation.  
12 Then it's poor propagation conditions.

13 MR. LORENCE: Thank you. I have no  
14 further questions.

15 MS. BENSKY: Your Honor, can I follow up  
16 on that? This is really important, and I want to  
17 make sure I understand.

18 RE-CROSS-EXAMINATION

19 BY MS. BENSKY:

20 Q So are you saying that if we have a flat -- if we  
21 have a flat ground, if there's a source that's close  
22 to the ground emanating sound, that sound can just go  
23 and be absorbed in the ground, correct?

24 A Ground absorption -- what happens, and this is more  
25 related to people's experience. You know, if we went

1 through all the details, it would be complicated, but  
2 I think people's experience is useful here. First of  
3 all, the first rule is that if you're downwind, it's  
4 louder than if you're upwind, and there's -- the  
5 reason is the downwind, and this is going to seem  
6 strange, we think of sound almost as rays, sound rays  
7 rather than waves.

8 And let's put it this way. Let's say you  
9 were behind the barrier. You expect it to be  
10 quieter. It's quieter because there's no direct path  
11 from the sound to you. It has to come around the  
12 corner just like if you had a -- something to stop  
13 the sun or a reflector of light. You go behind it,  
14 it's not as light as in front of it. Sound is the  
15 same thing. If you have a barrier or something that  
16 prevents the sound from getting to you, it's quieter  
17 than if you don't have that. Well, on a sunny day  
18 and you're upwind, you don't hear things. But if  
19 you're downwind, you do.

20 Another thing -- example, if you're out in  
21 a boat, do you hear things far away out in a boat?  
22 You've seen that? This is the hard surface of the  
23 water, and frequently above the water there's a  
24 temperature inversion because of the cooling and  
25 heating of the water. And those two can form two



1 layers that the sound gets trapped in, and then you  
2 have very -- you hear the people whispering on the  
3 shore, and it's like they're 10 feet away from you.  
4 I'm sure many of you have experienced this. This has  
5 to do with the propagation downwind versus upwind,  
6 has to do with the propagation.

7 The physics is complicated, but the  
8 effects -- same thing. Ever hear sources very early  
9 in the morning? You wake up at 5:00 a.m. and you  
10 hear a distant train or horns or the wheels? Have  
11 you experienced that? That again has -- at that time  
12 of day, you've got a direct path from the source,  
13 which is -- you don't hear the rest of the day to  
14 you. It has to do with the physics of the situation.

15 I'm not going to attempt to go into the  
16 physics, but I'm trying to give you different  
17 examples out of your daily life that show you this is  
18 what goes on. We don't want to really go into the  
19 details of what's going on.

20 Q So if there's a source up in the air that's emitting  
21 sound, the sound's going to come down and it's going  
22 to hit the receptor before it hits the ground and  
23 absorbs; is that correct?

24 A It's going to hit the receptor directly. There will  
25 be -- it gets confusing.

1 Q That's for sure.

2 A The ground is important only that it gives a  
3 reflection that can enhance or interfere with the  
4 direct path. But it does hit the microphone, that's  
5 the first thing it hits in time. The sound will  
6 arrive at the microphone before -- it comes directly  
7 from the source, so it will arrive first.

8 Q So somebody standing outside near a wind turbine or  
9 any source up in the air, that sound wave is going to  
10 travel down, and it's going to hit that person's ear  
11 before it goes down to the ground and gets absorbed?

12 A Well, won't be totally absorbed but, yes, it does hit  
13 you before it's absorbed. And I think your point is  
14 good, that as you're traveling along the ground, from  
15 ground to ground it will be absorbing some of the  
16 sounds, and that alone is -- that's part of the  
17 reason that the air-to-ground path is louder.

18 Q And so do you think it's proper to assume no  
19 absorption and use that 0.0 coefficient for this  
20 reason?

21 A That's part of the reason. Part of the reason is  
22 the -- in order to have a prediction that is what is  
23 called for in the standard, which is a prediction  
24 that is -- if you like the term conservative, a  
25 prediction that predicts what's going to happen 90

1 percent of the time or 95 percent of the time or some  
2 percentage of the time, I actually think that from  
3 the data that I know of, the prediction is probably  
4 the -- about 85 percent of the time would be  
5 included, and 15 percent of the time you would be  
6 above what's being predicted with the 0.00  
7 prediction. It's not the most conservative  
8 prediction in the world by any means.

9 Q But considering we have to use this model because we  
10 don't have anything better, the best way to use this  
11 model for a source that's 100 meters in the air is to  
12 use that 0.0 coefficient?

13 A 0.00 is the best you can do with this.

14 MS. BENSKY: Great. That's very helpful.  
15 Thank you.

16 MR. REYNOLDS: Couple questions on  
17 redirect.

18 REDIRECT EXAMINATION

19 BY MR. REYNOLDS:

20 Q Dr. Schomer, is it the heart of it that the challenge  
21 of creating a model to reflect what the citizens of  
22 Forest will actually experience, is that the heart of  
23 why it's better to have conservative estimates than  
24 not conservative estimates of sound? Because we're  
25 trying to figure out what's going to happen to the

1 citizens in Forest.

2 A I think there's probably lots of reasons I can think  
3 of for doing this. Again, we're dealing with a low  
4 frequency sound primarily. The A-weighted sound is  
5 going to correlate with it as it does with nearly all  
6 noise sources.

7 I think it's important to understand how  
8 the ear hears because that's all a part of this, and  
9 the ear doesn't hear all frequencies equally. It  
10 doesn't process all frequencies equally, and it gets  
11 very different at low frequencies. The ear gets very  
12 different at low frequencies, and this is one of the  
13 reasons I would say this is important. We -- I think  
14 Mr. Hessler testified that the threshold of hearing  
15 changes, or maybe it was in that paper that was  
16 passed out, but the threshold of hearing is very  
17 different from one person to another.

18 But what's even more important is that at  
19 the middle frequencies, like 1,000 hertz, a change of  
20 10 decibels is a doubling or a cutting in half of  
21 loudness. At these low frequencies, like let's say  
22 10 hertz, at 10 hertz, about a 2 dB change is a  
23 doubling of loudness. So at low frequencies,  
24 anything that you're off gets magnified by the ear.  
25 If you're off by 5 dB at low frequencies, that's a

1 factor of four in loudness. Whereas if you're off by  
2 5 dB at a middle frequency in a prediction, that's  
3 not even a factor of two in loudness. So errors get  
4 magnified at the low frequencies just because of how  
5 we hear.

6 Q That was one of the reasons for looking at the more  
7 conservative model. Are there any others?

8 A Well, let's see. I've talked about the standard  
9 calling for it. I've talked about it makes sense  
10 from the -- from the way the rule is written.  
11 Certainly it makes sense from being conservative from  
12 just the standpoint of how the ear hears. I think  
13 that just what we've talked about, the health effects  
14 and the fact that there's people that may be affected  
15 just like in one other community, somehow it seems  
16 like it calls for us to be cautious.

17 I think that if -- if it were some other  
18 area where government was involved directly, let's  
19 say, we're going to install -- we're going to license  
20 fire detectors that only work 90 percent of the time  
21 and 10 percent of the time people aren't warned about  
22 the fire protector, but that's good enough. People  
23 wouldn't say that's good enough, so the fire  
24 protection has to work all the time. And I think  
25 when we're talking about people literally being

1 driven out of their homes, we have to be a little bit  
2 cautious.

3 MR. REYNOLDS: Thank you. I don't have  
4 anything else.

5 EXAMINER NEWMARK: Highland?

6 MR. WILSON: No.

7 EXAMINER NEWMARK: All right. What are we  
8 doing with our ISO 9613-2?

9 MS. BENSKY: I'd like to move it into  
10 evidence.

11 EXAMINER NEWMARK: All right. Any  
12 objections?

13 MR. LORENCE: I guess I'd like to talk  
14 about that for a second.

15 EXAMINER NEWMARK: Okay.

16 MR. LORENCE: We've kept out all kinds of  
17 reports and exhibits today because they didn't come  
18 in at the proper time. Professor Schomer could have  
19 put it in at any time with his exhibits. I  
20 recognize that counsel here is not -- is not -- his  
21 witness is not asking this. But I guess I would ask  
22 the ALJ that under the theory that, you know, we've  
23 been keeping out late-filed things and this is  
24 awfully dense information, whether this should go in  
25 the record.

1 EXAMINER NEWMARK: Okay.

2 MR. LORENCE: And I just as a second aside  
3 for counsel, I'm not positive, but I think that  
4 these are usually under copyright, and is this  
5 something that we would be able to place on our  
6 website and make available to the world if -- I  
7 don't want to get you in any kind of copyright  
8 trouble if that's the case.

9 MR. MCKEEVER: I'll just say I got it on  
10 the internet.

11 MR. LORENCE: Yeah.

12 MR. REYNOLDS: And this is the standard  
13 that has been used by all the measurers of sound, so  
14 this is -- this is kind of the bible of sound  
15 measurement.

16 MR. LORENCE: And I guess that reinforces  
17 my question then. Anybody could have put it in.  
18 Any of the experts could have put it in from direct  
19 testimony on it. So whether we get it here at this  
20 late hour or not, I'll defer to the decision, but  
21 I'm -- given what we've done today with other  
22 things, I just wanted to raise that point.

23 MS. BENSKY: I guess the nature of this  
24 exhibit is totally different. This exhibit doesn't  
25 give any opinions. It's just a standard that

1 everybody -- all the sound people in this case have  
2 used and relied upon. So I think it would be  
3 helpful to have it in. And even if it wasn't in, I  
4 think it's the type of material that could be quoted  
5 and briefed anyway, so --

6 EXAMINER NEWMARK: Let's not get into  
7 that.

8 MR. WILSON: I think at the risk of making  
9 it look like Ms. Bensky and I are on the same  
10 team --

11 EXAMINER NEWMARK: We would like to see  
12 that.

13 MR. WILSON: I agree.

14 EXAMINER NEWMARK: Okay.

15 MR. WILSON: It should come in.

16 EXAMINER NEWMARK: I understand.

17 MR. WILSON: There's a lot of testimony on  
18 it.

19 EXAMINER NEWMARK: Let me say the  
20 overarching concern I have or rationale for letting  
21 it in is we've cited to equations and all kinds of  
22 portions of this document which I think can only be  
23 correctly or adequately explained or referenced by  
24 having the document. So for the abundance of  
25 caution for making the record even larger, I think



1 it would enhance the Commissioner's review of the  
2 testimony we've just heard. So what's the number  
3 for this one? It's 9, Schomer 9, is that --

4 MR. REYNOLDS: I thought it was 5.

5 EXAMINER NEWMARK: Well, I don't know if  
6 we ever marked your other ones. I might have  
7 mentioned on the record because Mr. Schomer, I was  
8 not accepting his Exhibits 5 through 8, and I am  
9 pretty sure I referenced that at the beginning of  
10 the hearing. So we're just going to call this 9.

11 MS. BENSKY: Okay.

12 (Schomer Exhibit No. 9 marked and received.)

13 EXAMINER NEWMARK: All right. I think  
14 you're done.

15 THE WITNESS: Thanks.

16 EXAMINER NEWMARK: You're excused.

17 (Witness excused.)

18 EXAMINER NEWMARK: 3 o'clock. Let's take  
19 15 minutes.

20 (Break taken from 3:05 p.m. to 3:20 p.m.)

21 EXAMINER NEWMARK: Well, got enough people  
22 back, I guess. You want to start off the record?

23 MR. McKEEVER: Yeah.

24 (Discussion held off the record.)

25 EXAMINER NEWMARK: All right. Next?



1 A I do recall that.

2 Q Do you believe that it would have been appropriate to  
3 apply a ground factor of 0.2 or 0.3 to your analysis  
4 of the Badger Hollow project?

5 A No.

6 Q Why not?

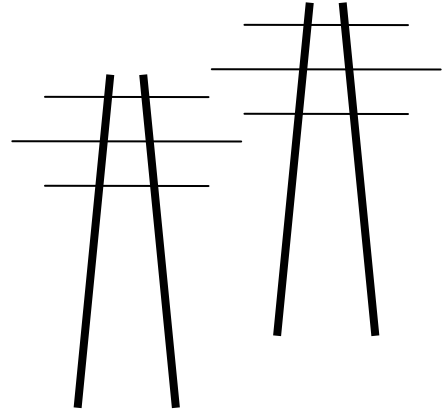
7 A The model that we use has been shown to predict  
8 conservatively with 0.5. I mean, 0.5 ground factor  
9 is used in probably -- well, with the exception  
10 perhaps of wind turbine projects which are different  
11 because the source is elevated. But for projects  
12 like a typical power plant, a solar plant where the  
13 sources are relatively close to the ground, I would  
14 say 90 to 99 percent of the studies use 0.5. And  
15 when consultants like myself go out and measure these  
16 plants after they're constructed to verify our  
17 modeling assumptions, that assumption checks out as  
18 being, if anything, overpredicting the levels. So  
19 there's no need to -- there would be no justification  
20 to use something like a .2 or .3 which would predict  
21 yet higher levels because we're already demonstrating  
22 that the model is probably overpredicting. So that  
23 would not be justified for those reasons.

24 MR. NOWICKI: Thank you. No further  
25 questions.

# Legalelectric, Inc.

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July 30, 2018

Dan Wolf  
Executive Secretary  
Minnesota Public Utilities Commission  
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via email & eFile: dan.wolf@state.mn.us

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RE:    Goodhue Wind Truth - Petition for Rulemaking for Wind Turbine Siting  
Standards, Minn. R. Ch. 7854

Dear Mr. Wolf and A.G. Swanson:

Enclosed please find **Petition for Rulemaking** for Minn. Rules Ch. 7854 for wind siting. This Petition for Rulemaking has been eFiled and eServed, and a hard copy is being mailed as required by Minn. R. 1400.2020 and 1400.2500, sent to Dan Wolf, Executive Secretary for the Commission, and also served on Attorney General Lori Swanson.

As you know, this is not the first Petition for Minn. R. Ch. 7854 rulemaking. In 2012, I personally filed a Petition for Rulemaking which the Commission rejected, with a request for “restatement.” With this Petition for Rulemaking, I ask that you consider this “restatement” and this second Petition in light of the information gathered over the ensuing years and the pressing need for revision of Minn. Ch. 7854. I expressly request that you consider this Petition in light of the flawed siting resulting in two landowner buy outs in Bent Tree, and in light of the Administrative Law Judge’s Recommendation that the Freeborn Wind project site permit be denied. Because there are no rules regarding criteria for siting Large Wind Energy Conversion Systems (LWECS), and because the standards used to site LWECS, as cited in permitting dockets, those of Appendix A in the Order in PUC Docket M-07-1102, which is expressly for county siting and projects under 25MW, rules are needed.

The 1995 and 2005 legislatures mandated rulemaking on several discrete topics:

**216F.05 RULES.**

The commission shall adopt rules governing the consideration of an application for a site permit for an LWECS that address the following:

- (1) criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;**
- (2) procedures that the commission will follow in acting on an application for an LWECS;
- (3) procedures for notification to the public of the application and for the conduct of a public information meeting and a public hearing on the proposed LWECS;
- (4) requirements for environmental review of the LWECS;**
- (5) conditions in the site permit for turbine type and designs; site layout and construction; and operation and maintenance of the LWECS, including the requirement to restore, to the extent possible, the area affected by construction of the LWECS to the natural conditions that existed immediately before construction of the LWECS;
- (6) revocation or suspension of a site permit when violations of the permit or other requirements occur; and
- (7) payment of fees for the necessary and reasonable costs of the commission in acting on a permit application and carrying out the requirements of this chapter.

**History:** [1995 c 203 s 5](#); [2005 c 97 art 3 s 19](#)

Minn. Stat. §216F.05 (**emphasis added**). That rulemaking has not occurred. There is no siting criteria and there is no requirement of environmental review.

Please see the Petition attached for background and specifics.

At this time, in conjunction with this request that rulemaking proceed, we ask that a rulemaking advisory committee be appointed, as provided by Minnesota statute, and that Goodhue Wind Truth be appointed to serve on that rulemaking advisory committee:

**14.101 ADVICE ON POSSIBLE RULES.**

Subd. 2. Advisory committees.

Each agency may also appoint committees to comment, before publication of a notice of intent to adopt or a notice of hearing, on the subject matter of a possible rulemaking under active consideration within the agency.

I also suggest that the Commission undertake a review of all existing wind permits to determine whether those permits need updating in light of the flawed permitting and reliance on something other than the applicable siting criteria of Minn. Stat. §216E.03, Subd. 7.

For active wind permitting proceedings, the Commission should assure that these dockets are utilizing the applicable statutory provisions, [216E.01](#); [216E.03, subdivision 7](#); [216E.08](#); [216E.11](#); [216E.12](#); [216E.14](#); [216E.15](#); [216E.17](#); and [216E.18, subdivision 3](#), which do apply as set forth in Minn. Stat. §216F.02.

If you have any questions or require anything further, please let me know.

Very truly yours,



Carol A. Overland  
Attorney at Law

Enclosures:

cc: Marie McNamara, Goodhue Wind Truth

**BEFORE THE**  
**MINNESOTA PUBLIC UTILITIES COMMISSION**

**Nancy Lange**  
**Dan Lipschultz**  
**Matt Schuerger**  
**Katie Sieben**  
**John A. Tuma**

**Chair**  
**Commissioner**  
**Commissioner**  
**Commissioner**  
**Commissioner**

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**PETITION FOR RULEMAKING**  
**TO THE**  
**MINNESOTA PUBLIC UTILITIES COMMISSION**

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**Name:** Carol A. Overland, as attorney for Petitioner **Goodhue Wind Truth**

**Group Represented or Title:** Goodhue Wind Truth, an advocacy group with much experience in wind need, siting and rulemaking dockets before the Public Utilities Commission.

**Address:** Goodhue Wind Truth, c/o Legalectric, 1110 West Avenue, Red Wing, MN 55066

This petition is being eFiled in eDockets, and also filed by mail, as required by Minn. R. 1400.2020 and 1400.2500, sent to Dan Wolf, Executive Secretary for the Commission, and also served on Attorney General Lori Swanson.

The Public Utilities Commission has nearly completed the too-many-years' long process of rulemaking for Minn. R. Ch. 7849 and 7850. Those of us participating in this six year long slog through the regulatory process have been repeatedly promised that "wind is next." OK, let's do it. Issues with wind siting are cropping up repeatedly, and the Commissioners are well aware of the problems the Commission faces. The industry is alarmed,<sup>1</sup> and it's no wonder. The siting process is broken, there are no rules, and when the proper rules and process is utilized, developers don't get what they want. From whatever perspective, whether developers, regulators, or landowners and neighbors of proposed wind projects, action is needed.

I am filing this Petition on behalf of Goodhue Wind Truth (hereinafter "GWT"), a group of landowners and citizens in wind project dockets where observation of county ordinance was at

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<sup>1</sup> Attachment A, [Judge's ruling against Minnesota wind farm causes alarm for advocates](#) StarTribune, June 12, 2018.

issue. GWT has gleaned these concerns about lack of appropriate standards from extensive first-hand experience as an Intervenor in the Goodhue dockets and from participating and observing matters related to Bent Tree, Pleasant Valley, and Freeborn Wind, from years of participation in the Power Plant Siting Act Annual Hearing, and active participation in the current Ch. 7849 and 7850 rulemaking. GWT hopes that at least with recent matters before the Commission that the Commission has recognized the need for rulemaking as well.

Let us not forget the 1995 and 2005 legislative mandates:

The commission shall adopt rules governing the consideration of an application for a site permit for an LWECS that address the following:

**(1) criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;**

(2) procedures that the commission will follow in acting on an application for an LWECS;

(3) procedures for notification to the public of the application and for the conduct of a public information meeting and a public hearing on the proposed LWECS;

**(4) requirements for environmental review of the LWECS;**

(5) conditions in the site permit for turbine type and designs; site layout and construction; and operation and maintenance of the LWECS, including the requirement to restore, to the extent possible, the area affected by construction of the LWECS to the natural conditions that existed immediately before construction of the LWECS;

(6) revocation or suspension of a site permit when violations of the permit or other requirements occur; and

(7) payment of fees for the necessary and reasonable costs of the commission in acting on a permit application and carrying out the requirements of this chapter.

**History:** [1995 c 203 s 5](#); [2005 c 97 art 3 s 19](#)

Minn. Stat. §216F.05 (emphasis added).

What rules were developed as mandated by the 1995 legislature? See Minn. R. Ch. 7854, f/k/a Minn. R. Ch. 7836, f/k/a Minn. R. Ch. 4410. Nothing until September, 2001, and the SONAR for those rules, which remain today, shows that siting criteria and “requirements for environmental review” were neglected. See Attachment B, SONAR, September 20, 2001 (emphasis added). These “rules” were adopted without a public hearing and there was no public comment. There is no siting criteria within these rules, and no requirement of environmental review.



What rules were developed as mandated by the 2005 legislature? None. During the 7849 and 7850 rulemaking proceedings, participants were repeatedly assured that “Wind rules are next.” The Commission has acknowledged in deliberations that there is little in the way of siting standards for large wind energy conversion systems, for example, setbacks are set on a “case by case basis,” which is arbitrary. Not only is it arbitrary, but it is insufficient, as evidenced by the problems and complaints near operating wind projects and the withdrawal and revocation of permits for other projects.

The Commission is in the midst of the first contested case for a wind project, and the rules of Minn. R. Ch. 7854 are inadequate – siting criteria and standards do not exist in the wind rules. The Freeborn Wind docket is the FIRST to appropriately use the PPSA siting criteria of Minn. Stat. §216E.03, Subd. 7, and the PPSA administrative rules, Minn. R. Ch. 1405 to guide the process, as provided by the exemption and “does apply” directive of Minn. Stat. §216F.02.

### **216F.02 EXEMPTIONS.**

(a) The requirements of chapter 216E do not apply to the siting of LWECS, except for sections [216E.01](#); [216E.03, subdivision 7](#); [216E.08](#); [216E.11](#); [216E.12](#); [216E.14](#); [216E.15](#); [216E.17](#); and [216E.18, subdivision 3](#), which do apply.

The siting criteria of Minn. Stat. §216E.03, Subd. 7 DO APPLY. However, the Freeborn Wind docket is the first ever to utilize that criteria. Every wind permit up to this point cites only the wind statutory chapter, now Minn. Stat. ch. 216F, and the wind rules, Minn. R. ch. 7854, as siting authority; every wind proceeding and permit up to this point does NOT utilize nor does it cite Minn. Stat. §216E.03, Subd. 7. Every wind permit that has been issued by the Commission to date is flawed, and likely invalid, due to this error and omission.

Standards were adopted for LWECS in MPUC Docket M-07-1102, which, correctly noted in a letter of April 2, 2012, was not a rulemaking. It states that the Order and Standards was a:

... statutorily mandated wind siting standards development process for wind projects 5-25 MW in size, intended, as stipulated in MS 216F.08, to be applied to county and state permits for wind projects under 25MW in size.

Letter, Dan Wolf for Burl Haar, Public Utilities Commission, April 2, 2012 (Attachment C).

That is correct. The express purpose and result of that docket, M-07-1102, was NOT that it was to be used for siting LWECS, but for siting by counties and for Commission LWECS permits under 25MW.

### **II. Commission Action**

After careful consideration, the Commission herein adopts the attached “General Wind Turbine Permit Setbacks and Standards for LWECS Facilities Permitted by Counties Pursuant to Minnesota Statute 216F.08.” Exhibit A. These standards and setbacks maintain most of the Commission’s established LWECS permit standards and setbacks which have been in effect for the last twelve years, with the relatively minor changes set forth below.

Attachment D, General Wind Turbine Permit Setbacks and Standards for Large Wind Energy Conversion System (LWECS) Permitted Pursuant to Minnesota Statute 216F.08.

That limitation of applicability to counties and projects under 25MW is stated in the Order, however, Appendix A of that Order has been used, repeatedly and exclusively, for siting of LWECS.

That Docket M-07-1102 Order further states:

**ORDER**

1. The Commission herein adopts the Large Wind Energy Conversion System General Wind Turbine Permit Setbacks and Standards proposed by the Department of Commerce Energy Facility Permitting staff, attached as Exhibit A. The general permit standards shall apply to large wind energy conversion system site permits issued by counties pursuant to Minn. Stat. 216F.08 and to permits issued by the Commission for LWECS with a combined nameplate capacity of less than 25,000 watts.

Id., p. 7. The Order could not be more clear as to its purpose, for permits “issued by counties” and “issued by the Commission” where “less than 25,000 watts.”

In the set up for these Exhibit A standards was this claim:

**In 1995, the Minnesota Legislature enacted the Minnesota Wind Siting Act<sup>1</sup> which established jurisdictional thresholds and procedures to implement the state's authority to issue site permits for large wind energy conversion systems (LWECS). Permanent rules to implement the Wind Siting Act were adopted by the Minnesota Environmental Quality Board (EQB) in February 2002.<sup>2</sup>**

Id. P. 1. The SONAR for those 2002 rules, as above, shows that specific criteria was deemed not necessary, that siting with vague phrases as guidelines “has not been a problem.” From the SONAR, regarding 116C.693, now 216F.03:

Subpart 3. Determination by board. This rule sets forth the standard for issuance of a permit. The requirements are taken from the statute setting forth state policy to site LWECS in an orderly manner that is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minnesota Statutes section 116C.693. These criteria are admittedly subjective, but they are the standards established by the Legislature, and in the seven wind permits the EQB has issued to date, application of these criteria has not been a problem. It is reasonable for the EQB to attempt to minimize the environmental impacts of the project, ensure the continued development of the wind resource, and utilize the wind resource in an efficient manner that keeps the costs of wind power as low as possible.

Attachment B, SONAR, p. 28.

All that statute has to offer is this sentence:

The legislature declares it to be the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.

Minn. Stat. §216F.03, SITING OF LWECS. This is not siting criteria.

Minnesota Rules Chapter 4410, and then 7836, was ultimately renumbered to Minnesota Rules Chapter 7854. A review of Chapter 7854 shows there was no change, there are no siting standards, no siting rules.

In practice, the EQB, and now the Department of Commerce – EERA, has used the list of application requirements regarding “Environmental impacts: as categories of items to be addressed in a permit:

Subp. 7. Environmental impacts.

An applicant for a site permit shall include with the application an analysis of the potential impacts of the project, proposed mitigative measures, and any adverse environmental effects that cannot be avoided, in the following areas:

- A. demographics, including people, homes, and businesses;
- B. noise;
- C. visual impacts;
- D. public services and infrastructure;
- E. cultural and archaeological impacts;
- F. recreational resources;
- G. public health and safety, including air traffic, electromagnetic fields, and security and traffic;
- H. hazardous materials;
- I. land-based economics, including agriculture, forestry, and mining;
- J. tourism and community benefits;
- K. topography;
- L. soils;

- M. geologic and groundwater resources;
- N. surface water and floodplain resources;
- O. wetlands;
- P. vegetation;
- Q. wildlife; and
- R. rare and unique natural resources.

The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts [7849.1000](#) to [7849.2100](#), and Minnesota Statutes, chapter 116D. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.

Minn. R. 7854.0500.

As witnessed in the Bent Tree project, regarding both noise and ice throw, and in the Freeborn Wind contested case, the first wind contested case in Minnesota (since Lake Benton in 1995, a wind developers turf war), these “Appendix A standards” are grossly inadequate and vague for use in siting LWECS. The single sentence of Minn. Stat. §216F.03, “The legislature declares it to be the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources” is similarly inadequate – that is not siting “criteria.”

In light of the background and express purpose of the M-07-1102 docket and specific reference to its applicability, via Minn. Stat. §216F.08, to only siting by counties and projects under 25MW, these standards are inapplicable to LWECS dockets before the Commission. Goodhue Wind Truth raised this issue in its Amicus Brief:

Also at issue in this case is whether the Commission correctly represented the issue before it, whether there are wind siting standards for projects greater than 25MW. The Commission’s Order is flawed because it relies in large part for support on its repeated legal error in stating that the Commission has established standards for siting of Large Wind Energy Conversion Systems<sup>2</sup>. The Commission has not established standards, and there is no basis for Commission and Commerce claims that there are standards for wind siting of projects greater than 25MW – such standards do not exist. The Commission, in error, relied on, cited and misrepresented its *Order Establishing General Permit Standards for the*

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<sup>2</sup> The Commission’s Order repeatedly mis-cites the Commission’s January 11, 2008 Order in Docket E,G-999/M-07-1102, Ex. 21 in this docket, as “Order, In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102” as “Order Establishing General Wind Permit Standards.” See Order, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36.

*Siting of Wind Generation Projects less than 25MW* non-existent standards as siting standards for projects over 25MW, as support for the Commission's Order for the AWA Goodhue Wind Project. This is an error of law.

The lack of wind siting rules should be no surprise to the Commission. This background should provide additional impetus for rulemaking – as if more is needed. Is there sufficient information to address issues such as noise and to develop reasonable and protective setbacks? Of course. There is a wealth of information in Commission dockets, and even more information that is easily available from other jurisdictions. For example, the Commission recently ordered wind turbine noise studies at Bent Tree that can be utilized to inform the record sufficient to support development of wind turbine noise standards for low frequency noise and infrasound and setbacks to provide sufficient distance to meet the noise standards. There is sufficient information to know that the 1,100 – 1,500 feet of the Hagens and Langruds in the Bent Tree project was not sufficient to protect their families. There are many peer reviewed studies available with a simple search. The University of Minnesota is in the midst of a study, “*Wind Turbine Generated Sound: Targeted Research to Improve Measurement, Analysis, and Annoyance Thresholds Based on Measured Human Response*” that also helps to inform the record, although the methodology is suspect. Much information is available, and it's time for the Commission to regulate the siting of wind turbines and start rulemaking. It's been languishing since 1995 and 2005 legislation. 23 years is long enough!

At this time, in conjunction with this request that rulemaking proceed, we ask that a rulemaking advisory committee be appointed, as provided by Minnesota statute:

**14.101 ADVICE ON POSSIBLE RULES.**

Subd. 2. Advisory committees.

Each agency may also appoint committees to comment, before publication of a notice of intent to adopt or a notice of hearing, on the subject matter of a possible rulemaking under active consideration within the agency.

Notices of the request for comments on possible rules and solicitation of advisory committee members should be posted in every wind eDocket prior to embarking on formal rulemaking.



Date: July 30, 2018

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## **Attachment A**

[Judge's ruling against Minnesota wind farm causes alarm for advocates](#)

StarTribune, June 12, 2018.

<http://www.startribune.com/judge-s-ruling-against-minnesota-wind-farm-causes-alarm-for-advocates/485312391/>

## BUSINESS

# Judge's ruling against Minnesota wind farm causes alarm for advocates

They say judge's opposition to proposal could threaten future of the industry.

By Mike Hughlett (<http://www.startribune.com/mike-hughlett/89522247/>) Star Tribune |

JUNE 12, 2018 — 7:54PM

A judge's recommendation that a proposed Minnesota wind farm be nixed over turbine noise has drawn a flurry of opposition from the wind-power industry, which fears a chilling effect on development.

In a rare move, Administrative Law Judge LauraSue Schlatter last month recommended that the Freeborn Wind farm be denied an operating permit, saying the southern Minnesota project failed to show it can meet state noise standards.

Freeborn Wind's developer, Invenergy, has objected, saying Schlatter's interpretation of state noise rules would be "impossible" to meet. Last week, two wind-industry trade groups and three of Invenergy's competitors also filed objections to Schlatter's recommendation, as did four clean-energy and environmental groups.

The judge's "interpretation of the Minnesota Pollution Control Agency's (MPCA) noise standards would have a detrimental impact on other current and future wind-energy projects throughout the state," the Minnesota Center for Environmental Advocacy wrote in its objection.

Administrative law judges like Schlatter are appointed to contested cases before the Minnesota Public Utilities Commission, which will eventually vote whether to approve the project. The proposed Freeborn Wind farm is the first contested PUC case involving a wind farm. The project southeast of Albert Lea has drawn opposition from some local residents over fears of excessive noise and other quality-of-life issues.

The \$300 million Freeborn Wind project would include 42 turbines in Freeborn County and another 82 turbines across the state border in Worth County, Iowa. The project was initially supposed to be solely in Minnesota, but Chicago-based Invenergy moved a big chunk of it due to opposition from the Association of Freeborn County Landowners.

There's no specific Minnesota rule for wind-farm noise, though there are general MPCA noise standards. Schlatter concluded the MPCA standard applies to total noise: background noise — like roadway traffic — combined with any wind-turbine sounds. Invenergy and the wind industry contend that the MPCA standard applies to wind-turbine sounds alone and say that's how the PUC has historically viewed the issue.

"If the (PUC) adopted a 'total noise' standard, such an interpretation would effectively ban future wind development in Minnesota, and potentially provide anti-wind activists a tool to attempt to adversely affect the operation of existing projects," the American Wind Energy Association wrote.

But the Association of Freeborn County Landowners said in a filing that "there is no evidence that profitable wind projects" can't be sited in Minnesota with existing standards. "Wind developers are up in arms, wringing their hands, and quaking, arguing for continuance of prior lax rule interpretations, improper siting procedures and ineffective regulatory oversight."

The Minnesota Department of Commerce, which represents the public interest before the PUC, said in a recent filing that it's trying to stake out a "middle ground," recommending that the PUC "limit a wind project's total turbine-only noise" to a certain decibel level.

Still, the commerce department concluded that “interpreting the [state’s] noise standard as a limit on total noise that applies to all sources is not an impractical or novel regulatory scheme.”

Other parties that have filed PUC briefs opposing Schlatter’s decision include: wind-energy developers Apex Clean Energy, RES Group and EDF Renewables; wind-turbine manufacturer and Freeborn Wind supplier Vestas; the Minnesota Conservative Energy Forum; and Wind on the Wires, a Minnesota nonprofit that represents wind and solar developers as well as clean-energy advocacy groups.

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# **Attachment B**

**In the Matter of the Proposed  
Adoption of Rules Governing  
The Siting of Large Wind Energy  
Conversion Systems**

**STATEMENT OF NEED  
AND REASONABLENESS**

**Minnesota Rules chapter 4401**

September 20, 2001 (emphasis added)

Adopted without a public hearing and without public comments

**STATE OF MINNESOTA  
MINNESOTA ENVIRONMENTAL QUALITY BOARD**

**In the Matter of the Proposed  
Adoption of Rules Governing  
the Siting of Large Wind Energy  
Conversion Systems**

**STATEMENT OF NEED  
AND REASONABLENESS**

**Minnesota Rules chapter 4401**

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**I. BACKGROUND AND INTRODUCTION**

In 1995 the Minnesota Legislature passed a law regulating large wind energy conversion systems. Minnesota Session Laws 1995, chapter 203, codified at Minnesota Statutes sections 116C.691 to 116C.697. The law required that any person seeking to construct a Large Wind Energy Conversion System (LWECS) in Minnesota was required to obtain a Site Permit from the Minnesota Environmental Quality Board.

A wind energy conversion system is a wind turbine or windmill or other device and associated facilities that converts wind energy to electrical energy. A Large Wind Energy Conversion System is a combination of these devices that generates 5,000 kilowatts or more. Minnesota Statutes section 116C.691

The law went into effect on August 1, 1995. At that time the EQB already had an application pending for a large wind energy conversion system, commonly referred to as the Northern States Power Company Phase II Project, a 107.5 megawatt project near Lake Benton, Minnesota. The EQB has successfully applied the new statutory requirements to the project and issued a Site Permit to NSP on October 31, 1995.

In December 1995, the EQB adopted Interim Site Permit Procedures for Large Wind Energy Conversion Systems. These Interim Procedures identified information to be included in a permit application and established procedures for providing the public with opportunities to participate in the permit consideration. The EQB successfully applied the Interim Site Permit Procedures to seven large wind projects since the adoption of the Interim Procedures in 1995.

The Minnesota Environmental Quality Board is proposing to adopt these rules under the statutory provisions relating to adoption of rules **without a public hearing.** Minnesota Statutes sections 14.22 to 14.28. These statutes allow an agency to adopt rules by giving notice to the public and allowing a period of time for the public to enter comments into the record, but do not require the agency to hold a public hearing. **Because the EQB has had extensive experience applying the Interim Site Permit Procedures and issued seven site permits under those Procedures, and because the Procedures form the basis of these**

proposed rules, the EQB has been able to bring these rules forward in a proven and polished form. Permit applicants and the public have had opportunities to participate in the issuance of site permits under essentially the same requirements and procedures proposed in these rules. Neither permit applicants nor the general public have complained about the manner in which the EQB has administered the site permit program under the Interim Procedures. This should allow these rules to go forward in an expeditious and noncontroversial manner.

### **Alternative Format**

Upon request, this Statement of Need and Reasonableness can be made available in a different format, such as large print, Braille, or cassette tape. To make a request, contact Larry Hartman at the Minnesota Environmental Quality Board, 658 Cedar Street, St. Paul, Minnesota 55155, phone (651) 296-5089, fax (651) 296-3698, or e-mail, [larry.hartman@state.mn.us](mailto:larry.hartman@state.mn.us) For TTY, contact Minnesota Relay Service at 800-627-3529 and ask for EQB.

## **II. STATUTORY AUTHORITY**

Minnesota Statutes section 116C.695 provides:

The board shall adopt rules governing the consideration of an application for a site permit for an LWECS that address the following:

(1) criteria that the board shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;

(2) procedures that the board will follow in acting on an application for an LWECS;

(3) procedures for notification to the public of the application and for the conduct of a public information meeting and a public hearing on the proposed LWECS;

(4) requirements for environmental review of the LWECS;

(5) conditions in the site permit for turbine type and designs; site layout and construction; and operation and maintenance of the LWECS, including the requirement to restore, to the extent possible, the area affected by construction of the LWECS to the natural conditions that existed immediately before construction of the LWECS;

(6) revocation or suspension of a site permit when violations of the permit or other requirements occur; and

(7) payment of fees for the necessary and reasonable costs of the board in acting on a permit application and carrying out the requirements of sections 116C.691 to 116C.696.

As is more specifically explained below in the discussion for each individual section of the proposed rules, each of these areas described above is addressed in the rules.

Under this grant of authority, the EQB has the necessary statutory authority to adopt rules for the administration of permit applications for Large Wind Energy Conversion Systems.

Minnesota Statutes section 14.125 – a part of the Administrative Procedure Act that applies to rulemaking – provides that an agency shall publish notice of intent to adopt rules or a notice of hearing within 18 months of the effective date of the authorizing statutes or the rule authority expires. However, this provision does not apply to laws authorizing or requiring rulemaking that were enacted before January 1, 1996, and the statutes at issue here were adopted in 1995.

Because the Interim Site Permit Procedures worked well in issuing LWECs Site Permits, the EQB elected to focus its efforts on the existing and proposed wind projects rather than on the development of a comprehensive set of rules. Thus, it has taken several years to bring this set of permanent rules to rulemaking. However, the experience the EQB has had in issuing these other site permits over the past five years has assisted the EQB greatly in addressing all the matters that are included in the proposed rules.

## **II. NEED FOR THE RULES**

Rules for the administration of site permits for Large Wind Energy Conversion Systems are needed because the EQB is likely to receive a number of permit applications over the next few years and into the future for large wind projects. Wind energy continues to be developed along Buffalo Ridge in southwestern Minnesota, and other areas of the state are likely to see development as well. It is preferable to have in place a comprehensive set of procedures and requirements that have the force and effect of law that can be applied in permitting proceedings for large wind projects. The Legislature declared in 1995 that the policy of the State is to site LWECs in an orderly manner that is compatible with environmental preservation, sustainable development, and the efficient use of resources. These rules are intended to further those legislative goals and policies.

## **III. COMPLIANCE WITH VARIOUS STATUTORY REQUIREMENTS.**

### **A. SOLICITATION OF OUTSIDE OPINION**

Minnesota Statutes section 14.101 requires an agency to solicit public comments on the subject of the proposed rulemaking. On February 12, 2001, the EQB published notice in the *State Register* of its intent to promulgate rules regarding the processing of permit

applications for Large Wind Energy Conversion Systems. 25 State Register 1382 (Feb. 12, 2001). The EQB also published notice in the *EQB Monitor* on February 19, 2001.

The public was given until April 6, 2001, to submit comments in response. The EQB did not receive a single written comment in response to the notice of intent to solicit outside opinion. The EQB also solicited public comments in March 1996 with a notice to that effect in the *State Register*. 20 State Register 2256 (March 11, 1996). No comments on the subject of the rules were submitted at that time either.

## B. DISCUSSION OF TOPICS IDENTIFIED IN SECTION 14.131

Minnesota Statutes section 14.131 requires that an agency that is proposing to adopt rules must address a number of factors in the Statement of Need and Reasonableness. The required factors are addressed below:

- (1) **A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.**

The persons who will be primarily affected by these rules are the wind developers. Local governmental officials and the general public and organizations involved in environmental protection are also affected by these rules but not in the same way as the developers. Utilities that purchase electricity generated by wind power can be affected by these rules.

The wind developers will bear the costs of the proposed rules because they are the persons who apply for the permits to construct the Large Wind Energy Conversion Systems. These persons will have to pay fees for the processing of their permit applications. Also, the permit conditions that are imposed in a site permit, such as environmental mitigation and construction limitations and avian mortality and other studies, will also result in costs to the permittee to perform these tasks.

Permittees will also receive a benefit from these rules, however. The rules will inform wind developers what is expected of them in constructing large wind projects. The permit will authorize the permittee to proceed with construction of a wind project in a specific area, effectively precluding other developers from building in that area. The permit may be an effective tool in finalizing financing of a proposed project. The state permit will pre-empt local review of the project and eliminate the need to seek separate permits from a number of local governmental bodies.

Local government will be affected by these rules in the sense that a permit for a LWECs project will determine the location of the facility and the conditions under which the project is to be constructed and operated. Local government will be pre-empted from enforcing its own zoning and other regulations. Minnesota Statutes section 116C.697. Local residents may be impacted by the location of wind turbines near their property. Environmental organizations will be affected because the rules will determine how the

wind resources are developed in an orderly fashion that is protective of the resource and the environment. Utilities that will purchase the electricity generated by wind turbines will be affected through the availability and cost of such power.

**(2) The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.**

The Environmental Quality Board is authorized by statute to charge permit applicants with the necessary and reasonable costs incurred by the EQB in processing the permit application. Minnesota Statutes section 116C.695(7). In addition, the EQB is authorized to make a general assessment against utilities in the state to fund the EQB's work with energy facilities. Minnesota Statutes section 116C.69, subd. 3. None of the expenses incurred by the EQB in either promulgating these rules or in administering permit applications will be paid for out of the general fund. Thus, implementation and enforcement of these rules should have no effect on state revenues.

The EQB estimates that in the next few years one or two permit applications for LWECS projects will be submitted each year. In the past six years since the law went into effect, the EQB has issued seven site permits for LWECS projects. The processing of these applications has cost about \$10,000 per application, although the first permit for the Northern States Power Company's Lake Benton I project was significantly higher, in excess of \$100,000, because it was a highly contested permit with a contested case hearing and an appeal to the Minnesota Court of Appeals by Kenetech Windpower, Inc.

**(3) A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.**

The EQB has operated under Interim Site Permit Procedures for the past five years. These rules are based on those Interim Procedures. Given the fact that neither the wind developers nor the general public have complained about any portions of the Interim Procedures for the past several years, it does not seem that the rules are unreasonably costly or intrusive. The EQB issued two Site Permits for LWECS in the year 2001 – one to Navitas Energy LLC and one to Chanarambie Power Partners LLC. It took about sixty days from acceptance of the application to complete the process and issue the permit, and it cost the applicants approximately \$10,000 each in fees charged by the EQB. The EQB believes that the proposed rules will provide for an expeditious consideration of a permit application with minimal cost to the applicant and ample opportunity for the public to be informed and to participate.

**(4) A description of any alternative methods for achieving the purposes of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.**

In 1995 when the EQB first began implementing the statutory requirement to obtain a site permit for a LWECS, there were several wind developers who were competing for the

best lands along Buffalo Ridge for wind projects. In order to ensure that the best lands were available to the serious wind developers who were likely to proceed expeditiously with their projects, the EQB included in the Interim Site Permit Procedures a mechanism whereby a utility company that had applied to the Public Utilities Commission for a certificate of need for a wind project in a specific area and was directed by law to provide wind power, was entitled to have that area reserved for its development for a period of two years from the time the application was accepted by the PUC. Such a reservation is not included in the proposed rules.

The reason for eliminating this mechanism is because it is no longer necessary. Instead, the proposed rules allow a person to apply for a permit for a specific area, but the authorization to proceed is contingent on the permittee obtaining the wind rights in the area defined in the permit and obtaining a power purchase agreement with somebody who is going to buy the electricity generated. In the last few years it has been private companies, not public utilities, that have been applying for the wind permits. Developers with the wind rights and a commitment to buy the power, along with the financing to fund the project, are going to be able to proceed with their projects without any need to reserve an area in advance.

**(5) The probable costs of complying with the proposed rule.**

The most readily identifiable costs of the proposed rules are the fees to be charged for processing the permit application. These fees for the seven site permits issued to date have been approximately \$10,000 per permit proceeding, except for the first permit the EQB issued to Northern States Power Company in 1995. Unless a project is controversial for some reason, and a contested case hearing is required on the application, costs for processing a permit application should continue to be in the \$10,000 range.

Permittees, of course, will also incur costs in complying with the conditions imposed in the permit. Wind turbines can cost more than a million dollars apiece, so the costs of complying with permit conditions has not been a major factor for wind developers as far as the EQB knows. The avian mortality study that Northern States Power Company was ordered to perform in 1995 cost about \$500,000 to complete. That cost, however, is being shared proportionately by all wind developers who obtain permits from the EQB through 2002, depending on the megawatts of installed capacity permitted.

**(6) An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference.**

This statutory requirement is primarily designed to address the situation where a proposed state rule is more stringent than a corresponding federal requirement. In this case, there is no corresponding federal regulation. Chapter 4401 applies to state permitting requirements for Large Wind Energy Conversion Systems. The federal government does not require such a permit for wind projects. The federal government could require approval for a wind project in certain circumstances, such as the case where

the wind turbines are near an airport or located on federal lands. However, the federal government does not require a permit for a wind project per se.

### **C. Performance-Based Analysis-Minnesota Statutes Section 14.002.**

Minnesota Statutes section 14.002 requires an agency that is developing rules to describe in the Statement of Need and Reasonableness how it considered ways it might afford flexibility in complying with the regulatory requirements being proposed while still meeting the agency's objectives. Here, what the EQB tried to do was to minimize the burden on what must be submitted as part of a permit application, yet ensure that environmental and energy considerations are addressed, and to expedite the process, yet provide ample opportunity for public input.

An example of how the EQB provided flexibility is in part 4401.0450, subpart 2, where the proposed language gives a permit applicant the right to go ahead with the permit application even if the applicant does not have a power purchase agreement for the power that will be generated. Another example is in subpart 5 of the same part, where an applicant's lack of wind rights will not hold up processing a permit application, even though without the wind rights the proposer will not be able to build the project.

In order to provide information to the public, and yet keep the process moving, the proposed rules provide that upon acceptance of an application, the chair of the board will make a preliminary decision on whether a permit may be issued and prepare a draft site permit if the decision is to approve a permit. This draft site permit will quickly identify for the public and the applicant any areas of contention. In the end, the existence of a draft site permit should provide for an expeditious final decision.

Throughout development of the proposed rules, the EQB was cognizant of the desire by applicants to minimize the burden of applying for a permit and to provide for an expeditious final decision. The EQB also considered that the public wants to be informed about proposed projects and to have an opportunity to participate in the decisionmaking process. The EQB believes that these rules will result in an open, informed, expeditious permitting process. The statute gives the EQB 180 days from the time an application is accepted to reach a final decision. Minnesota Statutes section 116C.694(c).

All interested persons are encouraged to submit comments on any parts of the rules. If there are other instances where additional flexibility is possible, the EQB will certainly consider such suggestions.

### **D. NOTICE TO COMMISSIONER OF THE DEPARTMENT OF AGRICULTURE**

Minnesota Statutes section 14.111 provides that before an agency may adopt rules that affect farming operations, the agency must provide a copy of the proposed rules to the Commissioner of the Department of Agriculture at least 30 days before publishing notice in the *State Register*. In this case, these proposed rules will not directly regulate farming operations, and this notice is probably not required. However, because the wind projects



to be permitted under these rules will likely be located on farm land, farming operations can be impacted when the wind turbines are constructed, and it is appropriate to notify the Commissioner.

Presently, the Commissioner of the Department of Agriculture, Gene Hugoson, is the chair of the Environmental Quality Board. Commissioner Hugoson has, of course, been advised of the possible adoption of these rules. This statutory requirement has been complied with.

#### **E. ADDITIONAL NOTICE GIVEN TO THE PUBLIC**

Minnesota Statutes section 14.23 requires an agency to describe in the Statement of Need and Reasonableness the efforts the agency made to notify persons or classes of persons who might be affected by the proposed rules about the proposed rulemaking. In addition to the statutory requirements to publish notice in the State Register and to mail notice to persons on the EQB rulemaking list, the EQB will also undertake other efforts to notify the public about these proposed rules.

The EQB will publish notice in the *EQB Monitor* of the proposed rulemaking. Each issue of the *EQB Monitor* is distributed to a lengthy list of persons and published on the EQB webpage. Many groups and individuals in Minnesota and elsewhere who are active and interested in environmental matters in the state are aware of the *EQB Monitor* and read it regularly.

In addition, the EQB will post a copy of the notice, the proposed rules, and this Statement of Need and Reasonableness directly on the internet. The EQB homepage contains an entry identifying the new items that have been recently posted by the EQB. When this material is first posted, the public will also see an entry highlighting the fact that this material is now available on the web.

The EQB has also over the past six years or so compiled a list of several hundred names of people who are known to the agency to be interested in wind development and new wind projects. The list includes names of wind developers, utility companies, local government officials, and the general public. The EQB will mail notice directly to the persons on this list, either by postal mail or by electronic mail.

Finally, the EQB will publish notice of the proposed rulemaking in local newspapers in southwestern Minnesota, where most of the wind development has occurred in the state. These will be the same newspapers that have been used in the past to provide notice about permit applications for specific projects.

#### **V. RULE-BY-RULE ANALYSIS**

This part of the SONAR is a rule-by-rule discussion of the reasons why the rule is being proposed. In a number of places, the EQB identifies documents that provide information that supports the proposed language

## **4401.0100 PURPOSE.**

This part is simply a recitation of what chapter 4401 is intended to do and repeats the statutory policy regarding the orderly development of the wind resource in Minnesota. Minnesota Statutes section 116C.693. There are no substantive requirements in this part.

## **4401.0200 Definitions.**

**Subpart 1. Scope.** This provision simply states that the terms defined in the rule are for purposes of chapter 4401.

**Subpart 2. Associated Facilities.** The term associated facilities is used in the statutory definition of “wind energy conversion system” but the Legislature did not define the term. It is helpful to provide a definition because an LWECS consists of not only the wind turbines, but also other associated facilities. Under the law even the associated facilities require a permit before construction is authorized.

The EQB proposes to define “associated facilities” as those “facilities, equipment, machinery, and other devices necessary to the proper operation and maintenance of a large wind energy conversion system, including access roads, collector and feeder lines, and substations.” This is simply a common sense definition. When permitting a LWECS, the EQB must not only identify the wind turbines to be included in the project, but also the other facilities and equipment that are necessary to make the wind turbines functional.

While it is not possible to identify specifically what facilities and equipment are included within the definition of “associated facilities” for every LWECS that might be proposed, there are some facilities that are certainly within the definition. The proposed definition lists access roads, collector and feeder lines, and substations as examples of “associated facilities.” These are the kind of facilities that have been included in other permitted projects as associated facilities. Surely, the electrical connections required to convey the electricity from the wind turbine to the transmission grid are associated facilities. Also, facilities necessary to transport the turbines and towers and other equipment to the site, like access roads, are the kind of activities that impact the environment and should be evaluated as part of the permit process. These roads are also necessary to maintain the turbines after they are up and running.

Other kinds of facilities and equipment and machinery that are necessary to the project will be determined during the permit process. The permittee can identify these facilities that are necessary to operation and maintenance of the LWECS. The reference to “necessary” facilities is specific enough to allow the applicant and the EQB to determine what is included within the definition.

**Subpart 3. Board.** The Minnesota Environmental Quality Board is sometimes simply referred to as the “board” in the rules for clarity and simplicity. The board is

comprised of the commissioners and directors of the state agencies that are members of the MEQB and the private citizens appointed by the Governor. Minnesota Statutes section 116C.03, subdivision 2. The board is the entity that makes the final decisions on permits and other matters.

**Subpart 4. Chair.** The “chair” is the person appointed by the Governor to serve as the chair of the board. There are several tasks identified in the rules for the chair of the Board to perform. As is explained below for specific rule language, it is reasonable to assign certain duties to the chair to ensure that the process moves expeditiously to a decision by the board. Since the board meets only once a month, it would slow down the process if every matter had to be brought to the board.

**Subpart 5. Construction.** The EQB does not want project proposers to begin construction of their proposed projects until after a permit has been issued. Part 4401.0300 provides that it is against the law to commence construction of an LWECs until the board has issued a site permit. The reason for prohibiting construction until the permit is issued is so that the applicant will not engage in conduct that irreversibly impairs the environment or make financial commitments that will make it difficult for the EQB to openly evaluate the project. It is common practice for permitting agencies to insist that projects not begin until a decision on the permit has been made. See, for example, the Minnesota Pollution Control Agency’s rules for water permits. Minnesota Rules part 7001.1020, subpart 8.

The question, of course, is what does it mean to commence construction. The kinds of commitments and activities described in the proposed rule – starting a continuous program of construction or site preparation - are the kinds of commitments and activities that would make it difficult for the EQB to deliberate to the extent it must on a permit request and to decide on the permit in accordance with the requirements of the law. These kind of efforts not only put pressure on the EQB to allow the conduct to go forward, but they can result in damage to the environment that could have and should have been avoided.

The proposed definition does not prohibit entering into power purchase agreements and obtaining wind rights from property owners and gathering wind data prior to obtaining a permit. Obviously, these kinds of tasks can be completed without impacting the permit process or the environment. Indeed, the EQB wants developers to negotiate and enter into power purchase agreements with utilities and negotiate and obtain wind rights from property owners. Certainly there is no objection to gathering wind data without applying for and obtaining a permit.

Nor does the rule make any mention of restricting the right to enter into contractual commitments related to the wind project. The EQB considered limiting the ability of a permit applicant to make binding contractual agreements to purchase facilities or equipment in advance of receiving a permit, but wind developers must be able to arrange for delivery of the turbines well in advance of applying for and receiving a permit from the EQB.

**Subpart 6. Draft site permit.** The draft site permit is a document that represents a preliminary decision by the chair that a site permit can be issued for the project. The draft site permit contains terms and conditions that the chair has determined might be appropriate to include in the final site permit. The draft site permit will assist the applicant and the public in understanding the issues associated with the proposed project

**Subpart 7. EQB.** This is the definition of the agency itself, including both the Board and the staff. Whenever it is the chair or the board that is responsible for performing a task or making a decision, the rules specify that. But in many instances it is the staff that will actually carry out certain tasks, and it is necessary to recognize that distinction. For example, it is the staff that will arrange for the publication of certain notices and maintain the accounting of the costs. In those instances in the rules where agency staff may perform the task, the rules spell out EQB, rather than the Board or the Chair.

**Subpart 8. EQB Monitor.** The *EQB Monitor* is a bulletin published by the EQB every other Monday. The *EQB Monitor* has been published by the EQB since 1977. The *EQB Monitor* is distributed widely to interested persons, and it is published on the web.

<http://www.mnplan.state.mn.us/eqb/monitor.html>

The public has come to expect notices of EQB matters to be published in the *EQB Monitor*, and there are several references in the rules to publication in the *EQB Monitor*.

**Subpart 9. Large wind energy conversion system or LWECS.** This definition is the statutory definition in Minnesota Statutes section 116C.691, subdivision 2.

**Subpart 10. Person.** Person needs to be defined broadly to include more than just individual human beings. The definition here is the same definition used in the Power Plant Siting Rules. Minnesota Rules part 4400.0200, subp. 12.

**Subpart 11. Power Purchase Agreement.** Individuals and corporations and other organizations that are not in the utility business are often the persons who propose large wind energy projects. These wind developers intend to sell the power generated to utilities like Xcel Energy and Great River Energy, who will then deliver the electricity to the ultimate consumers. Since the developers do not have their own transmission facilities, they need an agreement with the utilities to purchase the power to be generated. This definition defines power purchase agreement to be any kind of enforceable agreement between the developer and the utility for purchase of the wind power.

**Subpart 12. Site Permit.** The Site Permit is the document that the board issues at the completion of the process that authorizes the applicant to proceed with construction of the project under the terms and conditions contained in the permit.

**Subpart 13. Small Wind Energy Conversion System or SWECS.** This definition is identical to the statutory definition. Minnesota Statutes section 116C.691, subdivision 3. Every wind energy conversion system is either a SWECS or a LWECS but the EQB has jurisdiction only over the LWECS.

**Subpart 14. Wind Energy Conversion System or WECS.** This definition is identical to the statutory definition as well. Minnesota Statutes section 116C.691, subdivision 4. The Legislature intended in the statute and the EQB intends in the rule to promulgate a broad definition that will encompass any kind of device that captures the wind to use for the generation of electric energy.

#### **4401.0300 PERMIT REQUIREMENT**

**Subpart 1. LWECS.** This rule is simply a reiteration of the statutory mandate that a permit is required to construct a Large Wind Energy Conversion System. The rule also requires that the permit must be obtained before construction of the system can commence. Since the term “construction” is defined in part 4401.0200, subpart 5, there should be no confusion on the part of developers what is allowed to happen before the permit is issued. The explanation for the definition is included in the discussion for that subpart.

**Subpart 2. SWECS.** The Legislature provided that a Site Permit from the EQB is not required to construct a wind project of less than 5 megawatts and this rule recognizes that limitation. The EQB has no jurisdiction over SWECS, and the second sentence of this rule recognizes that local units of government are responsible for regulating the small wind projects. No state environmental review is required of an electric generating facility of less than five megawatts. Minnesota Rules part 4410.4600, subpart 3.

**Subpart 3. Expansion of Existing System.** The purpose of this provision is to require EQB review and approval before an existing LWECS is expanded by any amount or before an existing SWECS is expanded by an amount that allows the SWECS to generate more than 5 megawatts of electricity. Since the Legislature required any project over 5 megawatts to undergo state review, it makes sense to give the EQB an opportunity to analyze any expansion of an existing project when more than 5 megawatts of power are involved. The EQB wants to avoid the situation where several small projects are constructed without state review when in reality the projects are essentially one large project that requires an EQB permit.

The test proposed in the EQB rule for determining whether several small projects are really a large project is taken from the statutory language passed by the Legislature in the Energy Security and Reliability Act of 2001. Minnesota Session Laws 2001, chapter 212, article 5, section 2. In the 2001 legislative session, the Minnesota Legislature addressed this issue in terms of the incentive payment that is available to developers of small wind energy projects under two megawatts. Minnesota Statutes section 216C.41. The incentive payment is 1.5 cents per kilowatt-hour for qualifying facilities. The

Legislature was concerned that developers might attempt to skirt the limitations of the incentive payment provision by proposing several small wind projects, none of which exceeds two megawatts alone but which in total exceed that number, by proposing each project under a different name. In that way a developer might seek an incentive payment for several small projects that in reality are one large project in excess of the qualifying amount.

The language passed by the Legislature reads as follows:

(b) Beginning January 1, 2002, the total size of a wind energy conversion system under this section [216C.41] must be determined according to this paragraph. Unless the systems are interconnected with different distribution systems, the nameplate capacity of one wind energy conversion system must be combined with the nameplate capacity of any other wind energy conversion system that is:

- (1) located within five miles of the wind energy conversion system;
- (2) constructed within the same calendar year as the wind energy conversion system; and
- (3) under common ownership.

In the case of a dispute, the commissioner of commerce shall determine the total size of the system, and shall draw all reasonable inferences in favor of combining the system.

(c) In making a determination under paragraph (b), the commissioner of commerce may determine that two wind energy conversion systems are under common ownership when the underlying ownership structure contains similar persons or entities, even if the ownership shares differ between the two systems. Wind energy conversion systems are not under common ownership solely because the same person or entity provided equity financing for the systems.

Minnesota Statutes section 216C.41, subd. 5, as amended by Minnesota Laws 2001, ch. 212, art. 5, section 2.

The language in the proposed rule is essentially the same as the statutory language. The test applied by the Commissioner of the Department of Commerce for incentive payment purposes will be the same test applied by the EQB for permitting purposes. The Commissioner of Commerce is a member of the EQB Board and there will be cooperation between Commerce and the EQB in resolving whether two or more small projects are really one larger project.

#### **4001.0400. FILING OF APPLICATION FOR SITE PERMIT.**

**Subpart 1. Number of Copies.** The rule requires an applicant to file three copies of the application with the EQB. The reason three copies are required is so that the Chair can have a copy and the staff can have two. It is reasonable to require the applicant to provide enough copies to allow the staff and the Chair to conduct their review of the adequacy of the application. As is explained later, once the application is accepted the applicant will have to submit additional copies so the EQB can provide copies to all those persons who normally receive such documents.

**Subpart 2. Electronic Copy.** The EQB has been putting more and more information on its web page. The public has come to expect to find information about matters pending before all state agencies on the web. It is a convenient and inexpensive way to provide information to the public. In order to put the application on the web, the applicant must provide an electronic version of the document. The rule recognizes that an applicant can ask for a waiver of the requirement to provide an electronic copy, but it is hard to imagine in today's computer world that an electronic version is not available. Perhaps certain maps or photographs may not be available but even that situation should not arise often.

**Subpart 3. Proprietary information.** The purpose of this subpart is simply to recognize that on occasion an applicant may provide information as part of an application that is protected from public disclosure by Minnesota law. The most likely statute providing such protection is the Minnesota Government Data Practices Act, Minnesota Statutes chapter 13, and the most likely classification is trade secret information. Minnesota Statutes section 13.37(b). However, an applicant may have other reasons to protect certain information and may certainly rely on those.

The issue over public inspection of information in wind project applications has not been a problem in the past, but the rule nonetheless creates a mechanism for handling a request by an applicant to protect certain information from public disclosure. The request will be brought to the full Board for a determination of whether the information actually qualifies for the classification. If the Board disagrees with the applicant, and is of the view that the information is public information, the applicant can either allow the public to inspect the information, withdraw the application, or challenge the Board's decision in court. In any event, information that an applicant believes is not open for public review will not be made available to the public without affording the applicant an opportunity to establish that the information is protected.

#### **4401.0450 CONTENTS OF SITE PERMIT APPLICATION.**

**Subpart 1. Applicant.** This subpart requires the applicant to provide basic background information about the person or persons applying for the LWECs Site Permit. This same kind of information is required from applicants for other kinds of energy facilities permitted by the MEQB. See Minnesota Rules parts 4400.0600 (transmission lines), 4400.2600 (power plants), and 4415.0115 (pipelines). This kind of

information is necessary to ascertain who the permittee or permittees should be and also to provide contact persons for purposes of mailing notices and asking questions.

**Item A.** A letter of transmittal from an authorized representative or agent of the applicant is simply a means of submitting the application.

**Item B.** Providing the complete name, address, and telephone number of the applicant and authorized representatives ensures that the EQB staff can contact the right people if questions should arise. This is especially important when the application is first filed with the EQB if the staff has not had much prior contact with the applicant and learned the names of the appropriate people with knowledge about the project.

**Item C.** Asking for the signature of the preparer of the application is certainly a reasonable request. The preparer of the application is usually the person who is most knowledgeable about the project, or at least knows who to talk to about a particular matter. Applicants often use consultants to prepare and submit their applications. It is helpful to know who the consultant is so that questions may be directed to the consultant to clarify data or information in the application and to arrange for the transfer of an electronic version of the application.

**Item D.** The EQB wants to know whether the applicant is actually the person who will construct and operate the LWECs. It is important to determine the appropriate persons to name as permittees on the permit and to ensure that any conditions included in the permit will be complied with. The public usually wants to know the names of all persons involved with a proposed project. For example, in one application proceeding Northern States Power Company was the applicant, Zond, Inc. was the builder, and the permittee was Lake Benton Power Partners, LLC.

**Item E.** Asking the applicant to identify any other wind projects in which the applicant has an ownership or other financial interest will allow the EQB to determine whether a particular project is part of any other wind projects. It will also allow the EQB to consider the applicant's performance regarding these other projects and evaluate the applicant's ability to comply with permit conditions.

**Item F.** As with item D, the EQB wants to ensure that the proper persons are named as permittees. If the operator of the LWECs is required to ensure compliance with certain operating conditions, the EQB wants to know who that person is who will be performing certain operational tasks.

**Item G.** This last item simply asks the applicant to identify who should be named as permittees on the permit. It has been the EQB's experience that oftentimes a wind developer will incorporate a new organization for purposes of a particular project. The EQB needs to know the precise name of the applicants, and whether they are individuals, corporations, limited liability partnerships, or other organization. Asking the applicant to identify the precise names and structure of the permittees is the best way to ensure that the correct names are used.



## **Subpart 2. Certificate of need or other commitment.**

**Item A.** A certificate of need is a document issued by the Minnesota Public Utilities Commission. Minnesota Statutes section 216B.243, as amended by Minnesota Laws 2001, chapter 212, art. 7, sec. 33. A certificate of need is required for any power plant over 50 megawatts. Minnesota Statutes section 216B.2421, subd. 2(a), as amended by chapter 212, art. 7, sec. 29.

If a certificate of need is required, the applicant should file that application with the PUC prior to filing a site permit application with the MEQB. See Minnesota Statutes section 216B.243, subd. 4, as amended by chapter 212, art. 7, sec. 32. The applicant can file a permit application with the EQB before the PUC makes a decision on the certificate of need, but the EQB cannot issue a permit until a certificate of need is issued. Minnesota Statutes section 216B.243, subd. 2. Because the siting process will take less time to complete than the certificate of need process, the board can process the site permit but not make a final decision on the site permit until a certificate of need has been granted. The need and siting decisions for other energy facilities are made in the same sequence.

**Item B.** This provision recognizes that the Board may ask the PUC to determine if a certificate of need is required for a particular project. Because wind turbines are modular in nature, additional turbines may be added to a project at almost anytime. If, for example, a 45 MW project is built (for which a certificate of need is not required because it is under 50 MW), and the developer later proposes to add another 10 MW, it may be appropriate for the PUC to determine if a certificate of need is required.

**Item C.** This provision addresses those wind projects for which a certificate of need is not required because the LWECs is under 50 megawatts. In the absence of a need decision, the board wants to know what the applicant intends to do with the power that is generated. The board does not want to issue a site permit for a project that may not be built.

The board explained the reasons for requiring a power purchase agreement in two recent wind permit proceedings. The EQB in May 2001 issued permits to two developers for projects for which they did not have a power purchase agreement. One permit was for Navitas Energy, LLC, and the other was for Chanarambie Power Partners, LLC. for projects in Murray and Pipestone Counties. In both cases, the permittee had not finalized a power purchase agreement, at least not for all the power it intended to generate. The EQB issued both permits but conditioned them on the requirement that the permittee obtain a power purchase agreement within a specified time. The EQB made a specific finding regarding this issue in those permit proceedings, which reads as follows: “The purpose of the requirement for a power purchase agreement was to ensure that a developer did not tie up a large area of land for wind generation when the project was not likely to go forward in a timely fashion.” Finding No. 44, Navitas Energy, LLC.

The rule provides that the chair may request the applicant to submit a copy of the power purchase agreement or other document confirming the sale of the power. It is reasonable to recognize that the EQB can insist on confirmation that a power purchase agreement or other enforceable arrangement exists for sale of the power. However, the power purchase agreement is sometimes a confidential document, and the EQB has not in the past required the entire document to be submitted. The EQB may not need to know the terms of the sale, or the price, or other matters, for example, but only that an enforceable agreement exists. In such event, the EQB can request that only certain parts of the agreement be submitted.

While it is reasonable to expect a wind developer to tell the EQB what it intends to do with the power it plans to generate, the lack of a power purchase agreement does not necessarily mean that the permit will be delayed or denied. Both the Navitas permit and the Chanarambie permit were conditioned on the permittee obtaining a power purchase agreement within a relatively short period of time, and the permittees were not allowed to proceed with construction until they obtained a power purchase agreement. This is a reasonable solution to the situation where a developer wants to get a project approved but has not finalized the purchase arrangement yet, and this approach is continued in the rules.

**Subpart 3. State policy.** This part requires the applicant to describe in the application how the LWECS project will comport with a state policy that provides for environmental preservation, sustainable development and efficient use of resources. Minnesota Statutes section 116C.693. This part is significant in that it expresses the state policy and provides the applicant an opportunity to demonstrate how the LWECS project addresses these general policy areas. The applicant's discussion of this may also provide the Board with additional knowledge about development of the wind resource that may be helpful in the review and permitting of the LWECS project.

**Subpart 4. Proposed site.** This provision requires the applicant to submit basic information about the proposed site.

**Item A.** The boundaries of the project must be identified with some specificity so the EQB can determine whether the project interferes with any other existing or proposed wind projects. Applicants for existing projects have not had difficulty in the past in providing the EQB with United States Geological Survey (USGS) maps or other maps showing the boundaries of the project. The EQB will specifically identify the boundaries of the project in any permit that is issued, so the applicant must specify the area for which approval is being sought.

**Item B.** The EQB wants to know the characteristics of the wind within the proposed project boundaries. In order to ensure the orderly and efficient use of the wind resource, as directed to do by the Legislature, it is important to know the quality of the wind in the area to be developed.

The information required under this item is the kind of information developers have to gather to determine whether a proposed location has the kind of winds that are required for a successful wind project. The ten characteristics identified in this rule provide information on the speed of the wind, the seasonal variation in the wind, the frequency of the wind, wind direction, height of the wind above grade, and other criteria that are important in siting the location of wind turbines. Developers are not going to propose a project unless they have gathered this kind of information about the wind. It has not been a problem with past permits for applicants to provide the information requested here.

**Item C.** Since other meteorological conditions like rainfall and snowfall and temperature can affect the amount of electricity generated by wind turbines, it is reasonable to request an applicant to supply this kind of information. Again, any applicant for a wind project costing millions of dollars is going to have this kind of information available.

**Item D.** The reason for identifying the location of other wind turbines in the general area of the proposed LWECs is to ensure that one project does not interfere with another. If turbines are sited too close together, a downwind turbine can experience what's called wake loss. Wake loss results when the wind is sent into a turbulent state after encountering a turbine. If a turbine is located too close downwind, usually within ten rotor diameters of the upwind turbine, the wind will not have had a chance to recover to its normal state, and the turbulence will result in less efficient generation of electricity at the second turbine. Because the EQB wants to ensure efficient use of the wind resource, it is preferable to avoid wake loss to the extent possible. By taking into account existing turbines, the EQB can evaluate the potential for wake loss with a proposed project.

**Subpart 5. Wind rights.** In order to construct wind turbines in a particular location, the permittee must have the right to place the turbines on the land in the desired location. Wind developers have negotiated easements and other agreements with many landowners along Buffalo Ridge in southwest Minnesota and in other areas of the state with potential wind resources. It is reasonable and appropriate to expect a permit applicant to describe what wind rights the applicant holds within the proposed boundary of the project. The manner in which the EQB will address the issue of wind rights with particular projects is discussed under part 4401.0610, subpart 1.

**Subpart 6. Design of project.** This rule requires an applicant to provide some detail about the project being proposed. This information is required so the EQB can know specifically what is being proposed, evaluate the project and identify any problem areas, and determine necessary conditions for any permit that is issued.

**Item A.** The applicant must identify how many turbines the project will include and where the applicant intends to install those turbines. Identification of turbine location is necessary for all kinds of reasons, everything from environmental impacts to wake loss. The EQB understands, however, that at the time the application is submitted, the applicant can only estimate where the turbines will be located, because **micrositing**

occurs after the permit is issued and construction is about to begin. The permit does not preclude the permittee from moving the location of particular turbines from what was anticipated, as long as other various restrictions of the permit are complied with, such as setback requirements and restrictions on placing turbines in areas like wetlands.

Typically, a site permit for a wind project contains a condition requiring the permittee to inform the EQB of the precise locations of the turbines when the micrositing is complete.

**Item B.** The EQB needs to know the specifics of the turbines that will be installed – the height, the structure, the blade diameter, and other data. This information is necessary to evaluate the possible impacts of the project on the environment and to consider the energy production expected.

**Items C and D.** The wind turbines are only a part of any LWECS. A wind project also involves all kinds of electrical equipment, like transformers and collection and feeder lines, and other equipment like maintenance and operational equipment. In order to evaluate the complete impact of a proposed project, these associated facilities must also be identified. It is appropriate to require the applicant to identify what additional facilities are associated with the particular project being proposed. In addition, this will ensure that any permit that is issued will be written to cover everything that is associated with the project.

**Subpart 7. Environmental impacts.** Of course, the EQB must investigate and review the environmental impacts associated with any proposed wind project. The applicant is the one that must provide the information about the potential impacts of the project. What this rule requires is the inclusion in the application of information on the potential impacts of the project, the mitigative measures that are possible, and adverse environmental effects that cannot be avoided. This is the typical analysis with any project undergoing environmental review by the EQB or other agencies.

The effects identified in items A – R in the rule should cover every potential impact of a LWECS. It is not necessary to discuss every single one of these in this Statement of Need and Reasonableness. Suffice it to say that an applicant must identify any and all potentially adverse impacts that may be caused by a proposed project and mitigative measures that might be implemented with regard to those impacts.

Wind projects have not been found to have significant environmental and human impacts. Wind projects along Buffalo Ridge have been generally well accepted by residents and others concerned about the environment. Permit conditions have been satisfactory to address specific concerns like wetlands and wildlife management areas with past permits. One area of concern that was raised initially was the possibility of avian fatalities caused by the turbines.

As part of the first wind permit issued by the EQB, the Board required Northern States Power Company to conduct an avian mortality study along Buffalo Ridge. This study was conducted between 1995 and 2000, and a report on the study was completed in 2000. The researchers found that the number of avian fatalities from the wind turbines at

Buffalo Ridge is essentially inconsequential, although there was some bat mortality found. The wind developers are presently conducting additional studies on bat mortality.

Because the environmental and human consequences of wind turbines are relatively minor and can be minimized by appropriate permit conditions, the EQB is not requiring in these rules that an Environmental Assessment Worksheet or an Environmental Impact Statement be prepared on a proposed LWECS. It is sufficient that the environmental impacts and mitigative measures be discussed in the application itself. If an issue of concern were to be raised specific to a particular wind project, the EQB could ask for additional examination of those impacts and could address the concern through permit conditions or by moving some of the turbines

**Subpart 8. Construction of project.** Construction itself can cause environmental impacts, so it is necessary for the applicant to address the manner in which the project will be constructed. It may be necessary to include conditions in the permit requiring mitigative measures during construction of the turbines.

**Subpart 9. Operation of project.** Once the wind turbines are up and running, they must be operated and maintained. The applicant must describe its operation and maintenance procedures so any impacts associated with those tasks can be identified and addressed.

**Subpart 10. Costs.** The EQB uses the cost information to evaluate whether the project is making efficient use of the wind resource. Also, cost information is important to place in perspective the costs of mitigating any environmental impacts that are identified.

**Subpart 11. Schedule.** The EQB wants to know at the time the application is submitted what the developer's proposed schedule is. The EQB understands that sometimes schedules slip, but at least the applicant can provide an anticipated schedule. The rule requires the applicant to describe the anticipated schedule for a number of tasks, including obtaining the permit, acquiring land, obtaining financing, procuring equipment, and completing construction. This information will give the EQB a good overall view of the tasks required to be completed to actually bring the project online, and help identify any constraints in the schedule. The expected date of commercial operation is helpful to the EQB and to other state agencies as well. The public, also, is interested in the anticipated schedule for construction of the project.

**Subpart 12. Energy projections.** The EQB has been collecting data on how well the wind turbines in the state have been performing. At the time the application is submitted, the applicant can only make projections on the energy to be generated, but it is helpful to know what the developer expects to receive from the turbines planned for installation.

**Subpart 13. Decommissioning and restoration.** Just like any other project, a LWECS will not last forever. At some point the wind turbines and other associated

facilities will have to be decommissioned. The EQB wants to know upfront how the developer plans to pay for removal of the turbines at the end of their useful life. Since the wind turbines may last for thirty years or more, and the ownership of the project may change over the years, some arrangements must be made from the start to provide funding for the ultimate decommissioning. In other cases wind developers have created funds specially set aside for this purpose, and the funding comes from payments made periodically from sale of the electricity. The EQB is not promulgating one specific requirement for ensuring funds are available for decommissioning, and the EQB will allow applicants to be creative provided the EQB can be assured the money will be there when needed.

**Subpart 14. Identification of other permits.** It is not unusual with any project requiring a permit that the applicant identify what other permits are required before the project can go ahead. These permits are normally such permits as a Department of Natural Resources water crossing permit or a wetland survey and a Pollution Control Agency surface water discharge permit. Sometimes federal approval may be required, depending on the location of the project. For example, approval from the Federal Aviation Administration (FAA) may be required if an airport is nearby, or approval from the Bureau of Land Management could be necessary if the project were to be located on federal lands. Local government is pre-empted from enforcing its zoning and land use ordinances when the EQB has jurisdiction over a project. Minnesota Statutes section 116C.697.

#### **4401.0460 ACCEPTANCE OF APPLICATION.**

Sections 4401.0460 through 4401.0550 establish the procedures the EQB will follow in acting on an application for a site permit for a LWECs. The Legislature specifically directed the EQB to adopt rules establishing such procedures. Minnesota Statutes section 116C.695(2).

**Subpart 1. Action by chair.** The chair has thirty days under this requirement to accept or reject an application once it is submitted to the EQB. The statute specifically provides that it is the chair who decides on the completeness of the application. Minnesota Statutes section 116C.694(c). Allowing the chair to make this decision, rather than the board, will help to speed the process along. Ultimately, of course, it is the full board that will decide whether to issue a permit and what conditions to include.

The chair has thirty days from the day the application is submitted to make a decision on the completeness of the application. Acceptance of the application also triggers the start of the 180 days the EQB has to act on the application. Minnesota Statutes section 116C.694(c). Normally, wind developers have been in contact with the staff prior to submission of an application and have allowed the staff to comment on draft applications. Thus, when the application is submitted in final form, it contains the information the staff believes is necessary and is quickly accepted. If the chair should reject an application, the rule requires the chair to identify in writing the deficiencies that exist and how the application can be corrected.

**Subpart 2. Notice of application acceptance.** It is important that notice be provided quickly to persons who are likely to be interested in the fact that a wind permit has been applied for. This subpart requires the applicant to notify local officials and to publish notice in a newspaper of general circulation in each county in which the project is proposed to be located within fifteen days after acceptance of the application. Fifteen days is a reasonable period of time. There is no reason notice can't be published in the newspaper within a few days or a week after acceptance of the application.

This subpart provides that failure to give this notice or a delay in giving the notice could result in the permit being denied or a decision being delayed. It is appropriate to provide that these kind of sanctions could be imposed because the EQB has only 180 days to act on a permit application once the application is accepted, and it is important to give the public ample opportunity to respond to the proposal.

However, it is unlikely that such sanctions would be imposed. In most instances, the public will have already been informed about the possibility of a wind project in their vicinity by the time the application is submitted to the EQB, since usually the word about a proposed project is in the news locally before a permit is even applied for. Also, the subpart provides that the chair may elect to relieve the applicant of giving this notice. The reason for this is oftentimes the EQB is prepared to give the notice specified in part 4401.0550, subpart 1, at the same time the applicant is required to give notice under this subpart. In such situations, it makes sense to combine the notice to provide all the information specified in 4401.0550. Further, the EQB will post the application on its web page as soon as possible after the application is accepted, and the use of the internet helps provide notice very quickly.

**Subpart 3. Additional copies.** The purpose of this subpart is to ensure that a hard copy of the application is available in the area where the project is proposed to be located. The rule requires the applicant to provide a copy to the cities, townships, and counties where the project is located. These local governmental offices are a convenient place for residents in the area to come to review a hard copy. The rule directs local officials to make the application available for public inspection. The EQB has found local officials more than willing to perform this task in the past.

The applicant also must provide a hard copy to the Minnesota Public Utilities Commission and the Minnesota Historical Society. The PUC is interested in all wind projects because the PUC may have evaluated the project as part of a certificate of need proceeding or may have to consider the project in a subsequent rate hearing. The Department of Commerce will also be interested in all wind projects, but since the Commissioner of the Department of Commerce is a member of the EQB board, that agency will always be provided with such applications.

The rule requires the applicant to provide a hard copy of the application to each landowner within the boundaries of the proposed LWECS site. These are the people who are most directly affected by the project and who are most likely to review the

application. The EQB experience with all kinds of energy facilities is that the landowners whose property is most directly affected want to be provided with a hard copy of the application.

Once an application has been accepted, the applicant must submit a number of additional copies to the EQB. The rule does not specify how many copies of the application the applicant must submit. The chair will inform the applicant of the number. The EQB would like to minimize the number of hard copies that are required, but the EQB has a fairly extensive mailing list of agencies and citizens who require a copy of such documents. It is likely that the EQB will require 40 or more copies.

**4401.0470 PUBLIC ADVISOR** The Power Plant Siting Act, Minnesota Statutes sections 116C.51 to 116C.69, which was passed in 1973, gives the EQB jurisdiction over power plants other than wind projects and over high voltage transmission lines. One of the requirements of the Power Plant Siting Act is that the EQB appoint a staff person to act as a public advisor when a permit application for a power plant or transmission line is submitted. Minnesota Statutes section 116C.59, subd. 3. There is no corresponding requirement in the wind power statutes, but the EQB believes that continuation of this practice is desirable. Therefore, the EQB is proposing to adopt this section to provide for the appointment of a staff person to assist the public in participating in LWECs permit proceedings. The EQB has appointed a public advisor in the other wind project permit proceedings and the public has appreciated having such a person to consult about the process.

The language in this section is based on the language in the existing power plant siting rules. Minnesota Rules part 4400.0900. It is important to emphasize in the rule that while this staff person can assist the public in understanding the process, the staff cannot act as a legal adviser or advocate for any member of the public.

#### **4401.0500 PRELIMINARY DETERMINATION AND DRAFT SITE PERMIT.**

**Subpart 1. Preliminary determination.** This rule provides that within 45 days after acceptance of an application, the Chair must make a preliminary determination whether a permit may be issued and prepare a draft site permit with proposed conditions if a permit may be issued. This is the process followed by other agencies in administering permit programs. See the Pollution Control Agency rules on permits. Minnesota Rules parts 7001.0100 and 7001.1080.

The existence of a draft site permit will help the public and the applicant focus on any issues that are associated with the project. It will convey a preliminary decision by the chair that a site permit may be issued, and the proposed conditions will identify any potential issues of concern. The EQB has issued seven site permits for LWECs over the last six years and these permits have been quite similar in content. The EQB believes that it can quickly make a preliminary decision on whether a permit is appropriate and can draft the document with conditions based on the other permits that have been issued.



**Subpart 2. Effect of draft site permit.** This provision is necessary to clarify that issuance of a draft site permit does not mean that a permit is guaranteed. The EQB could still deny the permit based on information that is collected during the permit process. The permit conditions can certainly be changed in any manner that is supported by the record. Also, this rule emphasizes that a draft site permit does not authorize anything. A permit applicant is not authorized to begin construction of a wind project simply because the chair has sent a draft site permit out for public comment.

**4401.0550 PUBLIC PARTICIPATION.** This rule is intended to ensure that the public has an opportunity to participate in the processing of a permit application for a proposed wind project. The statute requires the EQB to include in its rules procedures for notifying the public of an application and affording opportunities for a public information meeting and a public hearing on a proposed LWECs. Minnesota Statutes section 116C.695(3). Some of the provisions in these proposed rules intended to provide public notice, part 4401.0460, and to assist the public, part 4401.0470, have already been discussed. This rule addresses additional notice and opportunities for public participation in the process.

**Subpart 1. Public notice.** Part 4401.0460 specifies requirements for notifying the public that a permit application for a wind project has been accepted by the EQB. This rule, part 4401.0550, specifies the notice that must be given by the EQB, not the applicant, about how the EQB will actually process the application and how the public may participate.

The rule does not specify when the notice must be given, but since it is not given until after a draft site permit is prepared, it could be as long as 45 days after acceptance of the application. However, with the Navitas and Chanarambie permits issued in May 2001, the staff had a draft site permit prepared within days after the application was accepted, so this notice was provided shortly after the application was accepted. That is the reason part 4401.0460, subpart 2, recognizes that these two notices may be combined.

**Items A, B, and C.** Some of the information – the name of the applicant and the description of the project and the location of a hard copy of the application– are repetitious from information the applicant must provide under 4401.0460. But it is helpful for the EQB to include that information in its notice as well.

**Item D.** This item requires a statement in the notice that a draft site permit is available. The draft permit will focus the issues for the public so it is important that the public knows that such a document is available.

**Item E.** This provision requires the EQB to identify the name of the public advisor appointed by the Chair. The public needs the identity of this person so the public knows who to contact at the EQB staff with its questions.

**Item F.** The notice must contain the time and place of a public information meeting that the EQB will hold on every site permit application. As discussed below, the

public must be given notice that a public meeting will be held in the area of the proposed project before the EQB will make a decision on a permit.

**Item G.** The notice must notify the public that comments may be submitted on the draft permit within a specified time period. The time period is discussed under subpart 4 of this rule. Also, the notice must inform the public that any person can request a contested case hearing on the matter. This hearing option is discussed under subpart 5.

**Item H.** Item H. requires the EQB to explain the anticipated procedures for reaching a final decision on the permit application. This requirement is another example of how the EQB wants to ensure that the public is fully aware of its opportunities to participate in the permitting process.

A related issue that should be discussed here under this proposed rule is the authority of the EQB to appoint a citizen advisory task force. The Power Plant Siting Act, which applies to large electric power generating plants and high voltage transmission lines, provides that the EQB can create a citizen advisory task force to assist the agency in siting and routing these kind of projects. Minnesota Statutes section 116C.59, subd. 1, as amended by Minnesota Laws 2001, chapter 212, article 7, section 18. These wind rules on LWECS do not contain a specific provision for creating such a task force. The reason for that is unlike the traditional coal-fired and natural gas-fired power plants, where several sites can be considered for the location of the plant, the wind developer has one particular area in mind for the project. There is not a great deal a citizen advisory task force can do with regard to selecting a site for a wind project.

In 1995, with the Lake Benton I project, the EQB actually did appoint a citizen advisory task force. That project, however, was proposed under the old power plant siting provisions that required an applicant to propose at least two sites. The task force did have two sites to review and did make a recommendation on a preferred site. Today, however, under these newer wind siting statutes, there are not two sites to review, and there is no role for a citizen advisory task force to play in reviewing potential sites.

**Subpart 2. Distribution of public notice.** While subpart 1 specifies what has to be in the notice the EQB will give the public, this rule addresses how to give that notice. Newspaper ads have historically been an effective means of alerting the public to matters pending before the EQB, and this rule continues that practice. Also, the EQB usually compiles a list of names and addresses of people who are known to the EQB to be interested in certain matters or certain kinds of matters, and the EQB will assuredly contact directly any person who asks to be notified about wind permits generally or a certain project specifically. Finally, the EQB Monitor has been published by the EQB for about 25 years, and the public has come to expect information like notice of permit applications in the Monitor. The Monitor is also available electronically on the EQB webpage, and thousands of people often check the Monitor on their computers for information.

**Subpart 3. Public comments on draft permit.** The public must be given an opportunity to submit comments on a proposed project. This rule gives the public a minimum of 30 days after publication of the draft site permit in the EQB Monitor to submit comments. The EQB can allow more than 30 days if the Chair believes that more time is appropriate in the circumstances. Also, the rule allows the Chair to extend the comment period if necessary to accommodate members of the public who have a good reason for needing more time. Further, the public will actually have more than 30 days from the time the notice of the acceptance of the permit application was first given and the application made available in local governmental offices.

**Subpart 4. Public information meeting.** The rule requires that the EQB hold a public informational meeting on each permit application. The EQB has held public informational meetings on all previous wind projects that have been permitted, and the EQB, and the public presumably, has found these meetings to be helpful in gathering information on a particular project. It is worthwhile to continue this practice.

The rule specifies how the meeting should be noticed and scheduled. The time frames provided are designed to afford the public an opportunity to meet with the EQB staff and the applicant at the meeting, ask their questions and gather information, and then have time to submit written comments if desired. The rule provides that the Chair can extend the comment period upon request.

**Subpart 5. Contested case hearing.** The statute requires that the EQB rules must provide for the conduct of a public hearing. Minnesota Statutes section 116C.695(3). The EQB does not read the statute to require a contested case hearing presided over by an administrative law judge in every case, as is specified in the Power Plant Siting Act for large electric generating power plants and high voltage transmission lines. Minnesota Statutes section 116C.57, subd. 2d., as amended by chapter 212, article 7, sec. 10. Instead, the EQB believes it is in compliance with the statute to provide for public meetings and an opportunity to request a contested case hearing in an appropriate situation. With only 180 days to complete the permitting process, it is unlikely the Legislature intended the EQB to hold a contested case hearing on every permit application.

During the public comment period, any person may request a contested case hearing. The person requesting the hearing must put the request in writing and specify the issues to be addressed in the hearing and the reasons why a hearing is necessary. The request will be presented to the full board. There must be a good reason to go through the time and expense of a contested case hearing. Item B. provides that the board will hold a hearing if it finds that a material issue of fact is in dispute and the holding of a hearing would aid the EQB in making a final determination on the permit application. These are reasonable criteria to apply in determining whether a contested case hearing is appropriate.

It is reasonable to impose a time limit on when a person may ask for a contested case hearing. The proposed rule allows the public to ask for a hearing any time up to the day

the comment period on the draft site permit ends. This is a minimum of 30 days after the draft site permit becomes available.

If a hearing is ordered, it will be a contested case hearing, presided over by an administrative law judge from the Office of Administrative Hearings who will conduct the hearing and write a report making recommendations on the site permit. Item C of the subpart specifically recognizes the role of the Office of Administrative Hearings. It is likely that the board will have to extend the time to act on the permit if such a hearing is held.

The only contested case hearing the EQB has held on a LWECS project involved the Lake Benton I project in 1995, in which two developers were competing for the same project. The other six LWECS that have been built along Buffalo Ridge were permitted without any controversy. No members of the public requested hearings on any of those projects. The EQB expects that future projects will also be able to be permitted without a contested case hearing, but this rule will be available if the situation should arise where there is public objection.

#### **4401.0600 FINAL PERMIT DECISION.**

**Subpart 1. Board action.** This subpart recognizes that it is the full Board that will make the ultimate permit decision. The rule provides that the Board must follow the applicable contested case procedures in those situations where a hearing was held. Those requirements can be found in the EQB's own procedural rules, Minnesota Rules chapter 4405, and in the rules of the Office of Administrative Hearings, Minnesota Rules chapter 1405, and in the Administrative Procedure Act, Minnesota Statutes sections 14.57 to 14.62.

When a hearing has not been held, the Board must still act on the basis of the record that has been created and follow its own procedural requirements in Minnesota Rules chapter 4405, for bringing matters to the Board at a regular monthly meeting for action.

**Subpart 2. Time limit for decision.** This provision is merely a repeat of the statutory requirement that the EQB has 180 days after acceptance of the application to act on the request. Minnesota Statutes section 116C.694(3). However, the statute allows the EQB to extend this deadline for cause, and the rule recognizes that possibility. It is impossible to identify in the rule all the reasons for extending a deadline, and the EQB has not even attempted to list any acceptable reasons. It is reasonable to address this question on an ad hoc basis as the situation arises. Of course, if the applicant agrees to the extension, it is reasonable to extend the time. In all cases, the EQB will not unreasonably delay reaching a decision on a permit.

In the past, for projects that were not contested, the EQB has been able to issue a site permit within just a month or two from the date the application was submitted. Under these rules, requiring certain notices to be given and affording time for public comment,

the EQB should be able to make a final decision on an uncontested permit request within three or four months from the day the application is accepted.

**Subpart 3. Determination by board.** This rule sets forth the standard for issuance of a permit. The requirements are taken from the statute setting forth state policy to site LWECS in an orderly manner that is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minnesota Statutes section 116C.693. These criteria are admittedly subjective, but they are the standards established by the Legislature, and in the seven wind permits the EQB has issued to date, application of these criteria has not been a problem. It is reasonable for the EQB to attempt to minimize the environmental impacts of the project, ensure the continued development of the wind resource, and utilize the wind resource in an efficient manner that keeps the costs of wind power as low as possible.

**Subpart 4. Conditions.** The EQB is authorized by statute to include conditions in any wind permit it issues. Minnesota Statutes section 116C.694(d). The EQB has not attempted to establish by rule any conditions that go into all wind permits. Appropriate conditions are determined during the permitting process. The information required to be included with the permit application is intended to allow the EQB to establish appropriate conditions reflecting the specifics of the project.

The seven wind permits that the EQB has issued generally contain the same permit conditions, and it is likely that permits issued in the future will contain identical or similar conditions. The last two wind permits issued by the Board - the Navitas permit and the Chanarambie Power Partners permit – are essentially identical. Nonetheless, the EQB is not attempting in this rulemaking to establish any conditions by rule.

There are a couple of rule requirements in part 4401.0610 that will be included in the permits that are issued, so in a sense these rule requirements are permit conditions. These requirements are discussed below.

**Subpart 5. Term.** The statute does not establish any definitive term for a wind permit. The EQB proposes to adopt by rule a term of 30 years for an LWECS permit. The EQB has included this 30-year term in its existing permits without objection. The 30 years is based on the generally accepted fact that 30 years is about how long a wind turbine is expected to last. However, the rule does provide that the permit can be extended so the EQB has no intention of requiring the removal of turbines that have a useful life. Requiring a renewal after 30 years, however, will afford the EQB an opportunity to take a fresh look at an old project and determine whether there is useful life left.

#### **4401.0610 EFFECT OF PERMIT.**

**Subpart 1. Wind rights.** This rule provides that even if a person obtains a wind permit from the EQB, the permit itself does not convey the right to install any wind turbines if the permittee does not hold the wind rights in the area where the permittee

wants to construct the turbine. Many wind developers are private organizations without the authority of eminent domain that would allow the permittee to condemn land. A wind developer cannot simply march onto private property and begin installing wind turbines.

This issue came to light in May 2001 when both Navitas Energy and Chanarambie Power Partners wanted a wind permit to construct turbines in the same area. Neither one held the wind rights in the area contested. In order to proceed with issuance of a permit to both developers, the EQB included language in their permits that provided that they could not go ahead in the contested area until the wind rights were obtained, and then the developer that failed to get the wind rights was precluded from building in that area. See the Navitas and Chanarambie permits. This seemed like a reasonable solution to the issue, one that allowed the developers to proceed with their projects in other areas, and the EQB has determined to incorporate this approach into the rule.

Several years ago, when the first wind projects were being developed along Buffalo Ridge by Northern States Power Company, NSP solicited bids from wind developers with the condition that NSP would provide the wind rights. Now, the developers are responsible for obtaining their own wind rights

While wind rights are required in order to construct a wind project, the EQB has not necessarily held up the issuance of a permit when a developer is still negotiating for certain wind rights. With the two permits issued in May 2001 to Navitas Energy and Chanarambie Power Partners, the Board included in both permits a particular area for which neither permittee held the wind rights, but provided that only that developer that obtained the wind rights could develop in the area. This was a reasonable solution in May 2001 and may continue to be a reasonable method to deal with situations where a wind developer has not obtained the wind rights. However, a developer with wind rights in a particular area may also apply for a permit and pre-empt another developer with a permit from developing in a particular area.

**Subpart 2. Other LWECS construction.** This subpart is a corollary to subpart 1. While Navitas and Chanarambie sought their permits simultaneously, in the future two wind developers may seek a permit to place turbines in same area at different times. This rule recognizes that just because the first developer obtains a permit for a certain area, that a second developer cannot seek a permit for the same area if the first developer does not hold the wind rights in the area permitted. The EQB believes that this kind of rule will allow developers to continue with their development plans and result in expeditious development of the wind resource in Minnesota.

**Subpart 3. Power purchase contract.** This is another related issue. A wind developer is not going to be able to obtain financing of a proposed project if the developer has nobody to buy the wind power that is to be generated. However, a developer may seek a permit from the EQB while it is negotiating a power purchase agreement or other enforceable mechanism for sale of the power. This provision will allow the EQB to proceed with issuance of the permit even though the details on a power purchase agreement have not been worked out. This was the situation with the Navitas

and Chanarambie permits. In that case, the EQB gave both developers a permit but conditioned the permits on the obtaining of a power purchase agreement or other mechanism for selling the power. If the permittee was not able to finalize a power purchase agreement within a finite time, less than one year in Chanarambie's case and about a year with Navitas, the permit was null and void. Again, this kind of approach allows the EQB to issue the permit and keep the developer moving with its plans, and yet not jeopardize the use of the wind resource by another developer with wind rights or a power purchase agreement.

It was discussed above in section 4401.0600, subpart 4 (Conditions) that the EQB had not attempted to establish conditions in the rule. In effect, however, the requirements in this part 4401.0610 do establish conditions that will be placed in wind permits.

**4401.0620 DELAY IN COSTRUCTION.** Because the Legislature wants to see an efficient and orderly development of the wind resources in this state, the EQB has proposed this condition to require a permittee to begin construction of the project within two years, and if construction has not begun within that timeframe, the permittee must advise the Board of the reason for the delay. The Board may then consider whether to revoke the permit. No permit would be revoked without notice and opportunity to be heard and compliance with all of the permittee's rights.

The EQB has required in its Power Plant Siting rules for years, Minnesota Rules part 4400.4000, that if a large power plant or high voltage transmission line permitted by the Board is not placed under construction within four years, the Board shall suspend the permit and the permittee cannot proceed without a reinstatement of the permit by the Board. This same concept is continued in this rule, although the timeframe is shorter and the suspension or revocation of the permit is not automatic. The reason for the rule is that at least for the larger projects (over 50 megawatts), the Public Utilities Commission will have determined that the project is needed. If the project is needed, the EQB, and perhaps the PUC and other agencies as well, want to know what is holding up construction, and whether another developer or another project should be permitted.

#### **4401.0700 PERMIT AMENDMENT OR REVOCATION.**

**Subpart 1. New boundary.** When a wind permit is issued for a proposed project, the boundaries of the project are specifically defined in the permit. Once the permittee completes its micrositing process and determines the specific locations for the turbines, however, the size of the project may shrink in size. The EQB then redefines the boundaries of the project to be the minimum area required so that the areas not used are available for other projects.

In the past this amendment of the permit to redefine the boundaries has been done by the board. But because it is a rather routine matter, the proposed rule would delegate that authority to the chair. This delegation allows this task to be completed with a minimum of administrative delay. However, the rule does provide that if there is a dispute over the precise boundaries of the project, any person can bring the matter to the full board. This

could be the permittee, who thinks the project area has shrunk too much, or another developer who wants the boundaries even smaller. The EQB has not experienced any complaints over the redefining of the boundaries, but the rule provides a process in case an objection is raised.

**Subpart 2. Permit amendment.** The statute recognizes that the Board may “deny, modify, suspend, or revoke a permit.” Minnesota Statutes section 116C.694(d). This subpart simply repeats that authority.

**Subpart 3. Permit revocation.** This subpart recognizes that the Board may revoke a permit in certain situations and the rule specifies the situations under which the permit may be revoked. The first condition in Item A is when the applicant has knowingly made a false statement as part of the application. Obviously, a permitting agency has the authority to revoke a permit that was obtained falsely, and that is what this provision says.

Item B allows the Board to revoke a permit if the permittee has failed to comply with the terms and conditions of the permit. Again, this is a situation where any permitting agency could choose to revoke a permit. However, violation of a permit condition is not an automatic revocation. The Board has discretion in how to respond to a permit violation. Not every permit violation is of such consequence that revocation or other sanction is appropriate. This will be a case-by-case decision.

Item C allows the Board to revoke a permit if human health or the environment is endangered. Here, too, the Board has discretion and it will be an ad hoc decision.

Item D covers the situation where the permittee has violated other laws that reflect on the ability of the permittee to comply with the permit.

The EQB has never revoked a wind permit, or any other permit, that it has issued. It is unlikely that a permittee will ever engage in the kind of conduct specified here. Nonetheless, it is reasonable to provide in the rules for revocation of a permit if the situation should arise.

**Subpart 4. Procedure.** Because the EQB has discretion whether to revoke a permit even if certain conduct has been engaged in, and because a permittee is entitled to certain due process rights before a permit can be taken away, this subpart establishes that the EQB must afford the permittee the right to notice and opportunity to be heard before a permit can be amended or revoked. The rule also recognizes that the Board may act on its own volition, or any person may bring an alleged misconduct situation to the Board’s attention.

#### **4401.0800 FEES.**

Minnesota Statutes section 116C.695(7) provides that the board shall adopt rules governing “payment of fees for the necessary and reasonable costs of the board in acting



on a permit application and carrying out the requirements of sections 116C.691 to 116C.697. The EQB is not establishing in this rule that applicants must pay fees; that was established by the Legislature in the statute. Instead, this rule only addresses the manner in which the fees are paid.

Minnesota Statutes section 16A.1283 is a new statute that was passed in 1999 that provides that a state agency may not impose a new fee or increase an existing fee without the approval of the Legislature. In this case, the EQB is not imposing a new fee or increasing an existing fee. The fee remains exactly as the Legislature created it in 1995. Therefore, it is not necessary to obtain legislative approval to adopt this subpart of the rules.

**Subpart 1. Fee requirement.** The first sentence of this rule merely recognizes the requirement that a permit applicant must pay a fee. The second sentence attempts to identify some of the necessary and reasonable costs that must be paid in processing a permit application. Obviously, staff time is a significant part of the necessary expenses. In addition, there are costs the EQB must pay to other persons, such as newspapers and postage and travel expenses, that must be covered. Often the EQB must seek legal advice in processing a particular application, and this is certainly true if any litigation should result. There are times when the EQB's permit decisions are challenged in court. In fact, the first LWECS permit the EQB issued, to Northern States Power Company for the Lake Benton Phase I project, was challenged in court.

**Subpart 2. Determination of board budget.** The applicant must pay the necessary and reasonable expenses of the EQB in processing the application. When the permit is applied for, nobody knows exactly how much it will cost to process, so the chair, working with the EQB staff, will prepare an estimate of the expected costs. The estimate will be based on past experiences in processing LWECS applications and on the staff's expectations of what will be involved in processing the pending application. The expenses incurred by the EQB in issuing the last two wind permits issued by the Board – the Navitas and Chanarambie Power Partners permits issued in May 2001 and referenced throughout this document – were approximately \$10,000. This is a reasonable fee and the applicants have not complained about the amount.

If an applicant should disagree with the chair's estimate, the rule allows the applicant to bring the complaint to the attention of the board. The EQB does not expect this to happen, because the staff will be able to make a fairly accurate estimate, and because in the end, the applicant will not be required to pay more than the actual costs. In any event, the rule recognizes that an applicant could ask the board to review the estimated budget.

**Subpart 3. Initial payment.** The EQB will begin incurring costs from the time the application is submitted so it is necessary for the applicant to make a payment to the agency essentially at the same time the application is submitted. The rule recognizes that the EQB will not begin to process the application until the first payment is made. If the applicant is late in making the payment, the EQB's timeframe for completing the permit process will not commence. The EQB's experience has been that applicants will discuss

the budget with the staff before the application is even submitted, so that when the applicant does submit the application, a check for the initial amount can be included.

The rule requires that **the first payment be at least 50% of the total estimated budget.** Because the staff must complete a great deal of work in a relatively short time after the application is accepted, it is reasonable to require one-half of the total payment be made upfront. Also, since the timeframe allowed for the entire process is only 180 days, it is preferable to not spend a lot of time sending invoices out to the applicant for additional payments. Some applicants might simply choose to submit the entire estimated fee upfront with the application and wait until the final accounting to determine the actual expenses.

Minnesota Statutes section 116C.69, subd. 2 and 3, which apply to permitting of power plants and transmission lines, requires that permit fees be deposited in a separate account for the specific project. Section 116C.695 does not include that requirement, but the EQB has always in the past maintained separate accounts for LWECs applications, and it makes sense to continue that practice. Maintaining a separate account helps ensure that only the necessary and reasonable costs attributable to the project are charged to the applicant.

**Subpart 4. Periodic payments.** If the applicant only pays one-half of the estimated budget, or if the estimated budget turns out to be insufficient, the **EQB will send an invoice to the applicant and request additional payments.** The EQB expects the applicant to make the payments before the EQB incurs expenditures beyond what is available in the account, and the EQB usually requests payment within 30 days of receipt of the invoice. It is reasonable to require that the applicant maintain a positive balance in the account to pay EQB expenses as they are incurred.

The rule provides that if the applicant has an outstanding balance due at the time the EQB is prepared to make a final decision on the permit, **the applicant must pay that amount before a final decision is made.** It makes good sense to ensure that the applicant pays what is owed for processing the permit before the final decision is made.

**Subpart 5. Final accounting.** Since the applicant pays only what is necessary and reasonable, a final accounting is required once all the expenses have been incurred. The final accounting will indicate exactly what costs and expenses were paid as part of the application. The EQB's accounting people will prepare the final accounting. If the applicant believes that the figures are unnecessary or unreasonable, the applicant can request that the board review the numbers and make a final decision on the amount due.

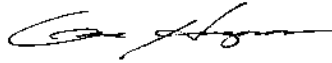
The final accounting cannot occur until the EQB has determined all its expenses in processing the permit application. It is possible that an aggrieved person may challenge the Board's final decision by bringing a lawsuit, so the final accounting cannot occur until the time for judicial review has expired.

It is reasonable to provide only a short period of time for either the applicant to make an additional payment, or the EQB to refund an overpayment, once the final accounting is determined. The rule provides for a thirty-day period for the final payment. Both the applicant and the EQB should be able to make the requisite payment within thirty days of the determination of the amount.

## VI. Conclusion

As explained in this document, the proposed rules will help ensure that the EQB can carry out its legislative mandate to ensure the orderly development of the wind resources in this state while protecting the environment. The permit program established by these rules for Large Wind Energy Conversion Systems should operate in an effective and expeditious fashion to accommodate applicants who seek a prompt resolution of their permit application and the public who seek an opportunity to be informed and to be heard.

DATED: September 20, 2001



GENE HUGOSON  
Chair  
Minnesota Environmental Quality Board

## EXHIBIT LIST

1. 25 State Register 1382 (February 12, 2001) (Notice of Intent to Solicit Outside Opinion)
2. EQB Monitor (March 5, 2001)
3. List of Persons Interested in Rules on Wind Projects
4. List of Wind Permits Issued by the EQB
5. Interim Site Permit Procedures
6. Lake Benton I Permit
7. Navitas Energy, LLC
  - a. Application
  - b. Permit
  - c. Findings of Fact
8. Chanarambie Power Partners, LLC
  - a. Application
  - b. Permit
  - c. Findings of Fact
9. Avian Study
10. Energy Security and Reliability Act of 2001

## **ADDENDUM TO STATEMENT OF NEED AND REASONABLENESS**

At the Environmental Quality Board meeting on September 20, 2001, when the Board approved the Statement of Need and Reasonableness and authorized the Chair to go forward with formal rulemaking on the proposed rules, the Board made one change in the proposed rules as they were presented to the Board. The Board in its authorizing resolution directed the staff to add a short Addendum to the SONAR explaining this one change, and that is the purpose of this Addendum.

The one change the Board made in the proposed rules was to change the word “electricity” in part 4401.0610, subpart 3 to the word “power.” The changed language now reads as follows:

Subp. 3. Power purchase agreement. A site permit does not authorize construction of the project until the permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the power to be generated by the project. If the permittee does not have a power purchase agreement or other enforceable mechanism at the time the permit is issued, the board shall provide in the permit that the permittee shall advise the board when it obtains a commitment for purchase of the power. The board may establish as a condition in the permit a date by which the permittee must obtain a power purchase agreement or other enforceable mechanism or the site permit is null and void.

The reason for the change is to recognize that the energy generated by wind turbines could be in a form other than electricity. For example, the electricity generated by the turbines could be used to produce hydrogen, which could then be stored and sold to a purchaser for use in generating electricity at a later time, or even sold for other purposes. By using a broader term in this subpart, the EQB is recognizing that it may be possible to utilize wind turbines for purposes other than the immediate sale of electricity.

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On September 24, 2001, amendments to the rules of the Office of Administrative Hearings regarding rulemaking became effective. The amendments were published in the State Register on September 17, 2001 (26 State Register 391).

One of the changes made to the rules relates to information in the Statement of Need and Reasonableness. The new rule now requires the SONAR to include the date the statement is made available for public review. Minnesota Rules part 1400.2070, subpart 1.E. This rule change became effective after the EQB Board approved the Statement of Need and Reasonableness in this case but this Addendum is added to provide this information.

The Statement of Need and Reasonableness first became available to the public on September 13, 2001, the day the information for the EQB’s September 20 monthly Board

meeting was mailed to Board members and to persons on the agency's mailing list. The SONAR has been available for the asking since that date. The SONAR was discussed at the Board meeting on September 20, 2001.

# **Attachment C**

**Letter from Public Utilities Commission  
to  
Carol A. Overland  
Rejecting Rulemaking Petition**

**April 2, 2012**

Wind Rulemaking



STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

April 2, 2012

Carol Overland  
1110 West Avenue  
Red Wing, MN 55066

Dear Ms. Overland:

We have reviewed your February 2, 2012 Petition for Rulemaking: Wind Projects 25 MW and above, and request clarification before we are able to proceed with docketing and issuing a request for comment. Minnesota Rules Chapter 7854: Wind Siting was promulgated in 2002. These rules apply to large wind energy conversion systems 5MW and larger in size.

We observe that the Commission's order in MPUC docket M-07-1102 was not a rulemaking, but a statutorily mandated wind siting standards development process for wind projects 5-25MW in size, intended, as stipulated in MS 216F.08, to be applied to county and state permits for wind projects under 25MW in size.

Considering these facts, we would appreciate a restatement of the specific action described in your petition.

Sincerely,

A handwritten signature in cursive script that reads "Burl W. Haar".  
Burl W. Haar  
Executive Secretary

[www.puc.state.mn.us](http://www.puc.state.mn.us)

PHONE (651) 296-7124 • FAX (651) 297-7073 • TDD (651) 297-1200 • 121 7th PLACE EAST • SUITE 350 • SAINT PAUL, MINNESOTA 55101-2147

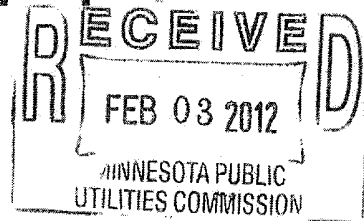
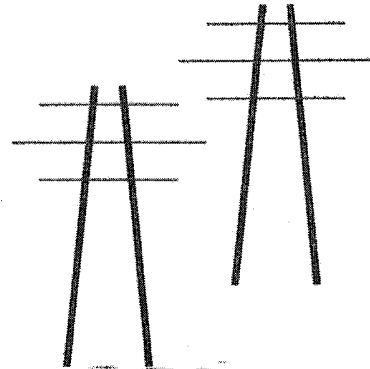


**Legalelectric, Inc.**

**Carol Overland** Attorney at Law, MN #254617  
Energy Consultant—Transmission, Power Plants, Nuclear Waste  
overland@legalelectric.org

1110 West Avenue  
Red Wing, Minnesota 55066  
612.227.8638

P.O. Box 69  
Port Penn, Delaware 19731  
302.834.3466



February 2, 2012

Burl Haar  
Executive Secretary  
Public Utilities Commission  
121 – 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

RE: Petition for Rulemaking – Wind Projects 25 MW and above

Dear Dr. Haar:

Enclosed for filing on behalf of Goodhue Wind Truth, please find Petition for Rulemaking for Wind Projects 25 MW and above. By copy of this letter, I am also serving Attorney General Lori Swanson.

If you have any questions, or require anything further, please let me know.

Very truly yours

A handwritten signature in cursive script that reads "Carol A. Overland".

Carol A. Overland  
Attorney at Law

cc: Bruce & Marie McNamara, Goodhue Wind Truth  
Lori Swanson, Attorney General

# 1400.2500 PETITION FOR RULEMAKING.

## PETITION FOR RULEMAKING TO THE MINNESOTA PUBLIC UTILITIES COMMISSION

Name: Carol A. Overland

Group Represented or Title: Goodhue Wind Truth

Address: c/o Legalectric

1110 West Avenue

Red Wing, MN 55066

I request that the agency named above (check one):

Adopt a new rule governing siting of wind projects/LWECS 25 MW and above

Amend Minnesota Rules, Chapter 7854, incorporating rules for siting of wind projects/LWECS 25MW and above.

1. Explain the need or reason for the rulemaking you request. The agency will consider your reasons in making its decision, so your explanation must be detailed. You can use additional pages.

In Minn. Stat. § 216F.05, the Public Utilities Commission was directed that it **SHALL** adopt rules governing the consideration of an application for a site permit for an LWECS ...” Minn. Stat. §216F.05 (emphasis added).

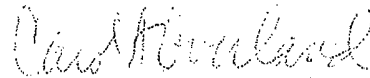
The PUC has adopted rules for wind turbines under 25 MW. See Order, In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102. This applies, as the caption states, to projects less than 25 megawatts.

The Commission has not adopted any rules for siting of wind projects 25 MW or greater.

2. For a new rule, state the proposed new language of the rule. For rule amendments, repeat the text of the rule, striking through deletions and underlining new language. If you cannot provide new rule language, then write a detailed description of the rule that you are requesting. You can use additional pages.

This will require a full public process, likely a contested case. Specific language that I'd recommend as a starting place for discussion can be found in Section 18, Goodhue County Ordinance, attached.

You must file this petition with the executive director or head of the agency in person or by United States mail. The agency must reply in writing to your petition within 60 days after receiving it.



January 31, 2012

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Carol A. Overland #254617  
Attorney for Goodhue Wind Truth  
OVERLAND LAW OFFICE  
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Red Wing, MN 55066  
(612) 227-8638  
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# **Attachment D**

## **Order Establishing General Wind Permit Standards**

**January 11, 2008**

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

LeRoy Koppendraye  
David C. Boyd  
Thomas Pugh  
Phyllis A. Reha

Chair  
Commissioner  
Commissioner  
Commissioner

In the Matter of Establishment of General  
Permit Standards for the Siting of Wind  
Generation Projects Less than 25 Megawatts

ISSUE DATE: January 11, 2008

DOCKET NO. E,G-999/M-07-1102

ORDER ESTABLISHING GENERAL WIND  
PERMIT STANDARDS

**LEGISLATIVE HISTORY**

In 1995, the Minnesota Legislature enacted the Minnesota Wind Siting Act<sup>1</sup> which established jurisdictional thresholds and procedures to implement the state's authority to issue site permits for large wind energy conversion systems (LWECS). Permanent rules to implement the Wind Siting Act were adopted by the Minnesota Environmental Quality Board (EQB) in February 2002.<sup>2</sup>

In 2005, the Legislature transferred the site permitting authority for LWECS (with a combined nameplate capacity of 5 megawatts or more), to the Minnesota Public Utilities Commission. Site permits for wind facilities with a combined nameplate capacity of less than 5 megawatts (small wind energy conversion systems, or SWECS) are permitted by local units of government.

Amendments to the Wind Siting Act were enacted during the 2007 legislative session. The amendments:

- establish definitions and procedures requiring the commissioner of the Department of Commerce to make LWECS project size determinations for permit applications submitted by counties, and set forth that an application to a county for a LWECS permit is not complete without a project size determination from the commissioner;
- provide the option for counties to assume the responsibility for processing applications for permits required by the Wind Siting Act for LWECS facilities less than 25 MW in total nameplate capacity commencing January 15, 2008;

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<sup>1</sup> Minnesota Statutes Chapter 216F.

<sup>2</sup> Minnesota Rules Chapter 7836.

- provide that the Commission shall establish general permit standards by January 15, 2008; and
- allow the Commission and counties to grant variances to the general permit standards and allows counties to adopt ordinance standards more restrictive than the Commission's general permit standards.

### **PROCEDURAL HISTORY**

At its August 23, 2007 meeting, the Commission requested that the Department of Commerce's Energy Facility Permitting staff consult with stakeholders and prepare for the Commission's consideration general permit standards and setback recommendations to satisfy the legislative mandate.

On September 28, 2007, the Energy Facility Permitting staff issued a notice of comment period to all Minnesota county planning and zoning administrators, to the Power Plant Siting Act general mailing list and to persons on recent wind project mailing lists. The Energy Facility Permitting staff also made presentations about this proceeding to pertinent associations in St. Cloud, Winona, Fergus Falls, and Pope County.

The Commission received some 26 written comment letters during the comment period. Comments were submitted by:

- Wadena County
- Southwest Regional Development Commission
- Lyon County Board of Commissioners
- Dakota County
- Lyon County Public Works
- Minnesota Department of Natural Resources
- PPM Energy
- The Minnesota Project
- Community-based energy development (C-BED) project participants and supporters<sup>3</sup>

On December 20, 2007, the Commission met to consider the matter. Michael Reese and Steve Wagner, representing Pope and Stevens County C-BED projects, appeared and made comments.

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<sup>3</sup> Seventeen persons who identified themselves as participants and advocates for C-BED projects submitted an identical form letter regarding setback issues, the wind access buffer, elimination of wind right requirements for small acreages, and capping costs of required permit studies.

## FINDINGS AND CONCLUSIONS

### **I. The Comment Process**

Through written or oral comments, most stakeholders indicated general agreement that the state wind site permitting process, standards and setbacks provide public safety protections, protect the wind rights of landowners and require permittees to conduct due diligence to avoid unforeseen impacts, which has resulted in orderly wind development.

Several of the comments recommended that the general wind permitting standards and setbacks should require that wind projects permitted by Minnesota counties be subject to the same level of pre-construction studies, due diligence, and wind access buffer setbacks as LWECS projects. Other comments focused on specific areas of concern and requested that the Commission modify certain existing LWECS permit setbacks or conditions for the general permit standard.

Some persons making comments suggested changes to some of the Commission's established standards and setbacks, which will be discussed below.

### **II. Commission Action**

After careful consideration, the Commission herein adopts the attached "General Wind Turbine Permit Setbacks and Standards for LWECS Facilities Permitted by Counties Pursuant to Minnesota Statute 216F.08." Exhibit A. These standards and setbacks maintain most of the Commission's established LWECS permit standards and setbacks which have been in effect for the last twelve years, with the relatively minor changes set forth below.

#### **A. Wetland Setbacks**

The Minnesota Department of Natural Resources (DNR) initially recommended that the Commission establish a 1000 foot turbine setback from all wetlands, streams, rivers and lakes listed in the state Public Waters Inventory and those listed on the National Wetlands Inventory.<sup>4</sup> The DNR submitted a letter on December 7 which supported deferring action on the wetland setback issue to provide time to further explore the issue.

The DNR's proposal with respect to wetlands would encompass a large and significant change from the Commission's existing standards, which prohibit placement of wind turbines in wetlands, but require no setbacks from wetlands. Were the Commission to adopt this proposal, it would exclude significant amounts of land from future wind development. As the DNR has agreed to defer the issue pending further factual development, the Commission will retain its current practice of prohibiting placement of wind turbines in wetlands, but requiring no setback from them, as an interim standard.

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<sup>4</sup> The DNR's proposed wetland setback would not apply to Minnesota Wetlands Conservation Act "exempt" or "farmed" wetlands.

Having determined that the Commission cannot act on the DNR's recommendation unless and until there is further record development of this issue, the Commission will request the Energy Facility Permitting staff to investigate wetland setback issues with stakeholders and develop recommendations for future Commission consideration.

## **B. Wind Access Buffer Setback**

Seventeen C-BED participants and advocates filed comments on setback issues.<sup>5</sup> They asserted that the wind access buffer setback historically applied by the Commission<sup>6</sup> to protect the wind rights of landowners adjacent to, but not participating in, the permitted project is overly conservative and does not economically or efficiently utilize state wind resources. The C-BED advocates requested a reduction of the wind access buffer to a distance of two rotor diameters on the cross wind axis and four rotor diameters on the predominant axis.

The DNR requested that the Commission require the same three rotor diameter by five rotor diameter wind access buffer setback to publicly owned conservation lands, such as state wildlife management areas.

Another commentor, PPM Energy, supported the current wind access buffer setbacks, considering the prevailing wind directions in Minnesota and the wake effects, or turbulence, between wind turbines.

The Energy Facility Permitting staff informed the Commission that their own experience, as well as information from experts and practitioners in the field of wind turbine siting, has consistently affirmed that wind turbines be spaced at least four rotor diameters and up to twelve rotor diameters apart on the predominant wind axis to minimize the effects of wind turbine induced turbulence downwind.

Therefore, the Commission will maintain its current setbacks of three rotor diameters on the secondary wind axis and five rotor diameters on the predominant axis. This buffer setback has been shown to protect wind rights and future development options of adjacent rights owners. At the request of the DNR, the Commission will also apply this same setback to public lands.

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<sup>5</sup> The wind access buffer setback is an external setback from lands and wind rights outside of an applicant's site control, to protect the wind and property rights of persons outside the permitted project boundary and persons within the project boundary who are not participating in the project.

<sup>6</sup> The Commission has historically imposed a wind access buffer of three rotor diameters on the crosswind or secondary axis (typically east-west) and five rotor diameters on the predominant or downwind axis (typically north-south).



### **1. Setbacks from Small Parcels**

C-BED participants requested that the Commission eliminate the wind access buffer setback from non-participating property owners with land parcels less than fifteen acres in size.

The Commission declines to do so. Historically, the wind projects for which Commission review and permits have been granted have been composed of dozens of individual parcels of land and wind rights, totaling thousands of acres of land for each LWECS project. For these many years, permittees have been able to develop projects while applying the wind access setbacks from small, non-participating landowners. After consideration, the Commission finds no rationale in statute or rule to treat one person's wind rights differently from another's.

### **2. Internal Turbine Spacing**

C-BED advocates also requested that the Commission not regulate turbine spacing within an LWECS facility, nor require wake analyses prior to construction, claiming that these provide only a snapshot of expected performance at a facility.

The Commission declines to implement this request. The purpose of the internal turbine spacing setback and requirement that wake loss studies be submitted is to ensure that LWECS projects permitted by the Commission are designed and sited in a manner that ensures efficient use of the wind resources, long term energy production, and reliability.<sup>7</sup>

Maintaining the Commission's three rotor by five rotor dimension internal turbine spacing setback and requirement to submit wind wake loss studies is a reasonable means by which to accomplish these goals.

### **3. Setbacks from Roads and Recreational Trails**

The DNR and Dakota County suggested increasing setbacks from public road rights-of-way to total turbine height; the DNR proposed applying the same setback from state trails and other recreational trails.<sup>8</sup>

As amended, Minn. Stat. § 216F.081 allows counties to adopt more restrictive public road setback ordinances than the Commission's general permit standards. The amended statute also directs the Commission to take those more restrictive standards into consideration when permitting LWECS

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<sup>7</sup> See Minn. Stat. § 216F.03 and Minn. Rules Part 7836.0200.

<sup>8</sup> Dakota County also proposed establishing new, unspecified setbacks where high volume roads are present or to accommodate planned transportation expansion projects. The Commission's general permit standards ensure that LWECS are sited in a manner which will not interfere with future urban developments, including taking into consideration local comprehensive plans when reviewing LWECS site permits.

within such counties. Finally, the Commission or a county may require larger road setbacks on a case-by-case basis in situations where a greater setback is justified.

Here, maintaining the existing minimum 250 foot turbine setback from the edge of public road rights-of-ways continues to be reasonable. The purpose of the setback is to prevent ice from shedding off wind turbines onto public roads. No reports of ice shed from turbines being deposited onto public roads has come to the attention of state regulators, despite inquiries made to wind developers, maintenance technicians, and local government officials about the subject.

The Commission will therefore adopt a case-by-case approach to handling issues of this type where necessary and in the public interest. The Commission will adopt this same case-by-case approach to address setbacks from high volume roads that may be widened in future transportation expansion projects.

The Commission also concludes that setbacks should be developed and applied to state trails on a case-by-case basis. State trails, which are generally multi-use recreational trails, traverse a wide variety of terrains and landscapes across the state. Setbacks are primarily to enhance the aesthetic enjoyment of the trail user; however, the needs and desires of the owner of the property through which the trail runs must also be considered.

A case-by-case analysis is best suited in recognition of many types of permanent and temporary recreational trails situated across the state.

### **C. Miscellaneous Issues**

Finally, comments and recommendations were offered on a variety of matters as set forth below. After review, the Commission finds that no changes to the Wind Siting Rules or General Permit Standards are necessary to address these issues.

Comments and recommendations were made concerning decommissioning and facility retrofit, urging review of permits if a permittee seeks to retrofit or otherwise modify the permitted facility. The Wind Siting Rules and Commission-issued LWECs permits have always required decommissioning plans nearly identical to the language recommended by the commentor. The Commission or counties have the ability to reassess and/or amend requirements for decommissioning plans as needed throughout the life of the LWECs facility permitted. Also, a facility retrofit or expansion would require Commission siting process review and site permit action, in accordance with Minn. Rules, Chapter 7836. These comments support the need to retain such requirements in the general wind permit standards.

The Southwest Regional Development Council offered comments on transportation issues related to transporting wind project equipment to the site, bridge and weight restrictions, local road permits required and construction related road damages. Issues such as these will continue to be handled by the governmental bodies controlling each road right-of-way, as set forth in Commission wind permit conditions. These comments support the need to retain such requirements in the general wind permit standards.

The Southwest Regional Development Council requested clarification on determination of project size. Minn. Stat. § 216F.011 provides a process and standards for the Commission and the Department of Commerce to use in making LWECS size determinations. Training materials and sessions will also be provided by the Department of Commerce Energy Facility Permitting staff.

Finally, the C-BED participants requested that permit costs for the site permit and any additional studies be capped at \$1000.00. Costs associated with site permit processing by the Commission are governed by Minn. Rule, part 7836.1500, which establishes that permit applicants shall pay the actual costs in processing an application.

### ORDER

1. The Commission herein adopts the Large Wind Energy Conversion System General Wind Turbine Permit Setbacks and Standards proposed by the Department of Commerce Energy Facility Permitting staff, attached as Exhibit A. The general permit standards shall apply to large wind energy conversion system site permits issued by counties pursuant to Minn. Stat. 216F.08 and to permits issued by the Commission for LWECS with a combined nameplate capacity of less than 25,000 watts.
2. The Commission requests that the Department of Commerce Energy Facility Permitting staff further investigate wetland setback issues with stakeholders and develop recommendations for Commission consideration.
3. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION



Burl W. Haar  
Executive Secretary



(SEAL)

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**Exhibit A**

**Minnesota Public Utilities Commission**

**General Wind Turbine Permit Setbacks and Standards for Large Wind Energy Conversion System (LWECS) Permitted Pursuant to Minnesota Statute 216F.08**

<b>Resource Category</b>	<b>General Permit Setback</b>	<b>Minimum Setback</b>
<b>Wind Access Buffer (setback from lands and/or wind rights not under permittee's control)</b>	Wind turbine towers shall not be placed less than 5 rotor diameters (RD) from all boundaries of developer's site control area (wind and land rights) on the predominant wind axis (typically north-south axis) and 3 rotor diameters (RD) on the secondary wind axis (typically east-west axis), without the approval of the permitting authority. This setback applies to all parcels for which the permittee does not control land and wind rights, including all public lands.	3 RD (760 – 985 ft) on east-west axis and 5 RD (1280 – 1640 ft) on north-south using turbines with 78 – 100 meter rotor diameters.
<b>Internal Turbine Spacing</b>	The turbine towers shall be spaced no closer than 3 rotor diameters (RD) for crosswind spacing (distance between towers) and 5 RD downwind spacing (distance between strings of towers). If required during final micro siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the permittee shall minimize the need to site the turbine towers closer.	5 rotor diameters downwind spacing 3 rotor diameters apart for crosswind spacing
<b>Noise Standard</b>	Project must meet Minnesota Noise Standards, Minnesota Rules Chapter 7030, at all residential receivers (homes). Residential noise standard NAC 1, L50 50 dBA during overnight hours. Setback distance calculated based on site layout and turbine for each residential receiver.	Typically 750 – 1500 ft is required to meet noise standards depending on turbine model, layout, site specific conditions.
<b>Homes</b>	At least 500 ft <u>and</u> sufficient distance to meet state noise standard.	500 feet + distance required to meet state noise standard.
<b>Public Roads and Recreational Trails</b>	The turbine towers shall be placed no closer than 250 feet from the edge of public road rights-of-way. Setbacks from state trails and other recreational trails shall be considered on a case-by-case basis.	Minimum 250 ft
<b>Meteorological Towers</b>	Meteorological towers shall be placed no closer than 250 foot from the edge of road rights-of-way and from the boundaries of developer's site control (wind and land rights). Setbacks from state trails and other recreational trails shall be considered on a case-by-case basis.	Minimum 250 ft
<b>Wetlands</b>	No turbines, towers or associated facilities shall be located in public waters wetlands. However, electric collector and feeder lines may cross or be placed in public waters or public water wetlands subject to DNR, FWS and/or USACOE permits.	No setback required pending further PUC action.

<b>Native Prairie</b>	Turbines and associated facilities shall not be placed in native prairie unless approved in native prairie protection plan (see native prairie standard below). Native prairie protection plan shall be submitted if native prairie is present.	No setback required.
<b>Sand and Gravel Operations</b>	No turbines, towers or associated facilities in active sand and gravel operations, unless negotiated with the landowner.	
<b>Aviation (public and private airports)</b>	No turbines, towers or associated facilities shall be located so as to create an obstruction to navigable airspace of public and private airports in Minnesota or adjacent states and/or providences.	Setbacks or other limitations determined in accordance with MNDOT Department of Aviation and Federal Aviation Administration requirements.

### **Additional General Permit Standards**

#### **Pre-Application Project Size Determination.**

Pursuant to Minnesota Statute 216F.011, applications to a county for a LWECS permit are not complete without a project size determination provided by the Commissioner of the Minnesota Department of Commerce. Requests for size determination shall be submitted on forms provided by the Department of Commerce. Upon written request of a project developer and receipt of any supplemental information requested by the commissioner, the commissioner of commerce shall provide a written size determination within 30 days. In the case of a dispute, the chair of the Public Utilities Commission shall make the final size determination.

Pursuant to Minnesota Statute 216F.011, the total size of a combination of wind energy conversion systems for the purpose of determining what jurisdiction has siting authority must be determined according to the criteria below:

The nameplate capacity of one wind energy conversion system must be combined with the nameplate capacity of any other wind energy conversion system that:

- (1) is located within five miles of the wind energy conversion system;
- (2) is constructed within the same 12-month period as the wind energy conversion system; and
- (3) exhibits characteristics of being a single development, including, but not limited to, ownership structure, an umbrella sales arrangement, shared interconnection, revenue sharing arrangements, and common debt or equity financing.

**Wind Turbines Design Standards.** All turbines shall be commercially available, utility scale, not prototype turbines. Turbines shall be installed on tubular, monopole design towers, and have a uniform white/off white color. All turbine towers shall be marked with a visible identification number.

**Underground and Overhead Electric Collection and Feeder Lines.** The permittee shall place electrical lines, known as collectors, communication cables, and associated electrical equipment such as junction boxes underground when located on private property. Collectors and cables shall also be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner. This paragraph does not apply to feeder lines.

The permittee shall place overhead or underground 34.5 kV electric lines, known as feeders within public rights-of-way or on private land immediately adjacent to public rights-of-way if a public right-of-way exists, except as necessary to avoid or minimize human, agricultural, or environmental impacts. Feeder lines may be placed on public rights-of-way only if approval or the required permits have been obtained from the governmental unit responsible for the affected right-of-way. In all cases, the permittee shall avoid placement of feeder lines in locations that may interfere with agricultural operations. Notwithstanding any of the requirements to conduct surveys before any construction can commence, the permittee may begin immediately upon issuance of a LWECS site permit to construct the 34.5 kV feeder lines that will be required as part of the project.

Any guy wires on the structures for feeder lines shall be marked with safety shields.

**Topsoil and Compaction.** The permittee must protect and segregate topsoil from subsoil on all lands unless otherwise negotiated with affected landowner. Must minimize soil compaction of all lands during all phases and confine soil compaction to as small area as possible.

**Fences.** The permittee shall promptly repair or replace all fences and gates removed or damaged during project life and provide continuity of electric fence circuits.

**Drainage Tile.** The permittee shall take into account, avoid, promptly repair or replace all drainage tiles broken or damaged during all phases of project life unless otherwise negotiated with affected landowner.

**Equipment Storage.** The permittee shall negotiate with landowners to locate sites for temporary equipment staging areas.

**Public Roads.** The permittee shall identify all state, county or township roads that will be used for the LWECS Project and shall notify the permitting authority (PUC or county) and the state, county or township governing body having jurisdiction over the roads to determine if the governmental

body needs to inspect the roads or issue any road permits prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the LWECS. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles and all other heavy components to and from the turbine sites.

Prior to construction, the permittee shall make satisfactory arrangements (including obtaining permits) for road use, access road intersections, maintenance and repair of damages with governmental jurisdiction with authority over each road. The permittee shall notify the permitting authority (PUC or county) of such arrangements upon request.

**Turbine Access Roads.** The permittee shall construct the smallest number of turbine access roads it can. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. When access roads are constructed across streams and drainage ways, the access roads shall be designed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed.

**Private Roads.** The permittee shall promptly repair private roads, driveways or lanes damaged unless otherwise negotiated with landowner.

**Soil Erosion and Sediment Control.** Prior to commencing construction, the Permittee shall submit its National Pollution Discharge Elimination System (NPDES) construction permit issued by the Minnesota Pollution Control Agency (MPCA) to the permitting authority (PUC or county).

**Cleanup.** The permittee shall remove all waste and scrap that is the product of construction, operation, restoration and maintenance from the site and properly dispose of it upon completion of each task. Personal litter, bottles, and paper deposited by site personnel shall be removed on a daily basis.

**Tree Removal.** The permittee shall minimize the removal of trees and shall not remove groves of trees or shelter belts without the approval of the affected landowner.

**Site Restoration.** The permittee shall, as soon as practical following construction of each turbine, considering the weather and preferences of the landowner, restore the area affected by any LWECS activities to the condition that existed immediately before construction began, to the extent possible. The time period may be no longer than eight months after completion of construction of the turbine, unless otherwise negotiated with the landowner. Restoration shall be compatible with the safe operation, maintenance, and inspection of the LWECS.

**Hazardous Waste.** The permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of hazardous wastes generated during any phase of the project's life.

**Application of Herbicides.** Restrict use to those herbicides and methods approved by the Minnesota Department of Agriculture. The permittee must contact landowner prior to application.

**Public Safety.** The permittee shall provide educational materials to landowners within the site boundaries and, upon request, to interested persons, about the Project and any restrictions or dangers associated with the LWECS Project. The permittee shall also provide any necessary safety measures, such as warning signs and gates for traffic control or to restrict public access to turbine access roads, substations and wind turbines.

**Fire Protection.** Prior to construction, the permittee shall prepare a fire protection and medical emergency plan in consultation with the fire department having jurisdiction over the area prior to LWECS construction. The permittee shall register the LWECS in the local government's emergency 911 system.

**Native Prairie.** Native prairie plan must be submitted if native prairie is present and will be impacted by the project. The permittee shall, with the advice of the DNR and any others selected by the permittee, prepare a prairie protection and management plan and submit it to the county and DNR Commissioner 60 days prior to the start of construction. The plan shall address steps to be taken to identify native prairie within the Project area, measures to avoid impacts to native prairie, and measures to mitigate for impacts if unavoidable. Wind turbines and all associated facilities, including foundations, access roads, underground cable and transformers, shall not be placed in native prairie unless addressed in the prairie protection and management plan. Unavoidable impacts to native prairie shall be mitigated by restoration or management of other native prairie areas that are in degraded condition, or by conveyance of conservation easements, or by other means agreed to by the permittee, DNR and PUC or county.

**Electromagnetic Interference.** Prior to beginning construction, the permittee shall submit a plan for conducting an assessment of television signal reception and microwave signal patterns in the Project area prior to commencement of construction of the Project. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television reception or microwave patterns in the event residents should complain about such disruption or interference after the turbines are placed in operation. The assessment shall be completed prior to operation of the turbines. The permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.



The permittee shall not operate the LWECs and associated facilities so as to cause microwave, television, radio, telecommunications or navigation interference contrary to Federal Communications Commission (FCC) regulations or other law. In the event the LWECs and its associated facilities or its operations cause such interference, the permittee shall take timely measures necessary to correct the problem.

**Turbine Lighting.** Towers shall be marked as required by the Federal Aviation Administration (FAA). There shall be no lights on the towers other than what is required by the FAA.

**Pre-Construction Biological Preservation Survey:** The permittee, in consultation with DNR and other interested parties, shall request a DNR Natural Heritage Information Service Database search for the project site, conduct a pre-construction inventory of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the site and assess the presence of state- or federally-listed or threatened species. The results of the survey shall be submitted to the permitting authority (PUC or county) and DNR prior to the commencement of construction.

**Archeological Resource Survey and Consultation:** The permittee shall work with the State Historic Preservation Office (SHPO) at the Minnesota Historical Society and the State Archaeologist as early as possible in the planning process to determine whether an archaeological survey is recommended for any part of the proposed Project. The permittee will contract with a qualified archaeologist to complete such surveys, and will submit the results to the permitting authority (PUC or county), the SHPO and the State Archaeologist. The SHPO and the State Archaeologist will make recommendations for the treatment of any significant archaeological sites which are identified. Any issues in the implementation of these recommendations will be resolved by permitting authority (PUC or county) in consultation with SHPO and the State Archaeologist. In addition, the permittee shall mark and preserve any previously unrecorded archaeological sites that are found during construction and shall promptly notify the SHPO, the State Archaeologist, and the permitting authority (PUC or county) of such discovery. The permittee shall not excavate at such locations until so authorized by the permitting authority (PUC or county) in consultation with the SHPO and the State Archaeologist.

If human remains are encountered during construction, the permittee shall immediately halt construction at that location and promptly notify local law enforcement authorities and the State Archaeologist. Construction at the human remains location shall not proceed until authorized by local law enforcement authorities or the State Archaeologist.

If any federal funding, permit or license is involved or required, the permittee shall notify the MHS as soon as possible in the planning process to coordinate section 106 (36 C.F.R 800) review.

Prior to construction, construction workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If any archaeological sites are found during construction, the permittee shall immediately stop work at the site and shall mark and preserve the site and notify the permitting authority (PUC or county) and the MHS about the discovery. The permitting authority (PUC or county) and the MHS shall have three working days from the time the agency is notified to conduct an inspection of the site if either agency shall choose to do so. On the fourth day after notification, the permittee may begin work on the site unless the MHS has directed that work shall cease. In such event, work shall not continue until the MHS determines that construction can proceed.

**Project Energy Production:** The permittee shall, by July 15 of each year, report to the PUC on the monthly energy production of the Project and the average monthly wind speed collected at one permanent meteorological tower selected by the PUC during the preceding year or partial year of operation.

**Site Plan:** Prior to commencing construction, the permittee shall submit to the permitting authority (PUC or county) a site plan for all turbines, roads, electrical equipment, collector and feeder lines and other associated facilities to be constructed and engineering drawings for site preparation, construction of the facilities, and a plan for restoration of the site due to construction. The permittee may submit a site plan and engineering drawings for only a portion of the LWECS if the permittee is prepared to commence construction on certain parts of the Project before completing the site plan and engineering drawings for other parts of the LWECS. The permittee shall have the right to move or relocate turbine sites due to the discovery of environmental conditions during construction, not previously identified, which by law or pursuant to this Permit would prevent such use. The permittee shall notify the permitting authority (PUC or county) of any turbines that are to be relocated before the turbine is constructed on the new site.

**Pre-construction Meeting:** Prior to the start of any construction, the permittee shall conduct a preconstruction meeting with the person designated by the permitting authority (PUC or county) to coordinate field monitoring of construction activities.

**Extraordinary Events:** Within 24 hours of an occurrence, the permittee shall notify the permitting authority (PUC or county) of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, collector or feeder line failure, injured LWECS worker or private person, kills of migratory, threatened or endangered species, or discovery of a large number of dead birds or bats of any variety on site. In the event of extraordinary avian mortality the DNR shall also be notified within 24 hours. The permittee shall, within 30 days of the occurrence, submit a report to the permitting authority (PUC or county) describing the cause of the occurrence and the steps taken to avoid future occurrences.

**Complaints:** Prior to the start of construction, the permittee shall submit to the permitting authority (PUC or county) the company's procedures to be used to receive and respond to complaints. The permittee shall report to the permitting authority (PUC or county) all complaints received concerning any part of the LWECS in accordance with the procedures provided in permit.

**As-Built Plans and Specifications:** Within 60 days after completion of construction, the permittee shall submit to the county and PUC a copy of the as-built plans and specifications. The permittee must also submit this data in a geographic information system (GIS) format for use in a statewide wind turbine database.

**Decommissioning Plan.** As part of its permit application, the permittee must submit a decommissioning plan describing the manner the permittee plans on meeting requirements of Minnesota Rule 7836.0500, subpart 13.

**Special Conditions:** Pursuant to Minnesota Statute 216F.04 and Minnesota Rule 7836.1000, the permitting authority (PUC or county) may adopt special permit conditions to LWECS site permits to address specific issues on a case-by-case basis.

# **Attachment E**

## **GOODHUE WIND TRUTH**

### **AMICUS BRIEF OF INTERVENOR**

**In the Matter of the Application of  
AWA Goodhue Wind, LLC for a Large Wind Energy  
Conversion System Site Permit for the  
78 MW Goodhue Wind Project in Goodhue County**

**State of Minnesota – Court of Appeals**

**February 6, 2012**

See **Summary of Argument** (p. 9)

See also **II. THE STATE HAS NOT ADOPTED SITING STANDARDS FOR  
WIND PROJECTS GREATER THAN 25 MW**, p. 15-20.

No. A11-2229

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**STATE OF MINNESOTA  
IN COURT OF APPEALS**

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**In the Matter of the Application of  
AWA Goodhue Wind, LLC for a Large Wind Energy  
Conversion System Site Permit for the  
78 MW Goodhue Wind Project in Goodhue County**

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**BRIEF AND ADDENDUM OF  
INTERVENOR/AMICUS GOODHUE WIND TRUTH**

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## STATEMENT OF THE ISSUES ON APPEAL

- 1. Did the Commission have good cause not to apply the Goodhue County Ordinance when it based its decision as “whether applying the County’s standards to this Project is necessary and whether less stringent standards are sufficient to effectively address the concerns raised.” Minn. Stat. §216F.081.**

**Issue raised:** The issue before the Commission is whether there is good cause not to apply the Goodhue County Ordinance. Minn. Stat. §216F.081.

**Statement of Commission ruling:** *The Commission adopted the ALJ Report finding good cause not to apply the Goodhue County Ordinance regarding Setbacks from Property Lines; Setbacks from Neighboring Dwellings; Setbacks for Other Rights of Way; Setbacks for Public Conservation Lands; Setbacks for Wetlands; Setbacks for Other Structures; Discontinuation and Decommissioning; Stray Voltage Testing; Electromagnetic Interference. CSS<sup>1</sup> Add. 0003, Order Granting Site Permit, p. 7, August 23, 2011, adopting ALJ Report; see GWT<sup>2</sup> App. 001, GWT ALJ Report, “Good Cause” Findings 55; 102; 113; 118; 133; 144; 155; 176.*

**How preserved for appeal:** This issue was raised by all parties before the Administrative Law Judge, in a contested case, where the task was to build a factual record regarding good cause. CSS Add. 0003, Order, p. 3, August 23, 2011. Good cause is not defined in the statute and it is an issue of statutory interpretation. This issue was raised in briefs and Motions for Reconsideration by Goodhue Wind Truth and other parties. GWT App, Goodhue Wind Truth Motion for Reconsideration. GWT argued the Order misrepresents the issue before the Commission as “whether applying the County’s standards to this Project is necessary and whether less stringent standards are sufficient to effectively address the concerns raised.” CSS Add. 0003, Order, p. 7, August 23, 2011.

**Apposite Authority:**

- Minn. Stat. §216F.081. GWT Add. 001.
- State by Beaulieu v. RSJ, Inc., 552 N.W. 2d 695, 701 (Minn. 1996).
- Mohler v. City of St. Louis Park, 643 N.W. 2d 623 (Minn. Ct. App. 2002).
- Clear Channel Outdoor Advertising, Inc. v. City of St. Paul, 675 N.W. 2d 343, 348 (Minn. Ct. App. 2004).

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<sup>1</sup> CSS Add. and CSS App. reference the Coalition for Sensible Siting Addendum and/or Application, to avoid duplication of primary documents.

<sup>2</sup> GWT Add. and GWT App. reference Goodhue Wind Truth Addendum and/or Application, attached.

**2. Was the Commission’s Siting Order an error of law when it based its decision on a claim of general permit standards for wind projects greater than 25MW (megawatts) when there are none.**

**Issue Raised:** This issue was raised repeatedly by Goodhue Wind Truth and other parties throughout the contested case proceeding, in briefs, and in multiple Motions for Reconsideration, that the Commission erred in its reliance on claimed standards for wind projects less than 25 MW when, despite a legislative mandate, it has not promulgated standards for wind projects 25 MW or greater, and erred in shifting the issue to “whether applying the County’s standards to this project is necessary and whether less stringent standards are sufficient to effectively address the concerns raised.” CSS Add. 0003, Order, p. 7, August 23, 2011.

**Statement of Commission Ruling:** *The Commission rejected the claim that it must apply the County’s standards because it lacks standards of its own, and repeatedly cited the Order from “In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts” as support for its decision.*

**Apposite Authority:**

- Minn. Stat. §216F.05. GWT Add. 002.
- Public Utilities Commission, Order, Docket E,G-999/M-07-1022, January 11, 2008. GWT App. 065; see also Order Issuing Site Permit as Amended, August 23, 2001 (citing “General Permit Standards” on See Order, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36), CSS Add. 0026.

**STATEMENT OF THE CASE**

This is an appeal of a Minnesota Public Utilities Commission action, a state agency action, that followed an OAH Public Hearing incorporating both Certificate of Need and Siting dockets (OAH Docket 8-2500-21395-2), and an OAH contested case hearing (OAH Docket 15-2500-19350-2) on narrowly specified issues, under the Minnesota Administrative Procedures Act, Minn. Stat. Ch. 14. The specific statutes at issue are Minn. Stat. §216F.081, regarding county standards, the legislature’s mandate in

Minn. Stat. §216F.05 that wind siting rules be adopted, and the siting of wind projects under Minn. Stat. Ch. 216F.

This brief will address whether the Commission made an error of law in its determination that there was “good cause” not to apply the Goodhue County Article 18 Wind Ordinance, as required by Minn. Stat. §216F.081, an issue of first impression. While the statute provides “good cause” as the standard to determine whether to apply a county’s siting standards, the Commission instead utilized “necessary” as a criteria. This use of “necessary” does not equate to “good cause,” the standard required by Minn. Stat. §216F.081. This is an error of law. Where this is relied on in the Order as rationale for finding “good cause,” the Order is invalid.

Also at issue in this case is whether the Commission correctly represented the issue before it, whether there are wind siting standards for projects greater than 25MW. The Commission’s Order is flawed because it relies in large part for support on its repeated legal error in stating that the Commission has established standards for siting of Large Wind Energy Conversion Systems<sup>3</sup>. The Commission has not established standards, and there is no basis for Commission and Commerce claims that there are standards for wind siting of projects greater than 25MW – such standards do not exist. The Commission, in error, relied on, cited and misrepresented its *Order Establishing General Permit Standards for the Siting of Wind Generation Projects less than 25MW* non-existent

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<sup>3</sup> The Commission’s Order repeatedly mis-cites the Commission’s January 11, 2008 Order in Docket E,G-999/M-07-1102, Ex. 21 in this docket, as “Order, In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102” as “Order Establishing General Wind Permit Standards.” See Order, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36.

standards as siting standards for projects over 25MW, as support for the Commission's Order for the AWA Goodhue Wind Project. This is an error of law.

### **STATEMENT OF FACTS**

AWA Goodhue initially filed this project siting application in October, 2008 (Record 1-3), notified the Commission of its intent to file an Amended Application in December, 2008 (Record 4-5). In July, 2009, the Commission opened an Investigation "to determine if current permit conditions on setbacks remain appropriate and reasonable. PUC Notice of "Health Impacts of Wind Turbines" docket, GWT App. D 81. AWA Goodhue then filed an Amended application in October, 2009. Record 6-9. The Application was accepted by the Commission as complete in December, 2009. Record 82. In February, 2010, Goodhue Wind Truth filed its first Petition for Intervention and Contested Case (Record, 90-91, 92), which was denied. Record, 127. Although the Contested Case was denied, the Commission did expand the proceeding and authorized the Siting Docket be incorporated into the Certificate of Need public hearing, and that public comments regarding the siting docket be accepted for the record. Record, 127. An exhaustive two day public hearing was held, with opportunities extended to parties for limited questioning of witnesses, presentation of Goodhue Wind Truth's witness Rick James, INCE (Record 142, 144-149, 152), and extensive public comment. Record 141, 143, 150-151, 153-249, see Exhibits Hearing Master List, Record 250; Transcripts Record 273-276. Goodhue Wind Truth's witness Rick James, INCE also submitted additional testimony post-hearing. Record 266-267, 269.

The Commission Ordered a contested case on three narrow issues and referred the matter to the Office of Administrative Hearings. Record 346. The issues set forth by the Commission and referred to OAH in that Order included:

*1. The ALJ assigned to this matter is requested to develop a record on every standard in Article 18 that is more stringent than what the Commission has heretofore applied to LWECS and make recommendations regarding each such standard whether the Commission should adopt it for Large Wind Energy Conversion Systems in Goodhue County. The Commission has identified two such standards in this Order (Section 4 and Section 6) but is not by this Order restricting the ALJ from developing the record and making recommendations regarding additional standards in Article 18 that upon further examination meet the “more stringent” qualification.*

*2. The ALJ assigned to this matter is requested to allow the parties to develop a factual record on the question of “good cause” as that term appears in Minn. Stat. § 216F.081 and to provide recommendations on whether, with respect to each standard in Article 18 identified in the course of her review as “more stringent” than what the Commission has heretofore applied to LWECS, there is “good cause” for the Commission to not apply the standard to siting LWECS in Goodhue County.*

*3. As the ALJ addresses the issues identified in the previous two sections, the ALJ is requested to include (but not limited to, by this Order) whether there is sufficient evidence regarding health and safety to support a 10 rotor diameter set-back for non-participating residents and the stray voltage requirements.*

Goodhue County, Belle Creek Township, City of Goodhue, City of Zumbrota, Coalition for Sensible Siting and Goodhue Wind Truth intervened. Record 342, 349, 358, 363, 367, 368. After the contested case hearing (Transcripts, Record 692A-D), ALJ Sheehy issued a Recommendation to the PUC. Record 708; GWT App. A 1. The PUC then made its decision of August 23, 2011, adopting the Recommendation of Judge Sheehy with minor modifications. Record 760-761; CSS Add. p. 3. All parties and 17 members of the public filed Motions for Reconsideration, Rehearing and Reopening (Record 764-790) which were denied by the Commission on November 14, 2011. Record 810-811.

The record in this docket is large, with many thousands of pages of public comments, and the contested case record has many thousands of page of transcripts and exhibits. However, the facts that serve as the basis for this appeal are quite limited, because this appeal turns on the Commission's errors of law. The facts at issue in this appeal are the facts found in four primary documents:

- The Administrative Law Judge's Report, adopted by the Commission with few exceptions. GWT Appendix, p. 1, *ALJ Findings of Fact, Conclusions and Recommendation*; CSS Add. 0003, Order Issuing Site Permit as Amended, August 23, 2011. Multiple parties submitted Motions for Reconsideration. See e.g., *Goodhue Wind Truth Motion for Reconsideration*, GWT App. 41.
- The Commission's deliberation and decision in this case, and the Order. Order Issuing Site Permit as Amended, August 23, 2011, CSS Add. 0003.
- The Commission's Order establishing standards for siting of wind projects under 25 MW. *PUC Order Establishing General Permit Standards for the Siting of Wind Generation Projects less than 25 MW*, GWT App. 65.
- The Commissions opening of a docket *In the Matter of the Commission Investigation Into Large Wind Energy Conversion Systems Permit Conditions on Setbacks* and the Minnesota Dept. of Health Environmental Health Division's *White Paper on Public Health Impacts of Wind Turbines*, GWT App. 81; see also *Public Health Impact of Wind Turbines*, Minnesota Dept. of Health, CSS App. 27.

These documents supply the facts demonstrating the legal errors made by the Commission, that the Commission based its Order on whether it deemed application of the Goodhue County ordinance was "necessary" rather than whether it had good cause not to apply it under Minn. Stat. §216F.081, and relying on its under 25 MW standards as support and basis for its decision.

## STANDARD OF REVIEW

Any party aggrieved by a decision of the Minnesota Public Utilities Commission may appeal in accordance with chapter 14. Minn. Stat. § 216B.52, subd. 1 (2004). The appellate court may reverse or remand to the agency if the agency decision is arbitrary or capricious or affected by other error of law. Minn. Stat. § 14.69(d),(f) (2004).

The standard of review for this court of an agency decision is set forth in Minn. Stat. §14.69, which states:

### **14.69 SCOPE OF JUDICIAL REVIEW.**

In a judicial review under sections [14.63](#) to [14.68](#), the court may affirm the decision of the agency or remand the case for further proceedings; or it may reverse or modify the decision if the substantial rights of the petitioners may have been prejudiced because the administrative finding, inferences, conclusion, or decisions are:

- (a) in violation of constitutional provisions; or
- (b) in excess of the statutory authority or jurisdiction of the agency; or
- (c) made upon unlawful procedure; or
- (d) affected by other error of law; or
- (e) unsupported by substantial evidence in view of the entire record as submitted; or
- (f) arbitrary or capricious.

The agency's decisions enjoy a presumption of correctness, and great deference by the court to the agency's expertise. Relators must prove error on the part of the Commission. See *Reserve Mining Co. v. Herbst*, 256 N.W.2d 808, 824 (Minn. 1977); *City of Moorhead v. Minnesota Pub. Utilities Comm'n*, 343 N.W.2d 843, 846, 849 (Minn. 1984), *Markwardt v. State Water Resources Board*, 254 N.W. 2d 371, 374 (Minn. 1977).



A decision is not arbitrary and capricious if the agency, when presented with opposing points of view, reached a decision that rejects one point of view. *CUB Foods, Inc. v. City of Minneapolis*, 633 N.W.2d 557, 565 (Minn. App. 2001), *review denied* (Minn. Nov. 13, 2001).

An agency's decision is arbitrary and capricious if it reflects the agency's will, and not its judgment. *Blue Cross & Blue Shield*, 624 N.W.2d 264, 278 (Minn. 2001). Questions of law are reviewed de novo. *Id.* "An agency's decision is arbitrary and capricious if the agency ... entirely failed to consider an important aspect of the problem... or if the decision is so implausible that it could not be ascribed to a difference in view or the result of agency expertise." *White v. Minn. Dept. of Natural Resources*, 567 N.W. 2d 724 (Minn. Ct. App. 1997); see also *Pope County Mothers v. Minn. Pollution Control Agency*, 594 N.W. 2d 233, 236 (Minn. Ct. App. 1999) (citing *Trout Unlimited, Inc. V. Minn. Dept. of Agric.*, 528 N.W. 2d 903, 907 (Minn. Ct. App. 1995)).

## **ARGUMENT**

### **I. SUMMARY OF ARGUMENT**

Goodhue Wind Truth supports the position of the Relator, Coalition For Sensible Siting, in its argument that the Commission failed to establish that there was "good cause" not to apply the Goodhue County Article 18 Wind Ordinance, as required by Minn. Stat. §216F.081. This is an issue of first impression. Where the Commission is issuing a site permit, and a County has lawfully established an ordinance regarding siting of wind turbines, "good cause" is the standard to determine whether to apply a county's siting standards. In this case, the Commission improperly utilized "necessary" as a

criteria. This use of “necessary” does not equate to “good cause,” the standard required by Minn. Stat. §216F.081. Where this “necessary” standard is relied on in the Order as rationale for finding “good cause,” the Order is an error of law.

The second issue raised by Goodhue Wind Truth is that the Commission incorrectly represented, as basis for its Order, whether there are wind siting standards for projects greater than 25MW. The Commission’s Order is an error of law because it relies in large part for support on its repeated legal error in stating that the Commission has established standards for siting of Large Wind Energy Conversion Systems<sup>4</sup>. The Commission has not established standards, and there is no basis for Commission and Commerce claims that there are standards for wind siting of projects greater than 25MW – such standards do not exist. The Commission, relied on, cited and in doing so misrepresents its Order Establishing General Permit Standards for the Siting of Wind Generation Projects less than 25MW non-existent standards as siting standards for projects over 25MW, as support for the Commission’s Order for the AWA Goodhue Wind Project.

**I. THERE IS NOT GOOD CAUSE NOT TO APPLY THE GOODHUE COUNTY WIND ORDINANCE.**

The first error of law is that the Commission’s Order misrepresents the issue before the Commission as an issue of “whether applying the County’s standards to this Project is **necessary** and whether **less stringent standards are sufficient to effectively address the**

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<sup>4</sup> The Commission’s Order repeatedly mis-cites the Commission’s January 11, 2008 Order in Docket E,G-999/M-07-1102, Ex. 21 in this docket, as “Order, In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102” as “Order Establishing General Wind Permit Standards.” See Order, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36.

**concerns raised.**” Order Granting Site Permit, p. 7 (emphasis added). CSS Add. 0003.

This is NOT the issue. The issue before the Commission, as clearly stated in the statute, and also by Commissioners in deliberation, is whether there is good cause not to apply the Goodhue County Ordinance. Minn. Stat. §216F.081. In each instance of using this misstatement of the issue presented, it is used in the logical sequence to reach a conclusion that there is good cause not to enforce the Goodhue County Ordinance, and as such, each conclusion reached is flawed. Each conclusion so reached is an error of law.

The language of the statute is unambiguous:

**216F.081 APPLICATION OF COUNTY STANDARDS.**

A county may adopt by ordinance standards for LWECS that are more stringent than standards in commission rules or in the commission's permit standards. The commission, in considering a permit application for LWECS in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the commission finds good cause not to apply the standards.

The ordinance itself is unambiguous in its intent:

*For LWECS, the county does not assume regulatory responsibility or permit authority under MS 216F.08, but any standards more stringent than those of the MPUC are to be considered and applied to LWECS per MS 216F.081.*

Section 1. Purpose, Article 18 Wind Energy Conversion System, Goodhue County Ordinance. CSS App. 0009.

As pointed out by Belle Creek Township in its post-hearing Brief, there is no requirement in the statute that counties take on permitting of 5-25MW projects for Minn. Stat. §216F.081 to apply<sup>5</sup>. The statute applies regardless. Statutory interpretation is not to

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<sup>5</sup> See Exhibit 696, Brief – Pos-Hearing memorandum of Intervenor Belle Creek Township.

be a contorted dance to achieve an absurd result. The plain meaning must be applied. *State by Beaulieu v. RSJ, Inc.*, 552 N.W. 2d 695, 701 (Minn. 1996). Not only is the statute unambiguous, the Goodhue County Ordinance is unambiguous in its statement that the standards in Article 18 are to be considered and applied by the PUC according to Minn. Stat. §216F.081. The plain language preface of the ordinance is the basis for its interpretation. See *Mohler v. City of St. Louis Park*, 643 N.W. 2d 623 (Minn. Ct. App. 2002); also c.f. *Clear Channel Outdoor Advertising, Inc. v. City of St. Paul*, 675 N.W. 2d 343, 348 (Minn. Ct. App. 2004).

Where the legislature has established specific standards that it deems applicable to all jurisdictions, state law very firmly states that these are the standards to be followed. See e.g. Minn. Stat. 326B.121, Subd. 1; see also *City of Minnetonka v. Mark Z. Jones Assocs., Inc.*, 306 Minn. 217, 218-19, 236 N.W.2d 163, 165 (1975). Sometimes the legislature goes further, enacting laws that order a county to adopt state standards, with penalties for those that do not. See e.g. Shoreland Development Minn. Stat. §103F.201; see also Minn. Stat. 103F.215, Subd. 4. In this case, the legislature enacted Minn. Stat. §216F.081, expressly giving counties authority to regulate wind turbines, and for that authority to be over-riden only if there is good cause not to apply the ordinance.

In the Commission's deliberation, and in its initial referral to Office of Administrative Hearings, the Commission presumed that the Goodhue County Ordinance did apply, and went to the next logical step, focusing on whether there is "good cause" not to apply the County Ordinance, requested development of the record regarding three narrow issues:

The charge of the Commission to the Administrative Law Judge was narrow:

*1. The ALJ assigned to this matter is requested to develop a record on every standard in Article 18 that is more stringent than what the Commission has heretofore applied to LWECS and make recommendations regarding each such standard whether the Commission should adopt it for Large Wind Energy Conversion Systems in Goodhue County. The Commission has identified two such standards in this Order (Section 4 and Section 6) but is not by this Order restricting the ALJ from developing the record and making recommendations regarding additional standards in Article 18 that upon further examination meet the “more stringent” qualification.*

*2. The ALJ assigned to this matter is requested to allow the parties to develop a factual record on the question of “good cause” as that term appears in Minn. Stat. § 216F.081 and to provide recommendations on whether, with respect to each standard in Article 18 identified in the course of her review as “more stringent” than what the Commission has heretofore applied to LWECS, there is “good cause” for the Commission to not apply the standard to siting LWECS in Goodhue County.*

*3. As the ALJ addresses the issues identified in the previous two sections, the ALJ is requested to include (but not limited to, by this Order) whether there is sufficient evidence regarding health and safety to support a 10 rotor diameter set-back for non-participating residents and the stray voltage requirements.*

*Order for Hearing*, p. 2, Record 346. The ALJ did not define good cause, nor did the ALJ specifically explain the “good cause” found.

Despite this clear directive, the ALJ strayed from the issues referred by the Commission, and, rather than presume that the County ordinance did apply, found that the county ordinance did not apply. The Commission rejected those Findings. *Order Granting Site Permit*, p. 20, CSS Add. 003; see also, GWT App. 1, FoF 40-46. The ALJ also strayed from the issue as found in Minn. Stat. 216F.081 by focusing on the Applicant’s “necessary” mantra:

*The Applicant argued that applying the County's standard is not necessary to protect the wind access rights of non-participating property owners and that the Commission's wind access buffer setback is effective in protecting those rights.*

ALJ made this error of law in her Recommendation, adopting the Applicant's misconstruction of county purpose and conflation or misrepresentation of "necessary" with "good cause," as reflected in the Commission's Order:

*The ALJ found that use of the County's proxy is not necessary to protect the wind access rights of non-participating property owners and significantly reduces the availability of land for this Project. As a result, she concluded that there is good cause not to apply the County's property line setback standard to this Project.*

*Order Granting Site Permit*, p. 8, Record 760-761, CSS Add. 0003. This is also effectively a shift of the burden of proof away from the Applicants, and onto the county.

The Commission's Order the adopted this misconstruction, a burden shift, and error of law when it concludes regarding the County property line setback:

*The Commission concurs with the ALJ that use of the County's property line setback **is not necessary to protect the rights of non-participating landowners** and finds good cause not to apply this standard. Using actual wind data more effectively protects the wind access rights of non-participating property owners and minimizes the effects of wind turbine-induced turbulence downwind. The Commission will therefore require the Applicant to apply its proposed wind access buffer setback, consistent with the Commission's general permit standards.*

*Order Granting Site Permit*, p. 8, Record 760-761; CSS add. 0003.

The Applicant continued use of "necessary" in its argument regarding the 10 RD setback:

*The Applicant argued that the record demonstrates that the County's standard is unnecessary to avert adverse effects of noise and shadow flicker*

*and that there are no sufficiently rigorous scientific studies credibly demonstrating that wind turbines cause adverse health effects, either from noise or shadow flicker.*

*Order Granting Site Permit*, p. 9, Record 760-761; CSS add. 0003. The Commission again made this error of law in its decision regarding the 10 RD setback:

A de facto “no exposure” standard is not necessary to protect the health, safety, and quality of life of Goodhue County residents.

*Order Granting Site Permit*, p. 14, Record 760-761; CSS add. 0003.

“Necessary” and “good cause” are not the same thing. Goodhue Wind Truth notes the Coalition for Sensible Siting’s apt analogy to the “strict scrutiny” standard, regarding classifications and restrictions as “narrowly tailored and reasonably necessary to further a compelling governmental interest.” CSS Brief, p. 14. CSS goes on to argue that “the strict scrutiny standard is designed to require an extremely high level of justification by the government for a law, and is reserved for cases where a law seeks to take away an individual’s core constitutional freedoms.” *Id.* This, on the other hand, is a situation where the ordinance is explicit in stating its intent for application, this is not a constitutional challenge to the county ordinance, nor is it a claim that the county ordinance impedes constitutional freedoms – it is about application of the law absent good cause not to apply the ordinance.

Use of “necessary” as a criteria is the improper measure, and results in a shift in the burden of proof. Use of “necessary” as the standard does not equate to “good cause,” the standard required by Minn. Stat. §216F.081. This is an error of law. Where this is

relied on in the Order as rationale for finding “good cause,” the property line setback and the 10 RD setback, the Order is invalid. The AWA Siting Permit must be remanded to the Commission.

## **II. THE STATE HAS NOT ADOPTED SITING STANDARDS FOR WIND PROJECTS GREATER THAN 25 MW.**

Although mandated by statute to promulgate siting standards for Large Wind Energy Conversion Systems (LWECS), the Commission has not done so. Minn. Stat. 216F.05. The Commission’s Order is flawed because it relies in large part on its claim that the Commission has established standards for siting of Large Wind Energy Conversion Systems<sup>6</sup> as support and authority. *Order Granting Site Permit*, p. 14, Record 760-761; CSS add. 0003. In its Order Issuing Site Permit, the Commission repeatedly cites its below 25 MW “siting standards” as “general permit standards” to reach its conclusions that there is “good cause.” *Id.*, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36. These are not “general permit standards.”

The Commission has not established standards. There is no basis for Commission and Commerce claims that there are standards for wind siting of projects greater than 25MW. Using word processing to cut the citation and name of the Commission’s Docket “*In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*,” to “*Order Establishing General Wind Permit Standards*” does not change the 25 megawatt project limitation in the enabling

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<sup>6</sup> The Commission’s Order repeatedly mis-cites the Commission’s January 11, 2008 Order in Docket E,G-999/M-07-1102, Ex. 21 in this docket, as “Order, In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102” as “Order Establishing General Wind Permit Standards.” See Order, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36.



statute, the purpose, the docket heading or the express megawatt limitations of that Order. PUC Order, *In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*, Docket No. E, G-999/M-07-1102. GWT App. D 81. In each of the many instances of using this misrepresentation of siting standards, it is used in logical sequence to reach a conclusion that there is good cause not to enforce the Goodhue County Ordinance, and as such, each conclusion reached is invalid. *Order Issuing Site Permit as Amended*, p. 4, fn. 5; p. 6; p. 6 fn. 11; p. 7, fn. 14; p. 9, fn. 17; p. 15, fn. 33; p. 16, fn. 36, CSS Add. 0003.

The 25 megawatt limitation is specifically stated in the Order, and by its reference to the statute:

*After careful consideration, the Commission herein adopts the attached "General Wind Turbine Permit Setbacks and Standards for LWECS Facilities Permitted by Counties Pursuant to Minnesota Statute 216F.08." Exhibit A.*

*In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*, p. 3, GWT App. 65.

This 25MW limitation is further stated and confirmed in the "Order" section of the Order:

1. The Commission herein adopts the Large Wind Energy Conversion System General Wind Turbine Permit Setbacks and Standards proposed by the Department of Commerce Energy Facility Permitting staff, attached as Exhibit A. The general permit standards shall apply to large wind energy conversion system site permits issued by counties pursuant to Minn. Stat. 216F.08 and to permits issued by the Commission for LWECS with a combined nameplate capacity of less than 25,000 watts.

*Id.*, p. 7. Exhibit A referred to is as specific, citing Minn. Stat. §216F.08 in the heading:

**Exhibit A**  
**Minnesota Public Utilities Commission**  
**General Wind Turbine Permit Setbacks and Standards for Large Wind Energy Conversion System (LWECS) Permitted Pursuant to Minnesota Statute 216F.08**

*Id.*, Exhibit A.

Again, the Commission issued this order pursuant to the Commission's authority under Minn. Stat. § 216F.08, and by its express language, Minn. Stat. §216F.08 is limited to projects 25MW or less:

**216F.08 PERMIT AUTHORITY; ASSUMPTION BY COUNTIES.**

(a) A county board may, by resolution and upon written notice to the Public Utilities Commission, assume responsibility for processing applications for permits required under this chapter for LWECS with a **combined nameplate capacity of less than 25,000 kilowatts**. The responsibility for permit application processing, if assumed by a county, may be delegated by the county board to an appropriate county officer or employee. Processing by a county shall be done in accordance with procedures and processes established under chapter 394.

(b) A county board that exercises its option under paragraph (a) may issue, deny, modify, impose conditions upon, or revoke permits pursuant to this section. The action of the county board about a permit application is final, subject to appeal as provided in section [394.27](#).

(c) **The commission shall, by order, establish general permit standards, including appropriate property line set-backs, governing site permits for LWECS under this section.** The order must consider existing and historic commission standards for wind permits issued by the commission. **The general permit standards shall apply to permits issued by counties and to permits issued by the commission for LWECS with a combined nameplate capacity of less than 25,000 kilowatts.** The commission or a county may grant a variance from a general permit standard if the variance is found to be in the public interest.

(d) The commission and the commissioner of commerce shall provide technical assistance to a county with respect to the processing of LWECS site permit applications.

Minn. Stat. §216F.08 (**emphasis added**).

How much clearer can it be?

Despite this clear and express limitation of the “*Order Establishing General Wind Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts*” the Commission Order repeatedly, improperly and inexplicably cites to and relies on this prior Order, referring to “the Commission’s general wind permit standards.” For example, in its Order the Commission used the false statement regarding state standards as basis for each of its decisions regarding setbacks from property lines, the 10 Rotor Diameter (RD) setback from neighboring dwellings, setbacks from wetlands and stray voltage testing:

- **The Commission’s general wind permit standards** contain a wind access buffer setback from all boundaries of a developer’s site control area of 3 RD on the secondary wind axis and 5 RD on the predominant axis.<sup>7</sup>
- The ALJ evaluated the County’s property line setback, which uses a broadly defined proxy of two 100 degree arcs for determining the prevailing wind. She found this standard to be less precise than using actual wind data, which the Applicant relied on to incorporate a wind access buffer setback consistent with **the Commission’s general wind permit standards**.<sup>8</sup>
- **The Commission’s general wind permit standards** require a setback of at least 500 feet from all homes, and any additional distance necessary to meet the PCA noise standards.<sup>9</sup>
- **The Commission’s general wind permit standards** prohibit wind turbines from being placed in wetlands but do not contain a setback for turbines from wetlands.<sup>10</sup>

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<sup>7</sup> Order Issuing Site Permit, p. 7, fn. 14. CSS Add. 003.

<sup>8</sup> Id., p. 8, citing ALJ Recommendation FoF 54, which states “To the extent that the ordinance is intended to protect the wind access rights of non-participating property owners, the manner in which prevailing wind is defined in the ordinance is both overly broad and less accurate than the definition used by the Commission. The ordinance uses a broadly defined proxy measurement rather than actual data to define prevailing wind direction, and it functions to greatly reduce the amount of land available for siting turbines. There is no evidence in the record to suggest that a setback of this magnitude is necessary to protect wind access rights of non-participating property owners.” This statement is utterly unsupported as there is no citation to any Commission definition, and there is no Commission definition!

<sup>9</sup> Id., p. 9, fn. 17.

<sup>10</sup> Id., p. 15, fn. 33.

- **The Commission’s general wind permit standards** do not require stray voltage testing.<sup>11</sup>
- The Commission will modify Finding 60 of the ALJ’s Report to read as follows:

The Commission’s ~~general wind permit standards~~ **General Wind Permit Standards Order** requiring that turbines must be set back at least 500 feet from all homes, plus whatever additional distance is necessary to meet state noise standards.<sup>12</sup>

- Finding 60 of the ALJ’s Report is modified to read as follows:

The Commission’s ~~general wind permit standards~~ **General Wind Permit Standards Order** requiring that turbines must be set back at least 500 feet from all homes, plus whatever additional distance is necessary to meet state noise standards.<sup>13</sup>

*Order Issuing Site Permit as Amended* (strike outs present in Order), CSS Add. 0003.

Each of the above statements in the Commission’s Order regarding a “General Wind Permit Standards Order are false because there is no “General Wind Permit Standards Order”, and the conclusions drawn in reliance on these false statements and in reliance on the fiction that the Commission has “general wind permit standards” are an error of law.

The Commission’s overt and repeated misrepresentation of the January 11, 2008 Order for projects under 25 MW, its authority under Minn. Stat. §216F.08, and reliance on these misrepresentations for its Order of August 23, 2011 is a blatant error of law. In each instance where this false statement regarding “general wind permit standards” is relied on

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<sup>11</sup> Order Issuing Site Permit, p. 16, fn. 36. CSS Add. 003.

<sup>12</sup> Order Issuing Site Permit p. 20, citing FOF 60, which cites In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102, GWT App. 65.

<sup>13</sup> Order Issuing Site Permit p. 20, citing FOF 60, which cites In the Matter of Establishment of General Permit Standards for the Siting of Wind Generation Projects Less than 25 Megawatts, Docket No. E, G-999/M-07-1102.

in the Order as rationale for finding “good cause,” the Order is invalid. The Commission’s Order regarding setbacks from property lines, the 10 RD setback from neighboring dwellings, setbacks from wetlands and stray voltage testing is flawed and invalid and requires amendment of the Order to incorporate the Goodhue County Ordinance.

**V. CONCLUSION**

Goodhue Wind Truth respectfully requests remand of this docket to the Public Utilities Commission. Goodhue Wind Truth has filed a rulemaking petition to establish standards for wind projects 25 MW or greater. Specifically, regarding this *Order Issuing Site Permit*, Goodhue Wind Truth requests that the Court:

1. Reverse the Commission Finding that there is good cause not to apply the Goodhue County Wind Ordinance, and
2. Remand to the Commission to amend the Order and Site Permit to include the standards of the Goodhue County Wind Ordinance in the Order and Permit; and
2. Issue a Declaratory Judgement that the Commission has not adopted siting standards for wind projects greater than 25MW and remand to the Commission to remove every reference in the Order to the Docket 07-1102 Order for projects over 25MW.

February 6, 2012



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Rich	Biernat	N/A		47310 209th Place McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Beth	Bily	beth@businessnorth.com		36800 W County Line Rd Hill City, MN 55748	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ralph	Birkholtz	N/A		5118 124th St SW Pillager, MN 56473	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Birkholz	david.birkholz@state.mn.us	MN Department of Commerce	Suite 500 85 7th Place East St. Paul, MN 551012198	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michelle F.	Bissonnette	michelle.bissonnette@hdrinc.com	HDR Engineering, Inc.	Golden Hills Office Center 701 Xenia Ave S Ste 600 Minneapolis, MN 55416	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Paul	Blackburn	paul@honorearth.org		PO Box 63 Callaway, MN 56521	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Paul	Blackburn	paul@paulblackburn.net		PO Box 17234 Minneapolis, MN 55417	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Blackmer	cblackme@bigfork.net		66541 County Road 533 Effie, MN 56639	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mary	Blair Hoeft	N/A	City of Byron - Administrator	680 - Byron Main Court NE PO Box 1137 Byron, MN 55920	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ellen	Boardman	eboardman@odonoghuelaw.com	O'Donoghue & O'Donoghue LLP	5301 Wisconsin Ave NW Ste 800 Washington, DC 20015	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bryan	Bode	Bryan@dirtymerchantinc.com		3301 3rd Ave Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Boland	tboland7@bigfork.net		67324 County Road 229 Effie, MN 56639	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dawn	Bordeaux	N/A		31187 151st St Princeton, MN 55371	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Borders	wborders@invenergyllc.com	Invenergy LLC	One South Wacker Drive Suite 1900 Chicago, IL 60606	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Boyd	todobo@itctel.com	Interstate Telecommunications, Inc.	PO Box 200 Clear Lake, SD 57226	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Gregory	Braaten	N/A		34323 State HWY 89  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James and Carol	Bradley	N/A		18442 483rd St  McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cheryl	Brandt	c-brandt@live.com	Oakland Township	88141 180th St  Austin, MN 55912	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Craig and Nola	Brandt	craig.nola.brandt@gmail.com		24745 County Rd 129  Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Brandt	jbrandt@uslink.net		38623 Eagles View Rd  Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dave	Bratford	daevbra2@yahoo.com		35836 Freestone Rd  Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathleen M.	Brennan	kmb@mcgrannshea.com	McGrann Shea Carnival, Straughn & Lamb, Chartered	800 Nicollet Mall Ste 2600  Minneapolis, MN 554027035	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Breuer	N/A		16870 77 St SE  Mooreton, ND 58061	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathy	Brockway	kbrockway@co.le-sueur.mn.us	Le Sueur County	88 S Park Ave  Le Center, MN 56057	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dawn	Broitzman	drbroitzman@yahoo.com		13549 870th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Carol	Brouellette	cbrouell@hotmail.com		15000 Peteler Lane  Minnetonka, MN 55345	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Loren and Carole	Brouellette	Carole_Brouellette@cargill.com		15000 Peteler Ln  Minnetonka, Mn 55345	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Brown	N/A		3006 E Hwy 169  Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
B. Andrew	Brown	brown.andrew@dorsey.com	Dorsey & Whitney LLP	Suite 1500 50 South Sixth Street Minneapolis, MN 554021498	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Patricia	Brunn	N/A		Estate of Alice M. Ranua 19700 Pembroke Circle Rogers, MN 55374	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joy	Bruns	joybruns@aim.com		3254 Robinson St  Marshall, MN 56258	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Christina	Brusven	cbrusven@fredlaw.com	Fredrikson Byron	200 S 6th St Ste 4000  Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Buchanan	buchananfamilyfarms@yahoo.com		81876 110th St  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Buck	kbuck553@gmail.com		55363 Hemlock Rd  Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jim	Bulera	jimbulera1@msn.com		28527 Flamingo St NW  Isanti, MN 55040	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Keith and Sara	Buley	N/A		47809 County Rd 126 Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cheryl	Bunes	N/A		39873 County Road 336 Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Wanda K	Burbie	N/A		617 N Pokegama Ave Apt B Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Burns	N/A		PO Box 172 Milan, MN 56262	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dave	Butcher	davidb@uslink.net		3998 67th St SW Pequot Lakes, MN 56472-2163	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Butler	odbutler78@yahoo.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
PUC	CAO	consumer.puc@state.mn.us	Public Utilities Commission	Consumer Affairs Office 121 7th Place E Suite 350 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tamara	Cameron	Tamara.Cameron@usace.army.mil	U.S. ARMY CORPS OF ENGINEERS	180 5th St #700 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Drew	Campbell	drcsoup@aol.com		303 E Pleasant St Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James B.	Canaan	jim.canaan@itctel.com	ITC	P.O. Box 920 312 Fourth Street Clear Lake, SD 57226	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Ronald	Capp	N/A		843 6th St SW Pipestone, MN 56164	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cory	Capra	ccapra@centuryfence.com	Century Fence	PO Box 277 Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tammy	Card	N/A		41936 Cty Rd 336 Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Daniel	Carlisle	d.carlisle@pmlaw.com	Pemberton Law	7 Colfax Avenue Wadena, MN 65482	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Daniel	Carlson	dncarlson8@aol.com		8485 Red Oak Dr Moundsview, MN 55112	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Carlson	charlie@shamineau.org		34497 Hwy 10 Motley, MN 56466	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kate	Carlton	kcarlton@fageninc.com	FAGEN, INC.	501 West Highway 212 Granite Falls, MN 56241	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Judy	Carpenter	judymcarpenter@gmail.com		1042 Verlin Lane Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
LeRoy	Carriere	N/A	Roseau River Watershed	504 4th Avenue NE Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Barbara	Case	barbara.case@state.mn.us	Office of Administrative Hearings	600 N. Robert St. St. Paul, Mn. 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mark	Cass	N/A		29250 Eden Coop Rd Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Linda	Castagneri	Linda.castagneri@comcast.net		6700 Cantata St NW Unit 1201 Albuquerque, NM 87114	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tammy and Aaron	Cech	N/A		85232 180th St Glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Centoben	centoben@yahoo.com		912 55th ST SW Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Connie	Chastain	csmadich@gmail.com		36642 Wabana Rd Grand Rapids, MN	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joe	Chaston	jchaston@local49.org		36420 Wabana Rd Grand Rapids, MN 55944	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Greg	Chester	gchester42@gmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kurt	Christopherson update email	N/A	Pipeline Supply, Inc	11884 237th Ave NW Elk River, MN 55330	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mitch	Chrzanowki	chrz@mncable.net		800 B 9th Ave SE Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Chute	jdchute@mlecmn.net		42992 US Hwy 169 Aitkin, MN 56431	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John	Cirelli	N/A		PO Box 124 McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Raymond	Citterman	N/A		3013 US Hwy 75 Ivanhoe, MN 56142	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Holly and Chuck	Clarke	N/A		12713 850th Ave glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeanne	Cochran	Jeanne.Cochran@state.mn.us	Office of Administrative Hearings	P.O. Box 64620 St. Paul, MN 55164-0620	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joanne	Cockrum	N/A		7529 Town Rd 93 Little Fork, MN 56653	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Erica	Cohrs	cohrrs25@gmail.com		1678 Highway 7 Lester Prairie, MN 55354	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jon	Coil	jcoil@paulbunyan.net		49625 Waldo RD NE Kelliher, MN 56650	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lori	Collins	N/A	Olmsted County Public Works	2122 Campus Drive SE, Suite 200 Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Bill	Cook	bcook@rpu.org	Rochester Public Utilities	4000 East River Road NE Rochester, MN 55906	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joe	Coolen	N/A		3723 Eaken Ave NE Buffalo, MN 55313	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Cooney	mikecooney44@gmail.com		825 Ivy Lane Eagan, MN 55123	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Judy	Coughlin	shortstop@frontiernet.net		8161 Pioneer Rd Chisago, MN 55013	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Paul	Courneya	Pcourneya@gmail.com		1388 Shadywood Shores Dr NW Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Itasca County	Courthouse	N/A	Itasca County Board of Commisioners	123 NE 4th Street Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sandra	Cowherd	scowherd@agri-pulse.com	Agri-Pulse Communications, Inc.	N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Cox	sjcoxreston@aol.com		5688 Fernhurst Dr NW Hackensack, MN 56452	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bill	Cox	N/A		20136 Little Bear Lake Rd Cook, MN 55723-4505	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Craigmile	dacmile@farmerstel.net		3600 140th St Boyd, MN 56218	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Rebecca	Cramer	rebacramer@gmail.com		2916 E Lake St Minneapolis, MN 55406	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Cramor	scott@northernsun.com		3148 29th Ave S Minneapolis, MN 55406	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Crane	johncranefishing@gmail.com	Fishing	1250 Wee Gwaus DR SW Bemidji, MN 56601	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Doug	Cranston	N/A		6906 20th St SW Byron, MN 55920	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
George	Crocker	gwillc@nawo.org	North American Water Office	PO Box 174 Lake Elmo, MN 55042	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Carl	Cronin	Regulatory.records@xcelenergy.com	Xcel Energy	414 Nicollet Mall FL 7 Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brendan	Cummins	brendan@cummins-law.com	Cummins & Cummins, LLP	1245 International Centre Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jennie	Czech	N/A		41152 311 Ave Browerville, MN 56438	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Don	Czech	donczech@hotmail.com		12459 Pine Hurst Rd Brainerd, MN 56401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nathan	Dahl	nathan.dahl@polaris.com		24834 510th Ave Salol, MN 56756	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mary	Darud	darudm@WaterScienceService.com	WaterScience, Inc.	14613 Evergreen Trl  Apple Valley, MN 55124	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathleen	Davern	N/A		1459 Chub Lake Park Rd  Carlton, MN 55718	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lonnie	Davidson	N/A		23294 330th Ave  Badger, MN 56714	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Davis	mike.davis@millelacsband.com		34490 State Hwy 65  McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lance	Davis	sivadfarms@gmail.com		87002 State Line Road  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gene	Davis	gpauldavis@gmail.com		10696 860th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Davis	N/A	-	1161 50th Ave  Sherburn, MN 56171	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Davis	Richard.Davis@state.mn.us	Department of Commerce	85 7th Place East Suite 500  Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Shelly	Day	gewiidiin68@yahoo.com		416 Main Street West  Hinckley, MN 55037	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Shonda	Day	Shonda.day@dvn.com	Devon Canada	100, 400 3rd Avenue  Calgary, AB T2P 4H2  CANADA	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Patricia	DeBleekere	tricia.debleeckere@state.mn.us	Public Utilities Commission	Suite 350 121 Seventh Place East  St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Daniel	DeCook	N/A		3353 60th Ave SW  Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Melissa	DeVetter	melissa.devetter@co.dodge.mn.us	Dodge County	721 N Main St Dept 123  Mantorville, MN 55955	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gerald	Dee	gerald.dee@agstar.com		5841 Co Rd 103  Byron, MN 55920	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stanley John	Dee	N/A		4525 42st SW  Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deputy Cassie	Deets 1013	deets.cassandra@CO.OLMSTED.MN.US	Emergency Management	151 Fourth St SE  Rochester, MN 55904-3710	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Corey	Dekker	Corey.Dekker@Canada.ca	Natural Resources Canada	Major Projects Management Office - West 504-800 Burrard Street Vancouver, BC V6Z 0B9  CANADA	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Shane	Delaney	delaneysd@outlook.com		40489 220th ST  Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Robert and Janet	Delich	N/A		37845 Cty Rd 336 Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Laura	Demman	laura.demman@nngco.com	Northern Natural Gas Company	1111 S. 103rd Street Omaha, NE 68125	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Denniston	james.r.denniston@xcelen ergy.com	Xcel Energy Services, Inc.	414 Nicollet Mall, Fifth Floor Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard G.	Devlin	devlin.richard@co.olmsted. mn.us	Olmsted County - Administrator	151 4th St. SE Rochester, MN 55904	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Grace	Dickson	BADEMAIL- grace_dickson@heitkamp.s enate.gov	Senator Heidi Heitkamp	33 S 3rd St, Suite B Grand Forks, ND 58201	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathy	Diekman	kdiekman@chahinkapazoo. org		310 N 2nd St Wahpeton, ND 58075	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Chuck	Diessner	cfdiessner@gmail.com		24328 Hazelwood Drive Park Rapids, MN 56470	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
District	Director	skip.langer@mn.nacdnet.n et	Olmsted Soil and Water Conservation District	2122 Campus Dr SE Ste 200 Rochester, MN 55904	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Dobrick	tom.dobrick@jkoskicompan y.us		601 Boulder Dr Apt #203 Duluth, MN 55812	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Angel	Dobrow	adobrow@hotmail.com		1301 Washington St  Northfield, MN 55057	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ian	Dobson	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Monica	Dohmen	mommyca1234@yahoo.com		1291 25th Ave SE  Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brad	Dokken	N/A		1224 Cherry St  Grand Forks, ND 58201	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Doll	john@johndollsd40.org		10918 Southview Drive  Burnsville, MN 55337	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bob	Dombeck	bcd93@comcast.net		20033 Hillside Dr.  Rogers, MN 55374	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael H.	Donahue	mndonahue@mnpower.com	Minnesota Power	30 West Superior Street  Duluth, MN 55802	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Randall	Doneen	randall.doneen@state.mn.us	Department of Natural Resources	500 Lafayette Rd, PO Box 25  Saint Paul, MN 55155	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dennis	Dore	dennisadore@aol.com		508 Geranium St SE  Rochester, MN 55904	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Eric	Douglas update email plz	N/A		32993 380 th Street  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Lori	Dowling Hanson	lori.dowling-hanson@state.mn.us	Department of Natural Resources	f1201 East Hwy 2 Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Melissa	Downing	l8ranchmjdown@aol.com		not provided	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Daniel	Downing	N/A		3369 Co Hwy 7 Ivanhoe, MN 56142	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
JoAnn	Downing	kjdowning@mvtwireless.com		Not provided	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Katie	Draper	shinob75@yahoo.com		2313 Cottontail Circle Brook Park, MN 55007	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John E.	Drawz	jdrawz@fredlaw.com	Fredrikson & Byron, P.A.	Suite 4000 200 South Sixth Street Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Dripps	N/A		3497 Simpson Rd SE Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeremy	Duehr	jduehr@fredlaw.com	Fredrikson & Byron, P.A.	200 South Sixth Street Suite 4000 Minneapolis, Minnesota 55402-1125	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Duraine	N/A		22991 Grouse St McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cory	Dutcher	cory.dutcher@ge.com	GE Power and Water	1 River Rd. Bldg. 37-413 Schenectady, NY 12345	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Willie	Dux	N/A	High Forest Township Clerk	2956 Co Rd 120 NE  Stewartville, MN 55976	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Alicia	Dvorak	aliciadvorak@gmail.com		Not Given	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Donovan	Dyrdal	dyr-valley@hughes.net		13142 180TH ST NW  Thief River Falls, Minnesota 56701	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rob	Ecklund	N/A	Koochiching County	4647 Highway 11  International Falls, MN 56649	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Alison	Edgerton	edge02@tds.net		2009 Hogans Island Dr NW  Backus, MN 56435	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Timothy J.	Edman	timothy.j.edman@xcelenergy.com	Xcel Energy	414 Nicollet Mall  Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles Guy	Edwards	N/A		PO Box 347  Pine River, MN 56474-0347	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jamie	Edwards	jsedwards2007@gmail.com		6620 Camden Drive  Brooklyn Center, MN 55430	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jon	Eickhoff	N/A	City of Pine Island	250 S Main Street, PO Box 1000  Pine Island, MN 55963	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kristen	Eide Tollefson	healingsystems69@gmail.com	R-CURE	28477 N Lake Ave  Frontenac, MN 55026-1044	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Adam	Eisenstein	eyesandstein@gmail.com		5214 10th Avenue South  Minneapolis, MN 55417	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Ek	scott.ek@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jane	Ekholm	janevanhunnik@hotmail.com		PO Box 1473  Walker, MN 56484	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bret	Eknes	bret.eknes@state.mn.us	Public Utilities Commission	Suite 350 121 7th Place East St. Paul, MN 551012147	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jim and Judy	Ellingson	jelling13@gomoorhead.com		1303 14th Ave S  Moorhead, MN 56560	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lori	Elmore	N/A		10705 State Hwy 87  Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Marlin	Elton	N/A		39495 310th Ave  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Elton	N/A		39645 Co Rd 3  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Betsy	Engelking	betsy@geronimoenergy.com	Geronimo Energy	7650 Edinborough Way Suite 725 Edina, MN 55435	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Katie	Engelmann	katie.engelmann21@gmail.com		412 Houston Ave  Crookston, MN 56716	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Clark	Ericksen	clark.ericksen@yahoo.com		81610 140th St  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lorris and Elsie	Erickson	N/A		22556 State Highway 89  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Susan	Erickson	N/A	Great Lakes Indian Fish & Wildlife Commission	POB 9 72682 Maple St Odanah, WI 54861	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Douglas	Erickson	N/A		36838 300th St  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Harvey	Erie	N/A		PO Box 126  Gonvick, MN 56644	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bruce	Eveland	N/A		260 44th Ave SW  Backus, MN 56435	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ron	Fagen	rfagen@fageninc.com	Palmer's Creek Wind Farm, LLC	501 West Highway 212  Granite Falls, MN 56241	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathleen	Fagerlund	kathleenfagerlund@gmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stephen	Fahlman	N/A		P.O. Box 16  Sandstone, MN 55072	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kate	Fairman	kate.frantz@state.mn.us	Department of Natural Resources	Box 32 500 Lafayette Rd St. Paul, MN 551554032	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Roger	Falk	N/A	Roseau County	35191 500th Avenue Salol, MN 56756	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Peter	Fasbender	N/A	US Fish and Wildlife Svc - TC Field Office	4101 East 80th Street Bloomington, MN 55425	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leili	Fatehi	leili@advocatepllc.com	Sierra Club	4849 12th Ave S Minneapolis, MN 55417	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jenni	Faulkner	jenni.faulkner@burnsvillem n.gov	City of Burnsville	100 Civic Center Pkwy Burnsville, mn 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Debra	Feders	debfeders@yahoo.com		36998 Little Oak Lane North Branch, MN 55056	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Annie	Felix Gerth	annie.felix- gerth@state.mn.us		Board of Water & Soil Resources 520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Femrite	rhfemrite@msn.com		4315 Sun Cliff Rd Eagan, MN 55122	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Keith and Debbie	Ferdon	kdferdon@brainerd.net		13134 57th Ave Motley, MN 56466	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sharon	Ferguson	sharon.ferguson@state.mn .us	Department of Commerce	85 7th Place E Ste 280 Saint Paul, MN 551012198	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Wayne	Fett	N/A		12328 900th Ave Glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Annette	Fiedler	phydev@swrdc.org	Southwest Regional Development Comm.	2401 Broadway Ave Ste 1 Slayton, MN 56172	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jamie	Fitzke	ALTE0031@umn.edu		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Beverly	Fitzloff	N/A		57886 231st Street Mankato, MN 56001	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Flaagan	mlflaagan@co.pennington.mn.us		13320 150th Ave NE Thief River Falls, MN 56701	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sean	Flannery	sean.flannery@res-americas.com	Renewable Energy Systems Americas Inc.	12 South 6th Street Suite 930 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Daniel	Fogal	danfogal@hotmail.com	Blue Earth County	Mankato Township 19727 Ridge Drive Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Larry and Emily	Franck	larry.franck@byron.k12.mn.us		901 70th Ave SW Byron, MN 55920	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Fredrickson	brian.fredrickson@essentiahealth.org		3721 2nd Ave E Hibbing, MN 55746	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anna	Friedlander	afriedlander@odonoghuelaw.com	O'Donoghue & O'Donoghue LLP	5301 Wisconsin Ave NW Suite 800 Washington, DC 20016	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Maxyne	Friesen	maxyne.friesen@gmail.com	U of M	2313 Colfax Ave S #5 Minneapolis, MN	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Randy	Frisk	frisk@paulbunyan.net		24805 Beltrami Line Rd Bemidji, MN 56601	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Frisk	N/A		33619 Aztec Rd Motley, MN 56466	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Polly	Fry	polly.fry@icloud.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rollie	Fuller	N/A		3513 County Rd 3 SW Baudette, MN 56623	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lorella	Fulton	N/A		1210 Main Avenue International Falls, MN 56649	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Eric	Funk	karissafunk@hotmail.com		5440 Creekside Lane SW Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dan and Jami	Gaither	na112792@gmail.com		1933 Darling Heights Pl. NW Alexandria, MN 56308	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Pedro	Galoppi	pedro.galoppi@credit-suisse.com	CREDIT SUISSE	One Madison Avenue New York, NY 10010	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deborah	Garross	deb.garross@burnsvillemn.gov	City of Burnsville	100 Civic Center Parkway Burnsville, MN 55337-3817	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Edward	Garvey	garveyed@aol.com	Residence	32 Lawton St Saint Paul, MN 55102	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
John R.	Gasele	jgasele@fryberger.com	Fryberger Buchanan Smith & Frederick PA	700 Lonsdale Building 302 W Superior St Ste 700 Duluth, MN 55802	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Larry	Gasow	Larry.Gasow@co.mcleod.mn.us	McLeod County	830 E 11th Street  Glencoe, MN 55336	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Reggie	Gassman	reggie.gassman@siouxvalleyenergy.com	Sioux Valley Energy	47092 SD Hwy 34  Colman, SD 57028	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sean	Gaston	sean.p.gaston@gmail.com		11133 850th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bernard W	Gearin Jr	N/A		20317 Brush Lake Lane  Park Rapids, MN 56470	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Karen A	Gebhardt	kageb1@gvtel.com		43901 253rd Ave  Leonard, MN 56652-4026	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nicholas	Gerulli	N/A		610 Oak Dr  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Gibbons	N/A	Itasca County	1177 LaPrarie Avenue  Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
George	Gibbons	N/A		15192 Birch Narrows Rd  Crosslake, MN 56442	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Andrew	Gibbons	andrew.gibbons@stinson.com	Stinson Leonard Street	50 S 6th St Ste 2600  Minneapolis, MN 54002	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Carl	Gibson	crgibson1945@yahoo.com		54497 E Bear Lake Forest Rd  Cook, MN 55723	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Gilbertson	N/A		Dan Gilbertson 16185 Sandstone Dr Morrison, CO 80465	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rick	Gitar	N/A		Fond du Lac Res. 1720 Big Lake Rd Cloquet, MN 55720	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Roger	Glidden	N/A		43997 Great River Rd  Aitkin, MN 56431	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Craig	Gordon	cgordon@inverenergyllc.com	Inverenergy LLC	One South Wacker Dr Suite 1900 Chicago, IL 60606	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Gornick	N/A		51201 207th PI  McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rachel	Gorton	rachel@gortonstudios.com		3281 Willie Drive  Burnsville, MN 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sandra	Goslee	N/A	Rochester-Olmsted Planning Dept	2122 Campus Drive SE, Suite 100  Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ken	Graeve	kmgraeve@yahoo.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kelly	Gragg Johnson	kelly.graggjohnson@state. mn.us	MN Historical Society Preservation Office	345 Kellogg Blvd. W., Level A  St. Paul, MN 55102-1906	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jeff	Graves	jeff031955@gmail.com		49127 US Hwy 169  Palisade, MN 56469	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Gray	BGRetired@wildblue.net		5608 Co Rd 71  Little Fork, MN 56653	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jerry and Barbara	Gray	N/A		452 S Knik Goose Bay Rd #283  Wasilla, AK 99654	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anne Marie	Griger	anne-marie.griger@res- group.com	Flying Cow Wind, LLC	11101 W 120th Ave  Broomfield, Colorado 80021	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Grimms	gary@innovativesw.com		2430 36th St S #103  Moorhead, MN 56560	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kristi	Gross	kristi.gross@co.goodhue.m n.us	Goodhue County	509 W 5th St  Red Wing, MN 55066	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Vince	Gross	N/A		26956 Hines Rd NE  Hines, MN 56647	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Grover	dgrover@itctransco.com	ITC Midwest	901 Marquette Avenue Suite 1950 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Debra and Mark	Grussing	N/A		103 S 20th St  Montevideo, MN 56265	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd J.	Guerrero	todd.guerrero@kutakrock.c om	Kutak Rock LLP	Suite 1750 220 South Sixth Street Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Larry	Guggisberg	larrygugs@gmail.com		504 9th Street SE Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Denise	Guinn	N/A		26657 Amik Circle Bagley, MN 56621	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Linda	Gunnik	N/A	Cameron Township	1665 30th Avenue Woodstock, MN 56186	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Arnav	Gupta	arnav.gupta@scotiabank.com	Scotiabank	40 King Street West, 65th Floor Toronto, ON M5W 2X6 CANADA	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dennis	Gustafson	tomtegarden@citlink.net		28388 Redwing Ave Shafer, MN 55074	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ron	Gustafson	rongustaf@comcast.net		PO Box 1 Bovey, MN 55709	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charlie	Habstritt	N/A		PO Box 148 Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nancy	Hajek	nancy.c.hajek@gmail.com		15169 850th Ave Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lisa	Hajek	lisa_hajek@hotmail.com		81638 150th Street Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jennie	Hakes	jhakes@mlecmn.net	Hakes and Steve Hawrysh	37724 390TH sT  Aitkin, MN 56431	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Craig	Halla	challa@molpus.com		312 8th Av.  International Falls, MN 56649	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Clifford	Hamann	N/A		514 N Main St  Badger, MN 56714	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dave	Hancock	dhancock6@msn.com		3739 Lindseth Dr NE  Bemidji, MN 56601	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Handzus	N/A		73833 State Highway 86  Lakefield, MN 55150	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Hanninen	N/A		514 2nd St SE  Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gordon E.	Hannon	gord.hannon@gov.mb.ca	Civil Legal Services	Rm 730 Woodsworth Bldg 405 Broadway Winnipeg, MB R3C 3L6  CANADA	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dorene	Hansen	dhansen078@gmail.com		12174 840 Avenue  Glenville, MN 56036-4481	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Hansen	brian@apexgetsbusiness.com		2731 Jefferson St  Duluth, MN 55812	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mike	Hanson	birchdale2@wikel.com		1740 County Rd 86N Birchdale, MN 56620	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Keith	Hanson	N/A		2604 110 Avenue Mahnomon, MN 56557	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Hanson	mdhinc@markhansonbuild ers.com		2314 Scenic Park Place SW Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Janelle	Hapka	jhapka@nd.gov		823 Burlington Dr NW East Grand Forks, MN 56721	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Harbaugh	rtharbaugh@yahoo.com		315 N Lake Ave Duluth, MN 55806	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Harbert	dharbert@kaaltv.com	KAAL-TV	1320 Salem Rd SW Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jason	Harris	Jason.Harris@nee.com	Dodge County Wind, LLC	700 Universe Blvd Juno Beach, FL 33408	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Harrison	N/A		3000 Fox Pt Rd Burnsville, MN 55337	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Larry	Hartman	Larry.Hartman@state.mn.u s	Department of Commerce	85 7th Place East, Suite 280 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Doug	Hayes	doug.hayes@sierraclub.org	Sierra Club	85 2nd St., 2nd Fl San Francisco, CA 94105	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Montgomery	Headley	mheadley@co.benton.mn.us	Benton County Administrator	PO Box 129 531 Dewey St Foley, MN 56329	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Healy	chuckh@electrotech-inc.com	ElectroTech, Inc	7101 Madison Ave Minneapolis, MN 55427	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Greg	Healy	Greg.j.healy@gmail.com		106 Pinehurst Ave Apt C55 New York, NY 10033	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Monica	Hedstrom	monica.hedstrom@whiteearth-nsn.gov		PO Box 393 Mahnomen, MN 56557	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ellen	Heine	ellen.l.heine@xcelenergy.com	Xcel Energy	414 Nicollet Mall, MP-8 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Janice A.	Helgeson	jahmh@smig.net		89719 140th St Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kimberly	Hellwig	kimberly.hellwig@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bridget	Helwig	helwig.b@gmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Henderson	henderson@mlecmn.net		43246 Great River Rd Aitkin, MN 56431	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Peter Mark	Hendrickson	hpineacres@wcta.net		11719 350th St Menahga, MN 56464	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Chad	Henjum	chenjum@tds.net		15132 old mill road Spicer, MN 56288	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathy	Herbranson	kgherbranson@gmail.com		49899 210th Place McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joan	Heredia	joan.heredia@enel.com	Enel Green Power North America, Inc.	3636 Nobel Drive, #475 San Diego, CA 92122	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Valerie	Herring	vherring@briggs.com	Briggs and Morgan, P.A.	2200 IDS Center 80 S. Eighth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rick	Heuring	RHeuring@GREnergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Philip	Hexom	plhexom@gmail.com		30933 US 10m Cushing, MN 56443	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John and Janice	Hiatt	N/A		21301 North Thirty Lake Drive Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anthony	Hicks	anthony.hicks@gpreinc.com		24096 170th Ave Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Hill	hillx001@umn.edu		50569 218th Pl McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Janet	Hill	janethillnew@gmail.com		50569 218th Pl Mcgregor, MN 55760-5592	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Drew	Hines	drewhines@rocketmail.com		400 1st St S #5 Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Hingsberger	thomas.j.hingsberger@usa ce.army.mil	Corps of Engineers, St. Paul District	180 5th St E Ste 700 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kelly	Hinnenkamp	khinnenkamp@annandale. mn.us	City of Annandale	PO Box K Annandale, MN 55302	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Paul and Amy	Hoernemann	aphoernemann@mvtvwirel ess.com		12090 30th Ave SE Granite Falls, MN 56241	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Janet	Hoffmann	N/A	Marion Township Clerk	2850 Oakview Ct SE Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Terry	Hokenson	terryhokn@visi.com		3352 Prospect Ter SE Minneapolis, MN 55414	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathleen	Hollander	kath77holl77@gmail.com		3824 Edmund Blvd Minneapolis, MN 55406	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mary	Holly	mholly@winthrop.com	Winthrop & Weinstine, P.A.	225 S Sixth St Ste 3500 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steven	Holt	N/A		31886 Ranch Trail Shafer, MN 55074	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Karen and Bret	Holtan	N/A		10482 St Hwy 87  Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Hope	robert.hope@scotiabank.com	Scotiabank	40 King Street West, 65th Floor  Toronto, ON M5W 2X6  CANADA	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Hoppe	il23@mtn.org	Local Union 23, I.B.E.W.	932 Payne Avenue  St. Paul, MN 55130	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jacob	Horbacz	Jacob.Horbacz@millelacsband.com		39760 Darling Lane  Hinckley, MN 55037	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Erin	Hornberger	elorenzen24@hotmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bonnie	Horne	N/A		1500 8th Avenue  Littlefork, MN 56653	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Audrey	Horne	N/A		5824 Cty Road 1  Littlefork, MN 56653	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nathan	Horner	nhorner@centuryfence.com	Century Fence	PO Box 277  Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leah S.	Horowitz, Ph.D.	lhorowitz@wisc.edu	Nelson Institute for Environmental Studies	University of Wisconsin- Madison 550 N Park St Rm 80 Science Hall Madison, WI 53706	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Becky	Horton	Becky.Horton@state.mn.us	Department of Natural Resources	1200 Warner Rd St. Paul, MN 55106	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Marlys	Horvath	Mhorvath2@hotmail.com		37498 State Highway 89 Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Hottinger	jchnorthstar@gmail.com	Hottinger Consulting LLC	14 Irvine Park Unit 14A St. Paul, MN 55102	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kari	Howe	kari.howe@state.mn.us	DEED	332 Minnesota St, #E200 1ST National Bank Bldg St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Walter	Hruska	N/A		1227 Greystone Lane SW Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Hufnagle	N/A		PO Box 7 Big Falls, MN 56627	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jim	Huhta	N/A		2251 Holn Rd Cromwell, MN 55726	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Shirley	Hunkins	N/A		734 S 7th St Breckenridge, MN 56520	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ryan	Hunt	ryanhunt@hugllc.com		408 Kent St Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Amber	Hunt	gaiasophia101@gmail.com		408 Kent Street Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Joe	Husbands	josephhusbands@hotmail.com		611 State Highway 172 NW  Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Doug	Hussman	N/A		13401 94th N  Maple Grove, MN 55369	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard and Norma	Hvidsten	N/A		1555 Main St NW Unit 311  Coon Rapids, MN 55448	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Roger	Irhke	N/A	Township Cooperative Planning Association	Rochester Township Hall, Room 10 4111 11th Ave SW Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rosalie	Isham	N/A		35216 State HWY 89  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Samuel	Jackson	sam@cummins-law.com		1245 International Centre 920 Second Ave South Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Curtis E. and Mary Jo	Jackson, Trustees	N/A		310 Birchwood Dr. N  Stillwater, MN 55082	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Jacobsen	N/A		44845 270th St  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Arshia	Javaherian	arshia.javaherian@enbridge.com	Enbridge Energy	26 East Superior Street Suite 309 Duluth, MN 55802	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Susu	Jeffrey	susujeffrey@msn.com	Friends of Coldwater	1063 Antoinette Ave  Minneapolis, MN 55405	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeff	Jelinski	jeffreyj@co.morrison.mn.us	Morrison County	District 2 213 SE 1st Avenue Little Falls, MN 56345	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Alan	Jenkins	aj@jenkinsatlaw.com	Jenkins at Law	2265 Roswell Road Suite 100 Marietta, GA 30062	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Patrice	Jensen	patrice.jensen@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd N  St. Paul, MN 55155	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Linda	Jensen	linda.s.jensen@ag.state.mn.us	Office of the Attorney General-DOC	1800 BRM Tower 445 Minnesota Street  St. Paul, MN 551012134	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sarah	Jewell	sjewell@rwkp.com	Reichert Wenner, P.A.	616 Roosevelt Rd Suite 100 PO Box 1556 St. Cloud, MN 56302-1556	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Johnson	berniceandbob@cox.net		4235 Phelps RD  Phoenix, AZ 85032	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leonard	Johnson	Leonard.Johnson@enbridge.com	Enbridge	N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Johnson	chuckmelody@live.com		5140 Rainbow Lane  Mounds View, MN 55112	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robin	Johnson	N/A		PO Box 64  Motley, MN 56466	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
David	Johnson	eventsplanner@yahoo.com		5950 Herranen Rd Cromell, MN 55726	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Earl	Johnson	N/A		24306 Cty Rd 13 Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Darrel	Johnson	N/A		11921 480th St Tamarack, MN 55787	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Marie	Johnson	N/A		26475 Cty Rd 126 Salol, MN 56756	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Johnson	Scott.Johnson@ci.medina. mn.us	City of Medina	2052 County Road 24 Medina, MN 55340-9790	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leonard	Johnson	leonardjohnson.duluth@gm ail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cavour	Johnson	snowta@uslink.net		4468 E Hwy 169 Bovey, MN 55709	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deanna	Johnson	nanakay@unitelc.com		15559 Explorer Circle Park Rapids, MN 56470	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Johnson	Rick.Johnson@lawmoss.co m	Moss & Barnett	150 S. 5th Street Suite 1200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Johnson	N/A		3120 2nd Street SW Buffalo, MN 55213	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Tom	Johnson	LTJENT.INC@hotmail.com		39790 250th St Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dean and Jill	Johnson	theoaks@brainerd.net		5758 124th St SW Pillager, MN 56473	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James L	Johnson	jimjohnson767@gmail.com		29054 680th Ave Roosevelt, MN 56673	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ron and Linda	Johnson	N/A		11325 230th St NE Thief River Falls, MN 56701	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Darrel T.	Johnson	N/A		9255 Military Rd Cottage Grove, MN 55016	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Johnson	kevinjohnson@mncable.net		Box 91 308 Main Ave Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sarah	Johnson Phillips	sarah.phillips@stoel.com	Stoel Rives LLP	33 South Sixth Street Suite 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Loren	Johnston	N/A		5795 Prairie Ridge Drive Shoreview, MN 55126	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Harry and Darlene	Johnston	N/A		4433 131st St W Savage, MN 55378	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mary Beth	Jones	BADEMAIL- mbjgwg@charter.net		8573 Birchwood Hills Rd Lakeshore, MN 56468	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jeff	Jones	jrjones@cityofpipestone.com	City of Pipestone	119 2nd Ave SW Pipestone, MN 56164	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ian	Jorgensen	ijorgensen@centuryfence.com	Century Fence	PO Box 277 Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Hans	Jung	hans.jung@frontier.com		26056 Pheasant Run Lindstrom, MN 55045	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Just	N/A	Just Property Development	3141 Francesca Drive Chaska, MN 55318	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
STACY	KOTCH EGSTAD	Stacy.Kotch@state.mn.us	MINNESOTA DEPARTMENT OF TRANSPORTATION	395 John Ireland Blvd. St. Paul, MN 55155	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Susan	Kadlec	susan.kadlec@jkalawfirm.com	Jovanovich, Kadlec & Athmann, PA	1010 W. St. Germain, Suite 420 St. Cloud, Minnesota 56301	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Kafstad	N/A		36998 State Hwy 11 Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stacey	Kaldenburg	N/A	Pleasant Grove Township Clerk	4040 75 th St SE Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Kaluzniak	mike.kaluzniak@state.mn.us	Public Utilities Commission	Suite 350 121 Seventh Place East St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Kannas	jbkannas@northlc.com		40874 Co. Rd. 336 Bovey, MN 55709	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Stacey	Karels	skarels@local563.org	Mankato Area Bldg & Construction Trades Council	310 McKinzie St Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Katzenmeyer	mlkatz@midco.net		465 West Amber Lake Dr Fairmont, MN 56031	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark J.	Kaufman	mkaufman@ibewlocal949.org	IBEW Local Union 949	12908 Nicollet Avenue South Burnsville, MN 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Barbara	Kaufman	bkaufman@tds.net		1295 32nd St SW Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Keely	N/A		P.O. Box 354 Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jon	Keener	N/A		501 151st Street Phoenix, IL 60426	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Keicker	N/A		30 Deer Ridge Rd Mankato, MN 56001	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Kell	kdavid6816@gmail.com		317 6th Ave SW #407 Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tony and Angie	Kellin	N/A		19490 Ruff Shores Rd Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Kelly	james.kelly@state.mn.us	Department of Health	PO Box 64975 St. Paul, MN 551640975	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Russell	Keppers	N/A		34175 Pulaski Rd Cushing, MN 56443	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lindsey	Ketchel	ketch22LJK@gmail.com		1972 Trillium Dr. NW Hackensack, MN 56452	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Kidwell	N/A		7446 Co Rd 1 Little fork, MN 56653	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deb	Kiel	rep.deb.kiel@house.mn		36044 275th Ave SW Crookston, MN 56716	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Raina	Killspotted	raining_kills@yahoo.com		36086 194th Place McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Andy	Kim	akim@evs-eng.com	EVS, Inc.	10250 Valley View Road Suite 123 Eden Prairie, MN 55344	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	King	tomking@wiktel.com		304 Dale Ave SW Warroad, MN 56763	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bruce	King	bruce@ranww.org	Realtors, Association of Northwestern WI	Suite 3 1903 Keith Street Eau Claire, WI 54701	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Hudson	Kingston	hudson@advocatepllc.com	Advocate PLLC	4849 12th Ave S Minneapolis, MN 55414	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Barb	Kirk	N/A		715 5th St International Falls, MN 56649	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Ariel	Kirk	ariellkirk@yahoo.com		713 9th St International Falls, MN 56649	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ray	Kirsch	Raymond.Kirsch@state.mn.us	Department of Commerce	85 7th Place E Ste 500 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rachel	Kitze Collins	rakitzecollins@locklaw.com	Lockridge Grindeal Nauen PLLP	100 Washington Ave S Suite 2200 Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Don	Klande	N/A		13699 Cty Rd 72 Swan River, MN 55784	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Doug	Klein	dklein@clearwatereg.com		453 Tower St NW Clearbrook, MN 56634	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Betsy	Kleinwort	N/A	Rock Dell Township Clerk	8075 Co Rd 126 SE Byron, MN 55920	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Kleist	buffalotownship@aol.com	Buffalo Township	3405 56th St NE Buffalo, MN 55313	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ronald	Knudson	N/A		PO Box 225 Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Koehler	TGK@IBEW160.org	Local Union #160, IBEW	2909 Anthony Ln St Anthony Village, MN 55418-3238	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Walter	Kolodziej	N/A		PO Box 2 Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Chad	Konickson	chad.konickson@usace.army.mil	U.S.Army Corps of Engineers	180 5th St # 700 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Raymond	Kopkie	N/A		1910 1st Ave W International Falls, MN 56649	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Del	Kortgard	N/A		9075 1st Ave S Granite Falls, MN 56241	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jack	Korthof	N/A		3327 Eaken Avenue NE Buffalo, MN 55313	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dennis	Koulgraf	kohlgraf@frontiernet.net		38366 State Hwy 65 McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gerald	Krahn	N/A		59450 County Rd 12 Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Arthur	Krahn	N/A		59404 CR 12 Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Krikava	mkrikava@briggs.com	Briggs And Morgan, P.A.	2200 IDS Center 80 S 8th St Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Kripotos	N/A		312 Central Ave SE Minneapolis, MN 55414	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Karen	Kromar	karen.kromar@state.mn.us	MN Pollution Control Agency	520 Lafayette Rd Saint Paul, MN 55155	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Kathy	Krook	wallyk327@msn.com		2362 Diane Ln Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Kurtzbein	bkurtzbein@yahoo.com		2037 Hwy 7 SW Montevideo, MN 56265	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Miles	Kushel	mkuschel@hotmail.com		8453 Co 20 SW Sebeka, MN 56477	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tim and Jessica	Kveen	N/A		1920 Sunkist Avenue Waukesha, WI 53188	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Terry and Carol	Kveen	N/A		N69 W20473 Orchard Ct Menomonee Falls, WI 53051	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Norman	Kveen	N/A		4760 North 186th Street Brookfield, WI 53045	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Patricia	Kveen Beaumont	N/A		5258 South 22nd Place Milwaukee, WI 53221	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steven	Kvenvold	skvenvold@rochestermn.gov	City of Rochester - Administrator	201 4th Street SE Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathy	LaBerge	labergeonthelake@yahoo.com		50597 Long Pt Pl McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	LaBorde	mike.laborde@yahoo.com		33917 Fairfield 114 Crosby, MN 56441	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Winona	LaDuke	winonaladuke1@gmail.com	Honor the Earth	607 Main Avenue Callaway, MN 56521	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	LaFave	james.lafave@state.mn.us	Office of Administrative Hearings	PO Box 64620 St. Paul, MN 55164-0620	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Martin	LaVenture	martin.laventure@health.state.mn.us	MN Department of Health	P.O. Box 64882 St. Paul, MN 55164	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Janelle	Lake	N/A		PO Box 369 Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rena	Langowski	renajane1@gmail.com	Oakland Township	19960 900th Ave Austin, MN 55912	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Adam	Lanz	alanz@treknorth.org	TrekNorth Jr. & Sr. High School	2400 Pine Ridge Ave. NW Bemidji, MN 56601	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Doug	Lappi	N/A		18958 Wolf Lake Trail Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Larson	buzzlarson62@yahoo.com		27176 Birch Drive Bovey, MN 55709	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dale	Larson	N/A		1556 Riangeline Rd SW Williams, MN 56686	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Adrian	Larson	aplars@gmail.com		402 7th Ave SE Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gene	Larson	N/A		9068 Annapolis Lane Maple Grove, MN 55369	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Katie	Larson	BADEMAIL- krlarson@sehinc.com	SEH	418 West Superior St Suite 200 Duluth, MN 55802-1514	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike and Christine	Lau	N/A		84428 120th St Glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cheryl	Lawrence	cjmlawrence@hotmail.com		501 - 14th St Cloquet, MN 55720	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Abby K.	Leach	abby@leachlawalbertlea.com		205 S Washington Ave Albert Lea, MN 56007	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
George	Leary	george.leary@blueearthcountymn.gov	Blue Earth County Planning & Zoning	410 S 5th St Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ronald	Lee	N/A		12084 County Rd 118 Merrifield, MN 56465	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin P.	Lee	klee@mncenter.org	Minnesota Center for Environmental Advocacy	26 E Exchange St Ste 206 Saint Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Amber	Lee	ASLee@minnesotaenergyresources.com	Minnesota Energy Resources Corporation	2685 145th St W Rosemount, MN 55068	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Nicci	Lehto	nicci.lehto@piic.org	Prairie Island Indian Community	5636 Sturgeon Lake Road Welch, MN 55089	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Leiferman	Mark.Leiferman@co.waseca.mn.us	Waseca County	300 N State St Waseca, MN 56093	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Leonhardt	N/A		32128 Konig Rd NE Waskish, MN 56685	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dan	Leshner	dlesher@greenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joel	Lewis	joeldlewis@msn.com		6224 Yuka Ave N Brooklyn Park, MN 55428	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rich	Libbey	rdlibbey@mchsi.com		18603 Hale Lake Drive Grand Rapid, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Wallace	Licke	john_licke@yahoo.com		26564 County Rd 340 Big Fork, MN 56628	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Lieser	kada@charter.net		709 South 13th Street Montevideo, MN 56265	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Les	Liimatainen	N/A		12 Canosia Rd Esko, MN 55733	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steven	Lillestal	steve@theirriverford.com		14054 Riverbend Tr Thief River Falls, MN 56701	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Dale	Lillfors	N/A		506 12th Ave SW Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leafwin	Lindblom	N/A		10961 State Hwy 87 Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert E.	Lindell	N/A		4741 Boone Ave N New Hope, MN 55428	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Larry	Lindholm	llindholm@sginterests.com	RGGGS Land & Minerals, LTD	PO Box 1266 Virginia, MN 55792	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kim	Lindquist	kim.lindquist@ci.rosemount .mn.us		2875 145th St W Rosemount, MN 55068	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Darrell	Lins	N/A		35200 Co Rd 3 Badger, MN 56714	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Eric	Lipman	eric.lipman@state.mn.us	Office of Administrative Hearings	PO Box 64620 St. Paul, MN 551640620	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Lippert	charlie.lippert@millelacsba nd.com		43408 Oodena Dr Onamia, MN 56359	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Susan	Lisell	gjslisell@gmail.com		24459 County Rd 129 Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dan	Litchfield	DLitchfield@invenergyllc.co m	Invenergy LLC	One S Wacker Dr Ste 1800 Chicago, IL 60606	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Glen H.	Livermont	Glen_livermont@nps.gov	Pipestone National Monument	36 Reservation Ave Pipestone, MN 56164	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Adam	Loberg	advantageenterprises@gmail.com		5877 Bluestem Lane SW Motley, MN 56466	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Loeffler	mike.loeffler@nngco.com	Northern Natural Gas Co.	CORP HQ, 714 1111 So. 103rd Street Omaha, NE 681241000	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Lofgren	coliemark@gmail.com		41366 Scenic Hwy Bovey, MN 55709	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michelle	Lommel	mlommel@GREnergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard and Helen	Lorenz	N/A		21166 County Rd 57 Nashwauk, MN 55769	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deb	Lowe	debl@co.morrison.mn.us	Morrison County	13784 160th Ave Little Falls, MN 56345	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Karen	Lucachick	N/A		18469 Sugar Lake Trail Cohasset, MN 55721	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Otto Edwin	Lueck	N/A		18719 US Hwy 2 Warba, MN 55793	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Clarence and Virginia	Luecken	N/A		2820 389th Ave. NE Stanchfield, MN 55080-3205	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
David	Lund	N/A		56432 County Rd 2 Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lawrence	Lundin	N/A		5493 Lundin Rd Cromwell, MN 55726	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Redeemer	Lutheran Church	N/A		PO Box 306 Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dan and Krista	Lutzi	N/A		6237 20th St SW Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rosemary	Lutzi	N/A		6235 20th St SW Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John and Jessica	Lutzi	jrlutzi80@gmail.com		7135 Salem Rd SW Byron, MN 55920	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lindsay K.	Lyle	lkyle@minnesotaenergyresources.com	Minnesota Energy Resources Corporation	1995 Rahncliff Ct Ste 200 Eagan, MN 55122-3401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gregory and Tamberleene	Maaninga	N/A		227 10th Street SW Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Toby	Mack	tmack@eeia.org	EEIA	601 Pennsylvania Ave NW Suite 900 Washington, DC 20004	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Peter	Madsen	peter.madsen@ag.state.mn.us	Office of the Attorney General-DOC	Bremer Tower, Suite 1800 445 Minnesota Street St. Paul, Minnesota 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Sue	Madson	sue_madson@hotmail.com		14806 830th Ave Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leon	Mager	lam3@isd.net		19511 E. Tri Oak Cir. NE Wyoming, MN 55092	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kermit and Hazel	Magnuson	N/A		PO Box 126 New Folden, MN 56738	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mitch	Magnusson	mitmag@centurytel.net		33790 320 S4 Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Patrick	Mahlberg	pmahlberg@fredlaw.com	Fredrikson & Byron, P.A.	200 S 6th St Ste 4000 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Duane	Mahlum	duane.mahlum@gpng.com	Great Plains Natural Gas Company	705 West Fir Avenue Fergus Falls, Minnesota 56538	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Philip	Mahowald	pmahowald@thejacobsonlawgroup.com	Jacobson Law Group	180 East Fifth Street Suite 940 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kavita	Maini	kmairi@wi.rr.com	KM Energy Consulting LLC	961 N Lost Woods Rd Oconomowoc, WI 53066	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Malecha	BADEMAILbillm@ibew110.org	IBEW 110	13896 360th St Lindstrom, MN 55045	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jennifer	Maleitzke	N/A	Natural Resource Group	80 South 8th Street Minneapolis, MN 55402	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Brad	Malm	btmalm@yahoo.com		1330 Conway Street Ste 110  St. Paul, MN 55106	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deana	Malone	deana.malone@co.wadena.mn.us	Wadena County Planning & Zoning	Rm. 234, Courthouse 415 Jefferson Street South Wadena, MN 56482	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Maloney	drm5966@frontiernet.net		26750 Olinda Trail  Lindstrom, MN 55045	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Project	Manager	N/A	US Army Corps of Engineers	1114 South Oak Street  La Crescent, MN 55947	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark and Beth	Mandich	N/A		24352 Cty Rd 57  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dorothy	Mandler	harmand99@gmail.com		28095 Pelican Lake Rd  Merrifield, MN 56465	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Matt	Mangulis	mattmangulis@yahoo.com		21304 594th Ave.  Mankato, MN 56001	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Glenn	Manni	gman1249@yahoo.com		294 Middle Pine Ct.  Star Prairie, WI 54026	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anne	Marcotte	anne.marcotte@co.aitkin.mn.us	Aitkin County Board	Aitkin County Commission PO Box 192 Hill City, Minnesota 55748	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Linda	Marjamaa	BADEMAIL-marjaal@wcta.net		10243 Hubbard Line Rd  Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Rob	Maroney	N/A	US Corp of Engineers	10867 East Gull Lake Dr NW  Brainerd, MN 56401	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Marshall	jim_marshall90@hotmail.com		210 Benson Lane  Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Pam	Marshall	pam@energycents.org	Energy CENTS Coalition	823 7th St E  St. Paul, MN 55106	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Roberta	Martin	roberta.martin@millelacsband.com		62264 Grouse Trail  Hinckley, MN 55037	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ashley	Martin	ashley.martinstevens@gmail.com		214 3rd Street SW  Fosston, MN 56542	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steve	Martinson	N/A	KIMT TV	112 N Pennsylvania Ave  Mason City, IA 50401	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Barbara	Mason	forbarb@gmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sheila	Masters	N/A		7238 148th St NW  Cass Lake, MN 56633	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joel	Mattfield	N/A		39026 County Rd 336  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Norman K.	Mattfield	N/A		39782 Scenic Hwy  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

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Meloy	Mattfield	N/A		39100 Cty Rd 336 Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michelle	Matthews	Michelle.Matthews@res- group.com	Renewable Energy Systems	330 2nd Ave S Ste 820  Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Willis	Mattison	mattison@arvig.net	Self	42516 State Hwy 34  Osage, MN 56570	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Keith A.	Mattison	mattison@paulbunyan.net		4679 Grant Valley Road NW  Bemidji, MN 56601	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dennis	McClellan	N/A		2113 10th Ave East  Hibbing, MN 55346	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	McClellan	mccllnmrk@yahoo.com		2019 11th Ave E  Hibbing, MN 55746	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Torin	McCormack	rrwd@mncable.net		108 3rd Ave SW  Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Phil	McKenna	phil.mckenna@insideclimat e news.org		1035 Cambridge St  Cambridge, MA 02141	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Warren	McQuay	N/A		20767 County Rd 5C  Nashwauk, MN 55769	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Beverly	Meadows	meadowsb@paulbunyan.n et		11952 Co Rd 51  Northome, MN 56661	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Susan	Medhaug	Susan.medhaug@state.mn.us	Department of Commerce	Suite 280, 85 Seventh Place East  St. Paul, MN 551012198	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thomas	Melone	Thomas.Melone@AllcoUS.com	Minnesota Go Solar LLC	222 South 9th Street Suite 1600 Minneapolis, Minnesota 55120	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mattfield	Meloy	N/A		39100 County Road 336  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Meloy	brian.meloy@stinson.com	Stinson, Leonard, Street LLP	50 S 6th St Ste 2600  Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Merritt	bob.merritt7160@gmail.com		1241 MN Ave  Detroit Lakes, MN 56501	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Harry	Meyer	N/A		1814 70th Ave SW  Byron, MN 55920	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bill	Meyer	bsmeyer99@msn.com		1826 70th Ave SW  Byron, MN 55920	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Paul	Meyer	pattibjorneby@hotmail.com		22165 Great Eastern  Warren, MN 56762	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Catherine	Michaud	catherine.michaud@glscities.org		20 North Wacker Drive Suite 2700  Chicago, IL 60606	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Tom	Micheletti	tommicheletti@excelsiorenergy.com	Excelsior Energy Inc.	225 S 6th St Ste 2560 Minneapolis, MN 55402-4638	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anne	Michels	N/A		5732 30th St Holdingford, MN 56340	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John R and Sharon	Miller	N/A		14985 114th St Norwood Young America, MN 55397	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jessica	Miller	BADEMAIL- Jessica.Miller@whiteearth- nsn.gov	White Earth Band of Ojibwe	P.O. Box 238 White Earth, MN 56591	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Miller	N/A	Roseau County	52630 County Road 2 Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Chris	Mills	cmills@sac.k12.mn.us		PO Box Stephen, MN 56757	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Mixon	kevin.mixon@state.mn.us	Department of Natural Resources	261 HWY 15 S New Ulm, MN 56073	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Moeller	dmoeller@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022093	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Monkman	monkmandm@yahoo.com		8095 20th St SW Backus, MN 56435	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Moody	N/A		7634 Pine Tree Road Side Lake, MN 55781	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Ken	Moorman	ken_m@co.lake-of-the-woods.mn.us		PO Box 674 Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Andrew	Moratzka	andrew.moratzka@stoel.com	Stoel Rives LLP	33 South Sixth St Ste 4200 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Craig	Morpne	N/A		28578 Anchorage CT NW Shevlin, MN 56676	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Mortenson	james.mortenson@state.mn.us	Office of Administrative Hearings	PO BOX 64620 St. Paul, MN 55164-0620	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rick	Moser	rjmoser@integrysgroup.com	MERC	700 N Adams Street Green Bay, WI 54307	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jan	Mosman	janicemosman@gmail.com		PO Box 247 Emily, MN 56447	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeremy and Melissa	Moulton	memoulton@hotmail.com		36301 Aztec Rd Motley, MN 56466	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Debra	Moynihan	debra.moynihan@state.mn.us	MN Department of Transportation	395 John Ireland Blvd MS 620 St. Paul, MN 55155-1899	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Colleen	Mueller	N/A		22186 State Hwy 4 Paynesville, MN 56362	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Roger	Muellner	N/A		7102 Calientito Loop Santa Fe, NM 87507-4613	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Donna	Muirhead	N/A		63834 Cty Road 2  Roosevelt, MN 56673	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Munter	mumooatthefarm@yahoo.com		14860 Bruce Crk Rd  Warba, MN 55793	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian J	Murphy	Brian.J.Murphy@nee.com	Nextera Energy Resources, LLC	700 Universe Blvd LAW-JB Juno Beach, FL 33408	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sonny	Myers	N/A	1854 Treaty Authority	4428 Haines Rd  Duluth, MN 55811-1524	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Myers	N/A		PO Box 16  Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Nauen	cnnauen@locklaw.com	Lockridge Grindal Nauen	Suite 2200 100 Washington Avenue South Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joe	Navejas	jnavejas@liunagroc.com		1308 Spring Rd  Faribault, MN 55021	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Neaton	neatonfamily@msn.com		4433 Upton Ave South  Minneapolis, MN 55416	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Terry	Neff	tneff@co.aitkin.mn.us	Aitkin County Environmental Services	209 2nd Street NW Room 100 Aitkin, MN 56431-1257	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Nelson	snelson@centuryfence.com	Century Fence	PO Box 277  Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Dana	Nelson	dakotaflats@gmail.com		808 N 7th Street  Fargo, ND 58102	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Erik	Nelson	enels86@yahoo.com		87011 110th St  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tyler	Nelson	N/A		14314 810th Ave  glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kathy	Nelson	gregandkathynelson@gmail.com		11589 870th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Marshall	Nelson	marshallnelson@wiktel.com		1942 23rd St SW  Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Pete and Joani	Neu	N/A		8382 172nd Ave SE  Becker, MN 55308	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeanne	Newstrom	N/A		24683 Trout Lake Road  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Niemi	mniemi04@gmail.com		2021 W 2nd St Apt 204  Duluth, MN 55806	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Niles	david.niles@avantenergy.com	Minnesota Municipal Power Agency	220 South Sixth Street Suite 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Duane	Ninneman	duane@cureriver.org	Clean Up the River Environment	117 South 1st St  Montevideo, MN 56265	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Darrell	Nitschke	dnitschk@nd.gov	North Dakota Public Service Commission	600 E. Boulevard Avenue State Capital, 12th Floor, Dept 408 Bismarck, ND 585050480	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rich	Noble	rich.noble@jkoskicompany.us		3193 Maple Dr  Cloquet, MN 55720	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Diane	Noll	albanywp@albanytel.com		20933 330 St  Albany, MN 56307	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nicole	Nordquist	nicole.nordquist@edf-re.com	EDF Renewable Energy	10 2nd Street NE Suite 400 Minneapolis, MN 55413	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Pam	Nordstrom	beaglenemo@yahoo.com		PO Box 103  Palisade, MN 56469	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sheryl	Noretip	sheryl8898@gmail.com		520 S Markley  Theif River Falls, MN 56701	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nancy	Norr	nnorr@mpower.com	Minnesota Power	30 W Superior St  Duluth, MN 55802	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ryan	Norrell	N/A	North Dakota Public Service Commission	600 E. Boulevard Avenue State Capital, 12 th Floor Dept 408 Bismarck, ND 58505-0480	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lois	Norrgard	Inorrgard@lnmn10.com		10368 Columbus Circle  Bloomington, Minnesota 55420	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Lois	Norrgard	lois@alaskawild.org	Alaska Wild	10368 Columbus Circle  Bloomington, Minnesota 55420	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Levi M.	Novacek	Inovacek798@gmail.com		45073 268th St  Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ron	Nuese	nuesers@itctel.com		1472 290th St  Hendricks, MN 56136	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Nutting	btutting@msn.com		49408 201st Ave  McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kate	O'Connell	kate.oconnell@state.mn.us	Department of Commerce	Suite 50085 Seventh Place East  St. Paul, MN 551012198	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ann	O'Reilly	ann.oreilly@state.mn.us	Office of Administrative Hearings	PO Box 64620  St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nate	OReilly	nate@iron512.com		43559 232nd Ave  Mazeppa, MN 55956	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Les	Oberg	N/A		6865 Wee Gaus Dr SE  Cass Lake, MN 56633	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ryan	Odden	N/A		221 Harry Rich Dr  Windom, MN 56482	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rick	Olseen	rick.olseen@mail.house.gov	Field and Constituent Service Rep	313 N Main St #103  Center City, MN 55012	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Colette	Olson	N/A		51645 Cty Rd 126 Salol, MN 56756	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Allie	Olson	aa_olson@hotmail.com		12225 810th Ave Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kari	Olson	N/A		1000 6th Street SW Chisholm, MN 55719	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Greg	Olson	N/A		PO Box 126 Karlstad, MN 56732	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rebecca	Olson	bolson123@northlc.com	Balsam Township	Not provided Balsam Township,	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Olson	olson2439@gmail.com		81802 160th Street Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kenneth	Oraskovich	N/A		18495 470th St Clearbrook, MN 56634	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Orin	Ostlund	N/A		17805 MN Hwy 15 Dassel, MN 55325	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brent	Ostlund	N/A		69347 185th St Dassel, MN 55325	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Oueson	robertcharity@gmail.com		6425 East Leisure Lane Flagstaff, AZ 86004	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Carol A.	Overland	overland@legalectric.org	Legaelectric - Overland Law Office	1110 West Avenue Red Wing, MN 55066	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jessica	Palmer Denig	jessica.palmer-Denig@state.mn.us	Office of Administrative Hearings	600 Robert St N PO Box 64620 St. Paul, MN 55164	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nahko	Parayno	nahkobear@gmail.com		423 Ashland Ave  Santa Monica, CA 90405	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Keith	Parker	keith.parker@state.mn.us	Department of Natural Resources	1200 Warner Rd  St. Paul, MN 55106	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Marsha	Parlow	mparlow@grenergy.com	Great River Energy	12300 Elm Creek Boulevard  Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Passe	chpasse@gmail.com		3300 60 Ave SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Francis	Passe	francispasse@gmail.com		3242 60th Ave SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bob	Patton	bob.patton@state.mn.us	MN Department of Agriculture	625 Robert St N  Saint Paul, MN 55155-2538	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jason	Paulson	jpaulson@charps.com		246 Ash St  Gonvick, MN 56644	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Geraldine	Pavlacky	N/A		5164 State Highway 210 SW  Pillager, MN 56473-2311	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Pavlik	bilmar@usfamily.net		17874 - 473rd St  McGregor, MN 5576	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Andrew	Pearson	stopthewar24@gmail.com		2629 18th Ave S Apt 2 Minneapolis, MN 55407	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Pederson	N/A		1112 County Rd 139  Hendricks, MN 56136	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeff and Beth	Pederson	N/A		23233 Cty Rd 8  Bovdy, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Verde	Pepin	N/A		4982 Azalea Rd  Motley, MN 56466	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Patrick and Candace	Perry	N/A		22790 Wildwood Dr  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
C W	Peter	wojjie@frontiernet.net		5405 Pagenkopf Road  Independence, MN 55359	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gene	Peters	gpete1951@aol.com		1320 Wickelow Lane SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sharon	Petersen	N/A	Salem Township Clerk	3802 Co Rd 150 SW  Byron, MN 55920	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Doug	Peterson	djlpete@yahoo.com		36168 410th St Aitkin, MN 56431	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Alice	Peterson	N/A		24153 300th St NW Argyle, MN 56713	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Walter	Peterson	123waltp@live.com		5181 48th St SW Pine River, MN 56474	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Peterson	kjp@ibew160.org	IBEW Local 160	1109 Northway Lane NE Rochester, MN 55906	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Peterson	kepeters@midco.net		3075 Town Rd 225 International Falls, MN 56649	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Linda K.	Peterson	lkpete@cloudnet.com		919 12th Ave N St. Cloud, MN 56303	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jesse	Peterson	N/A		2011 East Second St Duluth, MN 55812	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Peterson	john.peterson@nwsmn.com	Northwestern Surveying	PO Box 3067 Bemidji, MN 56619	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Catherine	Phillips	catherine.phillips@we-energies.com	We Energies	231 West Michigan St Milwaukee, WI 53203	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Angela	Piner	angela.piner@hdrinc.com	HDR, Inc.	Suite 600 701 Xenia Avenue South Suite 600 Minneapolis, MN 55416	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jerry and Carolyn	Pittelko	gwp_mn@yahoo.com		4901 Bamber Vly Rd SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Abbie	Plouff	abbie.plouff@gmail.com		308 E Prince St Apt 522 St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joseph	Plumer	joep@whiteearth.com	Red Lake Band of Chippewa Indians	P.O. Box 567  Red Lake, Minnesota 56671	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cody	Pogalz	codypogalz@dmceda.org	Destination Medical Center	N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bruce	Polkinghorne	N/A	North Star Electric Cooperative, Inc.	PO Box 136  Littlefork, MN 56653	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Craig	Poorker	cpoorker@greenergy.com	Great River Energy	12300 Elm Creek Boulevard  Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Post	David.Post@enel.com	Enel Green Power North America	7650 Edinborough Way Ste 725  Edina, MN 55435	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Pranis	kpranis@liunagroc.com	Laborers' District Council of MN and ND	81 E Little Canada Road  St. Paul, Minnesota 55117	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Pufahl	N/A	Laborers District Council, MN & ND	81 E Little Canada Road  St. Paul, MN 55117	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Rademacher	N/A		27909 Linn Rd  Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Erin	Radloff	erin.radloff@cenovus.com	Cenovus Energy, Inc.	500 Centre Street SE  Calgary, AB T2P 0M5  CANADA	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Raines	braines@ncsrcc.org	North Central States Regional Council of Carpenters	700 Olive Street  St. Paul, Minnesota 55130	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Larry	Rebman	larryemls@hotmail.com	EMLS, Inc	PO Box 122  Appleton, MN 56208	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Joel	Reed	jreed2237@gmail.com		2237 Nendick Road  Carlton, MN 55718	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James W.	Reents	jwreents@gmail.com		4561 Alder Ln NW  Hackensack, MN 56452	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mitch	Regal	mitch@innovativefs.com		1100 Holstein Dr NE  Pine City, MN 55063	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jay	Regnier	jay.regnier@prcwind.com	PRC Wind	618 2nd Ave SE  Minneapolis, MN 55414	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Teresa	Reichwein	tmr459@yahoo.com		12292 129th Ave  Menahga, MN 56464	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Reinhart	littlebear@northlc.com		20183 County Rd 52  Cook, MN 55723	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Cassandra	Remington	purplesandy07@gmail.com		2778 18th St SW Backus, MN 56435	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Neil	Rever	neilver@hotmail.com		24679 Hale Ave Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anita	Reyes	wagonburner1020@aol.com		510 3ed St NW Mahnomon, MN 56557	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Margaret	Rheude	Margaret_Rheude@fws.gov	U.S. Fish and Wildlife Service	Twin Cities Ecological Services Field Office 4101 American Blvd. E. Bloomington, MN 55425	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Barb	Rian	barb14@live.com		PO Box 84 McGregor, MN 55760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stuart	Rice	N/A		39737 290th Ave Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brian	Rice	brianrice@centurytel.net	Century	39650 320th Ave Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steven K.	Rice	whiteymn@aol.com		3737 11th Ave. S. Moorhead, MN 56560	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Anna	Richey	anna@conservationminnesota.org	Conservation MN	137 8th St NE Rochester, MN 55906	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Dustin	Richmond	d3krich@westtechwb.com		3368 County Highway 7  Ivanhoe, MN 56142	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stephanie	Richter	srichter12033@gmail.com		12033 840th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Richter	N/A		PO Box 217  Milaca, MN 56353	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Richter	ggrichter55@gmail.com		12033 840th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sean	Riley	N/A	Wright County Planning and Zoning	10 2nd Street NW  Buffalo, MN 55313	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael W and Roxanne J	Robinson	hummingbirdrock777@live.com		4705 11th Ave SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Robinson	pascoe@paulbunyan.net		1810 South Lake Irving Dr SW  Bemidji, Mn 56601	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Robinson	jurob03@gmail.com		11125 Carver Ct  Burnsville, MN 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Vince	Robinson	vince@lincolnterprise.org	Lincoln County Enterprise Dev Corp	PO Box 46  Ivanhoe, MN 56142	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bruce	Robinson	robibru@frontiernet.net		35651 464th Lane  Palisade, MN 56469	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jacqueline	Rodkewich	jacquehomeemail@gmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Thompson	Rodney and Carol	N/A		17679 635th Street Dodge Center, MN 55927	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steve	Roe	roetreat@crosslake.net		11663 Whitefish Ave  Crosslake, MN 56442	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Deborah	Roettger	pocketsdr@yahoo.com		36028 437th Lane  Aitkin, MN 56431	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Timothy G.	Rogers	Timothy.g.rogers@xcelenergy.com	Xcel Energy	414 Nicollet Mall  Minneapolis, MN 554011993	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Wendy	Rogers	N/A		701 23rd St SW  Baudette, MN 56623	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Suzanne	Rohlfing	caraway57@aol.com	North Route Group	2310 15th Ave NW  Rochester, MN 55901	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Rooney	N/A		4603 6th St NE  Columbia Heights, MN 55421-2214	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Andrew	Roscoe	aroscoe@mid-america.com		2609 Hayes Drive  Burnsville, MN 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leslie	Rosedahl	leslierosedahl@gmail.com		1765 Ashland Ave  St Paul, MN 55105	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Kristi	Rosenquist	windjourneyfarm@sleepyey etel.net		42883 228th Avenue  Mazeppa, MN 55956	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Clayton	Ross	N/A		3338 Co Rd 101  Hendricks, MN 56136	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James	Ross	N/A		1487 330th St  Hendricks, MN 56136	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jean	Ross	jfross@umn.edu		3624 Bryant Ave S  Minneapolis, MN 55409	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bryan	Roth	Bryan.roth@itctel.com	Interstate Telecommunications Coop.	P.O. Box 920  Clear Lake, SD 57226	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Roush	sroush@centuryfence.com	Century Fence	PO Box 277  Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ronald	Rozeske	rrozkeske@frontiernet.net		8323 Lent Trail  Stacy, MN 55079	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dawn	Rubner	N/A		11572 Cty Rd 1  Pine River, MN 56474	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Rucker	mruckerb@gmail.com		715 121st St  Lake Wilson, MN 56151	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Erwin	Rud	slowdancer@gvtel.com		33261 US Hwy 2 SE  Fosston, MN 56542	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Steve	Rudolph	stephen.rudolph@state.mn.us	Department of Natural Resources	208 Main Street East Baudette, MN 56623	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ruth Marie	Rudolph	N/A		5750 Adair Ave N Crystal, MN 55429	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Rutledge	mrutledge@fageneng.com	Fagen Engineering LLC	501 W Hwy 212 PO Box 159 Granite Falls, MN 56241	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Rutsen	N/A		6794 45Av SW Pequot Lakes, MN 56472	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Carlton	Ruud	N/A		36633 Indian Point Rd Cohasset, MN 55721	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bruse	Ryan	bruce@ryan-ws.com		3504 60th Ave SW Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mary Q.	Rynchek	N/A		14980 Lake House Ln #H8 Naples, FL 34110	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
MN	Sales	MNsales@centuryfence.com	Century Fence	PO Box 277 Forest Lake, MN 55025	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Larry C.	Salmela	N/A		22838 Rollercoaster Road Effie, MN 56639	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jon	Sampson	N/A		1940 Adirondack St Duluth, MN 55811	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Akilah	Sanders Reed	akilah.project350@gmail.com		2514 Emerson Ave S Apt 7 Minneapolis, Minnesota 55405	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stan	Sattinger	sattinss@aol.com		3933 Twelfth Ave S  Minneapolis, MN 55407	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750  St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Schaekel	KAS@mcgrannshea.com	McGrann Shea Carnival Straughn & Lamb Chartered	800 Nicollet Mall Suite 2600 Minneapolis, MN 55402-1924	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bill	Schimmel	N/A	City of Stewartville - Administrator	105 East 1st Street  Stewartville, MN 55976	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
LauraSue	Schlatter	LauraSue.Schlatter@state.mn.us	Office of Administrative Hearings	PO Box 64620  St. Paul, MN 55164-0620	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Blaine	Schmalz	N/A		3604 450th Ave  Lancaster, MN 56735	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cody	Schmalz	N/A		4529 400 Street  Lancaster, MN 56735	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jeff	Schmidt	N/A		30 Woodview Drive  Mankato, MN 56001	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jerry	Schmidt	jas@ptel.com		23148 Rus Dic Circle  Fergus Falls, MN 56537	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Jeff	Schmidt	N/A		2647 Colbert Ave NW Buffalo, MN 55313	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Schmitz	tschmitz_rph@yahoo.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Rachelle	Schmitz	rrneewel@yahoo.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bryan	Schneider	mktobeta@yahoo.com		224 Ledlie Lane Mankato, MN 56001	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kurt	Schneider	kurt.schneider@chisagoco unty.us	Chisago County Environmental Srvc Zoning	313 N. Main Street #243 Center City, MN 55012	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	Schoneberger	bob.schoneberger@united piping.us	United Piping Inc	4510 Airport Road Duluth, MN 55811	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Claudia	Schrull	CLAUDIA.SCHRULL@EN BRIDGE.COM	Enbridge Pipelines (North Dakota) LLC	Suite 3300 1100 Louisiana Houston, TX 77002	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Zachary	Schrupp	N/A		14625 118th Street Nya, MN 55397	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brad	Schrupp	N/A	Young America Township	12530 Salem Ave Norwood, MN 55368	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Schultz	Tschultz@ci.sauk- rapids.mn.us	City of Sauk Rapids	250 SUMMIT AVE N Sauk Rapids, MN 56379	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Rod	Schumacher	rod.schumacher@is-grp.com	I&S Group	115 E Hickry St Suite 300 Mankato, MN 56001	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Craig	Schweer	cschweer71@gmail.com		1419 Oak Dr  Montevideo, MN 56265	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kafstad	Scott	N/A		36998 State Hwy 11  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kenny	Scott	kps1767@msn.com		2245 48th St SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bob	Scribner	sawmill44@wcta.net		39401 County Rd 23  Menahga, MN 56464	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
S	Sedgwick	N/A		PO Box 243  Big Fork, MN 56628	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Seeger	seeger.9@ideaone.net		1708 5th St South  Moorhead, MN 56560	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott P	Seier	sseier@tenaska.com	Tenaska Wind Holdings II, LLC	14302 FNB Pkwy  Omaha, NE 68154	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Frank	Sershen	N/A		6245 Crackleberry Tr  Woodbury, MN 55129	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michelle	Severtson	mickeys@northlc.com		12047 870th Ave  Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Russell	Shabaiah	N/A		17022 Hwy 227  Onamia, MN 56359	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Janet	Shaddix Elling	jshaddix@janetshaddix.com	Shaddix And Associates	7400 Lyndale Ave S Ste 190  Richfield, MN 55423	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bria	Shea	bria.e.shea@xcelenergy.com	Xcel Energy	414 Nicollet Mall  Minneapolis, MN 55401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steve	Shea	stevejshea@comcast.net		7240 Sunshine Dr  Eden Prairie, MN 55346	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael	Sheehan	N/A	Olmstead County	2122 Campus Dr SE  Rochester, MN 55901	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dan and Danielle	Sheild	danisheild@gmail.com		20382 310th Street  Shafer, MN 55074	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ron	Shimanski	ronshimanski@yahoo.com		23808 Jet Ave  Silver Lake, MN 55381	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Yvonne	Shirk	yshirk@msn.com		11000 Territorial Drive  Burnsville, MN 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Eileen	Shore	eileenshore@outlook.com	Friends of the Headwaters	3137 42nd Ave So  Minneapolis, MN 55406	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bill	Sierks	bill.sierks@state.mn.us	State of MN - MPCA	520 Lafayette Rd N  St. Paul, MN 55101	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Dan	Sigfrid	dsigfrid@msn.com		3316 Duponts Ave S Minneapolis, MN 55408	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Siljenberg	traum@kmtel.com		8003 County Rd 126 SW Byron, MN 55920	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lucille	Silk	teedomae@arvig.net		38703 Co Hwy 34 Ogema, MN 56569	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Silvis	N/A		28253 Lost Lake Dr Grand Rapids, MN 55744	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lawrence	Simon	lcsimon136@gmail.com		7777 No. Wickham Rd #12 Melbourne, FL 32940	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Paul	Skarman	phskarman@yahoo.com		1601 East 116th St Burnsville, MN 55337	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Wayne	Skoe	wayne.skoe@co.koochiching.mn.us	Koochiching County	11966 Highway 1 Nothome, MN 56661	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Andrew	Slade	BADEMAIL-andrewslade@mepartnership.org		394 Lake Ave South Apt #223 Duluth, MN 55802	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nicolette	Slagle	nmslagle@mtu.edu		31446 East Round Lake Ponsford, MN 56575	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Slukich	tom@nationalconductor.com	National Conductor Constructors	18119 Hwy 371 North Brainerd, MN 56401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Michael	Small	mjsmall.ucc@gmail.com	Union UCC	PO Box 10 Hackensack, MN 56452	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mary	Smejkal	N/A		40458 Co Rd 343 Bovey, MN 55709-5598	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ken	Smith	ken.smith@districtenergy.com	District Energy St. Paul Inc.	76 W Kellogg Blvd St. Paul, MN 55102	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Donavon	Smith	N/A		PO Box 634 Baudette, MN 56623	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mollie	Smith	msmith@fredlaw.com	Fredrikson Byron PA	Suite 4000 200 South Sixth Street Minneapolis, MN 554021425	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Shawn	Smith	N/A		494 Jennings Ave NW Annandale, MN 55302	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sara	Smith	sara.smith@metc.state.mn.us	Metropolitan Council	390 Robert St N St. Paul, MN 55101-1805	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Fred	Smith	SMITH009@umn.edu		1425 W 28th St #221 Minneapolis, MN 55408	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Richard	Smith	grizrs615@gmail.com	Friends of the Headwaters	P.O. Box 583 Park Rapids, MN 56470	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jennifer	Smith	jenjens1121@yahoo.com		5135 Fish Lake Road Duluth, MN 55803	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Rick	Snodgrass	rickharoldsnodgrass@gmail.com		12109 Robin Rd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bradley	Snyder	bademailshellbaity@ctc.net		PO Box 86 Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Adam	Sokolski	adam.sokolski@iberdrolare n.com	Avangrid Renewables	527 Marquette Avenue Suite 1600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary and Marcia	Sola	gmsola@hughes.net		88621 110th St Glenville, MN 56036	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Loren	Solbers	solbergloren@gmail.com		2114 SW 3rd Ave Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jake	Sperber	jake.sperber@nuveen.com	Nuveen Asset Management	N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Trevor	Squire	squir078@umn.edu		2645 Dupont Ave S Minneapolis, MN 55408	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Karen H.	Stachowski	Karen.Stachowski@ag.tn.gov	Office of the Attorney General & Reporter	Consumer Protection and Advocate Division PO Box 20207 Nashville, TN 37202-0207	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Stark	wstark@fageninc.com		675 10th St Granite Falls, MN 56241	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Byron E.	Starns	byron.starns@stinson.com	Stinson Leonard Street LLP	50 S 6th St Ste 2600 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Dave	Starr	Dave_Starr@CINFIN.com		1012 W 2nd Street  Zumbrota, MN 55992	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bryce	Staudinger	Bryceandamy@hotmail.com		4041 Osgood Ct N  Stillwater, MN 55082	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Steckelberg	msteckelberg@grenergy.com	Great River Energy	12300 Elm Creek Boulevard  Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Claire	Steens	claire.steen@charter.net		29 Kingwood St  Brainerd, MN 56401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Philip	Steger	steger.phil@dorsey.com		50 South Sixth Street Suite 1500 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Fred	Stein	ottereaglebear60@yahoo.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Matt	Steinrueck	BADEMAIL- msteinrueck@cleanwater.org	Clean Water Action	330 Second Ave S Suite 420  Minneapolis, MN 55401	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Janet	Stejskal	jmstej@paulbunyan.net		224 11th St NE  Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Julia	Sten	N/A		26002 320th St NW  Argyle, MN 56713	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
George	Stephens	neeker2004@yahoo.com		45506 Great River Rd  Palisade, MN 56469	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC



First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Donna	Stephenson	dstephenson@grenergy.com	Great River Energy	12300 Elm Creek Boulevard  Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sandy	Sterle	ssterle777@gmail.com		2676 County Road 104  Barnum, MN 55707	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Warren	Stoe	warrenstoe@gmail.com		28459 370th St  Roseau, MN 56751	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Bud	Stone	bud@grandmn.com	Grand Rapids Area Chamber of Commerce	One NW Third Street  Grand Rapids, MN 55744	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
William	Storm	bill.storm@state.mn.us	Department of Commerce	Room 500 85 7th Place East St. Paul, MN 551012198	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dan and Elizabeth	Strand	N/A		Scott and Patricia Strand 1985 Hamel Rd Hamel, MN 55340	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott	Strand	SStrand@elpc.org	Environmental Law & Policy Center	15 South 5th Street Suite 500 Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dennis	Strand	N/A		33681 County Rd 28  Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Streiff	thomas.streiff@state.mn.us	MN Dept of Transportation	2900 48th Street NW  Rochester, MN 55901	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mark	Strohfus	mstrohfus@greenergy.com	Great River Energy	12300 Elm Creek Boulevard  Maple Grove, MN 553694718	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Carl	Stroh	cjsmg@sbcglobal.net	SBC Global	105 East Edgewood Ave  Indianapolis, IN 46227	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kevin	Stromberg	kevin.m.stromberg@icloud.com		Not provided  MN	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
James M.	Strommen	jstrommen@kennedy-graven.com	Kennedy & Graven, Chartered	470 U.S. Bank Plaza 200 South Sixth Street Minneapolis, MN 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Brad	Struck	N/A		84538 130th St  Glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dave	Strudenski	N/A	US Corps of Engineers	180 5th Street East  St. Paul, MN 55105	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charlene D.	Sturk	N/A	Beltrami County	1069 Carved Woodduck Lane SW  Bemidji, MN 56601	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Sturm	michael.sturm@contractlandstaff.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ted	Sullivan	tsbs@brainerd.net		5298 132nd St  Pillager, MN 56473	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Karen	Sullivan Hook	karenatwork@juno.com		10395 Quaker Ln  Maple Grove, MN 55369	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Charles	Sutton	charles_sutton@franken.senate.gov	Al Franken Senate Office	60 East Plato Blvd  St. Paul, MN 55107	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Tom	Swafford	tswafford@umsi.us	Utility Mapping Services, Inc	3947 E Calvary Rd Suite 103 Duluth, MN 55803	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Charles	Swanson	chuck49@wikel.com		15368 210th St NW  Viking, MN 56760	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Margaret	Swanson	marg.ivanhoe@yahoo.com		2881 Co Hwy 8  Ivanhoe, MN 56142	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Eric	Swanson	eswanson@winthrop.com	Winthrop & Weinstine	225 S 6th St Ste 3500 Capella Tower Minneapolis, MN 554024629	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Swenson	N/A	Rochester Township Clerk	4111 11th Avenue SW  Rochester, MN 55902	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Dean	Swenson	N/A		30503 360th Ave SE  Fosston, MN 56542	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jamie	Swezey	jamie.swezey@gmail.com		2600 Colfax Ave S Apt #1  Minneapolis, MN 55408	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Pat	Tabolich	wayfarer054@yahoo.com		42795 320th PL  Aitkin, MN 56431	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Todd	Tadych	ttadych@atcllc.com	American Transmission Company LLC	5303 Fen Oak Dr  Madison, WI 53718	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
James	Talcott	jim.talcott@nngco.com	Northern Natural Gas Company	1111 S 103rd St Omaha, Nebraska 68124	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Michael L.	Tardy	Mike.tardy@co.carlton.mn.us	Carlton County Engineer	1630 County Road 61 Carlton, MN 55718	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lou	Tasa	ltasa@paulbunyan.net		820 Augustana DR NE Bemidji, MN 56601	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ronen	Tesanek	N/A		23822 County Rd 9 Roseau, MN 56751	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Henry	Tews	N/A		12494 850th Ave Glenville, MN 56036	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ann	Theis	N/A	Minnesota Land Trust	2356 University Ave W Suite 240 St. Paul, MN 55114	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike	Theisen	michael.theisen@state.mn.us	Dept Labor and Industry	PO box 14 Sauk Rapids, MN 56379	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Harold	Thiessen	N/A		30658 650th Ave Warroad, MN 56763	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steve	Thompson	stevet@cmpasgroup.org	Central Minnesota Municipal Power Agency	459 S Grove St Blue Earth, MN 56013-2629	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Cindy	Thompson	N/A		49693 210th Place McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
William	Thomssen	wthom@local49.org		2338 100th Ave Lake Benton, MN 56149	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Scott and Virginia	Thorenson	N/A		31607 136th St Princeton, MN 55371	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Naomi	Todd	BADEMAIL- Naomi6todd1983@gmail.com		18490 360th St McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gerald	Tompeni	N/A		Box 26 Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
David	Tomperi	N/A		35674 111th Ave. Menahga, MN 56464	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
John	Tormanen	johntormanen@catholicea lth.net		13652 590th Ave Menahga, MN 56464	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Steve	Totti	N/A		48589 US Hwy 169 Palisade, MN 56469	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Melissa	Townsend	melissa.ampers@gmail.com		4144 29th Ave S Minneapolis, MN 55406	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Ann	Traelson	N/A		20783 508th Lane McGregor, MN 55760	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Clayton	Trosky	N/A		6046 Sandy Shores Dr NW Williams, MN 56686	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Owen	Truesdell	otruesdell@tunheim.com		701 Portland Ave Apt #1  St. Paul, MN 55104	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Leo	Trunt	leo.trunt@co.itasca.mn.us	Itasca County	12058 County Rd 72  Swan River, MN 55784	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Audrey	Tsinnie	audreysinnie1@outlook.com		807 SE 14th St  Brainerd, MN 56401	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Stan and Fran	Tvedt	frantvedt@hotmail.com		16374 State Hwy 1 NE  MN	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Marc	Tvedt	marctvedt@gmail.com		40497 Rutabaga Rd  Askon, MN 55704	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Paul	Uecker	N/A	Olmstead Soil and Water Cons Dist	2122 Campus Drive Suite 200  Rochester, MN 55904	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mark	Van Driel	markavandriel@gmail.com		7145 Gunflint Trail  Chanhassen, MN 55317	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Sara	Van Norman	sara@davismeansbusiness.com	Davis Law Office	400 South 4th Street Suite 401 Minneapolis, MN 55415	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Mike and Sue	VanPelt	msvanpelt1@gmail.com		N/A	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Robert	VanPelt	N/A		18067 860th Ave  Austin, MN 55912	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Mary	VanPelt	N/A		20527 900th Ave  Austin, MN 55912	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gary	Vasdev	gv16106@gmail.com		5581 40th St SW  Rochester, MN 55902	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Lisa	Veith	lisa.veith@ci.stpaul.mn.us	City of St. Paul	400 City Hall and Courthouse 15 West Kellogg Blvd. St. Paul, MN 55102	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Casey	Venema	N/A		25711 County Road 59  Bovey, MN 55709	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Kodi	Verhalen	kverhalen@briggs.com	Briggs & Morgan	2200 IDS Center 80 South Eighth Street Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Nick	Vespasiano	BADEMAIL- nvespasiano@montenews. com	Montevideo News	223 S 1st Street  Montevideo, MN 56265	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Karl	Vohs	N/A		428 2nd ST NW  Faribault, MN 55021	Paper Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Jesse	Volk	jesse.volk@gpng.com	Great Plains Natural Gas Company	705 West Fir Avenue  Fergus Falls, MN 56538	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
Gerald	Von Korff	jvonkorff@rinkenoonan.co m	Rinke Noonan	1015 W St Germain St  St. Cloud, MN 56303	Electronic Service	No	OFF_SL_17-18_Power Plant Siting Act 2017 List PUC
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# Minnesota Center for Environmental Advocacy

Using law, science, and research to protect Minnesota's environment, its natural resources, and the health of its people.

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August 24, 2018

Dan Wolf  
Executive Secretary  
Minnesota Public Utilities Commission  
121 – 7th Place East, Suite 350  
St. Paul, MN 55101

**VIA eFILING**

*Re: In the Matter of Possible Rulemaking to Amend Rules Chapter 7854*  
PUC Docket Number/s: E999/R-18-518

Dear Mr. Wolf,

Minnesota Center for Environmental Advocacy (MCEA) submits this letter in response to Goodhue Wind Truth's petition for rulemaking submitted July 30, 2018. The Commission requested comments on whether the petition for rulemaking meets the content requirements of Minn. R. 1400.2040 and whether the Commission should initiate a rulemaking on siting standards for Large Wind Energy Conversion Systems (LWECS). MCEA asserts that while Goodhue Wind Truth may have minimally met the requirements for what is contained in a petition, the Minnesota Public Utilities Commission should not initiate a rulemaking at this time.

## **1. Goodhue Wind Truth Minimally Complied With The Rule**

The requirements of a petition to an agency to adopt, amend, or repeal a rule are relatively simple. *See* Minn. R. 1400.2040. The petition must include the name and address of the petitioner, the specific action requested, and the need for the requested action. *Id.* Although the petition presented to the Commission is not specific with respect to the amendments requested, there is sufficient information to discern that Goodhue Wind Truth seeks to amend Minnesota Rule chapter 7854 to include more detailed siting criteria and environmental considerations. The need for the requested action appears to be dissatisfaction with the current rule and the fact that two recent wind siting dockets have been controversial.

Although the petition could be more specific, MCEA does not believe that the Commission should reject an otherwise meritorious request based on an arguably technical deficiency. As described below, however, MCEA respectfully asserts that Goodhue Wind Truth has not presented a sufficient basis on which to re-open the wind siting rules.

## 2. The Commission Should Not Initiate A Rulemaking

Without weighing in on the functionality of the current wind siting rules or whether they could benefit from amendments, MCEA cautions against granting a petition to re-open a rulemaking based solely on one party's dissatisfaction with the current rules.

Goodhue Wind Truth claims in its petition that "there are no rules regarding criteria for siting LWECS." Cover Letter to Petition at 1. This is simply not true. The EQB published rules for the siting of LWECS in 2002, which are now housed in Minnesota Rules chapter 7854. These rules apply to all wind conversion systems greater than 5 MW. This was explained to Ms. Overland in the Commission's April 2, 2012 response to her previous petition for a rulemaking. Petition, Attachment C. The response clearly states that "Minnesota Rules Chapter 7854: Wind Siting was promulgated in 2002. These rules apply to large wind energy conversion systems 5 MW and larger in size." *Id.* There is therefore no merit to the contention that there are no applicable rules.

It is possible that Goodhue Wind Truth is actually attempting to declare the rule invalid by claiming that it does not contain siting criteria or requirements for environmental review, but this is also inaccurate. The siting criteria contained in the rule are adopted from statutes: that LWECS must be sited in an orderly manner that is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minn. R. 7854.0200, Minn. Stat. § 216F.03. These criteria may be subjective, as admitted by the Environmental Quality Board in the Statement of Need and Reasonableness, but they exist. *See* Petition at 4.

Similarly, there are requirements for environmental review. Minn. R. 7854.0500, subp. 7. This subpart specifically states that "[t]he analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts 7849.1000 to 7849.2100, and Minnesota Statutes, chapter 116D." *Id.*

Accordingly, there is an existing rule applicable to LWECS 5 MW or greater, which contains both siting criteria and requirements for environmental review.

Other than the fact that certain recent projects have been more controversial than past projects, Goodhue Wind Truth has not alleged new evidence, technological developments, or unaddressed changes to the existing regulatory framework such that re-opening a rulemaking at this time is warranted.

Lastly, Goodhue Wind Truth seems to suggest that re-opening a rulemaking is warranted because certain aspects of the existing regulatory framework have been misapplied. The Petition includes allegations that siting dockets have not applied the criteria contained in Minn. Stat. § 216E.03 despite their applicability. Petition at 3. To the extent these allegations are well founded, they provide grounds for a legal challenge to siting decisions, not grounds to re-open siting rules.

MCEA appreciates the opportunity to comment on this request and reiterates that its recommendation to deny this request is not premised on the relative merits of the existing siting regulations, but is instead based on the assertion that the mere dissatisfaction of one party with existing rules is not ground on which to grant a petition to initiate a new rulemaking.

Sincerely,

/s/Leigh Curie

Leigh Currie

Senior Staff Attorney

Minnesota Center for Environmental Advocacy

1919 University Ave W, Suite 515

St. Paul, MN 55104



BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie J. Sieben	Commissioner
John A. Tuma	Commissioner

In the Matter of Possible Rulemaking to  
Amend Minnesota Rules Chapter 7854

ISSUE DATE: September 26, 2018

DOCKET NO. E-999/R-18-518

ORDER DENYING PETITION

**PROCEDURAL HISTORY**

On July 31, 2018, Goodhue Wind Truth, an advocacy group in wind siting dockets and in rulemaking dockets, filed a rulemaking petition under Minn. R. 1400.2040 and 1400.2500 to amend Chapter 7854 of the Commission's rules, governing site permits for Large Wind Energy Conversion Systems.

On August 2, 2018, the Commission issued a notice seeking comments on the petition.

By August 27, 2018, the Commission received comments on the petition from: Dodge County Concerned Citizens; Kristi Rosenquist; Goodhue Wind Truth; Rochelle Nygaard; Marie McNamara; Dorene Hansen; Xcel Energy; Wind on the Wires; the Department of Commerce, Energy Environmental Review and Analysis staff (EERA); Clean Energy Economy Minnesota; Geronimo Energy, LLC (Geronimo Energy); EDF Renewables; Sean Gaston; Invenergy Wind Development North America LLC (Invenergy); Minnesota Center for Environmental Advocacy (MCEA); and Avangrid Renewables, LLC (Avangrid).

On August 28, 2018, Goodhue Wind Truth filed a request for a reply comment period.

On August 30, 2018, the Commission issued a notice denying that request.

On September 20, 2018, the petition came before the Commission.

**FINDINGS AND CONCLUSIONS**

**I. Rulemaking Petition**

Minn. Stat. § 14.09 and Minn. R. 1400.2040 and 1400.2500 govern the requirements for a rulemaking petition. The statute requires that the petition state the specific action requested and the need for that action. The rules require that the petition state the petitioner's name, address, the group represented, and the reasons for requesting that the rule be adopted, amended, or

repealed. Under the statute, an agency has 60 days from the date of the filing to make a written decision on the petition.

Goodhue Wind Truth's rulemaking petition requests that the Commission initiate a rulemaking proceeding to amend Chapter 7854 of the Commission's rules governing site permits for Large Energy Wind Conversion Systems (LWECS). The petition includes the name and address of the petitioner, and the group represented.

Goodhue Wind Truth's petition states that the existing rules do not establish sufficient requirements for environmental review and do not include, for example, setbacks for LWECS from homes and other properties. Instead of making decisions on a case-by-case basis, Goodhue Wind Truth recommended that the Commission, informed by years of experience with individual wind siting dockets, amend its rules to establish reasonable setbacks and other standards that address issues such as noise. Goodhue Wind Truth also emphasized the need for rule requirements to enhance public participation by increasing notice requirements and establishing procedures for conducting public hearings.

## **II. Comments on the Petition**

### **A. Comments in Support of the Petition**

Dodge County Concerned Citizens; Kristi Rosenquist; Rochelle Nygaard; Marie McNamara; Sean Gaston; and Dorene Hansen filed comments in support of the rulemaking petition. They are, or have been, parties or participants in separate Commission proceedings involving the consideration of LWECS site permit applications in Goodhue, Freeborn, and Dodge Counties.

Their comments echoed those in the petition and recommended changes that they believe would increase environmental review to more effectively mitigate potential adverse effects of wind projects, including effects on human health and on avian and bat species. They also recommended changes to ensure that the public is more fully informed of potential projects and is given the opportunity to attend pre-application meetings to provide input on proposed project locations. They supported incorporating rule changes to protect the character of rural Minnesota, to ensure that ownership changes among developers are disclosed, and to require that other state agencies with subject matter expertise participate in wind siting dockets.

### **B. Comments in Opposition to the Petition**

Xcel Energy; Wind on the Wires; Clean Energy Economy Minnesota; Geronimo Energy; EDF Renewables; MCEA; Invenergy; and Avangrid opposed the rulemaking petition.

They stated that the rulemaking petition does not adequately identify a basis for rule changes, that the existing rules provide sufficient project evaluation criteria and environmental review, and that the Commission currently has the flexibility to make informed decisions based on the record developed in individual cases. They stated that the rules (Minn. R. 7854.0500, subp. 7, for example) require applicants to address various factors, such as noise, and that more specific conditions can be placed on individual projects depending on the facts of a case. They also stated that the rules reasonably balance the priorities of local communities and the benefits of wind development.

The EERA stated that the rulemaking petition inaccurately characterizes the existing rules and that to the contrary, the rules contain sufficient evaluation criteria and provide for adequate environmental review of proposed projects. The EERA also stated that under the current rule structure, the Commission has flexibility to set forth additional conditions on a case-by-case basis, depending on the specific project at issue.

### **III. Commission Action**

The rulemaking petition complies with the applicable content requirements by including the petitioner's name and address, the group represented, and the reasons for amending the existing rules. Comments challenging the petition are primarily related to the sufficiency of the petition's claims, rather than its completeness.

Having considered the petition and comments filed, the Commission is not persuaded that now is the time to consider possible amendments to its wind siting rules, Chapter 7854. The Commission currently has an open and ongoing rulemaking proceeding concerning power plant siting,<sup>1</sup> the outcome of which would likely inform the scope and structure of any future rulemaking proceeding on the Commission's other siting rules.

Further, the varied comments received in this docket suggest that there is not informed consensus on many issues that continue to be developed in individual cases, which provide a better forum for identifying and addressing project-specific issues.

For these reasons, the Commission will deny the rulemaking petition without prejudice.

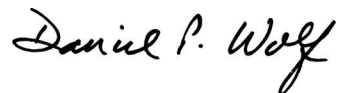
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<sup>1</sup> *In the Matter of Possible Amendments to Rules Governing Certificates of Need and Site and Route Permits for Large Electric Power Plants and High-Voltage Transmission Lines, Minnesota Rules, Chapters 7849 and 7850; and to Rules Governing Notice Plan Requirements for High-Voltage Transmission Lines, Minnesota Rules, part 7829.2550, Docket No. E,ET,IP-999/R-12-1246.*

## ORDER

1. The Commission hereby denies the rulemaking petition without prejudice.
2. This order shall become effective immediately.

BY ORDER OF THE COMMISSION



Daniel P. Wolf  
Executive Secretary



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**BEFORE THE  
OFFICE OF ADMINISTRATIVE HEARINGS  
for the  
MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of the Application of Freeborn  
Wind Farm, LLC for a Large Wind Energy  
Conversion System Site Permit for the 84  
MW Freeborn Wind Farm in Freeborn  
County.

**PUC Docket No. IP-6946/WS-17-410  
OAH Docket: 80-2500-34633**

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**ASSOCIATION OF FREEBORN COUNTY LANDOWNERS**

**INITIAL BRIEF**

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The Association of Freeborn County Landowners is an informal association of over 100 landowners and residents in and adjacent to the site footprint of the above-captioned Freeborn Wind Farm (hereinafter “Freeborn Wind”). The Association of Freeborn County Landowners have offered Initial and Reply comments in this docket, comments on the Draft Site Permit, have intervened to participate as full parties and offered testimony, and prepared and filed a Petition with roughly 470 signers, 78% of local residents and landowners, who are opposed to the project. Freeborn Wind is an industrial wind project wishing to move into an established agricultural and residential community. The community does not consent to this project, and strongly objects.

This project is the first to be intentionally reviewed under Minnesota siting criteria of the Power Plant Siting Act. The project is now designed to fit on a much smaller and spotted footprint than originally planned, and there is no room for any alteration in turbine locations. Environmental review, agency comments, Freeborn County ordinances and public comments should “reflect priorities and standards of the community.” Public comments and agency comments, particularly those of the Dept. of Health, have been given short shrift, and the review and analysis by the Department of Commerce EERA has been inadequate. The community does not consent, and firmly objects. This project, as proposed, should not be granted a site permit.

I. **SYSTEMIC PROBLEMS OF WIND SITING IN MINNESOTA DEMAND PREVENTATIVE AND PRECAUTIONARY SITING**

The State of Minnesota has systemic flaws in its wind siting process and mandated rules have not been promulgated, resulting in projects sited with inadequate and incomplete consideration of criteria, siting which violates permit conditions, puts landowners and residents at risk, and steals landowners’ use and enjoyment of their property. The Commission must address these systemic problems in issuing any wind permits, and must determine corrective action for previously permitted projects.



**A. MINNESOTA LAW PROVIDES SOME EXEMPTIONS FOR WIND PROJECTS – BUT NOT SITING CRITERIA.**

Under Minnesota’s Chapter 216F, Wind Energy Conversion Systems, wind projects are granted exemptions from the Power Plant Siting Act, EXCEPT for several sections which DO apply, most notably the siting criteria of the Power Plant Siting Act’s (PPSA) Minn. Stat. §216E.03, Subd. 7:

**216F.02 EXEMPTIONS.**

(a) The requirements of chapter 216E do not apply to the siting of LWECS, except for sections [216E.01](#); [216E.03, subdivision 7](#); [216E.08](#); [216E.11](#); [216E.12](#); [216E.14](#); [216E.15](#); [216E.17](#); and [216E.18, subdivision 3](#), which do apply.

In addition to being the first wind project sited using a contested case proceeding, the Freeborn Wind Project’s application is the first project in Minnesota to declare use of Minn. Stat. §216E.03, Subd. 7 siting criteria. FR-1, Application, p. 3. In addressing siting criteria and authority, the Draft Site Permit makes no mention of Minn. Stat. §216E.03, Subd. 7, expressly applicable, and only names Minn. Stat. Ch. 216F and Minn. R. Ch. 7854. EERA-8, Comments and Recommendations, p 3; Draft Site Permit, §1.0, p. 1; see also Davis, Tr. Vol. 2, p. 168, l. 4 – 169, l. 23. Minn. Stat. Ch. 216F and Minn. R. Ch. 7854 have no siting criteria. The legislature mandated that rules be promulgated addressing siting criteria to include addressing impact on humans and the environment, environmental review, and procedures. Minn. Stat. §216F.05. This has not been done. The error of citing Minn. Stat. Ch. 216F and Minn. R. Ch. 7854 for siting is common to each site permit reviewed, and the Commerce EERA boilerplate regarding authority and siting criteria is in error.

**B. THE POWER PLANT SITING ACT SITING CRITERIA DOES APPLY.**

The Applicants, Association of Freeborn County Landowners, and this court agree that the Power Plant Siting Act criteria for siting a project in Minn. Stat. §216E.03, Subd. 7 is

applicable to this project. See Minn. Stat. §216F.02. The Commission, by statute and rule, is to “determine that the project is compatible with environmental preservation, sustainable development, and the efficient use of resources, and the applicant has complied with this chapter.” See Minn. Stat. §216F.03 ; Minn. R. 7854.0500. Although there is a legislative mandate to develop wind siting criteria, among other things, and promulgate rules, that has not yet occurred. Minn. Stat. §216F.05.

While some provisions of Minn. Stat. §216E.03, Subd. 7 are not applicable, most are:

**Subd. 7. Considerations in designating sites and routes** (selected -- language not pertaining to wind generators has been eliminated).

(a) The commission's site and route permit determinations must be guided by the state's goals to conserve resources, minimize environmental impacts, minimize human settlement and other land use conflicts, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.

(b) To facilitate the study, research, evaluation, and designation of sites and routes, the commission shall be guided by, but not limited to, the following considerations:

(1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

(2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;

(3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;

(5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;

(6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;

(7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;

(9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;

(11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and

(12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.

(c) If the commission's rules are substantially similar to existing regulations of a federal agency to which the utility in the state is subject, the federal regulations must be applied by the commission.

(d) No site or route shall be designated which violates state agency rules.

Minn. Stat 216F.05.

Power Plant Siting Act criteria is mandated for review and siting of this project.

**C. THE LEGISLATIVE MANDATE FOR WIND SITING RULES HAS BEEN IGNORED FOR OVER TWENTY YEARS.**

In 1995, the legislature passed a mandate directing the Environmental Quality Board to develop wind siting rules, amended in 2005 to reflect that the Commission was now in the role of siting utility infrastructure in the stead of the EQB.

**216F.05 RULES.**

The commission shall adopt rules governing the consideration of an application for a site permit for an LWECS that address the following:

(1) criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;

- (2) procedures that the commission will follow in acting on an application for an LWECS;
- (3) procedures for notification to the public of the application and for the conduct of a public information meeting and a public hearing on the proposed LWECS;
- (4) requirements for environmental review of the LWECS;
- (5) conditions in the site permit for turbine type and designs; site layout and construction; and operation and maintenance of the LWECS, including the requirement to restore, to the extent possible, the area affected by construction of the LWECS to the natural conditions that existed immediately before construction of the LWECS;
- (6) revocation or suspension of a site permit when violations of the permit or other requirements occur; and
- (7) payment of fees for the necessary and reasonable costs of the commission in acting on a permit application and carrying out the requirements of this chapter.

Minn. Stat. §216F.05. Rules addressing these points have not been promulgated, and the rules in Ch. 7854 are notably silent regarding these topics. The wind standards adopted by the Commission were not developed in a rulemaking process and are not rules. AFCL requests the court take administrative notice that there are no wind specific siting rules addressing these points of the legislative mandate.

**D. WIND PROJECTS ARE NOT EXEMPT FROM ENVIRONMENTAL REVIEW.**

Wind projects, as above, are expressly exempt from the Power Plant Siting Act's (PPSA) environmental review found in Minn. Stat. 21E.03, Subd. 5:

**216F.02 EXEMPTIONS.**

- (a) The requirements of chapter 216E do not apply to the siting of LWECS, except for sections [216E.01](#); [216E.03, subdivision 7](#); [216E.08](#); [216E.11](#); [216E.12](#); [216E.14](#); [216E.15](#); [216E.17](#); and [216E.18, subdivision 3](#), which do apply.

The PPSA's 216E.03, Subd. 5 is part of the PPSA from which wind siting is exempted:

**Subd. 5.Environmental review.**

(a) The commissioner of the Department of Commerce shall prepare for the commission an environmental impact statement on each proposed large electric generating plant or high-voltage transmission line for which a complete application has been submitted. The commissioner shall not consider whether or not the project is needed. No other state environmental review documents shall be required. The commissioner shall study and evaluate any site or route proposed by an applicant and any other site or route the commission deems necessary that was proposed in a manner consistent with rules concerning the form, content, and timeliness of proposals for alternate sites or routes.

The wind siting chapter has no provision for environmental review, and despite the 1995 legislative mandate of rulemaking, specifically including development of environmental review for wind projects, that has not been addressed, and there are no wind rules regarding environmental review for siting of wind turbines. Minn. Stat. §216F.05; Minn. R. Ch. 7854. However, much of the expressly applicable PPSA criteria for siting does have an environmental component. Those that are applicable to wind projects address environmental considerations, including agency review which often has an environmental component:

**Subd. 7. Considerations in designating sites and routes** (language not pertaining to wind generators has been eliminated).

(a) The commission's site and route permit determinations must be guided by the state's goals to conserve resources, minimize **environmental** impacts, minimize **human settlement and other land use conflicts**, and ensure the state's electric energy security through efficient, cost-effective power supply and electric transmission infrastructure.

(b) To facilitate the study, research, evaluation, and designation of sites and routes, the commission shall be guided by, but not limited to, the following considerations:

(1) evaluation of research and investigations relating to the **effects on land, water and air resources** of large electric power generating plants and high-voltage transmission lines and the effects of water and air discharges and electric and magnetic fields resulting from such facilities on public health and welfare, vegetation, animals, materials and aesthetic values, including baseline studies, predictive modeling, and evaluation of new or improved methods for minimizing adverse impacts of water and air discharges and other matters pertaining to the effects of power plants on the water and air environment;

- (2) environmental evaluation of sites and routes proposed for future development and expansion and their relationship to the land, water, air and human resources of the state;
- (3) evaluation of the effects of new electric power generation and transmission technologies and systems related to power plants designed to minimize adverse environmental effects;
- (5) analysis of the direct and indirect economic impact of proposed sites and routes including, but not limited to, productive agricultural land lost or impaired;
- (6) evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed site and route be accepted;
- (7) evaluation of alternatives to the applicant's proposed site or route proposed pursuant to subdivisions 1 and 2;
- (9) evaluation of governmental survey lines and other natural division lines of agricultural land so as to minimize interference with agricultural operations;
- (11) evaluation of irreversible and irretrievable commitments of resources should the proposed site or route be approved; and
- (12) when appropriate, consideration of problems raised by other state and federal agencies and local entities.

(c) If the commission's rules are substantially similar to existing regulations of a federal agency to which the utility in the state is subject, the federal regulations must be applied by the commission.

(d) No site or route shall be designated which violates state agency rules.

Minn. Stat. §216E.03, Subd. 7 (selected, emphasis added).

Admittedly, it's problematic to analyze the environmental factors and criteria above when no environmental document has been completed and reviewed.

Where Commerce EERA is not reviewing and analyzing this project in light of applicable siting criteria, and where the siting criteria has environmental components, failure to address these environmental issues is contrary to the intent of the Minnesota Environmental Policy Act

(MEPA). Minn. Stat. Ch. 116D. See e.g., Minn. Stat. 116D.02 (State responsibilities), Subd. 2; Minn. Stat. 116D.04, Subd. 2a (Where there is potential for significant environmental effects resulting from any major governmental action, the action shall be preceded by a detailed environmental impact statement prepared by the responsible governmental unit.).

State agencies have specific responsibilities under MEPA:

**Subd. 2.Duties.**

All departments and agencies of the state government shall:

- (1) on a continuous basis, seek to strengthen relationships between state, regional, local and federal-state environmental planning, development and management programs;
- (2) utilize a systematic, interdisciplinary approach that will insure the integrated use of the natural and social sciences and the environmental arts in planning and in decision making which may have an impact on the environment; as an aid in accomplishing this purpose there shall be established advisory councils or other forums for consultation with persons in appropriate fields of specialization so as to ensure that the latest and most authoritative findings will be considered in administrative and regulatory decision making as quickly and as amply as possible;
- (3) identify and develop methods and procedures that will ensure that environmental amenities and values, whether quantified or not, will be given at least equal consideration in decision making along with economic and technical considerations;
- (4) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;
- (5) recognize the worldwide and long range character of environmental problems and, where consistent with the policy of the state, lend appropriate support to initiatives, resolutions, and programs designed to maximize interstate, national and international cooperation in anticipating and preventing a decline in the quality of the world environment;
- (6) make available to the federal government, counties, municipalities, institutions and individuals, information useful in restoring, maintaining, and enhancing the quality of the environment, and in meeting the policies of the state as set forth in Laws 1973, chapter 412;

(7) initiate the gathering and utilization of ecological information in the planning and development of resource oriented projects; and

(8) undertake, contract for or fund such research as is needed in order to determine and clarify effects by known or suspected pollutants which may be detrimental to human health or to the environment, as well as to evaluate the feasibility, safety and environmental effects of various methods of dealing with pollutants.

Minn. Stat. 116D.03, Subd. 2.

In this docket, state agencies, and in particular the Department of Commerce EERA, have a heightened responsibility to review the proposed project with a broad, inquisitive, searching, and protective perspective as required by MEPA and the PPSA criteria. That has not occurred.

**E. MINNESOTA AGENCIES ARE NOT WILLINGLY TESTIFYING ABOUT COMMENTS MADE IN SITING DOCKETS.**

Minnesota agencies resisted offering testimony in this hearing regarding their own comments, project siting developments, and project specific and general concerns. Previously agency staff attended hearings and offered testimony, yet in this case, AFCL had to subpoena DNR, Commerce, and Health -- all objected.<sup>1</sup> The goal of AFCL in requesting the subpoenas was to assure that agency comments and concerns are part of the record, and the intensity of each agency's resistance was surprising. The agency Motions and AFCL responses, as well as Orders, are part of the record.<sup>2</sup> Minn. R. 1405.1800, Subp. 2.

<sup>1</sup> See Commerce Motion to Quash and Agreement with AFCL; MDH Motion to Quash and Agreement; DNR Motion to Quash, Commerce Motion to Exclude.

<sup>2</sup> Motions are part of the hearing record:

Document ID	Docket #	On Behalf Of	Document Type	Received Date
<a href="#">20181-138532-01</a>	17-410	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	LETTER--CORRESPONDENCE AND AFFIDAVITS AND ACCEPTANCE OF SERVICE OF SUBPOENAS	1/2/2018
<a href="#">20181-139001-01</a>	17-410	DOC EERA	MOTION	1/16/2018
<a href="#">20181-139130-01</a>	17-410	DOC EERA	OTHER--AGREEMENT OF DOC EERA AND AFCL REGARDING SUBPOENAS	1/19/2018
<a href="#">20181-139379-01</a>	17-410	DOC EERA	MOTION--	1/26/2018
<a href="#">20181-139493-01</a>	17-410	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--RESPONSE TO EERA MOTION TO EXCLUDE BENT TREE DATA	1/30/2018
<a href="#">20181-139546-01</a>	17-410	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	LETTER--REQUEST TO THE AGENDA RE DNR TIME CERTAIN	1/30/2018



Failure of agencies to participate in the evidentiary hearing is important because agency comments and recommendations are not being addressed by the applicant. For example, the MPCA’s October 4, 2017 comment was withheld and not eFiled and made public until February, parties were not aware of the Comment until it was filed, and MPCA was not a participant in the hearing. Comment Letter from MPCA, eFiled 2/7/2018 ([20182-139859-01](#)) . Another example is the Dept. of Health, which resisted testifying regarding its comments, yet Invenergy’s Hankard admittedly did not provide modeling as recommended in Dept. of Health “Public Health Impacts of Wind Turbines” 2009 report, nor was the modeling performed for isopleths for dB(C) - dB(A) greater than 10 dB. Hankard stated that “These recommended isopleths are not typically provided on wind turbine projects and have not been produced... and that noise from the Project is not considered to have any significant quantities of LFN.” FW-13, Hankard Rebuttal, Schedule 1 (AFCL-IR33); see also AFCL-31, IR-89. The applicant should not be free to dismiss agency concerns

It is the job of the agencies to review projects and provide comments. The late filing of comments and agency resistance to providing simple testimony regarding relevant agency

<a href="#">20181-139547-01</a>	17-410	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--REFILE RESPONSE MOTION TO EXCLUDE - SERVICE LIST	1/30/2018
<a href="#">20181-139611-01</a>	17-410	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS AND MN DEPARTMENT OF HEALTH	LETTER--LETTER STIPULATION AND AFFIDAVIT - AFCL AND MDH	1/31/2018
<a href="#">20182-139859-01</a>	17-410	DOC-EERA	COMMENTS--COMMENT LETTER FROM MPCA	2/7/2018
<a href="#">20182-139915-01</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	MOTION--LISA JOYAL_PART 1 OF 3	2/9/2018
<a href="#">20182-139915-02</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	MOTION--MEMO_PART 2 OF 3	2/9/2018
<a href="#">20182-139915-03</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	MOTION--AFFIDAVIT_PART 3 OF 3	2/9/2018
<a href="#">20182-139916-01</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	MOTION--KEVIN MIXON_PART 1 OF 3	2/9/2018
<a href="#">20182-139916-02</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	MOTION--MIXON-MEMO_PART 2 OF 3	2/9/2018
<a href="#">20182-139916-03</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	MOTION--MIXON AFFIDAVIT_PART 3 OF 3	2/9/2018
<a href="#">20182-140003-01</a>	17-410	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	REPLY BRIEF--AFCL RESPONSE TO DNR MOTION TO QUASH AND AFF OF OVERLAND AND EXHIBITS	2/12/2018
<a href="#">20182-139981-01</a>	17-410	MINNESOTA DEPARTMENT OF NATURAL RESOURCES	OTHER--AFFIDAVIT OF SERVICE	2/12/2018
<a href="#">20182-140121-01</a>	17-410	OAH	ORDER--DENYING MOTIONS TO QUASH	2/15/2018

comments and agency reports raising concerns about projects should be noted. Under the siting criteria, there should be “consideration of problems raised by other state and federal agencies and local entities.” Minn. Stat. §216E.03, Subd. 7.

**F. MINNESOTA’S SITING STANDARDS AND RULES ARE ARBITRARY AND LAX WHEN COMPARED TO OTHER JURISDICTIONS**

Minnesota has “siting standards” but they are not specific, and setbacks for residences are established on a case by case basis in permitting. Despite Commerce EERA claims that “[t]he rules to implement the permitting requirements for LWECs are in Minn. Rule 7854, that is false. There are no statutory siting criteria or rules for siting. Minn. Stat. Ch. 216F; Minn. R. ch. 7854. There are siting standards which were developed a decade ago, in a rushed hybrid process that was not a rulemaking. AFCL-8, Wind Siting Standards. The origin of the commonly used 1,000 foot setback, as found in Section 4.2 of the Freeborn Wind draft Site Permit, is not based in statute, rule, or standards, is arbitrary and is unknown:

Q: ... it lists 1,000 feet as a setback from residences. Where does that number come from? It's for the SDP template. Where do you get that number?

A: For the template or for what we've submitted for the preliminary?

Q: Both, really. But where do you get – where does the thousand foot come from?

A: Thousand foot. I don't know exact – the exact location of where that comes from. But in the most recent site permit applications that have been approved in the most recent site permits that have been issued by the Commission, that has been the standard distance that they've approved, along with the consideration of noise standards being met.

Davis, Vol. 2, p. 171-173; see also EERA-8, DSP, p. 3.

However, setbacks can be much larger:

Q: Are you familiar of any siting permits that provided for one-half-mile setbacks?

A: I am.

Q: And how many times – or explain?

A: I know of only one in Minnesota, and actually this hearing was the first place that I'd ever heard of it, is Lakewinds up in Clay County, Minnesota where

they have half-mile setbacks. And I do not know the basis of those setbacks. I don't know the discussions that led to them.

Davis, Tr. Vol 2, p. 173, l. 5-14.

As found in studies provided as exhibits by Invenergy's witness Roberts, setbacks in other jurisdictions are larger and more protective and preventative than typically found in Minnesota. From Roberts' Schedules:

- The "Massachusetts study," recommended more restrictive noise levels be adopted by the state. FW-6, Roberts, Sched. 6, p. 17 & 80 of 164.
- A study from German, reviewed projects with setbacks of 150, 300, and 700 meters. FW-6, Roberts, Sched. 9, pps. 19, 23.
- A study from Japan reviewed projects where noise limits were 35-40 dBA, far below the 50 dBA in Minn. R. 7030. FW-6, Roberts, Sched. 10, p. 8-9.
- A study from France has setbacks of 500 and 1,500 meters. FW-6, Roberts, Sched. 11, p. 1-2, 7-12, 13, 14.
- A study from Denmark, has setbacks of four times the total height of the turbine, which in this case would be 1772 feet for a Vestas V110 and 1812 feet for a Vestas 116. This Denmark study recognized weak infrasound as a nuisance. FW-6, Roberts, Schedule 12, p. 11.
- As above, in the Lakeswind docket, the Commission ordered ½ mile setbacks. Davis, Tr. Vol 2, p. 173, l. 5-14; McNamara P-20, Lakeswind site map.

In light of existing issues with wind siting in Minnesota, and setbacks and noise limitations in other jurisdiction, preventative and precautionary siting is required.

#### **G. MPCA NOISE RULES ADDRESS ONLY A WEIGHTED SOUND**

Wind projects must comply with the MPCA's noise rules, Minn. R. Ch. 7030, but the noise rules regulate industrial facilities using an A weighted scale, which do not capture the noise of wind turbines, which requires monitoring of both A and C weighted scales. Minn. R. 7030.0040, but c.f. Bent Tree noise study protocol, AFCL-11, Bent Tree Noise Monitoring and

Noise Study Phase I, Appendix A; see also Bent Tree Noise Report, Phase II, p. 10 of Comment of Stephanie Richter, 3/15/2019 ([20183-141042-01](#)).

Efforts have been made to address this deficiency. When a rulemaking petition was filed with the MPCA for rules to specifically address wind turbine noise, both A and C weighted scales, the petition was denied:

After consulting with colleagues at the Minnesota Departments of Health and Commerce, I have concluded that the current understanding of wind turbine noise and its potential effects is insufficient to support rule making at this time.

Public Hearing Exhibit P. 20, p. 15-16, quoting MPCA Commissioner Stine, 9/12/2016 ([20169-124844-01](#)).

**H. IN PRACTICE, DECOMMISSIONING PLANS ARE NOT DRAFTED OR EVEN PROPOSED UNTIL AFTER A PERMIT IS ALREADY GRANTED, CONTRARY TO APPLICATION RULES AND LEAVING NO OPPORTUNITY TO ADDRESS DECOMMISSIONING SECURITY IN THE PERMITTING PROCESS.**

Under current practice, decommissioning information is not provided in the application, EERA does not raise this omission to the Commission, and the Commission blithely declares Applications complete without any acknowledgement of the omission of decommissioning information – a systemic problem. In this case, decommissioning information was not included in the application, and the decommissioning plan isn't being drafted and filed until after a permit is issued. Under the rules, decommissioning information including cost and financial assurance plan should be provided in the Application:

**Decommissioning and restoration.**

The applicant shall include the following information regarding decommissioning of the project and restoring the site:

- A. the anticipated life of the project;
- B. the estimated decommissioning costs in current dollars;
- C. the method and schedule for updating the costs of decommissioning and restoration;

- D. the method of ensuring that funds will be available for decommissioning and restoration; and
- E. the anticipated manner in which the project will be decommissioned and the site restored.

Minn. R. 7854.0500, Subp. 13.

Freeborn County also has requirements for decommissioning in its wind ordinance that requires a decommissioning plan and financial assurance. FR-1, Application, Appendix /.

Despite inclusion of the Ordinance in the Application, EERA was not aware that Freeborn County has decommissioning requirements in its wind ordinance. Davis, Tr. Vol. 2, p. 175, l. 13 – p. 176, l. 2.

The Freeborn Wind application did not include the information required in an application by Minn. R. 7854.0500, Subp. 13. FR-1, Site Permit Application. The application was submitted, the question of completeness was opened for comment, the application was reviewed by EERA and Commerce staff, and inexplicably declared complete at the August 10, 2018 meeting, and in the Order issued August 31, 2017.

AFCL received Invenergy's response to its questions about decommissioning, which were not reassuring, and which instead left decommissioning issues for later. When asked several specific questions regarding the Application sections on decommissioning, Invenergy's response was only:

Freeborn Wind will comply with the terms of the Site Permit as it relates to the preparation, content and distribution of a decommissioning plan. See Section 11.0 of the Draft Site Permit.

AFCL 21, Freeborn Wind Response to AFCL IR 16.

When asked about decommissioning costs, Invenergy's Litchfield testified that:

A: I don't feel I can answer that question. I've never looked at actual costs of actual wind decommissioning. I know it's happened, I've talked to people who have been a part of those projects, but I've not seen the numbers. I don't – I've

been a part of projects where we provide decommissioning cost estimates and they're a deconstruction cost proposal, so – and they're usually provided by same types of vendors that do wind farm construction. So I wouldn't have any real reason to doubt them.

Q: Has Invenergy been involved in any wind decommissioning?

A: Not to my knowledge.

Litchfield, Tr. Vol. 1A, p. 46, l. 13-25. Despite this lack of knowledge, Litchfield is serving on a PUC decommissioning work group. Litchfield, Vol. 2, p. 100, l. 13-19.

Invenergy's Litchfield also testified that there is no decommissioning plan for this project at this point, there is no cost estimate for decommissioning at this point, and there is "no form of financial assurance for the purpose of decommissioning the facility at this time. Litchfield, Tr. Vol. 1A, p. 43, l. 8-17; see also Tr., Vol. 2, p. 101, l. 7-9.. There is also no specific plan for financial assurance, although Litchfield anticipated that a site permit condition would require financial assurance. Litchfield, Tr. Vol 2, p. 99, l. 18 - 100, l. 12.

Despite the rule, the decommissioning information was not required to be provided, and was not submitted as an exhibit in the hearing. Minn. R. 7854.0500, Subp. 13. EERA proposes in Comments and in the Draft Site Permit that the Decommissioning Plan not be provided until after permitting, citing Minn. R. 7854.0500, Subp. 13! See EERA-8, Draft Site Permit, p. 8 Comments (requiring post-permitting "Special Condition" of update of Decommissioning Plan every 5 years). That rule cited by EERA in the Draft Site Permit, as above, is what "[t]he applicant shall include the following information regarding decommissioning of the project and restoring the site." Id. The "special condition" is only applicable after permitting, despite the express language of Minn. R. 7854.0500, Subp. 13.

To date the decommissioning information has not been provided, instead only statements

that the information will be provided after permitting. The decommissioning information required by the rule was obviously not included in the application, yet both EERA and the Commission missed this omission, and the application was declared complete. The application should not have been accepted, should not have been declared complete, and should not have moved forward without this specifically required decommissioning information. This flagrant disregard of the rules, by the Applicant, by EERA and by the Commission, and moving forward without any knowledge of how to decommission the project is irresponsible. How are the as yet unknown costs of decommissioning to be guaranteed? How can financial assurance be secured without knowledge of costs and process of decommissioning? What if project goes bankrupt or permit is revoked? These issues were raised by Wayne Brandt in a public Comment, where he brought a copy of his wind lease agreement, with an “Effect of Termination” clause that stated:

If Grantee fails to remove such Windpower Facilities within twelve (12) months of termination of the Easement, or such longer period as Owner may provide by extension, Owner may do so, in which case grantee shall reimburse Owner for reasonable and documented costs of removal and restoration incurred by Owner.

AFCL-35, Wayne Brandt Public Comment from Public Hearing, p. “15;” see also Brandt, Public Hearing, p. 133-139. That contract also provides for “Security for Removal of Windpower Facilities” with financial assurance to the landowner, which will remain in force for the term of the agreement. *Id.*; see also FR-19, Freeborn Wind Easement Form (Effect of Termination and Security for Removal of Windpower Facilities clauses are identical); see also Litchfield, Tr. Vol. 2, p. 90-101. This agreement puts the onus on the landowner if the company disappears and does not decommission, leaving it to the landowner to recover expenses. AFCL-35, Wayne Brandt Public Comment from Public Hearing, p. “15;” see also FR-19, Affidavit of Dan Litchfield, Freeborn Wind Easement Form.

We are at this late stage in permitting without that required and necessary information.

No permit should be granted until this information has been provided, opened for comment, and reviewed by Commerce, the public, and the Commission, as contemplated by the requirement that decommissioning information be included in the application.

**I. THE COMPLAINT PROCESS NEEDS AN OVERHAUL BEFORE ADDITIONAL PERMITS ARE ISSUED.**

The complaint process, part of all Permits, is dysfunctional. Complaints are made and often not resolved even after years of problems, i.e., Bent Tree and Big Blue wind projects, and with pipeline and transmission line projects as well. The complaint process must be revised. According to EERA's Davis, the questions and comments about the complaint process in this docket is the way to get a revision moving. Davis, Tr. Vol 2, p. 176-180.

**II. FREEBORN'S WITNESSES ARE NOT CREDIBLE**

Dr. Mark Roberts is a professional witness, with roughly 85% of his time spent at this activity, and testimony over such a wide variety of topics that it seems there are few subjects he does not testify about. FW-6, Roberts Direct, Schedule 1, C.V.; AFCL-33 and Roberts, Tr. Vol. 1B, p. 127-128. Roberts has had no special training or education regarding wind health impacts. FW-6, Roberts Direct, Schedule 1, C.V.; Roberts, Tr. Vol. 1B, p. 128, l. 18-25. His testimony is focused on causation, which is not at issue in this proceeding, and which serves as a distraction from issues before us, that of noise and siting the project such that the project is in compliance with Minnesota noise standards. He has attached an great number of studies to support his claims, but when scratching the surface of those studies, it's apparent that Roberts is telling only part of the story, and the rest of the story shows that his testimony is most generously characterized as misleading.

**A. ROBERTS' TESTIMONY WAS UNINFORMED, MISLEADING, AND FALSE.**



**i. Causation is not at issue**

Roberts mistakenly and misleadingly focused on causation in his testimony. This docket is an administrative proceeding, where the applicant has the burden of proof to show that under the criteria of Minn. Stat. §216E.03, Subd. 7, it should be granted a siting permit. There is no burden on the Intervenors to demonstrate causation, that wind projects, via noise, shadow flicker, or any other means, cause harm. Intervenors are not plaintiffs in a personal injury case.

Roberts frames his testimony as a causation issue, summarizing his testimony in 5 points, 4 of which focus on causation. He uses the word “cause” 34 times, and the word “causation” 21 times in just 20 pages of testimony, he is distracting from the dockets purpose -- evaluation of the project Minn. Stat. §216E.03, Subd. 7. Roberts’ testimony is not on point nor is it credible. Roberts’ testimony should be given very little weight.

**ii. Roberts misrepresented the Massachusetts study**

Regarding Schedule 6, the “Massachusetts study,” Roberts’ testimony was that “... they concluded that “there is insufficient evidence that the noise from wind turbines is directly (i.e. independent from an effect on annoyance or sleep) causing health problems or disease.” FW-6, Direct p. 115, l. 404-409. Finding, or attempting to find, causation was not in the charge to the study committee. FW-6, Sched. 6, p. vi, ES-2; 53-57 (p. 73-77 of 164). The sentence quoted by Roberts was not the conclusion of the study, nor was it a main finding. That sentence was found in 4 pages of Findings, this one was point 5 of four pages of findings, with categories of Noise, Shadow Flicker, Ice Throw, and Other Considerations. The quoted sentence was point 5 of 9 under the Noise subheading Health Impacts of Noise and Vibration, with 9 findings in the subheading having an additional 7 subpoints, so 16 findings in that section. FW-6, Sched. 6, p. vi, ES-2; 53-57 (p. 73-77 of 164). The sentence was one point of many, Freeborn admits that

“[i]t has a number of findings, and anybody could count them.” Tr. Vol. 1B, p. 144, l. 9-10. It is in no way a conclusion by the study committee. The findings should be reviewed and counted. Roberts’ summary sentence is a gross misrepresentation and mischaracterization of the study.

A more important point that Roberts did not mention is that the study produced “Promising Practices” in line with its charge that recommended specifically that the following noise limits be adopted by the state of Massachusetts:

Promising Practices for Nighttime Sound Pressure Levels by Land Use Type

Land Use	Sound Pressure Level, dB(A) Nighttime Limits
Industrial	70
Commercial	50
Villages, mixed usage	45
Sparsely populated areas, 8 m/s wind*	44
Sparsely populated areas, 6 m/s wind*	42
Residential areas, 8 m/s wind*	39
Residential areas, 6 m/s wind*	37

*\*measured at 10 m above ground, outside of residence or location of concern*

FW-6, Roberts, Sched. 6, p. 17 & 80 of 164. These noise limits are far more restrictive than those of the MPCA R. 7030, although the Minnesota rules are a floor, and permits can have more restrictive special conditions. Minn. Stat. §216F.04(d).

**iii. Roberts was unaware of standards and setbacks in the studies he cited**

Roberts cited studies as proving that there was “no causation” of health effects, but the situations in those studies was nothing like the Freeborn Wind proposed project. For example, Roberts quoted an Australian study which concluded that “wind turbines do not pose a threat to health if planning guidelines are followed.” FR-6, Roberts, Schedule 2, Wind Turbines and Health...” However, he testified that he did not know what the guidelines were, he had not reviewed them. Roberts, Vol. 2, p. 135, l. 18 – p. 136, l. 6.

Regarding Schedule 4, he quoted from the 2010 Chief Medical Officer of Health of Ontario which stated that “the sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct health effects, although some people may find it annoying.” FW-6, Roberts Direct, p. 13, l. 389-392; Sched. 4. Roberts had not looked with the Ministry of Environmental Guidelines referenced in that report. Roberts, Tr. Vol. 2, p. 139, l. 2-7. When asked if the common residential setbacks referred to in that report is 550 meters, he was not familiar with it. FW-6, Roberts Schedule 4, p. 232. He then testified that he heard the setback for this Freeborn Wind project was 1,500 feet. Id., p. 140, l. 25.

Roberts testified regarding Schedules 6, 9, 10, 11, 12, 13, 14, 15, and 16 “concluded that infrasound levels are multiple orders of magnitude below the threshold of human hearing.: FW-6, Roberts Direct, p. 17, l. 491-504. However, the “Massachusetts study,” as above, recommended more restrictive noise levels be adopted by the state. FW-6, Roberts, Sched. 6, p. 17 & 80 of 164. Schedule 9, a study from German, reviewed projects with setbacks of 150, 300, and 700 meters. FW-6, Roberts, Sched. 9, pps. 19, 23. In the Schedule 10 study, from Japan, noise limits were 35-40 dBA, far below the 50 dBA in Minn. R. 7030. FW-6, Roberts, Sched. 10, p. 8-9. Schedule 11, a study from France, has setbacks of 500 and 1,500 meters. FW-6, Roberts, Sched. 11, p. 1-2, 7-12, 13, 14. Schedule 12, a study from Denmark, has setbacks of four times the total height of the turbine, which in this case would be 1772 feet for a Vestas V110 and 1812 feet for a Vestas 116. Of note is that the Denmark study recognized weak infrasound as a nuisance. FW-6, Roberts, Sched. 12, p. 11. Roberts states that “wind turbine noise is not an issue caused by super-low frequency range.” FW-6, Roberts Direct, p. 17, l. 503.504 referencing Sched. 17. However, that same study identifies areas susceptible to environmental impact as one kilometer from a wind turbine. FW-6, Roberts, Sched. 17, p. 4.

By using these studies without recognition of the situations at play, the different siting guidelines and noise limitations in those jurisdiction, Roberts loses credibility, and his arguments are misleading, and are misrepresentations and mischaracterizations at best.

**iv. Roberts didn't know of more current studies because no one told him or gave to him, or he didn't look.**

A review of the schedules attached to Roberts' testimony shows that only 14 of 31 are less than 5 years old, and 11 are 2010 or older. Roberts testified that he did not know about updates to studies he had cited, testified about, and attached to his testimony. As Schedule 2, Roberts used the 2010 Australian National Health and Medical Research Council study from 2010, and when asked if he was aware there was a 2014 update and 2015 revision, he testified, "I have not seen it yet." Roberts, Tr. Vol. 1B, p. 136, l. 7-12. As Schedule 4, he used a 2010 study from the Chief Medical Officer of Health in Ontario, but was not aware it had been updated, and when asked if he had looked, he testified, "No, I haven't." Roberts, Vol. 2B, l. 4-9.

**v. Roberts testified regarding project specific issues which he had insufficient knowledge and had not adequately investigated.**

Roberts submitted a letter from the Minnesota Dept. of Health to Per Anderson, from the Lakeswind docket, which stated that there must be an environmental study. FW-6, Roberts Direct, Sched. 30; see also McNamara, Public Testimony, Tr. Public Hearing, p. 189, 192; McNamara's Exhibit P. 20, p. 2, Lakeswind ½ mile setbacks map. When asked whether he was aware that there is no Environmental Impact Statement or Environmental Assessment, no environmental study, before us in this docket, Roberts response was, "I have not reviewed this docket material you're referring to." Roberts, Tr. Vol 1B, p. 133, l. 8-16. Roberts also volunteered that the setback for this project was 1,500 feet, that he thought that's what the rules were, but again, "I haven't looked at the proposal." Roberts, p. 140-141.

**vi. Roberts testified in agreement with an EERA's Comments and Recommendations statement regarding "a causal link," a statement that does not exist**

Roberts testified that he agreed with a statement in EERA's Comments and Recommendation that accompanied the Draft Site Permit:

Most recently, the Minnesota Department of Commerce, Energy Environmental Review and Analysis ("EERA") in its Comments and Recommendations on the Preliminary Draft Site Permit for Freeborn Wind Energy LLC agreed with the MDH report's summation of the available "research and literature" regarding "wind turbine noise, i.e., the lack of scientific evidence supporting a causal link between wind turbines and disease."<sup>1</sup> However the EERA Comments and Recommendations did note that the "conclusions and recommendations drawn in the 2009 White Paper [MDH report]" were not supported by the research and data that was available at the time."<sup>2</sup> I agree with EERA's statement.

FR-6, Roberts Direct, p. 15, l. 432-440, claiming to cite the EERA Comments at 19-20.

However, the EERA Comments did not contain the words: "wind turbine noise, i.e., the lack of scientific evidence supporting a causal link between wind turbines and disease." The EERA Comment as cited by Roberts stated:

***Department of Health 2009 White Paper***

Comments referenced the Minnesota Department of Health 2009 White Paper as a "study." For clarification purposes and to provide factual information the 2009 White Paper written by the Minnesota Department of Health (MDH) was not a study looking at the potential impacts of infrasound and low frequency noise generated by wind turbines. The 2009 White Paper was a review of research and literature on the topic of potential wind turbine noise available at the time, and it provides some analysis of the available research and recommendations. DOC-EERA staff has reviewed the 2009 White Paper several times, and would agree with MDH's summation of available research and literature. However, the conclusions and recommendations drawn in the 2009 White Paper do not appear to be supported by the research and data that was available at the time of writing the 2009 White Paper. As the research identified by MDH identified no consistent pattern of health impacts related to wind turbines.

EERA-8, Comments and Recommendations on a Preliminary Draft Site Permit, p. 19-20.

Fabricated comments regarding causation are not helpful.

As an expert witness, Roberts has a responsibility to make sure that his testimony factual and is up to date and accurate. His schedules are primarily outdated studies, and he does not reference or seem to have awareness of updates and revisions, and has little knowledge of the project for which he is testifying. Through false and misrepresented statements of others, use of studies without checking to see if the studies he used were current or if there were updated versions, Roberts loses credibility. His arguments are misleading, and are misrepresentations and mischaracterizations at best and should be given very little weight.

**B. ELLENBOGEN’S TESTIMONY MISPLACED A FOCUS ON CAUSATION AND MISREPRESENTED THE MASSACHUSETTS STUDY AND HIS EXAMINATION OF PLAINTIFFS**

**i. Causation is not at issue.**

As with Roberts above, Ellenbogen focused on causation, which is not at issue. This docket is an administrative proceeding, where the applicant has the burden of proof to show that under the criteria of Minn. Stat. §216E.03, Subd. 7, it should be granted a siting permit. There is no burden on the Intervenors to demonstrate that there is causation, that wind projects, via noise, shadow flicker, or any other means, cause harm. When asked why he picked the one finding on causation to highlight, Ellenbogen stated:

I felt that particular point was the point most salient to my participation in this proceeding.

Ellenbogen, Tr. p. 65, p. 2-3.

By framing his testimony as a causation issue, using the word cause or causation 9 times in just 8 pages of testimony, he is distracting from the evaluation of the project through applicable siting criteria. Minn. Stat. §216E.03, Subd. 7. Viewed through this distraction, his testimony is not on point nor is it credible.

**ii. Ellenbogen’s examination of plaintiff’s was not sufficient to establish**

### **or disprove causation**

Ellenbogen's brief paragraphs about his Defendants' examination of people complaining of symptoms related to wind turbines was not sufficient to establish or disprove causation (which is irrelevant, because as above, causation is not at issues). FR-7, Ellenbogen Direct, p. 6-8.

Roberts, in his Direct testimony, laid out the several steps necessary for demonstration of causation. FR-6, Roberts Direct, p. 7-12. The Ellenbogen Defendants' examination did not have the thoroughness or depth necessary, in fact, although the patients were directly examined, there were no tests ordered, as he "was not given the opportunity to conduct further testing beyond that." Ellenbogen, Tr. Vol. 2, p. 70. A file review of 4 patients is not adequate to demonstrate causation or lack thereof, and has no bearing in this proceeding.

### **iii. Ellenbogen misrepresented, as did Roberts, the "conclusion" of the Massachusetts study.**

Ellenbogen was a participant in the Massachusetts study panel. FV-6, Roberts Schedule 6. Ellenbogen also testified about causation and mischaracterized the findings of the study:

Q: Please explain the Study's key finding with respect to noise.

A: We concluded that there is insufficient evidence that noise from the wind turbines is directly causing health problems or disease...

As above, finding, or attempting to find, causation was not in the charge to the study committee. FR-7, Ellenbogen Direct, p. 2-3; FW-6, Sched. 6, Massachusetts Study, p. vi, ES-2; 53-57 (p. 73-77 of 164). The study did not have a "key finding," with respect to noise or any other matter. Again, that finding using the word "causing" was point 5 contained within 4 pages of Findings. FW-6, Sched. 6, p. vi, ES-2; 53-57 (p. 73-77 of 164). The sentence was one point of many and is in no way the conclusion by the study committee generally or specifically regarding noise. The claim of a "conclusion" regarding causation is a misrepresentation and mischaracterization of the study.

The same is found regarding “the Study’s finding with respect to shadow flicker.” FW-7, Ellenbogen Direct, p. 5, l. 136-149. The study had five findings regarding shadow flicker.

Ellenbogen also failed to mention that the study produced “Promising Practices,” in line with its charge, that recommended noise limits be adopted by the state of Massachusetts, noise limits which are much lower dB(A) levels than those in Minnesota rules.:

Promising Practices for Nighttime Sound Pressure Levels by Land Use Type

Land Use	Sound Pressure Level, dB(A) Nighttime Limits
Industrial	70
Commercial	50
Villages, mixed usage	45
Sparsely populated areas, 8 m/s wind*	44
Sparsely populated areas, 6 m/s wind*	42
Residential areas, 8 m/s wind*	39
Residential areas, 6 m/s wind*	37

*\*measured at 10 m above ground, outside of residence or location of concern*

FW-6, Roberts, Sched. 6, p. 17 & 80 of 164.

**C. HANKARD OMITTED THE REQUIRED AMBIENT NOISE LEVELS FROM HIS MODELING**

Invenergy’s Hankard did not include ambient noise levels in his Noise Study, attached to the application. FW-1, Appendix B, Noise Analysis. Under EERA’s Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report, ambient noise modeling is necessary. EERA-9, Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report, Appendix A. Though not technically required, the MPCA Comment states:

Developers should not propose projects where the total noise is estimated to exceed the noise standards at receptor property. Modeling wind farms before construction should include total noise – turbine noise and background noise as datasets.



Id. This modeling was not produced until a week after the hearing, and there was no opportunity for cross-examination.

#### **D. JIMENO'S TESTIMONY LACKED CREDIBILITY**

Invenergy's Jimeno's testimony lacked credibility because his "facts" were not verifiable. Under cross-examination by KAAL, it was determined that the numbers of viewers in the area were determined in a way that could not be verified, and those numbers were favorable to Freeborn Wind, and not consistent with KAAL's viewer numbers. See, e.g., Jimeno, Tr. Vol. 2, p. 16-28.

I don't recall the exact formula, I guess, that was used to calculate the households. Id., p. 23, l. 22-23. In an effort to determine how viewing households was determined, Jimeno's workpapers were requested, and received. Id., p. 26; FR-17, Affidavit of Dennis Jimeno and Work Papers.

#### **E. LITCHFIELD TESTIFIED ABOUT MATTERS THAT DEFIED THE LAWS OF PHYSICS**

Invenergy's Litchfield claims the project will reduce emissions, replace fossil fuel, "avoid up to 11 million tons of CO2 emissions." FW-4, Litchfield Direct, p. 10-11, 25. When asked what fossil generation will be reduced, what fossil generation will be replaced, what emissions will be avoided, when asked to substantiate these claims and provide a direct link, there was no direct link.

There are no specific agreements/contracts that can be identified. AFCL-27, Freeborn Wind Response to AFCL IR 26. The laws of physics are clear -- only way to reduce emissions is to stop burning. This project will not stop burning, it will only not generate CO2 and other emissions. While decreasing CO2 and other emissions is a necessary and good thing, there is no direct link between this project and reduction, avoidance or replacement.

**F. GIAMPOLI LACKS ESPERTISE TO CREDIBLY TESTIFY ABOUT ENVIRONMENTAL MATTERS**

Invenenergy’s Giampoli is not credible as an environmental witness. She is not a biologist, ecologist, or any other “gist” that would lend to environmental work. She has a BA in Communication Arts and Spanish, and a JD from Rutgers University School of law. She is the “environmental manager overseeing the wildlife and wetland survey work and permitting for the Freeborn Wind Farm.” FR-8, Giampoli Direct, p. 1-2. Giampoli’s training has been on-the- job with promotion from a specialist to a management position. She also oversees the environmental consultants and biologists. Giampoli, Tr. Vol. 1B, p. 26, l. 17-19; p. 27, l. 1-3. Nothing in her resume shows any expertise in this area.

Giampoli did not know who gathered and drafted the information in the sections of the application for which she was responsible. Giampoli, p. 36, l. 22- 37, l. 12. Giampoli was not aware whether a yet to be completed wetland delineation could affect turbine placement. Id., p. 29, l. 9 – p. 30, l. 5.

As Freeborn Wind’s environmental witness, there is too much that Ms. Giampoli is not familiar with, and with such large areas of unfamiliarity, is not qualified to supervise consultants and judge the quality of their work.

**III. COMMERCE – EERA IS NOT SUFFICIENTLY FAMILIAR WITH SITING CRITERIA TO REVIEW APPLICATION OR PREPARE DRAFT SITE PERMIT**

EERA staff responsible for project review and drafting of the Draft Site Permit cited statutory and rules as authority for siting, and omitted the Power Plant Siting Act criteria applicable for this project. EERA-8, Commerce Recommendations, p. 3, and Draft Site Permit, p. 1. Staff further admitted unfamiliarity with the statutory criteria of the Power Plant Siting Act. Davis, Tr. Vol. 2, p. 168 – 170. Without a working knowledge of the criteria, without

understanding of its applicability, on its face, the proffered Comments and Recommendation and Draft Site Permit are inadequate.

**A. COMMERCE ADMITS UNFAMILIARITY WITH PPSA CRITERIA**

EERA proved unequipped to evaluate the Freeborn Wind proposal because Davis was not familiar with the criteria to review this project and upon which permitting would be based.

When asked about adding the statutory criteria to the parts of EERA Comments and Recommendations and the Draft Site Permit, Davis stated that he wasn't clear why a reference to Minn. Stat. §216E.03, Subd. 7 should be added to the Comments and Recommendations and Draft Site Permit. Davis, Tr. Vol. 2, p. 158-170; see also Minn. Stat. §216E.03, Subd. 7.

I would question whether our permit does not meet that already and our review does not meet that.

Davis, Tr. Vol. 2, p. 169, l. 19-22. Davis states that a template is used, but he does not know the origin of the most basic terms, such as the 1,000 foot setback. Davis, Tr. Vol. 2, /. Use of a template with terms that are not understood or justified is not acceptable. Further, the person charged with reviewing and analyzing the project proposal must be very well acquainted with the statutory criteria. There is also no excuse for omission of "Minn. Stat. §216E.03, Subd. 7" from the "Regulatory Process and Procedures" in the Comments and Recommendations and section 1.0 Site Permit, where Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854 are cited as authority for permitting.

**B. THIS PROJECT HAS NOT BEEN PROPERLY REVIEWED UNDER THE MINN. STAT. §216E.03, SUBD. 7 SITING CRITERIA.**

Before the Freeborn Wind project, the state's Department of Commerce and the Public Utilities Commission had not used the applicable siting criteria, that of Minn. Stat. §216.03, Subd. 7 (see Minn. Stat. §216F.02 Exemptions). Freeborn Wind appropriately acknowledges

the applicability of the Power Plant Siting Act's criteria in its application. However, in testimony, Commerce's Rich Davis was asked to amend Commerce's Comments and Draft Siting Permit to include reference to the siting criteria, and he testified that he was not familiar with Minn. Stat. §216E.03, Subd. 7. When Commerce staff, responsible to the Commission for review and analysis and a recommendation of the project, is admittedly not familiar with the applicable siting criteria, EERA's Comments and Recommendations and the Draft Site Permit have little value and little weight. Commerce has not done its job.

The Department of Commerce EERA and the Commission must site wind projects using the statutory criteria, and ultimately, the Commission must address systemic problem of all previous permits that were sited without applying the statutory criteria. The Department of Commerce's analysis is deficient because the project has not been reviewed, nor have EERA's Comments and Recommendations nor the Draft Site Permit been prepared with the statutory criteria in mind. See EERA-8, EERA Comments p. 3 and Draft Site Permit, p. 1. A permit should not be issued without review and analysis of the project using the applicable criteria. The review process for this project, as a state government action, as well as all wind projects sited thus far in Minnesota, is not compliant with the Minnesota Environmental Policy Act. Minn. Stat. Ch. 116D.

**IV. ISSUES SPECIFIC TO THE FREEBORN WIND PROJECT HAVE NOT BEEN RESOLVED SUFFICIENTLY TO ALLOW A PERMIT TO BE ISSUED**

In light of the systemic issues in siting wind turbines detailed above, the lack of credibility of many witnesses, and the specific issues raised by AFCL and others, below, the Commission should not issue a siting permit for any wind project until these systemic and specific problems are corrected. Freeborn Wind has not complied with guidelines and rules, and

has not preventatively addressed the problems raised. The Commission, through recent experience, is well aware that there are siting problems and the need for caution. That experience shows the need for careful, preventative siting and attention to the siting criteria.

**A. INADEQUATE NOISE MODELING AND PROJECT DESIGN THAT PROVIDES NEITHER MARGIN OF ERROR NOR TURBINE LOCATION ALTERNATIVES REQUIRES PREVENTATIVE SITING.**

Minnesota siting criteria requires consideration of noise related issues. Noise is related to the criteria focused on the state's goal of minimizing human settlement and other land use conflicts; evaluation of research and investigations regarding facilities' impacts on public health and welfare; environmental evaluation of sites and relationship to human resources, minimization of adverse environmental effects; evaluation of adverse direct and indirect environmental effects that cannot be avoided; evaluation of alternatives to the applicant's proposed site, evaluation of irreversible and irretrievable commitments of resources, consideration of problems raised by other state and federal agencies and local entities, and not to designate a site that violates state agency rules. See Minn. Stat. §216E.03, Subd, 7 (a), (b)(1), (2), (3), (6), (7), (11), (12), (d). Of particular importance is "evaluation of irreversible and irretrievable commitments of resources," because once a wind project is permitted and constructed, it's difficult to move, modify, or mitigate impacts of the project.

The applicant's focus on causation related to noise is distraction. What is at issue in this proceeding is whether the project will comply with the noise limitations of MPCA noise regulations. Noise is admittedly annoying, and can interfere or even rob landowners of the use and enjoyment of their property. Noise and the annoyance and take away their enjoyment of their lives. The origin of the 1,000 foot setback utilized in EERA's Draft Site Permit template is unknown. Davis, Tr. Vol. 2, p. 172, l. 11 – p. 173, p. 4.. The Commission has ordered setbacks

on a case by case basis, and notably ½ mile setbacks in the Lakeswind docket. McNamara, P. 20, Lakeswind site map' Davis, Tr. Vol. 2, p. 172, l. 5-14. Other jurisdictions have set larger distance setbacks, such as 550 meters in Australia, or lower noise limitations, such as 40 dBA recommendations of WHO and the Massachusetts study, and the Minnesota Department of Health's recognition that a ½ mile setback would reduce complaints, all in an effort to be protective, preventative, and precautionary in siting. See FW-9, Roberts Direct Schedule 1, Schedule 6, pps. ES-10 & 60; Schedule 7 . The Commission has no set setbacks, only a floor, with siting from residences ostensibly designed to provide compliance with noise standards. AFCL-8, MN Wind Siting Standards, Appendix A. Experience and Commission dockets show that the 1,000 foot distance often used is not distance enough, with Minnesota projects demonstrating exceedences requiring Commission action. AFCL-11, Bent Tree Noise Monitoring and Noise Study, Phase I; see also Bent Tree Noise Report, Phase II, p. 10 of Comment of Stephanie Richter, 3/15/2019 ([20183-141042-01](#)); AFCL 15, Hansen Rebuttal, Schedule F, Big Blue – PUC Letter - Request for Response to Alleged Site Permit Violations and to Show Cause. These examples are reason to use preventative and precautionary siting going forward. Once a project is built, mitigation is difficult and costly, and neither the Commission nor developers want to be in the position of attempting mitigation through buyouts, moving nearly 500 foot turbines with 55 foot foundations, or suspension or revocation of permits.

Wind on the Wires, the industry lobbying association, of which Invenergy is a member, advocated in an eFiled Comment for interpretation of the Minn. R. 7030 noise standard and “supports the consistent application of the Rule on a going forward basis using the interpretation that has been applied to date to wind farm permits in the State of Minnesota.,” claiming that the issue in this docket is the rule, and **“how it has been interpreted to date for wind farm**

**permits.”** WOW Comment, 3/15/2018 ([20183-141082-01](#)). It appears WOW is not aware of wind turbine siting issues and steps the Commission has taken to address proven noise problems.

The Public Utilities Commission is on notice that noise has been a problem for residents living within wind projects, that complaints have been made, that the complaint process is broken, and that noise violations have been documented. AFCL-11, Bent Tree Noise Monitoring and Noise Study, Phase I; see also Bent Tree Noise Report, Phase II, p. 10 of Comment of Stephanie Richter, 3/15/2019 ([20183-141042-01](#)); AFCL 15, Hansen Rebuttal, Schedule F, Big Blue – PUC Letter - Request for Response to Alleged Site Permit Violations and to Show Cause. Not only is noise specifically regulated by MPCA rule, but it is a factor within the PPSA criteria, particularly where the criteria seeks to minimize environmental impacts, minimize human settlement and other land use conflicts, public health and welfare, adverse direct and indirect environmental effects, irreversible and irretrievable commitments, consideration of problems raised by agencies, and state agency rules. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d). Wind projects have not performed adequate modeling prior to construction, and post-construction noise modeling has shown that at least two projects thus far are not compliant with noise rules and permit conditions.

Wind projects must comply with the MPCA’s noise rules, Minn. R. Ch. 7030, but the noise rules regulate industrial facilities using an A weighted scale, which do not capture both A and C weighted scales, the noise emitted by wind turbines. Minn. R. 7030.0040.

Hankard did not provide modeling as recommended in Dept. of Health “Public Health Impacts of Wind Turbines” 2009 report, nor was the modeling performed for isopleths for dB(C) - dB(A) greater than 10 dB, apparently because it is Hankard’s position that “These recommended isopleths are not typically provided on wind turbine projects and have not been

produced... and that noise from the Project is not considered to have any significant quantities of LFN.” FW-13, Hankard Rebuttal, Schedule 1 (AFCL-IR33); see also AFCL-31, IR-89.

Wind projects also have the direction of the “Guidelines for Large Wind Energy Conversion System Noise Study Protocol and Report.” EERA-9. Commerce’s noise monitoring guidelines states that project proposals should include modeling of ambient and turbine noise – Hankard testified that it’s a “requirement of that document.” Hankard, Vol. 2, p. 104, l. 19-25. Freeborn did not include ambient noise in its impacts section of its application, and it was not provided until after the hearing ended. See Id., p. 105, l. 10-15. The guidelines are very specific regarding ambient noise modeling:

- a) Modeling. **Developers should not propose projects where total noise is estimated to exceed the noise standards at receptor property.** Modeling wind farms before construction should include total noise-turbine noise and background noise as datasets. Then the total monitored noise can be compared to the total monitored noise. If only turbine noise were modeled, then monitored background noise must be applied to adjust the measured noise in order to compare the noise from turbines to the modeled estimates. The monitored noise values are used to compare to the model estimates. They are also used to measure compliance.

EERA-9 Guidance for Large Wind Energy conversion system Noise Study Protocol and Report.

Appendix A (emphasis added).

Freeborn Wind’s project proposal was not compliant with 2012 Dept. of Commerce Guidelines for noise monitoring. “... our modeling refers to turbine-generated noise levels.” Hankard, Tr. Vol 1B, p. 99, l. 19 – p. 100, l. 9. Under the guidance, projects should not be proposed without pre-construction modeling of both ambient noise and wind turbine noise. EERA-8, Guidance. And EERA admits that the noise modeling for this project didn’t meet the guidelines:

Q: And to your knowledge was the modeling provided in compliance with the guidance?



A: From what I've seen, no, it is not.

Davis, Tr. Vol. 2, p. 173, l. 19-21.

Inclusion and consideration of all noise is a key to preventative siting, but Freeborn did not produce it before the hearing, and only submitted it upon request, after Freeborn's omission was raised during the hearing. The ambient noise modeling was promptly provided. FW-18. This exhibit was not subject to cross-examination.

In the application, section 8.3-2, drafted by Hankard, it states that at no location are noise levels greater than 50 dBA under any condition. In live testimony, he "corrected" that to state "... wind-turbine-only noise levels will not exceed 50 dBA." Id., p. 101, l. 14-15. Logically, given that correction, wind-turbine-only noise and ambient noise levels may exceed 50 dBA. "All sources" in Hankard's view does not include ambient noise. Id., p 104, l. 6-8. Commerce EERA and the MPCA have a different view – that "all sources" would include ambient noise.

Given the +/- 3 dB(A) "margin of error, although chose conservative assumptions, the modeling could still result in values over 50 dB(A). See Hankard, Tr., Vol. 1B, p. 113

Doubling of sound energy, or sound pressure level, is 3 dB. "They do not perceive it as a doubling of loudness, until the – until the increase in the decibels is 10. Tr., Vol. 1B, p. 115. Doubling of sound energy doesn't mean a perception of doubling of sound. But the numbers are what matters, in this case the 50 dB(A) of the MPCA 7030 rule.

Invenergy's Hankard agreed to produce noise modeling that included ambient noise, which was provide one week after the hearing adjourned. FR-18. This round of modeling appears to show that where ambient noise levels are at 45 dB(A), there are 4 locations with 50 dB(A) levels, 21 locations at 49 dB(A), and 15 locations at 48 dB(A), totaling 40 locations where the +/- 3 dB(A) would put the project out of compliance. This is concerning.

EERA's Davis notes that larger turbines are noisier, the longer the blades, the noisier the turbines because the larger the turbines are, the faster the tips rotate.

6. The Bent Tree Wind Farm is a 200 MW project, consisting of 122 Vestas V82

1.65 MW, each with a hub height of only 80 meters and a rotor diameter of 82 meters. These are an older generation of turbines [fn. omitted]. The Freeborn Wind Farm, on the other hand, is proposed to consist in Minnesota of only 42 of a more modern generation of Vestas V116 and V110 – 2 MW turbines. These new model Vestas turbines are proposed to be constructed with a hub height of 80 meters and rotor diameters of 110 to 116 meters [fn omitted].

7. It is generally understood that turbine noise output increases with higher blade tip speeds. The wind turbines at the Bent Tree Wind Farm utilize “active stall” blade designs as their “air brake,” to maintain a maximum blade rotational speed during high wind speed conditions [fn omitted]. Wind turbines with active stall blade designs produce, under higher wind speeds, a higher maximum noise output than turbine models that utilize a more modern “blade feathering and pitch cylinders” technology to maintain maximum blade rotational speeds. I understand that the two turbine models proposed for the Freeborn Wind Farm will utilize full blade feathering and pitch cylinders rather than active stall rotor blade designs [fn omitted].

Aff. of Davis, EERA Motion<sup>3</sup>, [20181-139379-01](#).<sup>4</sup>

If a project is not in compliance with a noise standard, if modeling shows that within the margin of error there could be a compliance problem, and if a noise standard is a permit condition, “the Dept. of Commerce assists Commission staff in enforcement of the site permit conditions...” Davis, Tr. Vol 2, p. 187, l. 13-20. However, enforcement is difficult, given the cost, size, weight, and production, project owners will not be eager to mitigate the situation. Preventative, careful siting is the best path forward.

Why be concerned? There is a demonstrated problem in two projects where the Commission has had to begin steps toward suspension or revocation of a permit – the Bent Tree and Big Blue projects. See AFCL-11, Bent Tree Noise Monitoring and Noise Study, Phase I; see

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<sup>3</sup> Motions are part of the hearing record. Minn. R. 1405.1800, Subp. 2.

<sup>4</sup> Davis does not state the source of this information. Invenergy's Litchfield testified that he does not have manuals for Vestas 110 and 116, perhaps Davis has such manuals.

also Bent Tree Noise Report, Phase II, p. 10 of Comment of Stephanie Richter, 3/15/2019 ([20183-141042-01](#)); AFCL 15, Hansen Rebuttal, Schedule F, Big Blue – PUC Letter - Request for Response to Alleged Site Permit Violations and to Show Cause. Others may be in the pipeline. Wind on the Wires urges an interpretation that it claims is consistent with past practice, but that is not correct. WOW states that “The 50 dBA L<sub>50</sub> **does not include ambient background noise but is limited to the source.**” WOW Comment, 3/15/2018, [20183-141082-01](#). This comment further states that “Minnesota wind farms have been found to be in compliance with Minnesota Noise Standards when the wind farm noise levels have been at or below the standards required by Minn. Rule 7030.0040, Subd. (sic) 2.” Id. However, the opposite is true, that Minnesota wind farms have been found to **NOT** be in compliance with Minnesota Noise Standards when the wind farm noise levels have been at or below the standards required by Minn. Rule 7030.0040, Subp. 2 (emphasis added). WOW unreasonably argues that:

Any other interpretation of the Rule that includes ambient background noise within the 50 dBA L<sub>50</sub> would have a chilling effect on wind development in the State of Minnesota, thereby depriving the state of the benefits wind development can provide...

Id. Just WOW! Wind projects are by design moving into communities, and as evidenced with Big Blue and Bent Tree, violating the state noise rule, necessitating Commission action. WoW worries about a chilling impact on the wind industry, but gives no consideration to the chilling impact that noise violations have on residents use and enjoyment of their property, their homes. WoW had best help work toward preventative and respectful siting, because continued violations of the state noise rule will put wind development in the deep freeze. Developers and owners will not want to invest in a project if as a result of poor siting practices it risks expensive mitigation such as moving a turbine, curtailment 12 hours daily such as now at Bent Tree, suspension of a permit or even revocation for non-compliance.

Wind noise modeling guidance and post-construction modeling is inclusive of ambient sound. EERA-8, Guidance; AFCL-11, Bent Tree Phase 2; Minn. R. 7030. It's good to know that "WOW supports the consistent application of the Rule on a going forward basis using the interpretation that has been applied to date to wind farm permits in the State of Minnesota." WOW Comment, 3/15/2018, [20183-141082-01](#). The extensive Bent Tree noise monitoring reports have been performed by industry consultants "using the interpretation that has been applied to date." Setbacks must be sufficient to provide a margin of error because experience shows that turbines can be noisier than modeling predicts. Wind siting standards are inadequate, wind siting rules have yet to be promulgated, and it's long past time to start that process. If the wind industry wants to continue developing projects, the siting process will have to change, i.e., utilize the correct siting criteria as in this proceeding, and consider impacts on human settlement and environmental factors under that criteria.

**B. CLAIMED BENEFITS AND COSTS OF THIS PROJECT DO NOT ADD UP.**

Economics are a subject for review under the criteria of Minn. Stat. §216E.03, Subd. 7, specifically the "analysis of the direct and indirect economic impact of proposed sites... including, but not limited to, productive agricultural land lost or impaired. Freeborn Wind claim that this project provides both economic and environmental benefits, and some measure of costs are disclosed, but the claims of the applicants do not add up. Environmental costs and benefits are also subject to review, specifically, that the criteria of Minn. Stat §216E.03, Subd. 7 (a); (b)(1), (2), (3), (6), (9), (11), (12); and (d). Of particular importance is "evaluation of irreversible and irretrievable commitments of resources," because once a wind project is permitted and constructed, it's difficult to move, modify, or mitigate impacts of the project.

For example, Freeborn Wind claims that:

Compared to fossil generation, the Project will reduce emissions of air pollutants including carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM<sub>10</sub>), volatile organic compounds (VOC) and carbon monoxide (CO). Just to take a few, the Project's generation over 30 years would reduce CO<sub>2</sub> emissions by over 11 million tons relative to coal-fired electricity, or reduce CO<sub>2</sub> emissions by over 4.5 million tons relative to gas-fired electricity. And these numbers are just for the Minnesota portion of the Wind Farm. The entire 200 MW Wind Farm would reduce CO<sub>2</sub> emissions by approximately 26 million tons relative to coal-fired electricity over 30 years. Replacing fossil fuel generation with renewable sources also has a significant positive impact on health and healthcare costs. Studies conducted by the Union of Concerned Scientists ("UCS") have determined that the decrease in pollutant emissions from fossil fuels is linked to a reduction of early mortality, a loss of workdays, and overall healthcare costs. That same study estimates that healthcare costs in the United States related to impacts from fossil fuels in 2015 ranged between \$361 and \$886 billion (UCS, 2017).

However, that argument turns on "replacement" and "reduction," and there is no direct link. What fossil generation will be reduced? What fossil generation will be replaced? When asked to substantiate the claim that the project provides environmental benefits through reduction of CO<sub>2</sub> emissions and other pollutants, and provide a direct link, such as agreements committing to reduction or replacement of fossil generation in exchange for Freeborn Wind generation, the response was:

There are no specific agreements/contracts that can be identified.

AFCL-27, Freeborn Wind Response to AFCL IR 26. The direct link cannot be identified because there is no direct link from construction of a wind project to claimed benefits of replaced fossil generation, or reduced or avoided emissions of fossil generation.

Wind on the Wires, a wind industry lobbying association, of which Invenergy is a paying member, makes this same argument. While the increase in wind and solar generation nationwide is changing the nature of electrical generation, and the reduction of production costs makes it an economical choice, and while wind is not generating pollutants as fossil fuel generation does,

there is no direct replacement or reduction of fossil fuel generation, only an increase in non-fossil fuel generation, an increase in non-fossil percentages. Id.

Invenergy also obtained a glowing endorsement from Rep. Tim Walz, in support of his “constituent Melville Nickerson, Director of Government Relations for Invenergy,” of Chicago, claiming benefits of the project, but Invenergy’s Litchfield admitted that Walz letter was a mistake. AFCL-26, Letter to Dan Wolf from Rep. Tim Walz, 2-16-2018; Litchfield, Tr., Vol. 1A . Rep. Walz sent another letter correcting this mistake, and noted:

Furthermore, since my initial correspondence, I have heard directly from my constituents in Freeborn County who have serious concerns about the siting of turbines in the Invenergy proposal. It is my wish that these concerns receive full and fair consideration as your Commission works through its permitting process...

... I also firmly believe that we must balance our development of renewables with respect for individuals whose quality of life could be adversely affected by a specific project. I am confident that you and your Commission share this belief and will conduct your review of this matter in an open and transparent manner.

Rep. Walz Comment Letter, 3/15/2018 ([20183-141076-01](#)).

Freeborn Wind also claims there are economic benefits. Under the siting criteria, there must be “analysis of the direct and indirect economic impact of proposed sites... including, but not limited to, productive agricultural land lost or impaired.” Minn. Stat. §216E.03, Subd. 7. A cost benefit analysis has not been conducted, the costs disclosed not substantiated, and claims of benefits have not been vetted.

Economic benefits claimed by Freeborn Wind do not add up. Much of Freeborn’s claims are based on its estimate of the capacity factor of the turbines at 45-52%. When questioned about whether that projection is realistic, Invenergy’s Litchfield testified, “Yes.”

Q: Are you aware of projects operating that have reached that capacity factor?

A: Yes.

Q: In Minnesota?

A: I’m not aware of a specific project in Minnesota...

Q: Can you name a project that has achieved that capacity factor?

Litchfield Vol. 1A, p. 39-40.

A benefit to Freeborn Wind is that with the sale to Xcel Energy, the timeline for construction moved up. ACL – 24, IR 24. The amount of that benefit has not been quantified.

Freeborn claims economic development benefits of investment and job creation during construction; permanent wind technician jobs during operations; landowner revenue; and local tax revenue. FW-4, Litchfield Direct, p. 11. Litchfield does not detail “investment” benefits. The application does not address benefits generally in the “Local Economics” section, although tax payments are addressed specifically, claiming \$9,400 per turbine per year, totaling \$397,000, a Minnesota tax. See also FW-4, Litchfield Direct, p. 13.

Another way to look at local economic benefits is explained in the Comment of Stephanie

Richter:

Year One	
\$2.2 landowners payments	
Freeborn county 42% of turbines	\$924,000
Production tax to Freeborn county	\$ 0
10 potential jobs (42%)	<u>\$231,000</u>
Year one-Freeborn county	\$1,155,000
Year Two (add production Tax)	
45% capacity production	\$ 397,353
And increase \$1.155 mill by 2%	<u>\$ +23,100</u>
	\$1,575,453

Comment of Richter, 3/15/2018 ([20183-141042](#)).

Production tax payments in Minnesota are split with 80% going to Freeborn County and 20% to the townships. FW4, Application, p. 108-109. There are an estimated 200 temporary construction jobs, of which “some” will be local workers, and this is for the project, so roughly 42% of the jobs would be Freeborn County work. See FW-4, Litchfield Direct, p. 11. Leases with landowners address crop damage payments and drain tile repair, and those items are not

“benefits,” but would instead repair damage and make the landowners whole. See FW-4, Litchfield Direct, p. 12. Landowner royalties, which include the repair and damage amounts, are expected to be \$800,000/year, for a total of “\$35 million over the 30-year life of the project.”

FW-4, Litchfield Direct, p. 12. However, \$35 million x 30 years = \$24 million, not \$35.

It appears Freeborn Wind is grossly overstating economic benefits of the project.

The costs of the project have not been vetted. Freeborn Wind claims “installed capital costs are estimated to be approximately \$300 million, including wind turbines, associated electrical and communication equipment and systems, and access roads. The Minnesota portion of the Project would be approximately \$126 million for operations and maintenance costs, and administrative costs are estimated to be approximately \$7-8 million per year in total and \$3 million per year for the Minnesota portion of the project.” FW-4, Litchfield Direct, p. 8; FW-1, Application, p. 108. It is not clear whether costs of this proceeding are included in this estimate. The costs of decommissioning, and the costs of decommissioning assurance are another part of the project not accounted for. As above, the cost of agreements to address crop damage payments and drain tile repair, are project costs. See FW-4, Litchfield Direct, p. 12.

The claimed “environmental benefits” of CO2 and emissions reduction and avoidance are illusory, because the project itself does not provide these benefits, it only does not contribute to emissions. That is an important distinction. The claimed economic benefits are not verifiable, and due to conflicting evidence, are subject to debate. There is not enough information in the record to make a determination regarding direct and indirect economic impacts of the project, nor to compare benefits with costs.

**C. FREEBORN WIND ARGUES THAT ITS PROJECTED SHADOW FLICKER IS “CLOSE ENOUGH” AND IT SHOULD NOT HAVE TO COMPLY.**

Minnesota siting criteria requires consideration of issues related to shadow flicker.



Shadow flicker is an environmental impact, and one that has an impact on humans and human settlement, public health and welfare, a factor in environmental evaluation of sites, evaluation of effects of new electric power generation technologies and minimization of adverse environmental effects, direct and indirect economic impact, evaluation of adverse direct and indirect environmental effects that cannot be avoided should the proposed siting be accepted, irreversible and irretrievable commitments of resources, and consideration of problems raised by state, federal and local agencies. Minn. Stat. §216E.03, Subd. 7. The Freeborn Wind project shadow flicker modeling shows impacts far above the Freeborn County Ordinance limits of 30 hours annually. Shadow flicker and its impacts are a factor to be considered under the PPSA's statutory criteria which seeks to minimize environmental impacts, minimize human settlement and other land use conflicts, public health and welfare, adverse direct and indirect environmental effects, irreversible and irretrievable commitments, consideration of problems raised by agencies, and state agency rules. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d).

Shadow flicker occurs when the turbines block the sun and is limited for nearby homes to 30 hrs/yr. Wind developers perform shadow flicker monitoring, but shadow flicker occurs, whether someone is a "receptor" or not. Wind companies propose "mitigation" using blinds and shades, leaving people to sit in the dark in daytime, or as Freeborn's Litchfield suggested in writing, "go to Florida for the winter." See Public Comment, Kathy Nelson, 7/3/2017 ([20177-133467-02](#)).

Freeborn Wind admits that as shown by its shadow flicker modeling, some residents, both participants and non-participants will receive more than 30 hours per year of shadow flicker:

The figures in the Application, e.g. Figure 2 and Figure 3, depict a layout consistent with Freeborn County's shadow flicker requirements. The three

participant and four non-participant residences that were modeled above 30 hours per year will be examined in more detail considering site-specific factors such as trees and buildings that were not accounted for in the realistic modeling scenario (because it was still fundamentally conservative), and if so, how those existing visual buffers would affect potential shadow flicker reception. We have attempted to mitigate this by gaining landowner acceptance at these participating homes, but they have declined. So we will achieve the 30 hour limit by using Turbine Control Software to shut down a specific turbine or turbines as necessary.

AFCL-19, Freeborn Wind Response to AFCL IR 7.

However, looking at the modeling provided by Invenergy, the hours of shadow flicker inflicted on residents adds up to far more than 30 hours annually. FR-11, Litchfield Rebuttal, Schedule 1, Response to AFCL IR 17. One of the affected landowners, Kathy Nelson, added up the impacts of the four turbines surrounding her home:

<b>Turbine number</b>	<b># with flicker</b>	<b>Minutes/day</b>	<b>Total Hours/Yr</b>
<b>Turbine 40</b>	<b>118</b>	<b>30</b>	<b>59 hrs</b>
<b>Turbine 41</b>	<b>118</b>	<b>60</b>	<b>118 hrs</b>
<b>Turbine 42</b>	<b>30</b>	<b>30</b>	<b>15 hrs</b>
<b>Turbine 43</b>	<b>25</b>	<b>40</b>	<b>16.6 hrs</b>
<b>Turbine 44</b>	<b>25</b>	<b>30</b>	<b><u>12.5 hrs</u></b>
<b>Grand total</b>			<b>221.1 hours</b>

The numbers of days may be off a day or two according to the narrative but the minutes per day is what Dan Litchfield has testified to. This is outrageous. Turbines 40 and 41 are also noted as having no significant obstruction to the view.

Public Comment, Kathy Nelson, Comments – Exceedances of Shadow Flicker to Home, 3/13/2015 ([20183-141036-01](#))(some hours may have been missed in one Nelson comment).

On p. 2 of 16, using the numbers to identify the home, then referring to the shadow flicker graphical calendar, for home 282, based on the graph on p. 3 of 16, there would be 102 hours of shadow flicker. Similarly, for home 315, based on the graph on p. 7 of 16, there would be an estimated 156.4 hours of shadow flicker. For home 317, based on the graph of p. 11 of 16, there would be an estimated 238.6 hours of shadow flicker. For home 326, based on the graph on p. 14 of 16, there would be an estimated 116 hours. See Public Comment, Darla Robbins,

3/14/2018, ([20183-141040-01](#)). In each case, that's quite a few more hours than 30 hours. FR-11, Litchfield Rebuttal, Schedule 1, Response to AFCL IR 17. As stated in the IR 17 response:

This chart shows this home can receive shadow flicker from 5 nearby turbines:

1. Turbine #40, located to the west-southwest of the home, can cause shadow flicker on the home briefly in the late afternoon (4:30-5:00 PM) from late October through mid February. No significant obstruction to the view of this turbine is expected.
2. Turbine #41, located to the southwest of the home, can cause shadow flicker on the home in the morning (3:40-4:40 PM) from late October through mid February. No significant obstruction to the view of this turbine is expected.
3. Turbine #42, located to the southeast of the home, can cause shadow flicker on the home briefly in the morning (8:40-9:10 AM) from early December to early January. While this turbine is a minor contributor to the overall flicker total, as can be seen in the photos to follow, both the view of this turbine and any shadow flicker will be obscured by the mature trees to the southeast of the home, albeit limited because they are deciduous trees and will be in a leaf-off condition when the flicker occurs.
4. Turbine #43, located to the east-southeast of the home, can cause shadow flicker on the home briefly in the morning (7:10-7:50 AM) from mid February to early March and again in mid October, at a slightly later time. While this turbine is a minor contributor to the overall flicker total, as can be seen in the photos to follow, both the view of this turbine and any shadow flicker will be obscured by the mature trees southeast of the home, albeit limited because they are deciduous trees and will be in a leaf-off condition when the flicker occurs.
5. Turbine #44, located east of the home, can cause shadow flicker on the home in the morning (7:10-7:40 AM) mid-March through early April and again in mid September. While this turbine is a minor contributor to the overall flicker total, as can be seen in the photos to follow, both the view of this turbine and any shadow flicker will be obscured by the mature trees east of the home, albeit limited because they are deciduous trees and will primarily be in a leaf-off condition when the flicker occurs.

Id., p. 4 of 6, Comment of Kathy Nelson, 3/15/2018 ([20183-141092-01](#))(some hours of flicker may have been missed in comment); see also Litchfield, Tr. Vol. 1A, p. 33 – 35; Gaston, Public Hearing, p. 94 (shadow flicker rises from 22 hours and 2 minutes to 50 hours).

Invenergy's Litchfield testified that the company would shut down turbines as necessary to comply with the 30 hour rule. AFCL-19; Tr. Vol 1A, p. 33, l. 12-15. However, there would

not be real time monitoring, but instead “be a complaint resolution issue if it’s presented by a landowner to the project.” *Id.*, l. 16-23. That means that a resident would have to experience the shadow flicker, know how to make a complaint, make a complaint, and wait for action to be taken. Instead, where modeling shows non-compliance is likely, the turbines should not be sited in the proposed non-compliant location and should be relocated. Freeborn Wind claims they have sufficient land rights to build the project. FW-4, Litchfield Direct, p. 8, l. 226-229. However, as noted by Applicants, there is no room to move any turbine.

Shadow flicker is covered in the criteria focused on the state’s goal of minimizing human settlement and other land use conflicts; evaluation of research and investigations regarding facilities’ impacts on public health and welfare; environmental evaluation of sites and relationship to human resources, minimization of adverse environmental effects and effects that cannot be avoided; evaluation of alternatives to the applicant’s proposed site, evaluation of irreversible and irretrievable commitments of resources, consideration of problems raised by other state and federal agencies and local entities, and not to designate a site that violates state agency rules. See Minn. Stat. §216E.03, Subd. 7 (a), (b)(1), (2), (3), (6), (7), (11), (12), (d). Of particular importance is “evaluation of irreversible and irretrievable commitments of resources,” because once a wind project is permitted and constructed, it’s difficult to move, modify, or mitigate shadow flicker impacts. Shadow flicker is also predicted to extend far beyond the county ordinance limits. The project, as proposed should not be permitted due to the applicant’s extremely high predictions of shadow flicker.

**D. VISUAL AESTHETICS AND AESTHETIC VALUES ARE IMPORTANT TO THE COMMUNITY .**

Minnesota siting criteria requires consideration of aesthetics and environmental issues. Aesthetics is a criteria focused on the state’s goal of minimizing human settlement and other land

use conflicts; evaluation of research and investigations regarding facilities' impacts on public health and welfare and aesthetic values; environmental evaluation of sites and relationship to human resources, minimization of adverse environmental effects; evaluation of adverse direct and indirect environmental effects that cannot be avoided; evaluation of alternatives to the applicant's proposed site, evaluation of irreversible and irretrievable commitments of resources, consideration of problems raised by other state and federal agencies and local entities, and not to designate a site that violates state agency rules. See Minn. Stat. §216E.03, Subd, 7 (a), (b)(1), (2), (3), (6), (7), (11), (12), (d). Again, consideration and "evaluation of irreversible and irretrievable commitments of resources," is particularly important, because once a wind project is permitted and constructed, it's difficult to move, modify, or mitigate impacts of the project.

A wind project is visible for many miles. Freeborn's turbines are proposed to be as close to homes as 1,200 feet. Landowners live within the project, surrounded by multiple turbines, which are very tall and visible in their locations directly adjacent to picture windows, visible outside from any location on their property, towering over their homes and clashing with the community's rural setting. This intrusion is unavoidable and can rob landowners of their use and enjoyment of their property.

A look at the shadow flicker exhibits produced in an Information Request, with arrows between turbines demonstrates the visibility of turbines for those living nearby. FW-11, Litchfield Rebuttal, Sched. 1, AFCL IR 17. Freeborn's overhead photos say it best -- it's difficult to ignore nearly 500 foot turbines placed nearby homes, visible from windows and anywhere in the yard:



FW-11, Litchfield Rebuttal, Sched. 1, AFCL IR 17.

The visual aspects, aesthetics and aesthetic values must be considered, and under the

PPSA criteria, the project as proposed should be rejected.

**E. TOWNSHIPS HAVE GONE TO GREAT LENGTHS TO DRAFT ROAD ORDINANCES, AND FREEBORN MUST COMPLY WITH LOCAL REGULATIONS, NOT PROCEED WITHOUT AN AGREEMENT.**

Road upgrades and repairs to facilitate construction, maintenance, emergency response, and decommissioning are significant issues in a rural community with few transportation options. Building and maintaining roads is a primary function of townships, and a township has primary jurisdiction over its roads, a county has primary jurisdiction over its roads. Roads and road use should be considered under the PPSA criteria regarding minimization of human settlement and other land use conflicts, effects on land use, environmental evaluation of sites and relationship to the land, adverse direct and indirect environmental effects that cannot be avoided, evaluation of irreversible and irretrievable commitments of resources, and consideration of problems raised by other state agencies. Minn. Stat. §216E.03, Subd. 7.

Towns and counties often enact road ordinances, and enter into road agreements, and in this project area, have done so. Litchfield, Tr. Vol 1A, p.26; Litchfield Direct, Schedule 2, Worth County Road and Drainage Easement and Maintenance Agreement; AFCL- 20, IR re: Road Agreements. The presumed impacts on roads are demonstrated in the need for sections on roads in the Draft Site Permit boilerplate. See EERA-8, Draft Site Permit, §5.2..12-14, Public, Turbine Access, and Private Roads. The Minnesota DOT also has its Policy of Accommodation, referenced in its October 6, 2017 comment, which is guidance on siting near roads under DOT jurisdiction.<sup>5</sup> DOT Comment, 10/6/2017 ([201710-136205-01](http://www.dot.state.mn.us/policy/operations/op002.html)). However, in considering turbine locations near state roads, it should be noted that this is a “Utility Accommodation Policy,” to accommodate siting of utility infrastructure. Freeborn Wind is not a utility, and after transfer to

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<sup>5</sup> DOT Utility Accommodation Policy, online at <http://www.dot.state.mn.us/policy/operations/op002.html>

Xcel Energy as owner, it will remain “Freeborn Wind, LLC,” a Limited Liability Company, and not a Public Service Corporation.

Township and county roadways would require significant rebuilding to handle the heavy weight of truck traffic with cranes and turbines, which would come at significant cost. The roads would need to be widened and corners expanded so equipment could make the turns, and roads must be returned to previous condition, which may not be wise considering necessary turbine maintenance, replacement, rehab, and removal costs. FW-4, Litchfield Direct, p. 6, l. 152-167; see also Schedule 2.

In an IR asking about status of road agreements with Hayward, London, Oakland and Shell Rock townships, Freeborn was asked and responded:

**Q:** Does Freeborn agree that these agreements must be reached and executed as a condition of a site permit?

**A:** No. Draft Site Permit condition 5.2.12 requires the Permittee to “make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over the roads to be used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components.” While the road agreements would satisfy this condition, the road agreements are not the only means by which the condition could be satisfied.

AFCL 18, Freeborn wind Response to AFCL IR20.

When asked what he meant when stating, “While the road agreements would satisfy this condition, the road agreements are not the only means by which the condition could be satisfied,” Litchfield responded that the best means is “a road agreement, bilateral or multi-lateral, of all the townships AND the county,” but if there is no agreement, Freeborn Wind would proceed without an agreement. Litchfield, Tr. Vol. 1A, p. 27-28. The Draft Site Permit, however, states that:



The Permittee shall prior to the use of such roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the project, for maintenance and repair of roads that may be subject to increased impacts due to transportation of equipment and project components. The Permittee shall notify the Commission of such arrangements upon request.

EERA-8, Draft Site Permit, p. 9, 5.2.12, Public Roads. Proceeding without an agreement is not an option under the permit. While the Draft Site Permit states that “[t]he Permittee shall prior to the use of such roads, make satisfactory arrangements...” it only requires notification to the Commission of such arrangements upon request. This is inadequate. The Draft Site Permit must be amended to require that the Permittee file agreements with the Commission before beginning construction.

**F. DRAINTILE SYSTEMS ARE THE LITERAL FOUNDATION OF THIS AGRICULTURAL COMMUNITY AND MUST BE PROTECTED.**

The foot print proposed for the Freeborn Wind project is an agricultural area, with an extensive system of drain tile to facilitate crop production. Consideration of impacts on land use and agriculture, relationship of project to the land, direct and indirect impact of proposed sites including productive agricultural land lost or impaired, direct and indirect environmental impacts, and minimization of interference with agricultural operations is required under the PPSA criteria. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d). The presumption of damage to drain tile systems is such that it is a boilerplate point in a Draft Site Permit. See EERA-8, Draft Site Permit, §5.2.19 Drainage Tiles; see also Litchfield Direct, Schedule 2, Worth County Road and Drainage Easement and Maintenance Agreement.; AFCL-22, Freeborn Response to AFCL IR 23.

Drain tile systems will likely be damaged, and due to the interconnected nature of drain tile, damage from debris and silt in the system could migrate beyond the immediate construction

area, and construction damage may not become apparent until long after the project is built.

Freeborn states:

[I]f such damage does occur, Freeborn Wind will comply with the terms of Draft Site Permit condition 5.2.24. Freeborn Wind anticipates doing so by first offering the affected landowners the same terms it offers participating landowners for such damages. If a voluntary agreement cannot be reached on those terms, the issue will be handled following the complaint procedure included in the Draft Site Permit.

AFCL-22, Freeborn Response to AFCL IR 23.

While Freeborn Wind draws a distinction between participating and non-participating landowners, the Draft Site Permit makes no such distinction:

The Permittee shall fairly restore or compensate landowners for damage to crops, fences, private roads and lanes, landscaping, drain tile, or other damages sustained during construction.

EERA-8, Draft Site Permit, p. 12, §5.2.24, Damages.

This is an issue that extends beyond participants property boundaries, and must be fairly addressed in any permit.

**G. CONSTRUCTION OF FREEBORN WIND WOULD END AERIAL SPRAYING AND SEEDING.**

A specific impact on agricultural operations is the project's bar to continuation of aerial spraying and seeding. As above, consideration of impacts on land use and agriculture, relationship of project to the land, direct and indirect impact of proposed sites including productive agricultural land lost or impaired, direct and indirect environmental impacts, and minimization of interference with agricultural operations is required under the PPSA criteria. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d).

There was testimony at the public hearing regarding aerial spraying, first by a former pilot who testified about aerial spraying near a wind turbine, but admitted he had no experience

doing so, that wind turbines were just being installed at the time he quit flying. Rauenhorst, Public Hearing, p. 77-84. Another pilot currently in the agricultural spraying business, with decades of agricultural flights, heard Mr. Rauenhorst's comments, and later testified that he would not fly near wind turbine projects, and he would not allow his pilots to fly in such circumstances.

I have 39 years of aerial application experience, totaling, oh, 13,500 hours of ag time. And I'm here to tell you you cannot safely fly within a wind farm. I will not put myself or any pilots that help us risk that for them or their families... But once you get within that farm, inside that facility, there's turbulence, the blade's moving, you lose your depth perception, and it is not safe to be within that facility. I think – I did not want there to be a misconception about that for this panel.

Thisus, Public Hearing, p. 90-91.

With the turbines presenting an effective prohibition on aerial spraying and seeding, farmers would have to find other ways to accomplish this, and it would be a more costly and time consuming method, interfering with and impairing agricultural operations.

Under the PPSA, the impacts on land use, agricultural impacts, and interference with agricultural operations must be considered, and the project as proposed should be rejected.

Minn. Stat. §216E.03, Subd. 7.

**H. ICE THROW IS A DANGEROUS SIDE EFFECT OF WIND GENERATION, AND THE SETBACKS DO NOT ADEQUATELY PROTECT PEOPLE AND PROPERTY.**

Public safety, public health and welfare, is a consideration under the factors of the PPSA criteria. Minn. Stat. §216F.03, Subd. 7 (b)(1).

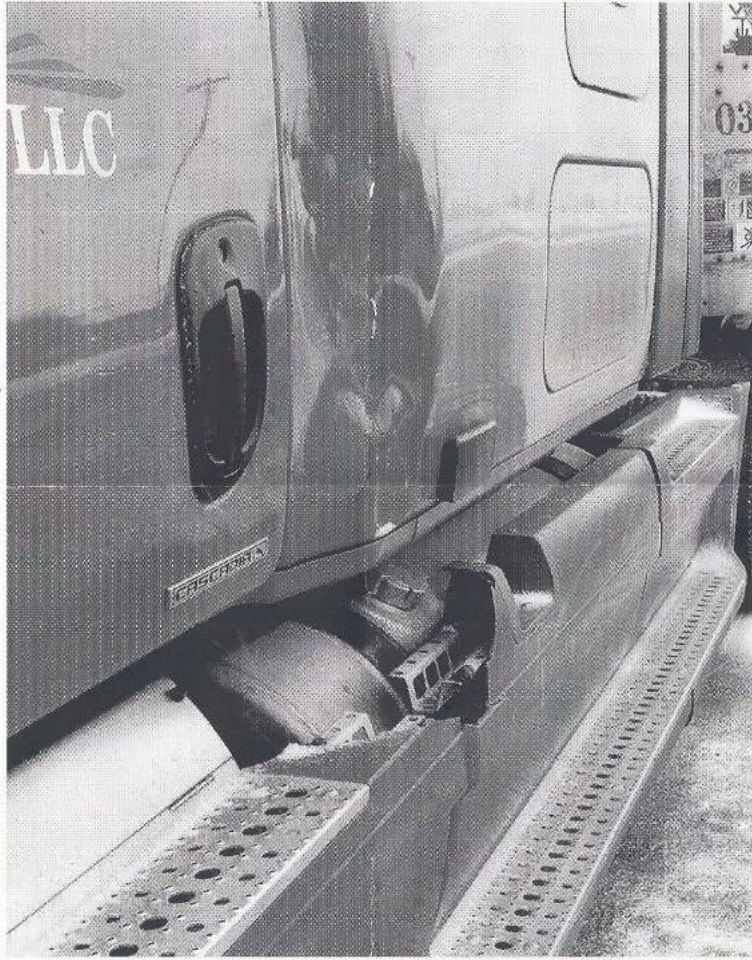
Ice throws are a literal direct impact, most recently experienced on February 22, 2018, as the Freeborn Wind hearing had ended, when a Bent Tree turbine threw ice over Highway 13 and

it hit a semi tractor, scraping the door and taking a large piece out of the driver's side faring between the steer and drive axels, right over the fuel tank.



See Comment, Dan Beshan, Freeborn County Commissioner, 3/15/2018, (20183-140987-01);

see also DOT Comment, 10/6/2017 ([201710-136205-01](#)).



Saturday 2-24-18  
*Albert Lea Tribune*  
**Turbines temporarily shut down after ice strikes semi**

By Sam Wilmes  
sam.wilmes@albertleatribune.com

Alliant Energy shut down about a dozen of its turbines in Bent Tree Wind Farm after a report that ice from a turbine struck a semi Thursday on Minnesota Highway 13.

The turbines were described by Alliant Energy Spokesman Justin Foss as "select turbines" near Highway 13. The turbines have been inspected and had not been turned on as of Friday afternoon.

Foss, who said such incidents are not common, noted part of the reason why the turbines were temporarily shut down was to give Freeborn County residents who are sensitive to wind an extra sense that they are investigating.

Goodhue County resident Marie McNamara said she and a friend were heading home from an evidentiary hearing for the Freeborn Wind Farm ON Thursday when they received a call from a passerby in the area that ice had struck a vehicle.

McNamara said turbines encounter more problems the older they get, so sufficient distances between turbines and highways and homes are needed. She called Minnesota setback standards "insufficient."

Freeborn County Sheriff Kurt Freitag confirmed the ice struck the vehicle and said it was an unusual event. No houses were in jeopardy because they were at a far enough distance from the turbines.

Wind speed and direction is expected to dictate which turbines are turned on.

Public Comment, Bonita Belshan, 3/15/2018 (ID # [20183-141038-01](#)).

Public health and safety is a criteria to be considered in review of this project, as is direct environmental effects, as well as environmental evaluation of sites. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d). The road setback standard is not sufficient to prevent damages to property and risks to public safety – that much has been demonstrated.

**I. THERE IS GREAT RISK THAT THE TURBINES WILL INTERFERE WITH OVER THE AIR BROADCAST SIGNALS, CELL AND LAND LINE PHONES, AND INTERNET ACCESS.**

Wind turbines can interfere with over the air broadcast signals, cell phone signals, land line phones, and internet access. This was such a concern to KAAL that it intervened in this

proceeding to assure that this potential was considered. Interference with these signals has an impact on human settlement, public health and welfare, a direct and indirect economic impact, likely irreversible and irretrievable commitment of resources if project does interfere. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d).

While Commerce has the duties of review and analysis of a project proposal, Commerce staff does not have specific expertise in over-the-air signals. Davis, Tr. Vol. 2, p. 181, l. 11-12.

AFCL has many members who rely on radio and television over-the-air signal, cell phone reception, and internet, and are concerned that there is great risk for interference with signals and reception. Because AFCL has no expertise and little knowledge of these matters, AFCL adopts as if fully related herein all arguments and evidence produced by KAAL in this matter.

**J. APPLICANTS ARE NOT TAKING SUFFICIENT NOTICE OF WILDLIFE ISSUES AND POTENTIAL HARMS TO WILDLIFE.**

Impacts on wildlife are a consideration for review under the PPSA criteria.

Considerations of wildlife issues and potential impacts and harms to wildlife is found in the state's goal of minimizing environmental impacts land use conflicts; evaluation of research and investigations regarding facilities' impacts on animals and minimizing impacts; environmental evaluation of sites, evaluation of adverse direct and indirect environmental effects that cannot be avoided; evaluation of alternatives to the applicant's proposed site, evaluation of irreversible and irretrievable commitments of resources, consideration of problems raised by other state and federal agencies and local entities, and not to designate a site that violates state agency rules. See Minn. Stat. §216E.03, Subd, 7 (a), (b)(1), (2), (3), (6), (7), (11), (12), (d). See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d).

AFCL has repeatedly raised concerns about impacts of the project on wildlife, including specifically eagles and bats. If the project were permitted, wildlife habitat would decrease, and it

would encroach on important species. Eagle nests and foraging areas are within and surrounding the project footprint. AFCL has reported multiple eagle nests to Freeborn Wind, DNR, and USFWS, but several remain unacknowledged. Bat monitoring was not conducted on agency recommended schedule. These issues are well and thoroughly documented in the record. See e.g., Hansen, Comment 3/15/2018 ([20183-141043-01](#)).

At this point, unknown whether an eagle take permit will be recommended by U.S. Fish and Wildlife, they have yet to weigh in. Giampoli, Tr. Vol. 1B, p. 29-30.. Applicants have made no inquiries regarding whether any eagle carcasses have been found near a turbine in the area or in the Riverland parking lot near that facility's turbine. Tr., Vol. 1B, p. 47-48.

The wildlife concerns raised by AFCL must be considered in light of the state's PPSA criteria, and based on the record and unresolved concerns, the project should not go forward.

**K. THE APPLICANTS HAVE NOT DESIGNED IN ANY ROOM TO MOVE TURBINES IF SITING ISSUES BECOME APPARENT.**

Design factors, and impacts on human settlement and land use, minimization of direct and indirect impacts, and consideration of problems raised by other state and federal agencies and local entities are factors of the PPSA criteria. See Minn. Stat. §216E.03, Subd. 7 (a), (b) (1), (2), (3), (5), (6), (11), (12), (d). This project has inadequate land rights to afford design micrositing options to move turbine locations if issues present, such as potential noise and shadow flicker exceedences, wetland encroachment, and interference with eagle nests and/or foraging habitat.

This project has been designed with no ability to adjust locations if siting proves problematic. For example, the DNR requested 5-6 alternate turbine sites should issues arise that prohibit use of locations proposed. FR-1, Application, Appendix A, Agency Correspondence, p. 3-5, 14-17. Mixon of the DNR testified at the hearing that was not aware of alternate sites provided. Mixon, Tr. Vol. 2, p. 48, l. 15-22. There is no room to adjust turbine locations, and

no alternate sites proposed. Freeborn has testified that they have no room to move the Minnesota turbine locations. Litchfield, Tr. Vol. 1A, / Freeborn states:

It is a two-state project that will be comprised of 100 turbine locations. All alternative turbine locations are in Iowa. Freeborn Wind has identified 42 valid turbine locations in Minnesota and is seeking a Site Permit for all 42.

AFCL-3, Litchfield, Response to AFCL to Freeborn IR3.

Because the Freeborn County wetland setback is problematic for the Applicants, Freeborn Wind is requesting the Commission find “good cause” to pre-empt the local ordinance.

FR-4, Litchfield Direct, p. 16-17. This request is based on Minnesota statute:

**APPLICATION OF COUNTY STANDARDS.**

A county may adopt by ordinance standards for LWECS that are more stringent than standards in commission rules or in the commission's permit standards. The commission, in considering a permit application for LWECS in a county that has adopted more stringent standards, shall consider and apply those more stringent standards, unless the commission finds good cause not to apply the standards.

Minn. Stat. 216F.081. Invenergy’s argument is, essentially, “close enough.” No, “close enough” isn’t.

The project also plans an Operations and Maintenance facility next to the project substation. FW-1, Application, p. 4. However, an Operations and Maintenance facility is not allowed under the County Ordinance. Belshan, Public Hearing, p. 160. Freeborn Wind also asks to override the County’s land use ordinance to allow that facility.

The project should not be sited by overruling the community preferences and ordinances. If it cannot comply with community preferences and ordinances, the proposal should be rejected.

**L. DECOMMISSIONING INFORMATION MUST BE PROVIDED AND REVIEWED PRIOR TO ISSUING ANY PERMIT**

In this specific case, decommissioning information was not included in the application, and the decommissioning plan isn’t being drafted and filed until after a permit is issued. EERA



did not raise this omission to the Commission, and the Commission blithely declared the Application complete without any acknowledgement of the omission of decommissioning information – a systemic problem, but in this case, a problem for this project. Under the rules, decommissioning information including cost and financial assurance plan should be provided in the Application, and as above, n it was not. Supra Section I.E. No permit should be granted until this information has been provided, opened for comment, and reviewed by Commerce, the public, and the Commission, as contemplated by the requirement that decommissioning information be included in the application.

**M. THE COMPLAINT PROCESS IN THE DRAFT SITE PERMIT IS INADEQUATE AND MUST BE REVISED TO PROVIDE TIMELY INVESTIGATION OF COMPLAINTS AND PERMIT ENFORCEMENT.**

The Commission’s complaint process is broken. The Commission is aware that there have been problems with the Bent Tree and Big Blue projects, but it takes years for complaints that are not resolved to work their way to the Commission. See Testimony of Cheryl Hagen, Public Hearing Tr. p. 108-111; Testimony of Bernie Hagen, p. 112-115.

The complaint process proposed for this project is the same boilerplate language used in every wind project, and there have only been nominal revisions over time. Davis, Tr. Vol. 2, p. 180, l. 14-17. The Draft Site Permit includes the complaint process, located at the very end of the document. EERA-8, Draft Site Permit – p. 72 of 77. This complaint process is found at the end of each permit issued and if a permit is issued in this docket, a copy of the permit is mailed to “everyone that is notice of the issuance of the permit.” Davis, Vol. 2, p. 179-180.

The complaint process is complex and is subject to revision:

Q: What would it take to initiate a review of the complaint process?

A: This is when you would provide a comment on it. It’s part of the draft site permit, so—

Q: So right now?

A: So this is when comments should be submitted, yeah.

Davis, Tr. Vol 2, p.180.

Complaints regarding over-the-air may be problematic, because unless someone identifies the wind project as the source of the interference and knows how to and does in fact make a complaint under the permit's complaint process, there may be no record of the problem. Commerce does not receive complaints from the television signal, and people experiencing over-the-air interference may not know why they have interference. Davis, Tr. Vol. 2, p. 181, l. 13- p. 183, l. 8. Although Davis does not know of any complaints, Cheryl Hagen testified regarding their trouble with over-the-air TV reception due to Bent Tree at the Public Hearing. Testimony of Cheryl Hagen, Public Hearing Tr. p. 108-109.

No permit should be issued without thorough review and revision of the complaint process.

**N. PER MPCA, APPLICATION DOES NOT DISCLOSE NOR ADEQUATELY ADDRESS POTENTIAL EFFECTS OF PROJECT.**

PPSA siting criteria directs that "... the commission shall be guided by, but not limited to, the following considerations... (12) when appropriate, consideration of problems raised by other state and federal agencies and local entities." Minn. Stat. §216E.03, Subd. 7 (b)(12). According to the MPCA, the application does not adequately address several factors:

- The Site Permit does not adequately address how the Project will avoid adverse effects during construction that may contribute to the impairments of the Shell Rock River and Woodbury Creek. The Project proposer will need to comply with requirements for additional best management practices (BMPs) for special and impaired waters in Appendix A Part C of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit (CSW Permit).
- The Site Permit Application does not describe the amount of new impervious surfaces that will be created by the Project and how the effects of increased stormwater from the impervious surfaces will be mitigated. The site will need to

comply with requirements for permanent stormwater management for new impervious surfaces that result in 1 acre or more as specified in Part III. D. of the CSW Permit.

- If the project will result in a total disturbance of 50 or more acres, the Stormwater Pollution Prevention Plan must be submitted for review by the MPCA 30 days prior to beginning construction.

EERA-5, Agency Comments ([20182-139859-01](#)). The MPCA Comment is dated October 4, 2017, addressed to Richard Davis, EERA, but EERA did not file it until four months later, on February 7, 2018. It is unknown whether these issues raised by the MPCA have been addressed. A site permit should not be issued until they are.

#### **IV. ECONOMIC IMPACTS ALONE ARE NOT SUFFICIENT TO OVERRIDE ENVIRONMENTAL CONSIDERATIONS**

As an argument against having to comply with the Freeborn County preference for a 1,500 foot residential setback, Freeborn Wind's Litchfield testifies that if that is necessary, a turbine would be eliminated and there would be an economic impact, that the participant would be financially harmed. FR-4, Litchfield Direct, p. 19-20. The project also increases noise levels for non-participants to site near a wetland, where "good cause" not to observe the Freeborn County wetland setback is claimed "because only stock ponds are affected, the wetland remains adequately protected from impacts, the deficiency is just five percent of the setback and this minor deficiency comes with benefits to non-participating residents elsewhere." Id., p. 16-17.

The Minnesota Environmental Rights Act clarifies the role of economic arguments and the balance with environmental concerns, providing that "Economic considerations alone shall not constitute a defense hereunder." Minn. Stat. §116B.04, Subd. Because an economic benefit is provided to Freeborn Wind and participants, that is not sufficient reason to invoke the "good cause" argument to avoid compliance with county setbacks and community standards.

**V. PREVENTATIVE AND PRECAUTIONARY SITING IS NECESSARY BECAUSE IF SITING ERRORS ARE MADE, OR A PROJECT IS NOT IN COMPLIANCE, THERE IS LITTLE PRACTICAL RECOURSE ONCE WIND PROJECT IS BUILT.**

There is no statutory mechanism in place to address situations where projects are built and residents have lost the use and enjoyment of their property. “Buy the Farm,” Minn. Stat. §216E.12, Subd. 4, is instructive, and applies to wind projects (see Minn. Stat. 216F.02, Exemptions). Minnesota should adopt the Power Plant Siting Act’s “Buy the Farm” and Minn. Stat. Ch. 117 eminent domain compensation for landowner buy-outs where the wind farm has moved into the neighborhood. No permit should be issued without a plan in place to sufficiently address permit violations, landowner complaints, and provide landowner opt-out choices.

**VI. FREEBORN WIND MUST NOT BE GRANTED A SITING PERMIT**

A wind project moving in changes the character of the community forever with a shift from agricultural to industrial: **COMMUNITY CONSENT IS NECESSARY!** The people who live in what is now the potential Freeborn Wind project footprint chose to live here, to stay here, for many reasons. Most grew up here, and their land has been in the family for generations. Many want a quiet rural way of life. Entry of wind turbines into this community would shift away from the established and flourishing agricultural base. It’s important to note that the wind project moving into a community, but not mindful or respectful of those living in the area, and landowners have not consented. This project would take away use and enjoyment of their property. Building this project in the area proposed would remove some of the most productive agricultural land from production. Construction activities would disrupt with noise, high traffic, disrupted and rebuilt roadways and drainage systems. Operation would disrupt with continual flashing red lights, turbine noise, maintenance activities. The community would become an industrial, not rural agricultural, area.

AFCL requests the court take administrative notice that Minn. R. 7854, Site Permit, Large Wind Energy System, does not address the mandated siting issues as set forth in Minn. Stat. §216F.05, and that there are no wind siting rules addressing these points.

As the applicant, Freeborn Wind has the burden of proof to demonstrate that it has met the criteria for a siting permit. Minn. Stat. §216E.03, Subd. 7; see also Minn. Stat. §216F.02. Freeborn Wind should not be granted a permit. The above factors affect siting of individual turbines and siting of the project as a whole. At the risk of sounding like a broken record, “evaluation of irreversible and irretrievable commitments of resources,” is particularly important, because once a wind project is permitted and constructed, it’s difficult to move, modify, or mitigate impacts of the project. Another consideration is that Freeborn Wind does not have land rights in Minnesota to move turbines to comply with siting requirements and alleviate siting concerns. Prevention and precaution is needed in siting such large infrastructure in a community. The PUC should not issue a siting permit to Freeborn Wind.

In the alternative, the Commission may in its discretion, adopt special permit conditions. Minn. Stat. §216F.04. If the Commission wishes to issue a permit, it should adopt special permit conditions of ½ mile setbacks as with the Lakeswind project, and noise limits as recommended as Promising Practices in the Massachusetts Study. A special permit should require shadow flicker be in compliance with the Freeborn County ordinance limit of 30 hours annually, and provide opt-out choices for affected landowners.

March 20, 2018



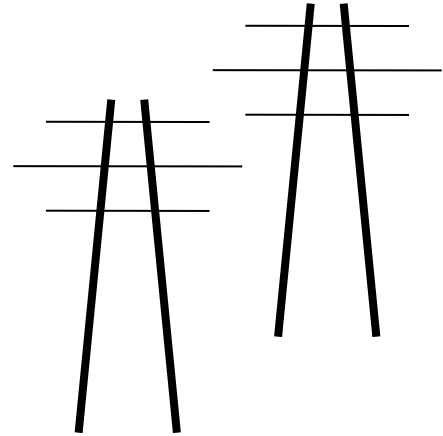
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January 1, 2020

Denise Wilson  
Director, Environmental Review Program  
Environmental Quality Board  
520 Lafayette Road North  
St. Paul, MN 55155

via email: [denise.wilson@state.mn.us](mailto:denise.wilson@state.mn.us)

RE: Petition for an EAW – Association of Freeborn County Landowners  
**Application of Freeborn Wind Energy, LLC for a Large Wind Energy Conversion  
System Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County**  
PUC Docket: IP-6946/WS-17-410

Dear Ms. Wilson:

Attached please find Association of Freeborn County Landowners' Petition for an Environmental Assessment Worksheet as provided by Minn. R. 4410.1100, including the Petition with over 380 Minnesota signers and material evidence of significant environmental effects to accompany the petition demonstrating potential for environmental effects. Minn. R. 4410.1100.

Association of Freeborn County Landowners have repeatedly requested environmental review, required by MEPA for a large electric generation facility over 50 MW, and the Public Utilities Commission has consistently denied our requests, proceeding toward a Permit Amendment Request without requisite environmental review.

In addition to this filing emailed direct to you, I have notified Xcel Energy in writing via email to both outside counsel working on this project. Minn. R. 4410.1100, Subp. 4.

Very truly yours

Carol A. Overland  
Attorney at Law

cc: Association of Freeborn County Landowners  
Christina Brusven, Lisa Agrimonti, Fredricksen & Byron [CBrusven@fredlaw.com](mailto:CBrusven@fredlaw.com),  
[LAgrimonti@fredlaw.com](mailto:LAgrimonti@fredlaw.com)

CERTIFICATE OF SERVICE

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**PETITION FOR ENVIRONMENTAL ASSESSMENT WORKSHEET**

**Minn. R. 4410.1100**

**XCEL ENERGY'S FREEBORN WIND PROJECT**

**Application of Freeborn Wind Energy, LLC for a Large Wind Energy  
Conversion System Site Permit for the 84 MW Freeborn Wind Farm in  
Freeborn County**

PUC Docket: IP-6946/WS-17-410; OAH Docket: 80-2500-34633

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I, Carol A. Overland, certify that on the 1<sup>st</sup> day of January, 2020, I served the Association of Freeborn County Landowner's Petition for Environmental Assessment Worksheet, to the following parties on the Service List, attached, as required by Minn. R. 4410.1100, Subp. 4, with complementary copies to Public Utilities Commission (likely RGU) and Department of Commerce – EERA..

January 1, 2020



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**ATTORNEY FOR  
ASSOCIATION OF FREEBORN  
COUNTY LANDOWNERS**

## SERVICE LIST

### ENVIRONMENTAL QUALITY BOARD:

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### FREEBORN WIND PROJECT PROPOSER – XCEL ENERGY:

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Courtesy copy to:

### MINNESOTA PUBLIC UTILITIES COMMISSION

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# PETITION FOR ENVIRONMENTAL ASSESSMENT WORKSHEET

**Minn. R. 4410.1100**

## **XCEL ENERGY'S FREEBORN WIND PROJECT**

### **Application of Freeborn Wind Energy, LLC for a Large Wind Energy Conversion System Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County**

PUC Docket: IP-6946/WS-17-410; OAH Docket: 80-2500-34633

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The Association of Freeborn County Landowners and over 380 Minnesota residents hereby Petition the Environmental Quality Board, under Minn. R. 4410.1100, Subp. 3(b), and ask that the Environmental Quality Board forward this Petition to the Public Utilities Commission, as Responsible Governmental Unit, for a decision regarding preparation of an Environmental Assessment Worksheet (Minn. R. 4410.4500) for the Freeborn Wind, LLC, wind project, a “project” as defined by Minn. R. 4410.0200, Subp. 58. The Environmental Assessment Worksheet should then be utilized by the Commission to address whether a full Environmental Impact Statement is required to review the potential of substantial environmental effects. Minn. Stat. ch. 116D.

#### **I. LEGAL BASIS FOR ENVIRONMENTAL REVIEW**

The Public Utilities Commission, as the governmental unit with primary permitting authority, is the logical governmental unit, although there are other governmental units with lesser responsibility. Minn. R. 4410.0500 and 4410.4300. Because of the nature or location of the proposed project, the project has potential for significant environmental effects. Minn. R. 4410.1100, Subp. 6. As an electric generating facility over 50 MW, significant environmental

effects are legally presumed, and a mandatory EAW and EIS is required. Minn. R. 4410.4300 and Minn. R. 4100.4400. As a matter of policy, agencies have a responsibility to conduct environmental review for projects with potential for environmental impacts. Minn. Stat. §116D.03, Subd. 2; Minn. Stat. §116D.04, Subd. 2(a). Minn. Stat. §216F.05(4) mandated adoption of rules for Large Wind Energy Conversion Systems (LWECS) and MEPA compliance, specifically mandating “requirements for environmental review of the LWECS,” but yet no requirements **FOR** environmental review of LWECS were adopted. Over the twenty-plus years that LWECS have been permitted by the EQB and Public Utilities Commission, wind projects have evaded and avoided environmental review. Minn. R. 7854.0500, Subp. 7 details application requirements, where applicants provide information regarding impacts from applicants’ perspective, with this declaration in the rule ultimately adopted:

*The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts [7849.1000](#) to [7849.2100](#), and Minnesota Statutes, chapter 116D. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.*

Minn. R. 7854.0500, Subp. 7.

The Freeborn Wind project is not exempted under Minn. R. 4410.4600. An application is not environmental review or Alternative Review under Minn. Stat. §116D.04, Subd. 4a; see also Minn. R. 4410.3600, Subp. 1 or 2. Under MEPA, the Commission must perform environmental review and consider environmental consequences when deciding whether to issue a permit. *Id.*

MEPA also specifically requires governmental agencies to consider environmental consequences when deciding whether to approve a proposed “project.” *Citizens Advocating Responsible Dev. v. Kandiyohi Cty. Bd. of Comm’rs*, 713 N.W.2d 817, 823 (Minn. 2006). MEPA contemplates preparation of two principal categories of project-specific review reports—an EAW and an EIS. An EAW is a brief preliminary report that sets out the basic facts necessary to determine whether the

proposed project requires the more rigorous review of an EIS. Minn. Stat. § 116D.04, subd. 1a(c).

*In the Matter of Minnesota Power's Petition for Approval of the EnergyForward Resource Package*, p. 5-6, A19-0688, A19-0704, PUC Docket E015/AI-17-568 (December 23, 2019). In this EnergyForward case, the Commission failed to address the environmental impacts of a resource plan which included construction and operation of a gas plant in Wisconsin.

In this case, the Freeborn Wind project did not require an Environmental Assessment as a part of a Certificate of Need review because the project was approved by the Commission as part of a resource acquisition plan, similar to a resource plan, and thus no Certificate of Need was required. Similar to the EnergyForward Resource Package, no environmental review has been performed for this Freeborn Wind project.

The Commission has been ordered by the Appellate Court to complete environmental review of the potential impacts of the Nemadji power plant as part of that resource plan. *In re Applications of Enbridge Energy*, 913 N.W. 2d 12 (Minn. App. 2019), *review denied* (Minn. Sept. 17, 2019); see also *In the Matter of Minnesota Power's Petition for Approval of the EnergyForward Resource Package*, A19-0688, A19-0704, PUC Docket E015/AI-17-568 (December 23, 2019). The Freeborn Wind project is yet another example of the Commission's failure to perform environmental review for a project acquired in a way that did not require a Certificate of Need, which did not trigger an Environmental Assessment. The Freeborn Wind project, like the Nemadji power plant, must have environmental review and comply with the Minnesota Environmental Policy Act. Minn. Stat. ch. 116D.

Information provided by an applicant does not in and of itself constitute environmental review under MEPA. An EAW is essential, and this Petition is filed at this late stage because

AFCL's Motion/Petition for EIS (motion practice, not a Minn. R. 4410 Petition) was denied at the Commission meeting on December 19, 2019.

The state has no LWECS siting rules and there are no LWECS-specific siting standards, only small wind standards, developed informally, and not as a rulemaking. Exhibit A, Order Establishing General Wind Permit Standards, PUC Docket G,E-999/M-07-1102. The Commission has also disregarded the public process mandate of the Power Plant Siting Act, environmental law in Minnesota, and until this Freeborn Wind docket, the applicability of the not-wind-specific siting criteria of the Power Plant Siting Act. Minn. Stat. §216E.08 (public participation mandate, authorization of advisory task force, etc.); see Minn. Stat. §216E.0, Subd.7 (power plant and transmission siting criteria, much inapplicable to wind); Exhibit B, Order Granting Permit (December 19, 2018).

The Freeborn Wind project, at up to 84 MW of turbines, and with changed plans for 31 larger V120 turbines, a project covering 21,313 acres, newly provided noise and shadow flicker modeling and requests for several permit amendments, is expected to have significant environmental impacts, that much has been demonstrated. Exhibit C Freeborn Wind ALJ Recommendation (May 14, 2018); Exhibit D, Xcel Energy Application for Permit Amendment (8/20/2019); Exhibit E, Xcel Compliance Filings (11/8/2019); Exhibit F, Xcel Compliance Filings (12/6/2019). Potential material environmental impacts are described throughout the record. Compliance with the state noise standard, for example, has not been demonstrated, as the new noise study and shadow flicker study have been filed but not publicly vetted.

Despite this probability of impacts, there has been no Environmental Impact Statement or Environmental Assessment Worksheet. There has been no public hearing or contested case regarding the voluminous Xcel Energy Permit Amendment application (8/20/2019) and

compliance filings (11/8/2019 and 12/6/2019) proposing the 31 larger Vestas V120s, noisier turbines. In particular, there has been no environmental review or public process regarding the recent noise modeling using an indefensible 0.5 ground factor input submitted August 20, 2019, after the December 19, 2018 permit was granted, and after noise modeling accompanying the initial application with the correct 0.0 ground factor could not demonstrate compliance with state noise standards. The Commission has notice that use of 0.5 ground factor is not appropriate for modeling noise, which raises questions of likely non-compliance with MPCA's noise standard (Minn. R. 7030.0400). Exhibit G, AFCL Motion for Contested Case and Environmental Review (12/11/2019)(denied 12/19/2019). New shadow flicker modeling shows 6 or more homes receiving over 30 hours annually. Exhibit D, Xcel Site Permit Amendment Application, Attachment G, Shadow Flicker. Other environmental impacts are addressed in paragraph E, below, and in supporting material evidence, attached. Environmental review is required by MEPA. Minn. Stat. §116D.03, Subd. 2; Minn. Stat. §116D.04, Subd. 2a.

The Freeborn project presents demonstrated substantive environmental impacts, including noise and shadow flicker, aesthetic and visual, wildlife, and socioeconomic impacts of decreased property marketability and valuation. Exhibits D, E and F, Xcel's Permit Amendment filings. The sheer volume of these filings, detailing the project and its potential substantial effects, requires public iterative review for completeness, predictions, assumptions, accuracy, impacts and mitigation options.

As of this date, all governmental permits have not yet been granted, and the project is not exempted from environmental review. See Exhibit E, Compliance Filing Section 5.5.2 (201911-157383-01); Minn. R. 4410.4600, Subp. 2(B). The PUC has deliberated and made its decision on December 19, 2019, but as of January 1, 2020, the Final Order has not been eFiled on the

Commission's eDockets system. Other permits not yet granted include Township over-size (OS) and over-weight (OW) permits; County Utility Permit, County Access Permit. See Exhibit H, permit list, Invenergy App. p. 111-113 (20176-132804-01). Township ordinance and road agreement require environmental review, and EAW or EIS. Minn. R. 4410.0200, subp. 65; Minn. Stat. §116D.03; Minn. Stat. §116D.03. Construction may not begin and additional permits may not be issued until the issues raised by this Petition have been settled. Minn. R. 4410.3100, Subp. 1. This Petition and supporting material evidence demonstrates that because of the nature and location of the project there is potential for significant environmental effects.

As Petitioners, the Association of Freeborn County Landowners, a full party in the Commission's Freeborn Wind docket, and the many people who have signed AFCL's Petition for an Environmental Assessment Worksheet, ask that the EQB refer this Petition and supporting material evidence to the Public Utilities Commission and/or London and Oakland Townships as RGU(s) and that an EAW be completed to determine whether an Environmental Impact Statement is necessary. This Petition and evidence herein meets the standards and criteria of Minn. R. 4410.1100. The Public Utilities Commission has not performed necessary environmental review and has not complied with the Minnesota Environmental Policy Act.

## **II. REQUIREMENTS OF EAW PETITION PROCESS – CONTENT**

Association of Freeborn County Landowners (AFCL) provides the following Petition content information and attached material evidence, together with over 380 signatures of Minnesota residents and landowners, as required by Minn. R. 4410.1100:

### **A. Description of Proposed Project**

The Freeborn Wind project is a Large Wind Energy Conversion System. Minn. Stat. §216F.01, Subd. 2. The project footprint encompasses 21,313 acres in Freeborn County that

Xcel has “secured.” Exhibit D, p. 3, Xcel Site Permit Amendment Application (August 20, 2019). In Xcel’s Permit Amendment filing, it quotes the original Site Permit:

*The Freeborn Wind Farm, when fully constructed and operational will have a nameplate capacity of up to 200 MW, of which, 84 MW will be located in Freeborn County, Minnesota and the remaining 116 MW will be located in Worth County, Iowa. The Project will consist of 42 2-MW wind turbines, consisting solely of one turbine model or a combination of turbine models, which may include Vestas V110 and Vestas V116 as identified in the Permittee’s Site Permit Application.*

Id, p. 15. The project has been acquired by Xcel Energy, and the acquisition was approved by the Commission. As above, Xcel requested an amendment to multiple sections of the Freeborn Wind site permit, including the project description section of the permit:

*The Freeborn Wind Farm will be a 200 MW nameplate capacity LWECS, 82 MW of which will be located in Freeborn County, Minnesota. The LWECS portion in Minnesota will consist of 10 Vestas V110 and 31 Vestas V120 turbines. Both turbine models are 2 MW in size.*

Id.; see also Exhibit C, ALJ Recommendation of Denial of Permit, p. 14, Site Location and Characteristics (footnotes omitted). In Xcel’s Amendment Request, Xcel included a noise study, shadow flicker study, and many maps showing the potential impacts of the project over the 21,313 acre geographic area of the project footprint and beyond. See Exhibit D, Site Permit Amendment Application and Attachment E Noise, F Shadow Flicker, J Decommissioning.

After filing the Site Permit Amendment Request, Xcel filed voluminous “Compliance Filings” on November 8, 2019 and December 6, 2019. Exhibit E, Compliance Filings (November 8, 2019); Exhibit F, Compliance Filings (December 6, 2019). At the time the initial Site Permit was issued, AFCL objected to the Commission’s issuance of a site permit without crucial environmental documents in the record, diversion of production of these filings to a private setting, Pre-Construction meetings, without proper review, and postponing filing of these documents until just prior to the private “Pre-Construction” meetings. See e.g. Exhibit I, p. 13-

15, AFCL Reconsideration (January 9, 2019); see also Exhibit J, AFCL Comment including Motion for Remand (March 13, 2019).

These Xcel “Compliance Filings” also include the first filing of a proposed Complaint Process on November 8, 2019, and a December 6, 2019 filed Summary of a Pre-Construction meeting held November 25, 2019. Exhibit F, Compliance Filing (12/6/2019). The November 25, 2019 meeting was the one for which AFCL had made several prior requests for notification, filed two Data Practices Act requests for scheduling information and notice, together with data requests for environmental and procedural information. Exhibit K, AFCL Request for Notice (4/23/2019); Exhibit L, AFCL Request for Notice 11/25/2019). Commission staff acknowledged AFCL request for notice, but failed to provide notice of meeting to AFCL. Exhibit M, PUC staff email (4/23/2019). Unbeknownst to AFCL, this Pre-Construction meeting was held on November 25, 2019, beginning less than ½ hour after this second written request was sent! AFCL received no notice, and AFCL was excluded from the pre-construction meeting where this information was discussed.

The Xcel Site Permit Amendment Application and the November 8 and December 6, 2019 filings were the first glimpses of the description, location, and nature of impacts of the project as proposed by Xcel Energy, and the differences between this Application for Permit Amendment and the initial Invenergy Application and Site Permit.

Xcel’s request for an amendment, if permitted, would allow a modified siting plan, use of larger Vestas V120 turbines, noisier turbines based on increased size; noisier based on unvetted noise modeling with use of in appropriate ground factor of 0.5 that understates noise; shadow flicker with admittedly at least 6 homes affected by over 30 hours annually of shadow flicker; a decommissioning plan with incomplete and inadequate planning; an inadequate complaint



process; and other changes, none of which have been subject to public iterative vetting or environmental review. The specific permit changes requested are set out in Xcel's Permit Amendment Request. Exhibit D, see e.g., p.15-20, Xcel Site Permit Amendment Request, also Attachment E, 2019 Updated Pre-Construction Noise Analysis; Attachment F, Updated Shadow Flicker Study, et seq.

As of this writing, all required permits, including the Commission's written Order regarding Xcel's Site Permit Amendment Request, have not yet been granted. See Exhibit H, Permits (permit list from Invenergy Freeborn Wind application). Applicant Invenergy's list of permits required. In particular, the Public Utilities Commission's permit is flawed, as no environmental review has been undertaken, and the Commission specifically denied AFCL's several requests as a party for environmental review, most recently a Motion for an Environmental Impact Statement, denied orally on December 19, 2019. No permit has been granted by the townships, which by ordinance and state rule requires that oversize truck use permitting process include environmental review. See Exhibit N, London Township Ordinance 17-1, p. 5-6, Section 3.

The project description as proposed by Xcel Energy is now in the public record, together with Xcel Energy's Site Permit Amendment Application and Compliance Filings.

### **B. The Proposer of the Project**

The project has been sold by its original proposer/developer, Invenergy, to Xcel Energy, and acquisition of Freeborn Wind, LLC was approved by the Public Utilities Commission.

#### **Xcel Energy/Freeborn Wind Represented by:**

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**C. The name, address, and telephone number of the representative of the Petitioners**

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[overland@legalelectric.org](mailto:overland@legalelectric.org) (612) 227-8638  
Attorney for Association of Freeborn County Landowners  
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**D. A brief description of the potential environmental effects which may result from the project.**

Xcel has requested amendment to many sections of the permit, each of which has potential environmental effects. As Commerce-EERA stated:

*The Permittee has specifically requested an amendment to the Site Permit language for Section 2.0 Project Description and Section 3.0 Designated Site, and inclusion of an updated map to reflect the 2019 Project Layout referenced in Section 3.1 Turbine Layout. Additionally, the Permittee has indicated how their amendment request has addressed various sections of the site permit; Section 4.1 Wind Access Buffer, Section 4.2 Residences, Section 4.3 Noise, Section 4.9 Wind Turbine Towers, Section 5.2.26 Tower Identification, Section 5.4 Electrical Collector and Feeder Lines, Section 7.2 Shadow Flicker, Section 7.5.1 Avian and Bat Protection Plan, and Section 10.3 Site Plan.*

Exhibit O, Commerce-EERA Comment, 11-12-2019.

In its comments, Commerce-EERA states:

*EERA recommends the Commission approve the Permittee's requested amendments to the Freeborn Wind Farm site permit Section 2.0, Section 3.0, and Section 3.1. The anticipated environmental and human impacts associated with the change in turbine technology and change in turbine layout, including a change in location of certain infrastructure, appear to be comparable, or less than, the potential impacts associated with the originally permitted wind turbine models and turbine and infrastructure layouts.*

*At this time EERA does not recommend the modification or addition of any other permit conditions/sections.*

*EERA recommends that the Permittee file maps that will more clearly display that turbine locations are appropriately sited to satisfy the 5 RD x 3 RD setback from*

*non-participating property boundaries, as displayed on updated Figure 4 in Attachment D of the Amendment Request. Specifically, providing a zoomed-in view of turbines 3, 6, 13, 14, 18, 19, 24, 25, 27, 29, 42, and 48, would provide additional reassurance that the appropriate setbacks from non-participating property boundaries are being satisfied.*

Id., p. 6.

Commerce-EERA inexplicably recommends blanket granting of Xcel's request, based on whether impacts are "comparable" with "the potential impacts associated with the originally permitted wind turbine models and turbine and infrastructure layouts." Commerce-EERA does not address whether the project complies with environmental law and/or standards, and recommends amending the permit despite insufficient environmental information necessitating a request for "reassurance" that setbacks are appropriate for "non-participating" landowners! The law does not distinguish between participating and non-participating landowners. Minn. R. 7030.0400. Impacts are impacts, and the project is or is not in compliance.

This docket before the Public Utilities Commission has similarities with the Nemadji Trails Energy Center (NTEC) docket. As with the Nemadji Trails Energy Center (NTEC) docket at the Commission<sup>1</sup>, the ALJ presiding over the Freeborn Wind contested case recommended denial of the applicant's request because the applicant had not met its burden of proof. As with the Nemadji Trails Energy Center (NTEC) docket<sup>2</sup>, environmental review had been requested directly to the Commission. As with the Nemadji Trails Energy Center (NTEC), after receipt of the ALJ's recommendation of denial of the permit, the Commission inexplicably, without supplementing the record, without a public hearing, without further contested case proceedings,

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<sup>1</sup> PUC Docket E-15/AI-17-568.

<sup>2</sup> Online at:

<http://mncourts.gov/mncourtsgov/media/Appellate/Court%20of%20Appeals/Standard%20opinions/OPa190688-122319.pdf>

did an about face from the ALJ's Recommendation of denial of the Freeborn Wind permit application and granted applicant's Site Permit. Exhibit B, Order Granting Permit, December 19, 2018. The Appellate Court in both the Enbridge and Nemadji (NTEC) cases found that the Commission had not conducted the requisite environmental review and that the Commission erroneously held that environmental review was not necessary, and the court ordered environmental review.

The Association of Freeborn County Landowners' appeal of the Freeborn Wind PUC Order of May 10, 2019 has been stayed pending Commission action on Xcel's Site Permit Amendment Request (Court File A19-1195).

In the Commission's December 19, 2018 Freeborn Wind Order, there was a directive modifying two Findings of Fact from the ALJ's Recommendation and requiring public process. The Findings of Fact amended and adopted by the Commission include FoF 243 and 244:

**Finding 243**

Should the Commission choose to do so, it could provide Freeborn Wind with an opportunity to submit a plan demonstrating how it will comply with Minnesota's noise standards at all times throughout the footprint of the Freeborn Wind Project. ~~The plan should include low frequency noise measurements for evaluation in consultation with MDH.~~

**Finding 244**

The Administrative Law Judge further recommends that the plan be made available for public and agency comment and a hearing held with a summary report. The Commission should then review and approve a pre-construction noise mitigation plan that best assures that turbine noise will not cause noise levels that exceed Minnesota's noise standards.

Exhibit B, Order Granting Site Permit, Modifications to ALJ Report, December 19, 2018. Those Findings 243 and 244, as above, have not been amended or deleted in subsequent orders.

Potential environmental effects which may result from the project include, but are not limited to, those set out in Xcel Energy's Permit Amendment application and subsequent filings and those raised by Intervenors and the public:

**PROBABLE NOISE EXCEEDENCES:** The project as proposed by Invenergy did not demonstrate that it could comply with noise standards. Exhibit C, Freeborn Wind ALJ Recommendation (May 14, 2018); Minn. R. 7030.0400 (Noise Standard). The Administrative Law Judge recommended the project be denied:

#### **SUMMARY OF RECOMMENDATIONS**

The Administrative Law Judge concludes that Freeborn Wind has failed to demonstrate that the proposed Project will meet the requirements of Minn. R. 7030.0040, the applicable Minnesota Noise Standards. Therefore, the Administrative Law Judge respectfully recommends that the Commission either deny Freeborn Wind's Application for a Site Permit, or in the alternative, provide Freeborn Wind with a period of time to submit a plan demonstrating how it will comply with Minnesota's Noise Standards at all times throughout the footprint of the Freeborn Wind Project.

Exhibit C, p. 2.

With its permit amendment request, Xcel Energy filed noise modeling utilizing a ground factor input of 0.5, rather than the 0.0 ground factor input utilized in the Invenergy application noise modeling and throughout the contested case. Exhibit D, Xcel Energy Application for Permit Amendment (8/20/2019); Exhibit C, Freeborn Wind ALJ Recommendation (May 14, 2018); see also Exhibit P, Invenergy Application, Appendix B, p. 12 (0.0 ground factor in original Invenergy application). Use of the 0.5 ground factor is improper for elevated noise sources and understates the noise and probable impacts. Exhibit G, Motion for Contested Case and Environmental Review, p. 10 and Testimony of Hankard; Exhibit Q, AFCL Comment and Request for Contested Case, Testimony of Hankard and Schomer (November 12, 2019)

AFCL has provided actual and constructive notice that the noise modeling is improper, understating the potential noise impacts by using an improper ground factor, 0.5, rather than the

ground factor of 0.0 for modeling noise of elevated noise source to a receptor located on the ground. Exhibit Q, AFCL Comment and Motion for Contested Case (11-12-2019) (addressing material issues of fact and potential for substantial impacts); Exhibit G, AFCL Motion for Contested Case; Exhibit J, AFCL Comment and Motion for Remand. AFCL also provided actual and constructive notice of potential for noise impacts by entering the Bent Tree Noise Modeling, both Phase I and Phase II, into the Freeborn Wind hearing record. The Bent Tree noise studies found the noise standard was exceeded, that the project was not compliant, and the noise standard was violated by V82 turbines when measured at 1,150 and 1,525 feet from residences of families that had complained of noise. Exhibit R, Bent Tree Noise Monitoring Study, Phase II (V82 turbines pps. pps.6, 12, 21; 1,150 and 1,525 feet from nearest turbine p. 10) (2<sup>nd</sup> Noise Monitoring Report to demonstrate noise exceedences) see also Minn. R. 7030.0400. The families in those homes were bought out by the utilities, and settlement agreements entered into the record. See Bent Tree PUC Docket ET6657/WS-08-573, Settlement Agreements filed April 19, 2018; PUC Dismissed Complaints with Conditions June 5, 2018. The Bent Tree exceedences of the noise standard verified by two noise monitoring studies and Settlement Agreements are demonstrations of potential impacts of wind turbines that move into a community and why preventative and precautionary siting is crucial.

No independent modeling has been performed in the Freeborn Wind docket, and no modeling with the appropriate ground factor of 0.0 has been submitted by Invenenergy or Xcel Energy following the ALJ's Recommendation of Denial (May 14, 2018).

Xcel states in its Permit Amendment Petition that:

The closest turbine to a participating residence is Turbine T-23, which is approximately **1,096** feet from the nearest residence. The nearest non-participating residence is located approximately **1,367** feet from Turbine T-29, the nearest turbine.

Exhibit D, Xcel Petition for Permit Amendment, p. 17<sup>3</sup> (emphasis added).

The Bent Tree noise exceedences measured at residences 1,150 and 1,525 feet from the nearest turbine, important distances to note because Bent Tree is a wind project which uses smaller and less noisy turbines. Exhibit R, Bent Tree Noise Monitoring Study, Phase II (V82 turbines pps. pps.6, 12, 21; 1,150 and 1,525 feet from nearest turbine p. 10); see also Minn. R. 7030.0400, Noise Standards. AFCL has provided actual and constructive notice to the applicants, Commerce, and the Commission in multiple filings that given Bent Tree non-compliance with the noise standard at 1,150 and 1,525 feet from smaller turbines, there is potential for noise non-compliance, potential for substantial effects, at the Freeborn distances of 1,000 “setback” and Xcel’s reported 1,096 feet and 1,367 feet between residences and larger turbines. See Exhibits G, I, J, Q . How many Freeborn turbines are less than the 1,525 feet where Bent Tree exceedences were found? What more notice of potential for significant environmental effects could be needed?.

And what of setbacks in the permit? Xcel notes that the original Freeborn Wind permit states:

*Wind turbine towers shall not be located closer than 1,000 feet from all residences or the distance required to comply with the noise standards pursuant to Minn. R. 7030.0040, established by the Minnesota Pollution Control Agency, whichever is greater.*

Exhibit B, Order Granting Permit and Permit, Section 4.2, December 19, 2018 (note “all residences” without participant or non-participant distinction). When asked in the Freeborn Wind contested case hearing about use and origin of the 1,000 foot setback, there was no definitive response from Commerce-EERA’s drafter of the permit:

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<sup>3</sup> Note Minnesota’s noise standard does not distinguish between participants and non-participants. The noise limit is 50 dB(A), whether a receptor is a participant or not.

Q: ... it lists 1,000 feet as a setback from residences. Where does that number come from? It's for the SDP template. Where do you get that number?

A: For the template or for what we've submitted for the preliminary?

Q: Both, really. But where do you get – where does the thousand foot come from?

A: Thousand foot. I don't know exact – the exact location of where that comes from. But in the most recent site permit applications that have been approved in the most recent site permits that have been issued by the Commission, that has been the standard distance that they've approved, along with the consideration of noise standards being met.

Tr. Freeborn Wind hearing, Davis, Vol. 2, p. 171-173. The origin of the commonly used 1,000 foot setback, as found in Section 4.2 of the Freeborn Wind draft Site Permit, is unknown. It is not based in statute, rule, or standards, and is arbitrary.

Based on use of the inappropriate ground factor of 0.5 for modeling, there is potential for noise exceedences and non-compliance with Minnesota's noise standards. Based on failure to demonstrate compliance in the contested case with smaller turbines, there is potential for noise exceedences and non-compliance with Minnesota's noise standards. Based on a comparison of the 1,000 foot setback of unknown origin established for Freeborn Wind project using Vestas V110 and V120 turbines compared with the Bent Tree Vestas V82, there is potential for noise exceedences and non-compliance with Minnesota's noise standard. Based upon the exceedences found in Bent Tree with these smaller Vestas V82 turbines at 1150 and 1525 feet, there is potential for noise exceedences and non-compliance with Minnesota noise standards.

**SHADOW FLICKER:** Xcel's new shadow flicker modeling shows that homes are predicted to receive more than 30 hours annually of shadow flicker:

The Shadow Flicker Assessment has been updated to incorporate the larger Vestas V120 turbine technology and the 2019 Project Layout. The updated assessment indicates that under the realistic modeling scenario the participating residents with the highest shadow flicker would experience 42 hours and 31 minutes per year, and the non-participating residents with the highest shadow flicker would experience 41 hours and 57 minutes per year. Six residences, three participating and three nonparticipating, are anticipated to experience greater than 30 hours of



shadow flicker per year. The Permittee also noted that this analysis does not include any shadow flicker blockage caused by trees, building, or specific building designs.

Exhibit O, Commerce-EERA Comments, November 12, 2019.

Should shadow flicker modeling identify any residence that will experience in 30 hours, or more, of shadow flicker per year, the Permittee must specifically identify these residences in the Shadow Flicker Management Plan. If through minimization and mitigation efforts identified in the Shadow Flicker Management Plan the Permittee is not able to reduce a residence's anticipated shadow flicker exposure to less than 30 hours per year a shadow flicker detection systems will be utilized during project operations to monitor shadow flicker exposure at the residence. The Shadow Flicker Management Plan will detail the placement and use of any shadow flicker detection systems, how the monitoring data will be used to inform turbine operations, and a detailed plan of when and how turbine operations will be adjusted to mitigate shadow flicker exposure exceeding 30 hours per year at any one receptor. The results of any shadow flicker monitoring and mitigation implementation will be reported by the Permittee in the Annual Project Energy Production Report identified in Section 10.8 of this Permit.

Exhibit B, Order Granting Permit and Permit, Permit Section 7.2, Shadow Flicker (December 19, 2019). Commenters in the record have tallied potential for shadow flicker much higher than those hours admitted by Xcel. Kathy Nelson found Xcel's Shadow Flicker modeling predicts 7,416 hours annually as the "worst case" and "adjusts" that figure to 1,195 hours annually with no explanation of the decrease Exhibit S, Nelson Comment (11-12-2019).

Although the original Permit does set a 30 hour annual threshold for shadow flicker, there are no statutes, rules, or standards establishing this limit – it is arbitrary. The ALJ's Recommendation had proposed a 27 hour limit on shadow flicker, also arbitrary. Exhibit C, p. 18-21; Findings #260-261, p. 9-10; FoF #546, p. 17-18; Permit Section 7.2,p. 14-15.

Based on the shadow flicker modeling provided by Xcel in its new Permit Amendment Application and admissions of impacts, and Commerce-EERA admission of impacts, there is documented potential for significant impacts.

**DECOMMISSIONING PLAN:** Decommissioning is an important aspect of environmental effects and environmental preservation. Decommissioning a 21,313 acre wind project is a large operation and involves not only removing project turbines, but large removing all or part of concrete foundations, project access roads and changes to county and township roads, energy collector system and substation, and other considerations, including paying for it. In decommissioning such a large project, there is inherently potential for significant environmental effects. There is also a necessity to establish financial assurance for funding to decommission properly, in the least impactful manner. This should occur before the project is built.

Proactive planning is not how wind project permitting has been allowed to proceed in Minnesota. Decommissioning information is required to be included in an application, and yet this information was not included in the original Invenenergy application, nor was any decommissioning information included in Invenenergy's response to AFCL discovery requests regarding decommissioning nor were details provided in testimony in the contested case. Minn. R. 7854.0500, Sub. 13. A decommissioning plan was not provided by Invenenergy, and was not provided by Xcel until it filed for a site permit amendment. See Exhibit D, Xcel Site Permit Amendment Application, Attachment J Decommissioning (August 20, 2019). Decommissioning information has not been subject to public vetting, environmental review, and was not part of the Freeborn contested case hearing, other than discussing that the Decommissioning Plan was not provided in the application or elsewhere. Minn. R. 7854.0500, Subp. 13.

Decommissioning financial assurance is also important because in the project leases, there is a clause which would transfer responsibility for decommissioning to the landowner if the project owner does not decommission the project, thus leaving the landowner to decommission

and then to attempt to collect costs from the project owner. When asked about this after its Permit Amendment application, Xcel's response to AFCL's Information Request 9 was that it would not remove this clause allowing a shift of decommissioning responsibility to the landowner, stating it was a standard clause in a wind lease. Exhibit T, AFCL IR 9. Xcel also stated in an Information Request response that it would not add a statement that "*As owner and operator of Project facilities, Xcel Energy will bear the financial responsibility for decommissioning activities and Project area restoration.*" as it deemed that was "unnecessary." Exhibit U, AFCL IR 10.

The decommissioning plan must be reviewed for adequacy due to the potential for significant environmental effects and transfer of responsibility for decommissioning to landowners. Decommissioning, and whether it is planned for and adequately executed, is a matter of substantial environmental impact.

#### **OTHER PERMIT AMENDMENT AREAS WITH POTENTIAL FOR**

**ENVIRONMENTAL IMPACTS:** In addition to noise, shadow flicker, and decommissioning, the other Permit sections proposed for amendment have environmental impacts.

- Section 2.0 Project Description – change in turbines with increased generation economic and environmental impact;
- Section 3.0 Designated Site and map of new project layout with unclear setbacks, visual changes and potential for property valuation and marketability impacts;
- Section 3.1 Turbine Layout, as above, map of new project layout with unclear setbacks, visual changes and potential for property valuation and marketability impacts;
- Section 4.1 Wind Access Buffer, unclear setbacks with apparent encroachment over land not part of the project, visual changes and potential for property valuation and marketability impacts;
- Section 4.2 Residences, with unclear setbacks and potential for noise, shadow flicker, aesthetic and visual impacts;

- Section 4.9 Wind Turbine Towers, larger, noisier, in addition to above impacts on residents, potential impacts on wildlife, birds and bats, many nesting and foraging eagles in area;
- Section 5.2.26 Tower Identification, increased generation likely alters economic cost/benefit, different blades alters cost and noise impacts;
- Section 5.4 Electrical Collector and Feeder Lines, different turbine locations alters impacts;
- Section 7.5.1 Avian and Bat Protection Plan, as above, change in turbines changes potential impacts, new ABPP requires review for adequacy; and
- Section 10.3 Site Plan, as above, changed site plan has changed impacts.

As of this writing, there has been no environmental review via an Environmental Assessment Worksheet or Environmental Impact Statement. The Public Utilities Commission again erroneously determined that environmental review was not necessary at its December 19, 2019 meeting. MEPA requires environmental review for projects with potential for significant impacts. The Freeborn Wind has potential for significant environmental impacts.

**E. Material evidence indicating that, because of the nature or location of the proposed project, there maybe potential for significant environmental effects.**

The Exhibits A-W cited above as material evidence are attached to this Petition below, with Certification. Exhibits cited below regarding the necessity of environmental review of wind projects are also attached below, and signed Petitions follow.

**III. THE PROJECT IS NOT EXEMPT FROM ENVIRONMENTAL REVIEW**

The Freeborn Wind project is not exempt from environmental review, and the Environmental Quality Board has jurisdiction over this matter because the Public Utilities Commission has failed to promulgate rules governing environmental review requirements for wind projects.

Despite a 1995 legislative mandate to develop rules for wind siting to include the impact of LWECs on humans and the environment and requirements for environmental review of the

LWECS, there has since that time been a decades' long failure by both the Environmental Quality Board and the Public Utilities Commission to promulgate wind-specific siting rules, and despite multiple Petitions for Rulemaking to promulgate wind-specific siting and noise rules, there is no existing case law regarding environmental review of LWECS as this issue has yet to be brought to the courts. Minn. Stat. §216F.05. Now would be a good time to correct this environmental review deficiency.

As an electric generating facility over 50 MW, a mandatory EAW and/or EIS is required. Minn. R. 4410.4300 and Minn. R. 4100.4400. Wind is exempted from some, but not all of the provisions of the Power Plant Siting Act, and many statutory provisions of the PPSA are expressly applicable:

The requirements of chapter 216E do not apply to the siting of LWECS, except for sections [216E.01](#); [216E.03, subdivision 7](#); [216E.08](#); [216E.11](#); [216E.12](#); [216E.14](#); [216E.15](#); [216E.17](#); and [216E.18, subdivision 3](#), which do apply.

Minn. Stat. §216F.02.

There are exemptions from environmental review, but this wind project is not exempt from environmental review under any of the various exemptions listed in Minnesota rules. Minn. R. 4410.4500. As of this writing, all required permits have not yet been granted, another reason, as a matter of timing, that this project is not exempt from environmental review. Minn. R. 4410.4600, Subp. 2(B). See Exhibit H, Invenenergy Application, p. 111-113 (20176-132804-01) (Applicant's list of permits needed from various sources). The Public Utilities Commission's written Order regarding Xcel's Site Permit Amendment Request has not yet been issued. No permits have been granted by the townships, which by ordinance and state rule requires that oversize and overweight truck permitting must include environmental review. Exhibit N, London Township Ordinance 17-1, p. 5-6, Section 3. Other permits are also pending.

Most importantly, this project is not exempt under Minn. R. 7854.0500, Subp. 7, as this rule does not comport with MEPA environmental requirements and does not fulfill the legislative mandate to promulgate rules setting requirements for environmental review of wind projects.

The history of wind siting and failure of the Environmental Quality Board and now the Public Utilities Commission is decades long. Again, in 1995, the legislature mandated that rules be developed for siting wind covering specific environmental considerations, specifically:

The commission shall adopt rules governing the consideration of an application for a site permit for an LWECS that address the following:

(1) criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;

...

(4) requirements for environmental review of the LWECS; ...

Session Laws 1995, Ch. 203, Section 5<sup>4</sup> Siting authority was originally held by the Environmental Quality Board, and was transferred from the EQB to the Public Utilities Commission in 2005. This rulemaking mandate was retained in statute and moved to the Public Utilities Commission's wind statutory chapter. Minn. Stat. §216F.05; see Session Laws 2005, Ch. 97, Article III, Sections 17, 19<sup>5</sup>.

Rules mandated by the legislature were not promulgated until 2001, and those rules developed did not include either “criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment” or “requirements for environmental review of the LWECS.” Minn. Stat. §216F.05(1),(4). Instead, the “rules” avoided environmental review with a simple, conclusory, and utterly unsubstantiated section in the Statement of Need and Reasonableness. From the SONAR:

*Because the environmental and human consequences of wind turbines are relatively minor and can be minimized by appropriate permit conditions, the EQB*

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<sup>4</sup> Online: <https://www.revisor.mn.gov/laws/1995/0/203/>

<sup>5</sup> Online: <https://www.revisor.mn.gov/laws/2005/0/97/>

*is not requiring in these rules that an Environmental Assessment Worksheet or an Environmental Impact Statement be prepared on a proposed LWECS. It is sufficient that the environmental impacts and mitigative measures be discussed in the application itself. If an issue of concern were to be raised specific to a particular wind project, the EQB could ask for additional examination of those impacts and could address the concern through permit conditions or by moving some of the turbines.*

Exhibit V, SONAR Minn. R. 4401, p. 19 (September 20, 2001)(highlighting added). On that same page of the SONAR, there's a reference to setback requirements, and siting in wetlands, but there are no setback requirements or wetland siting restrictions in statute or rule applicable to Large Wind Energy Conversion Systems. The SONAR's "analysis" of environmental impact impacts fails to set out any requirements for environmental review:

**Subpart 7. Environmental impacts.** Of course, the EQB must investigate and review the environmental impacts associated with any proposed wind project. The applicant is the one that must provide the information about the potential impacts of the project. What this rule requires is the inclusion in the application of information on the potential impacts of the project, the mitigative measures that are possible, and adverse environmental effects that cannot be avoided. This is the typical analysis with any project undergoing environmental review by the EQB or other agencies.

The effects identified in items A – R in the rule should cover every potential impact of a LWECS. It is not necessary to discuss every single one of these in this Statement of Need and Reasonableness. Suffice it to say that an applicant must identify any and all potentially adverse impacts that may be caused by a proposed project and mitigative measures that might be implemented with regard to those impacts.

Wind projects have not been found to have significant environmental and human impacts. Wind projects along Buffalo Ridge have been generally well accepted by residents and others concerned about the environment. Permit conditions have been satisfactory to address specific concerns like wetlands and wildlife management areas with past permits. One area of concern that was raised initially was the possibility of avian fatalities caused by the turbines.

As part of the first wind permit issued by the EQB, the Board required Northern States Power Company to conduct an avian mortality study along Buffalo Ridge. This study was conducted between 1995 and 2000, and a report on the study was completed in 2000.

The researchers found that the number of avian fatalities from the wind turbines at Buffalo Ridge is essentially inconsequential, although there was some bat mortality found. The wind developers are presently conducting additional studies on bat mortality.

**Because the environmental and human consequences of wind turbines are relatively minor and can be minimized by appropriate permit conditions,** the EQB is not requiring in these rules that an Environmental Assessment Worksheet or an Environmental Impact Statement be prepared on a proposed LWECS. **It is sufficient that the environmental impacts and mitigative measures be discussed in the application itself.** If an issue of concern were to be raised specific to a particular wind project, the EQB could ask for additional examination of those impacts and could address the concern through permit conditions or by moving some of the turbines.

Id. SONAR, p 19-20 (emphasis added).

The resulting “rule” stated:

**Subp. 7. Environmental impacts.**

An applicant for a site permit shall include with the application an analysis of the potential impacts of the project, proposed mitigative measures, and any adverse environmental effects that cannot be avoided, in the following areas:

- A. demographics, including people, homes, and businesses;
- B. noise;
- C. visual impacts;
- D. public services and infrastructure;
- E. cultural and archaeological impacts;
- F. recreational resources;
- G. public health and safety, including air traffic, electromagnetic fields, and security and traffic;
- H. hazardous materials;
- I. land-based economics, including agriculture, forestry, and mining;
- J. tourism and community benefits;
- K. topography;
- L. soils;
- M. geologic and groundwater resources;
- N. surface water and floodplain resources;
- O. wetlands;
- P. vegetation;
- Q. wildlife; and
- R. rare and unique natural resources.

The analysis of the environmental impacts required by this subpart satisfies the environmental review requirements of chapter 4410, parts [7849.1000](#) to [7849.2100](#), and Minnesota Statutes, chapter 116D. No environmental assessment worksheet or environmental impact statement shall be required on a proposed LWECS project.

Minn. R. 7854.0500, Subp. 7 (emphasis added).



Looking back at the SONAR, the resulting “rule,” and the repeated references in the Freeborn Order to setback requirements, noise and residential setbacks, siting in wetlands, again, there are no setback requirements or wetland siting restrictions in statute or rule applicable to Large Wind Energy Conversion Systems. However, there are Small Wind Siting Standards, expressly drafted for small wind projects under 25MW. Exhibit A, Order Establishing Small Wind Permit Standards, PUC Docket E,G-000/M-07-1102. “Small wind energy conversion system” or “SWECS” means any combination of WECS with a combined nameplate capacity of less than 5,000 kilowatts.” Minn. Stat. §216F.01, Subd. 3. The small wind standards set out in the Commission’s 2008 small wind standards order, particularly those in the chart found in Attachment A of the Order, are extensively cited in LWECS proceedings as the basis for setbacks and buffers in LWECS permits! See Attachment D, Xcel Energy Petition for Permit Amendment, p. ; ALJ Freeborn Wind Recommendation; Attachment B, Commission’s Freeborn Wind Order 12/19/2018. The Freeborn Site Permit includes establishment of setbacks, including setbacks as wind buffers, setbacks from residences, setbacks from roads, and 3 rotor diameter x 5 rotor diameter setbacks, but there is no basis for use of these setbacks in statute or rule or standards – they are arbitrarily based on the inapplicable small wind standards. Xcel’s Site Permit Amendment Application includes many references to setbacks, but there are no citations to statutory or rule criteria, only the “permit.” Search Ex. D for references to Permit Sections 4.1, 4.2, 4.3 in Attachment A, Xcel Petition for Permit Amendment, and maps constituting Attachments. See Exhibit B, PUC Order Granting Permit and Permit; Exhibit C, ALJ Findings of Fact, Conclusions of Law, and Recommendation. Xcel’s Application Attachment C shows 3x5 rotor diameter and greyed in “setbacks” and the 3x5 RD red markings overlap grey areas that are supposedly off limits due to “setbacks.” See Exhibit D, Application, Attachment C map.

Petitions have been filed for wind-specific siting rules, and have been rejected by the Commission. See PUC Docket E-999/R-18-518, GWT Rulemaking Petition, denied September 26, 2018. A petition was filed with the MPCA requesting wind-specific noise rules be developed, also rejected. The rejection letter was entered in the Freeborn Wind docket. Exhibit W, Stine Letter, September 12, 2016.

Association of Freeborn County Landowners intervened in the Freeborn Wind docket before the Commission, and participated as a full party in the Freeborn Wind contested case hearing through Office of Administrative Hearings. Multiple material issues of fact, multiple examples of potential for significant environmental effects, and multiple requests for environmental review were raised by AFCL, local government, and members of the public. The Commission's initial Freeborn Order acknowledges potential impacts of noise, public safety and ice throws, shadow flicker, interference with over-the-air television signals, and decommissioning. Exhibit B, Order Granting Site Permit and Permit, p. 7, December 19, 2018.

It is not the job of an intervening party or member of the public to assure compliance with the Minnesota Environmental Policy Act, Power Plant Siting Act, application content or other requirements – parties do not have and should not be forced to take on the applicants' burden of production or burden of proof, and parties should not have to retain and present expert witnesses to do the work of an agency.

The Public Utilities Commission, with the help of Commerce-EERA, has the mandate to regulate and to “site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.” Minn. Stat. §216F.03. A mandatory EAW and EIS is required for an electric facility over 50 MW. Minn. R. 4410.4300 and Minn. R. 4100.4400. Minn. Stat. §216F.05(4) mandated adoption of rules for Large Wind

Energy Conversion Systems (LWECS) but no wind-specific siting rules have been adopted.

AFCL has repeatedly raised material issues of fact, material evidence of potential for significant environmental effects, demonstrating that the nature and location of the proposed project has potential for significant environmental effects. With this Petition, AFCL again raises these issues and requests environmental review as required by the Minnesota Environmental Policy Act. AFCL asks the Environmental Quality Board and the Public Utilities Commission to follow the law.

The Public Utilities Commission has deflected, dismissed, and denied AFCL's multiple requests for environmental review, most recently, AFCL's request for an Environmental Impact Statement on December 19, 2019. Association of Freeborn County Landowners respectfully requests that the Environmental Quality Board refer this Petition to the Public Utilities Commission, that an Environmental Assessment Worksheet be prepared for the Freeborn Wind project, and that an Environmental Impact Statement be prepared as necessary environmental review.

Respectfully submitted,

January 1, 2020



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**ATTORNEY FOR  
ASSOCIATION OF FREEBORN  
COUNTY LANDOWNERS**

STATE OF MINNESOTA  
IN COURT OF APPEALS

**FILED**

July 10, 2020

**OFFICE OF  
APPELLATE COURTS**

**STATEMENT OF THE CASE  
OF PETITIONER/RELATOR**

**In the Matter of the Application of  
Freeborn Wind Energy, LLC for a Large  
Wind Energy Conversion System Site  
Permit for the 84 MW Freeborn Wind  
Farm in Freeborn County**

Court of Appeals Case No.

A20-\_\_\_\_\_

Association of Freeborn County  
Landowners,

Minnesota Public Utilities Commission  
Docket No. IP6946/WS-17-410

Relator,

**Dates of Decision:**

**FINAL ORDER March 31, 2020**

vs.

**Date Triggering Appeal:  
DENIAL OF RECONSIDERATION**

**June 12, 2020**

Minnesota Public Utilities Commission,

Respondent.

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Relator Association of Freeborn County Landowners, for its Statement of the Case,  
states as follows:

**1. Agency of case origination:**

This case originated with the Minnesota Public Utilities Commission (hereinafter  
“PUC.”), from a decision to amend the Freeborn Wind site permit upon Application for  
Site Permit Amendment following approval of the acquisition of Freeborn Wind, LLC

by Northern States Power and denying AFCL's Petition for an Environmental Assessment Worksheet, referred after verification by the Environmental Quality Board ("EQB"). Addendum Part I, Exhibit A and B.

## **2. Jurisdictional statement**

### **a. Statute, Rule, or Other Authority Authorizing Certiorari Appeal.**

The Administrative Procedures Act authorizes review in the Court of Appeals by writ of certiorari. Minn. Stat. §14.6-683; Minn. R. Civ. App. P. 103.03(g) and 115.01. Certiorari appeal of Public Utilities Commission decisions are taken pursuant to Minn. Stat. §216B.52 and §216E.15, after the Final Order and denial of Reconsideration is issued by the Commission. That Order Denying Reconsideration was filed on June 12, 2020.

### **b. Authority Fixing Time Limit for Obtaining Certiorari Review.**

Relators appeal the PUC's final decision on Xcel Energy/NSP's Site Permit Amendment Request, its March 31, 2020 Order granting amendment of the Site Permit for the Freeborn Wind project and the PUC's June 12, 2020 denial of AFCL's Motion. Addendum Part I, Exhibit A and B. This appeal is timely filed no more than 30 days after the PUC's June 12, 2020 Order. Minn. Stat. §§14.64, §216B.52 and §216E.15.

An appeal of the Commission's denial of AFCL's Petition for Environmental Assessment Worksheet, A20-410, was filed separately on March 18, 2020, due to judicial review provisions of the Minnesota Environmental Policy Act, requiring filing of an appeal not more than 30 days after publication of notice of the final decision in the

EQB Monitor. Minn. Stat. §§116D.04, Subd. 10 (2018), 14.63 to 14.68. That appeal was dismissed as premature and the writ of certiorari for appeal A20-410 was discharged on April 2, 2020. That Order is attached to AFCL's Petition for Writ of Certiorari.

**c. Finality of Order or Judgment.**

This Public Utilities Commission's Order Granting Site Permit Amendment of March 31, 2020, and Order Denying Reconsideration filed June 12, 2020, is final, and the 30 day window for appeal was triggered by filing of the Order Denying Reconsideration, filed by the Commission on June 12, 2020.

**3. State type of litigation and designate any statutes at issue.**

This, together with AFCL's appeal currently stayed (A19-1195) is a case of first impression – consideration of the state's wind siting process, where the Commission sites a Large Wind Energy Conversion System with fatally flawed process and without siting criteria and siting rules. AFCL will request that the earlier appeal be consolidated with this appeal based on the concentric overlap of issues and parties.

This specific appeal is an appeal of two actions of the Minnesota Public Utilities Commission. One is the Commission's denial of AFCL's Petition for an Environmental Assessment Worksheet for a Large Wind Energy Conversion System (LWECS). Minn. Stat. §116D.04, Subd. 10. Addendum Part II; Addendum Part I, Exhibit B Denial of EAW Petition. The other is the Commission's flawed process and procedure in its grant of a permit amendment for Xcel/NSP's Freeborn Wind project without finding the application complete, without environmental review as required by MEPA, without

public vetting of the many filings, many pages, in Xcel/NSP's application, appendices and compliance filings; without a public hearing, pushing applicant's production of project documents into private meetings after granting of the permit, and failure to promulgate criteria and siting rules. The Commission failed to refer Xcel's Application for Permit Amendment to the Office of Administrative Hearings for a contested case where material issues of fact are present. The Commission failed to provide for "broad spectrum of public participation as its principal of operation," and instead limited public participation and access to information.

Specific statutes at issue are found in the Minnesota Environmental Policy Act, Minn. Stat. §116D.04, Subd. 2(a)a, e; the Minnesota Power Plant Siting Act, Minn. Stat. §216E.08; Minn. Stat. §116F.05; .Minn. R. 7854.0500; Minn. R. 7854.0600; Minnesota Administrative Procedures Act, Minn. Stat. Ch. 14 and rules of Minn. Ch. 1400 and 1405; Minnesota Pollution Control Agency's noise standards, Minn. R. 7030.0400 and Dept. of Commerce wind siting guidelines (2012 and 2019).

#### **4. Brief description of claims, defenses, issues litigated, and result below.**

The Commission's denial of AFCL's Petition for an Environmental Assessment Worksheet for a Large Wind Energy Conversion System (LWECS) is at issue, where material evidence was produced demonstrating potential impacts to the environment and to humans. Minn. Stat. §116D.04, Subd. 10. The Commission orally denied the decision, but a Commission order is not "final" until the written order is filed, and EQB rules require a Record of Decision. See Addendum Part II: Attachment G, EQB Letter of

Transmittal to PUC; Attachment A, EQB Monitor; Attachment B, PUC Letter to EQB; Attachment C, AFCL Letter to EQB.

The Commission's failure to develop siting criteria and rules for environmental review is at issue because of the potential for environmental impact of large wind projects covering thousands of acres and moving into an existing community. The legislature mandated promulgation of rules, specifically "criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;" and "requirements for environmental review of the LWECS," however no siting criteria or requirements for environmental review have been adopted. Minn. Stat. §216F.05(1), (4). In the rulemaking SONAR, potential for impacts was dismissed out of hand and no "criteria that the commission shall use to designate LWECS sites, which must include the impact of LWECS on humans and the environment;" and "requirements for environmental review of the LWECS" were developed. Addendum Part II, Attachment D, Petition for EAW. Despite the specific mandate to develop requirements for environmental review, wind projects were only directed to produce environmental information in the project application content, and through the SONAR, and ultimately the application content rule, that was declared sufficient environmental analysis. Minn. R. 7854.0500, Subp. 7, see Addendum Part II, Attachment D, Petition for EAW, p. 22-25. The rule is not consistent with the Minnesota Environmental Policy Act.

Public participation has been constrained and thwarted through the Commission's refusal to perform iterative environmental review, either through an EAW with its public comment period and determination of the need for an EIS, and in its refusal to perform an



Environmental Impact Statement, with release of a Draft EIS, a public hearing and comment period, and a Final EIS and an adequacy determination, and the Commission's failure to provide for public review and comment and make a completeness determination on the application amendment, and its granting of the site permit without a public hearing or referral to Office of Administrative hearings for a contested case. Addendum Part I, Exhibit A, Final Order. Public Participation is to be a broad spectrum of participation, as required by Minn. Stat. §216E.08. That mandate has not been adopted by the Public Utilities Commission.

**5. List specific issues proposed to be raised on appeal.**

The specific issues to be addressed in this appeal are the errors of law and arbitrary and capricious acts of the Public Utilities Commission:

- Whether failure to perform environmental review and denial of a Petition for EAW presented with material evidence that, because of the nature or location of the proposed project, there may be potential for significant environmental effects, is a violation of MEPA; Minn. Stat. §116D.04, Subd. 10; Minn. Stat. §216E.03, Subd. 7; Minn. R. 4410.1100, Subp. 2E.
- Whether withholding and failure to offer public participation opportunities is a violation of the Commission's public participation and public interest mandate of Minn. Stat. §216E.08, Minn. R. 7854.0600, and the Order and Initial Permit (December 19, 2018 Site Permit, FoF 243 and 244 (requiring a hearing and summary report)).
- Where Commission is on notice of potential for shadow flicker impacts and non-compliance with Minnesota noise standard, and receives updated "shadow flicker modeling" and "noise modeling" for Freeborn Wind, and does not provide opportunity for public scrutiny and comment or environmental review regarding flicker and noise impacts, or other environmental effects, is a violation of MEPA; Minn. Stat. §116D.04, Subd. 10; Minn. Stat. §216E.03, Subd. 7; Minn. R. 4410.1100, Subp. 2E.

- Whether a Siting Order that does not cite siting criteria or permitting standards, and relies on “Order Establishing General Wind Permit Standards” (Docket No. E, G-999/M-07-1102), a Commerce template, and/or Commerce “guidelines” for siting a Large Wind Energy Conversion System, constitutes arbitrary and capricious permitting and legal error.
- Where all wind noise modeling provided by applicant in the contested case record is based on a 0.0 ground factor assumption, and ALJ Recommended the permit be denied due to failure to demonstrate compliance, is failure to perform environmental review, acceptance of applicant’s noise modeling with 0.5 ground factor, and doing so without public hearing or contested case, does this constitute an arbitrary and capricious decision unsupported by the record, and legal error.
- Where the Commission is faced with robust public participation, intervention, and party and public testimony to extent allowed, showing that the community has raised material issues of fact and does not consent to the project encroaching on the community, is issuance of a site permit arbitrary and capricious and legal error in violation of the Power Plant Siting Act, Minn. Stat. §216E.08, Minn. Ch. §216F, and Minn. R. Ch. 7854.

## 6. Related appeals.

There is a pending appeal, stayed pending the Commission’s Final Order regarding Xcel Energy’s Amendment Application. See A19-1195, *In the Matter of the Application of Freeborn Wind Energy, LLC for a Large Wind Energy Conversion System Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County*. AFCL requests consolidation of these two appeals, and will request consolidation in a separate Motion filing.

As with A19-1195, *In the Matter of the Application of Freeborn Wind Energy, LLC for a Large Wind Energy Conversion System Site Permit for the 84 MW Freeborn Wind Farm in Freeborn County*, although this Commission decision is “final” at this time it is expected that Freeborn Wind/NSP will file another application for permit amendment

in the immediate future. . AFCL has recently learned that Freeborn Wind/NSP has removed 17 of the 41 turbines planned for the Minnesota part of the project plan -- over 40% of the turbines will be removed. AFCL has filed a Motion for Order to Show Cause, requesting disclosure of its revised plan and that Freeborn/NSP provide a stand-alone application for a permit amendment. Addendum, Exhibit A, AFCL Motion for Order to Show Cause. This change in the project has been confirmed in a footnote to Commission Staff Briefing Papers. Addendum, Exhibit B, Staff Briefing Papers (selected). The Briefing Papers state that:

*Commission staff has been informed by Xcel Energy that they intend to move a substantial number of turbines from the project to Iowa and they intended to formally notify the Commission via the e-Dockets system prior to the July 16, 2020 Commission Agenda Meeting.*

Id., p. 3 (selected). Freeborn Wind/NSP withheld notice of this change, there is no filing in the docket at the time of this writing. AFCL has no choice but to appeal the March 31, 2020 Order at this time, and wants to assure that the Court does have notice of the substantial changes, anticipated application for permit amendment, and likely delays

It is Commission precedent to require a “stand-alone” application where there is a substantial change in a project after a permit is granted, as was required when NSP acquired the project and filed its August 2019 Freeborn/NSP application for permit amendment, resulting in the March 31, 2020 Order which is the subject of this appeal. The Commission Ordered a stand-alone application for the Three Waters project when 19 of its 52 turbines were removed. See Addendum, Exhibit A, AFCL Motion for Order to Show Cause (Motion Exhibit E – Letter EERA to Three Waters Wind June 8, 2020;

Motion Exhibit F – Commission Order, June 22, 2020). Freeborn/NSP’s response to AFCL’s Motion is due by Monday, July 13, 2020, and the Commission meeting regarding the Motion will be after that with at least ten (10) days’ notice. Because of this substantial change, and the need for yet another application for permit amendment, AFCL will request a stay of this appeal pending further Commission process. Freeborn Wind/NSP, by failing to disclose the substantive change in the project, leaves AFCL in the position of appealing a decision without the Findings of Fact and knowledge of the basis for the Commission’s denial of the EAW Petition.

AFCL is filing this appeal so as not to miss the statutory window for appeal of the PUC’s March 31, 2020 decision. Minn. Stat. §216B.52; Minn. Stat. §116D.04, Subd. 10. AFCL requests stay of consideration of this appeal of the Commission’s Site Permit Amendment and EAW Petition decision until after the Commission produces the Final Order and Record of Decision regarding this next Freeborn Wind/NSP site permit amendment. AFCL will request a Stay separately.

A related Minnesota Environmental Rights Act (MERA) complaint was filed on June 10, 2020, in Ramsey County District Court, *State of Minnesota ex. rel. Association of Freeborn County Landowners v. Minnesota Public Utilities Commission*, Court File No. 62-CV-20-3674, seeking declaratory equitable relief and a temporary injunction stopping construction of the Freeborn Wind, Plum Creek Wind, Buffalo Ridge Wind and Three Waters Wind, all before the Public Utilities Commission at the present time. There is a hearing scheduled for September 2, at 1:30 p.m. for 4 parties’ Motion to Dismiss and AFCL’s Motion for Temporary Injunction.

**7. Contents of record.**

There is an extensive record of the Commission’s proceeding regarding AFCL’s Petition for EAW and the Freeborn Wind site permit amendment in the possession of the Commission. For the purposes of Rules 115.04, subd. 1 and 110.02, subd. 1(c), Relator provides notice that a transcript of the Commission meeting deliberations is necessary. The transcript will be requested, and these transcripts and the record will be transmitted to the Court of Appeals under Rule 111.01. Trout Unlimited, Inc. v. Minn. Dep’t of Agriculture, 528 N.W. 2d 903, 908 (Minn. App. 1995)

**8. Is oral argument requested? Yes. At another location? No.** (likely Zoom)

**9. Identify the type of brief to be filed.** Formal brief under [Rule 128.02](#).

**10. Names, addresses, zip codes telephone numbers and emails of attorneys:**

*Relator - Association of Freeborn County Landowners’ Counsel* – as below

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June 10, 2020



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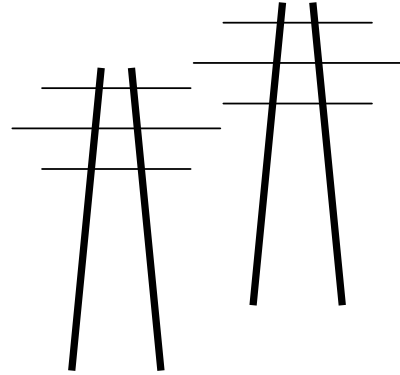
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ATTORNEY FOR ASSOCIATION OF  
FREEBORN COUNTY LANDOWNERS

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June 8, 2018

Dan Wolf  
Executive Secretary  
Public Utilities Commission  
121 – 7<sup>th</sup> Place East, Suite 350  
St. Paul, MN 55101

eFiled and eServed

RE: AFCL - Exceptions and Request for Oral Argument  
Freeborn Wind, LLC  
MPCU Docket: IP-6946/WS-17-410

Dear Mr. Wolf:

On behalf of Association of Freeborn County Landowners, please find Exceptions to Recommendation of Administrative Law Judge and request for Oral Argument at the Commission meeting for deliberation regarding the above-entitled docket.

Please let me know if you have any questions or require anything further.

Very truly yours,

A handwritten signature in cursive script that reads "Carol A. Overland".

Carol A. Overland  
Attorney at Law

Enclosures

cc: Association of Freeborn County Landowners

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

**Nancy Lange  
Dan Lipschultz  
Matt Schuerger  
Katie Sieben  
John A. Tuma**

**Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner**

In the Matter of the Application of Freeborn  
Wind Energy, LLC for a Large Wind Energy  
Conversion System Site Permit for the 84  
MW Freeborn Wind Farm in Freeborn County

**PUC Docket No. IP6946/WS-17-410**

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**EXCEPTIONS OF ASSOCIATION OF FREEBORN COUNTY LANDOWNERS TO  
FINDINGS OF FACT, CONCLUSIONS OF LAW, AND RECOMMENDATION  
OF THE ADMINISTRATIVE LAW JUDGE**

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The Association of Freeborn County Landowners (AFCL), requests that the Freeborn Wind permit be denied. AFCL, pursuant to Minn. Stat. §14.61 and Minn. R. 7829.2700, submits the following exceptions to the report of the Administrative Law Judge in the above captioned proceeding. The Association of Freeborn County Landowners are affected parties as landowners in Freeborn County, an area targeted for this project, and as Intervenors with granted full party status, request that the Commission take these Exceptions under consideration. The community does not consent to this project.

The Association of Freeborn County Landowners (AFCL) adopts the Exceptions of KAAL as if fully incorporated herein.

The Association of Freeborn County Landowners respectfully requests oral argument in the above-captioned matter when it comes before the Commission.



**I. SYSTEMIC PROBLEMS OF WIND SITING IN MINNESOTA DEMAND PREVENTATIVE AND PRECAUTIONARY SITING, AND ULTIMATELY, A REVAMPING OF WIND SITING PROCESS AND PROCEDURES.**

The Commission and Commerce – EERA are well aware of the systemic flaws in the wind siting process. These flaws inevitably result in siting issues for new projects, as evidenced in this case, and result in problems with existing projects that have been improperly sited. Bent Tree and Big Blue are existing projects before the Commission with multiple complaints and noise monitoring ordered, issues that would have been avoided with more rigorous siting review.<sup>1</sup> Others are in the pipeline and will follow.

AFCL requests that the Commission begin now, with this Freeborn Wind case, to practice respectful and preventative wind siting, in compliance with and utilizing the existing applicable wind and noise siting rules and standards to protect the public from potential permit violations and protect developers from permit violations and difficult mitigation. These wind and noise siting rules and standards, as noted by the Administrative Law Judge in her Recommendation of denial of the permit, call the applicant’s project into question. The applicant has not demonstrated that it can meet existing siting rules and standards. The permit should be denied.

This is the first Minnesota wind project to be properly sited, using the siting criteria of the Power Plant Siting Act. Minn. Stat. §216E.03, Subd. 7. This is the first Minnesota wind project to be reviewed in a contested-case proceeding, as requested by AFCL and agreed to by Freeborn Wind. The importance of these two factors of the PPSA criteria and this contested case proceeding cannot be overstated. Yet with the resulting Recommendation that the permit be denied, wind developers are up in arms, wringing their hands, and quaking, arguing for

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<sup>1</sup> AFCL-11, Bent Tree Noise Monitoring and Noise Study, Phase 1; ACL 15, Hansen Rebuttal, Schedule D, Bent Tree Phase 2, beginning p. 55 of 152; See also AFCL-15, Hansen Rebuttal, Schedule F, PUC Letter – Show Cause, Big Blue Wind Project, PUC Docket IP-6851/WS-10-1238, p. 147 of 152.

continuance of prior lax rule interpretations, improper siting procedures, and ineffective regulatory oversight.<sup>2</sup>

Dan Lichfield, an Invenergy senior manager, objected to Schlatter's interpretation of Minnesota's noise regulations, saying it "is impossible to meet for a wind farm. ... Every other wind farm in the state has not been subject to this interpretation."<sup>3</sup>

Yes, Invenergy's Litchfield has a point. Every other wind farm in the state of Minnesota has been sited improperly. Every other wind farm in Minnesota has a permit stating that the project was reviewed and sited under authority, under jurisdiction, of the wind siting statutes, Chapter 216F, and Minnesota Rules 7854. Not one wind permit lists the legally applicable parts of the Power Plant Siting Act, particularly the siting criteria of Minn. Stat. §216E.03, Subd. 7. However, there is no evidence that profitable wind projects cannot be sited in compliance with existing wind siting statutes, rules and standards. The Commission will ultimately have to wrestle with these siting issues, and until then, the Commission will have applications for wind projects to consider.

For now, the immediate issue is this Freeborn Wind permit, and this permit should be denied. It is time for developers to provide noise studies in the application as required by rules and guidelines; for setbacks to provide sufficient distance for modeling margin-of-error; for decommissioning plans to be set forth in the application and subject to public review and comment; for the Draft Site Permit template to conform to rules and standards; for the complaint process to be revised; for regulators to conscientiously review applications for completeness; for information to be provided up front, and for regulators to require it rather than allow it to be

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<sup>2</sup> See, e.g., EDF Renewables [20186-143638-01](#). Many more such "Exceptions" from developers are expected. Note those filed in this docket, from EDF Renewables, RES, WOW, Vestas and AWEA have cut and paste language and footnotes. Form letters have little weight.

<sup>3</sup> Administrative law judge says PUC should reject Freeborn County wind project, Star Tribune May 17, 2018, <http://www.startribune.com/administrative-law-judge-says-puc-should-reject-freeborn-county-wind-project/482980081/>

provided after permitting, if at all; for reviewing agencies to do their job by providing comments and showing up to assure comments and concerns are part of the hearing record. It is time for the Commission to site respectfully, using the regulatory tools at hand to prevent foreseeable problems that have cropped up with other projects, such as noise violations, shadow flicker disturbances, avian mortality and need for take permits, and economic harm to agriculture, property values, tourism and recreation, and public safety services and infrastructure.

The Commission is in a rough spot, but that's regulation. On one hand there are industry promotional groups such as Wind on the Wires (WoW) touting economic benefits to participants and local governments, ignoring the legitimate siting issues that make wind siting, and living within a wind project, difficult.<sup>4</sup> On the other hand, lobbying groups such as Center of the American Experiment invade the project area with billboards and radio ads claiming wind is the driving factor of high electricity rates, countered by WoW radio ads in the project area. These diametrically opposed claims both ignore the legitimate siting issues clamoring for attention, issues that bring consternation to the Commission and which have communities in uproar.<sup>5</sup> Multiple rulemaking petitions to the Commission and MPCA regarding these legitimate siting issues have been filed and dismissed out of hand.<sup>6</sup> The Draft Site Permit template does not comport with wind "standards" and uses arbitrary setbacks. Legislatively mandated rulemaking resulted not in a rulemaking proceeding, but the 2008 "Wind Siting

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<sup>4</sup> WOW Public Comment of Soholt, Public Hearing, Tr. p. 183-187 ("and if it were an option, which unfortunately it's not, I would eagerly and willingly live among a wind farm."); WOW filed Comment, 3/15/2018, [20183-141082-01](#).

<sup>5</sup> See "American Experiment's Wind Energy Campaign Comes to Freeborn County," <https://www.americanexperiment.org/2018/03/american-experiments-wind-energy-campaign-comes-freeborn-county/>; WOW Public Comment of Soholt, Public Hearing, Tr. p.187, l. 5 – 11. ("So we – we had a statement out about the Center of the American Experiment Report. We talked to reporters, and we are correcting this information that the – that's on Center of the American Experiment that's out. We had a small budget in our main budget for renewable – for radio ads the last two years.")

<sup>6</sup> See, e.g., eDocket 20169-124844-01 and Public Hearing Exhibit P. 22, p. 15-16, 20183-149052-07, quoting MPCA Commissioner Stine's response to Overland's Rulemaking Petition, 9/12/2016 ([20169-124844-01](#)).

Standards,”<sup>7</sup> leading to projects sited with inadequate and incomplete siting which sets up violation of permit conditions. This puts landowners and residents at risk, and robs landowners of their use and enjoyment of their property – the nuisance comes to the community. If developers want projects to be sited, they must assure projects have a low risk of violating rules or standards and must have a low risk of nuisance, depriving landowners of their use and enjoyment of their property.

The Commission must address these systemic problems in issuing any individual wind permits, and going forward, must also continue to determine corrective action for previously permitted projects. In this climate of regulatory flux, it may indeed be very difficult to site any wind project. Thorough systemic review and revamping of the wind siting process is decades overdue, and we need to get to work on that. But for now, in this docket, the Commission must act within the existing regulatory framework, use the existing tools, and with consideration that prior interpretations of regulation may have developed into lax review and improper permitting and permitting procedures.

AFCL strongly urges the Commission’s acceptance of the Administrative Law Judge’s Recommendation of denial of the Freeborn Wind site permit. The applicants have not met their burden of proof – they have not demonstrated that they will meet the noise standard and rule. This is a particularly important action in light of the complaints and potential violations that have come before the Commission recently, and those that will likely be presented to the Commission in the future. Poor siting is not easily remedied.

In addition to our strong support of the ALJ’s Recommendation of denial of the Freeborn Wind site permit, and the specific Exceptions, below, there are several other related issues the

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<sup>7</sup> AFCL-8, Wind Siting Standards, PUC Docket 07-1102 (note 5/17 in Trimont (IP6907/WS-13-258) agenda item at 4:03, Mr. Swanson’s comment, “It is a standard set in a generic wind standards docket, it’s not a rule... it can be varied” Comments at 4:03: [http://minnesotapuc.granicus.com/MediaPlayer.php?view\\_id=2&clip\\_id=739](http://minnesotapuc.granicus.com/MediaPlayer.php?view_id=2&clip_id=739)

Commission should consider:

**II. IN PRACTICE, DECOMMISSIONING PLANS ARE NOT PART OF THE APPLICATION, CONTRARY TO APPLICATION RULES, WHICH PROVIDES NO OPPORTUNITY TO ADDRESS DECOMMISSIONING SECURITY IN THE PERMITTING PROCESS.**

The ALJ's Findings of Fact regarding decommissioning and restoration are found at paragraphs 507 to 532, and Conditions in paragraphs 550 and 551.

Under current practice, decommissioning information is not provided in the application, EERA does not raise this omission to the Commission, and the Commission declares applications "substantially complete" without any acknowledgement, and perhaps without any knowledge, of the omission of decommissioning information – a systemic problem. In this case, requisite decommissioning information was not included in the application, and according to Freeborn Wind and Commerce-EERA the decommissioning plan isn't being drafted and filed until after a permit is issued!

Under the rules, decommissioning information including cost and financial assurance plan should be provided in the Application:

**Decommissioning and restoration.**

The applicant shall include the following information regarding decommissioning of the project and restoring the site:

- A. the anticipated life of the project;
- B. the estimated decommissioning costs in current dollars;
- C. the method and schedule for updating the costs of decommissioning and restoration;
- D. the method of ensuring that funds will be available for decommissioning and restoration; and
- E. the anticipated manner in which the project will be decommissioned and the site restored.

Minn. R. 7854.0500, Subp. 13.

The Freeborn Wind application did not include the information required in an application

by Minn. R. 7854.0500, Subp. 13.<sup>8</sup> The Wind Siting Standards reinforce the requirement that the decommissioning information of Minn. R. 7854.0500, Subp. 13 be included in the application.<sup>9</sup>

Freeborn Wind's application was submitted, the question of completeness was opened for comment, the application was reviewed by EERA and Commerce staff, and inexplicably declared complete at the August 10, 2018 meeting, and in the Order issued August 31, 2017.

AFCL received Invenergy's response to its questions about decommissioning, which were not reassuring, and which instead left decommissioning issues for later. When asked several specific questions regarding the Application sections on decommissioning, Invenergy's response was only:

Freeborn Wind will comply with the terms of the Site Permit as it relates to the preparation, content and distribution of a decommissioning plan. See Section 11.0 of the Draft Site Permit.<sup>10</sup>

When asked about decommissioning costs, Invenergy's Litchfield testified that:

A: I don't feel I can answer that question. I've never looked at actual costs of actual wind decommissioning. I know it's happened, I've talked to people who have been a part of those projects, but I've not seen the numbers. I don't – I've been a part of projects where we provide decommissioning cost estimates and they're a deconstruction cost proposal, so – and they're usually provided by same types of vendors that do wind farm construction. So I wouldn't have any real reason to doubt them.

Q: Has Invenergy been involved in any wind decommissioning?

A: Not to my knowledge.<sup>11</sup>

Invenergy's Litchfield also testified that there is no decommissioning plan for this project at this point, there is no cost estimate for decommissioning at this point, and there is "no form of financial assurance for the purpose of decommissioning the facility at this time."<sup>12</sup> There is also

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<sup>8</sup> FR-1, Site Permit Application.

<sup>9</sup> AFCL—8, Wind Siting Standards, App. A (p. 15).

<sup>10</sup> AFCL 21, Freeborn Wind Response to AFCL IR 16.

<sup>11</sup> Litchfield, Tr. Vol. 1A, p. 46, l. 13-25.

no specific plan for financial assurance, although Litchfield anticipated that a site permit condition would require financial assurance.<sup>13</sup> This is exactly the situation where a decommissioning plan is most needed.

The ALJ's Recommendation infers that it is the job of an Intervenor to object to the applicant's failure to file the decommissioning information required by rule, and that AFCL should have filed a Motion for Reconsideration if the Commission declares an application "substantially complete" when some required information is not in the application. ALJ Recommendation, FoF 518. The Commission's Completeness determination, however, is only acceptance of the application as "substantially" complete. It's absurd to put responsibility for assurance of a complete application on an intervenor that was not even a party at the time! This is the job of Commerce-EERA and the job of the Commission. It is EERA and the Commission that missed Freeborn Wind's omission or let it slide.

Decommissioning plans have been pushed back by Commerce-EERA to a post-permit pre-operational stage, out of public view. The Commission should bring a halt to the practices of declaring "completeness" of applications and granting of permits where applications are not in compliance with application requirements, and end the consistent failure to allow public review and comment of decommissioning plans.

AFCL urges the Commission to require compliance with Minn. R. 7854.0500, Subp. 13 now, and require that this information be filed for agency and public review and a hearing; and in the alternative, to provide that information for agency public review and comment. No permit should be issued without the opportunity to address the decommissioning plan.

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<sup>12</sup> Litchfield, Tr. Vol. 1A, p. 43, l. 8-17; see also Tr., Vol. 2, p. 101, l. 7-9.

<sup>13</sup> Litchfield, Tr. Vol 2, p. 99, l. 18 - 100, l. 12.

### **III. THE PERMIT COMPLAINT PROCESS IS INADEQUATE AND MUST BE REVISED TO PROVIDE TIMELY INVESTIGATION OF COMPLAINTS AND ENFORCEMENT.**

The ALJ's Findings of Fact regarding the complaint process are found at paragraphs 533 to 539, and Conditions in paragraphs 545 regarding interference complaints.

The Commission's complaint process is broken. The Commission is well aware that there have been problems with the Bent Tree and Big Blue projects, but it takes years for complaints that are not resolved to work their way to the Commission.<sup>14</sup> The complaint process proposed for this project is the same boilerplate language used in every wind project, and there have only been nominal revisions over time.<sup>15</sup> The ALJ recognized that changes may be imminent, but did not recommend any specific changes.<sup>16</sup> Each Site Permit includes a complaint process, located at the very end of the document.<sup>17</sup> A copy of the permit is mailed to everyone that is given notice of the issuance of the permit – this is how landowners are informed of their rights.<sup>18</sup> The complaint process is complex and is subject to revision:

Q: What would it take to initiate a review of the complaint process?

A: This is when you would provide a comment on it. It's part of the draft site permit, so—

Q: So right now?

A: So this is when comments should be submitted, yeah.<sup>19</sup>

AFCL strongly advocates that “right now” is the time to initiate a review of the complaint process. The Commission has direct knowledge that the complaint process is inadequate. No permit should be issued without thorough review and revision of the complaint procedures.

### **IV. THE FREEBORN WIND PERMIT SHOULD BE DENIED**

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<sup>14</sup> See Testimony of Cheryl Hagen, Public Hearing Tr. p. 108-111; Bernie Hagen, p. 112-115.

<sup>15</sup> Davis, Tr. Vol. 2, p. 180, l. 14-17.

<sup>16</sup> FoF para. 533-539.

<sup>17</sup> EERA-8, Draft Site Permit – p. 72 of 77.

<sup>18</sup> Davis, Vol. 2, p. 179-180.

<sup>19</sup> Davis, Tr. Vol 2, p.180.



The Administrative Law Judge has recommended the Freeborn Wind permit be denied. We are at this late stage in permitting without essential and required information, review, and process. No permit should be granted unless and until the applicant can sufficiently demonstrate that it can meet the noise and shadow flicker rules and standards; decommissioning information has been provided; the complaint process revised; both decommissioning and complaint process opened for comment and reviewed by Commerce, the public, and the Commission.

AFCL requests that the Commission begin now, with this Freeborn Wind case, to begin respectful and preventative wind siting, utilizing the existing applicable siting standards to protect the public from potential permit violations and difficult mitigation. These siting rules and standards, as noted by the Administrative Law Judge in her Recommendation of denial of the permit, call the permit into question. The applicant has not met its burden of proof and has not demonstrated that it can meet existing siting rules and standards.

Association of Freeborn County Landowners respectfully requests oral argument in the above-captioned matter when it comes before the Commission.

Respectfully submitted,

DATE: June 8, 2018



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## LINE ITEM EXCEPTIONS

60. A public hearing was held in Albert Lea, Minnesota, on February 20, 2018. All applicant and agency witnesses and many members of the public were sworn or affirmed on oath.

93. In the Application, the anticipated construction start was May 2020, with commercial operations commencing in the fourth quarter of 2020.<sup>157</sup> However, Freeborn Wind reports that Xcel Energy intends to advance the construction timetable and start construction in the fall of 2019, with commercial operations still commencing in the fourth quarter of 2020.<sup>158</sup> The commencement of construction is dependent on several factors, including changes in production tax credit availability.<sup>1</sup> The commercial operations date is dependent on several factors,<sup>159</sup> including weather, permitting, and other development activities.

114. There was no testimony regarding independent verification of signatures on agreements or testimony alleging that any person continued to be bound by the terms of an agreement based on misrepresentations of the fired agent.

116. The Administrative Law Judge finds that there is insufficient evidence to determine whether Freeborn Wind has secured its land rights in a manner free from coercion due to misrepresentations of the fired agent.

151. Minn. Stat. 216E.12, Subd. 4 does specifically apply to projects sited under Minn. Stat. Ch. 216F, although this is not a situation where eminent domain would be used. Minn. Stat. §216F.02, Exemptions.

152 (et seq.) .Freeborn Wind states that project facilities will be sited and constructed predominantly on leased agricultural lands owned by participating landowners. According to Freeborn Wind, these participating landowners will be compensated for the use of their property, yielding increased valuations on the farmland due to the harvest of electricity along with traditional agricultural products that underpin the value of the land.<sup>232</sup> Therefore, Freeborn Wind anticipates that there will be no unmitigated impacts to the property values of participating landowners.<sup>233</sup>

~~154. There was conflicting testimony regarding the ability of agricultural pilots to conduct aerial spraying within the perimeter of a wind farm.<sup>237</sup> –AFCL provided no expert testimony regarding the impact of wind turbines on neighboring agricultural property or practices. (see FoF 434 – 440).~~

184. This section concerns the Project's compliance with Minnesota noise regulations and whether the Draft Site Permit's provisions relating to noise are sufficient, both are at issue in this proceeding. The potential for the Project to cause adverse health effects more generally is

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<sup>1</sup> AFCL – 24, IR 24

discussed at section H of this Report although causation is not at issue in this administrative permitting proceeding.

202. The Minnesota Pollution Control Agency (MPCA) enforces the state's noise rules (Minn. R. Ch. 7030), but only for those projects for which it issues a permit. In the case of wind siting permits, it is the Commission that issues the permit with noise conditions. Enforcement of Commission-issued site permits is within the jurisdiction of the Commission and the Department of Commerce EERA, not the MPCA.<sup>2</sup> Freeborn Wind looks to Minn. Stat. Ch. 116 (2016), the chapter that establishes the MPCA, for a definition of "noise." That chapter defines "noise" to mean "any sound not occurring in the natural environment, including, but not limited to, sounds emanating from aircraft and highways, and industrial, commercial, and residential sources."<sup>310</sup> Freeborn Wind contends that because "noise" is any sound not occurring in the natural environment, the noise limits in subpart 2 of Minn. R. 7030.0400 apply to wind turbine noise alone, and that the rule regulates only the noise emissions of non-natural sources considered individually, not the total amount of noise a receptor experiences.

213. Freeborn Wind did not follow this guidance "because the frequency spectrum of noise from wind turbines is relatively fixed, and once one part of the spectrum becomes limited, so does every other part of the audible spectrum."<sup>326</sup> The 50 dB(A) limit for receptors was attained modeled by placing the wind turbines at certain distances from the receptors. For the Project, the 50 dB(A) limit at residences controls Project LFN levels to about 60 dB(C) or less at residences, and limits-models infrasound ~~to-at~~ levels orders of magnitude below the human hearing threshold."<sup>327</sup>

214. While the record evidence legitimates concerns over the Project's potential to generate harmful LFN and infrasound, opponents of the Project are correct that Minnesota's noise standards do not address them. DOC-EERA did not recommend the addition of any conditions or special conditions specific to infrasound or low frequency noise.<sup>328</sup> While the Commission, the Department of Health, the Department of Commerce, and the Pollution Control Agency all acknowledge public complaints concerning wind turbine generated infrasound and LFN merit concern, in 2012, the MPCA Commissioner, in response to a rulemaking Petition, stated that "After consulting with colleagues at the Minnesota Departments of Health and Commerce, I have concluded that the current understanding of wind turbine noise and its potential effects is insufficient to support rule making at this time,"<sup>3</sup> and in 2016, that "the present knowledge of the potential health effects of infrasound does not lend itself to the development of an appropriate standard at this time."<sup>329</sup> No rulemaking has been initiated regarding wind noise.

216. The Commission's General Permit Standards requires that the "Project must meet Minnesota Noise Standards, Minnesota Rules Chapter 7030, at all residential receivers (homes). Residential noise standard NAC 1, L<sub>50</sub> 50 dB(A) during overnight hours. Setback distance

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<sup>2</sup> See AFCL-11, Bent Tree Noise Monitoring and Noise Study Phase I; ACL 15, Hansen Rebuttal, Schedule D, Bent Tree Phase 2, beginning p. 55 of 152; AFCL 15, Hansen Rebuttal, Schedule F, Big Blue – PUC Letter - Request for Response to Alleged Site Permit Violations and to Show Cause.

<sup>3</sup> eDocket 20169-124844-01 and Public Hearing Exhibit P. 22, p. 15-16, 20183-149052-07, quoting MPCA Commissioner Stine's response to Overland's Rulemaking Petition, 9/12/2016 (20169-124844-01).

calculated based on site layout and turbine for each residential receiver.”<sup>331</sup> The Commission prescribed a minimum setback of “[t]ypically 750 – 1500 ft. is required to meet noise standards depending on turbine model, layout, site specific conditions.”<sup>332</sup> The Standards minimum setback from homes is “500 ft + distance required to meet state noise standard.” Id.

233. Mr. Hankard predicts that the total nighttime noise standard (ambient plus wind turbine noise)  $L_{50}$  will be exceeded at times when ambient noise levels are 50 dB(A) and above.<sup>361</sup> The average background noise  $L_{50}$  levels, including both ambient and turbine noise, range from 33 to 57 dB(A), under conditions during which the turbines would operate (“Critical” and “Full Power” turbine operations). The average background noise  $L_{10}$  levels range from 37 to 60 dB(A) under conditions during which the turbines would operate (“Critical” and “Full Power” turbine operations). This information was not provided with Freeborn Wind’s original Application. It was provided as a post-hearing exhibit following questioning by DOC-EERA during which it became apparent that Freeborn Wind interpreted Minn. R. 7030.0040 to require only the measurement of the proposed additional source of noise, not including ambient noise.<sup>362</sup>

The parties stipulated to receipt of this exhibit, and there was no opportunity for cross-examination regarding this post-hearing exhibit.

236. The methodology Mr. Hankard employed has a margin of error to its noise level measurements of plus or minus three dB.<sup>366</sup> An increase of three dB corresponds to a doubling of sound power but only a slightly noticeable increase in loudness. Mr. Hankard contends that, by using the most conservative values for the model’s parameters, the margin of error with respect to underestimating sound levels is much smaller than three dB.<sup>367</sup> An increase of three dB applied to the post hearing modeling would result in many receptors with levels at or greater than 50 dB.

238. Another cause for uncertainty is the absence of certain empirical data. That is, sound measurements are not made when one would expect the loudest levels to occur. As Mr. Hankard pointed out, the American National Standards Institute (ANSI) “discourages measurements when the local wind speed is 11 miles an hour or greater. - And that’s because what you’re actually measuring at that point is distortion of the microphone and not actual sound in the air.”<sup>369</sup> Accordingly, Mr. Hankard did not include any noise monitoring results over 11 miles per hour. Minnesota noise monitoring protocol also excludes noise monitoring performed when wind speeds are greater than 11 miles per hour.<sup>4</sup> The average monthly wind speed in the Freeborn Project Area is greater than 11 miles per hour.<sup>370</sup> While the wind speed at the hub height of a turbine may differ from the wind speed near ground level for a variety of reasons,<sup>371</sup> Freeborn Wind’s Application stated that, at 80 meters above the ground, predicted wind speeds near the Project Area are 6.0 to 8.8 meters per second.<sup>372</sup> At 8.8 meters per second, this is just under 20 miles per hour. 6 meters per second is over 13.4 miles per hour, above the exclusionary threshold for noise monitoring.

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<sup>4</sup> Minn. R. 7030.

244. The Administrative Law Judge further recommends that the plan be made available for public and agency comment and a hearing held with a summary report. The Commission should then review and approve a pre-construction noise mitigation plan ~~that best only if it~~<sup>377</sup> assures that turbine noise will not cause noise levels that exceed Minnesota's noise standards.

245. Freeborn Wind cannot lawfully operate its turbines if their operation results in total noise at any receptor in excess of the standards in Minn. R. 7030.0400. If the Commission grants a Site Permit and post-construction measurements show that total noise levels exceed  $L_{50}$  dB(A) for any receptor, the Commission shall suspend the permit and Freeborn Wind must adjust its operations, including shutting down one or more turbines, if doing so will result in complying with the standards. The mitigation options should be clarified prior to granting of any permit.

256. The results of the study indicate that, of the 254 receptors modeled, seven were predicted to realistically experience more than 30 hours of shadow flicker per year. Three of the seven receptors were at participating landowners' occupied residences and would experience 40:28, 30:52, and 32:30 hours of shadow flicker. Four non-participating landowners' occupied residences would experience 31:12, 34:35, 34.29, and 45.23 hours of shadow flicker.<sup>393</sup>

However, whether landowners are participants or non-participants is not a consideration for limits on shadow flicker.

267. Freeborn Wind asserts the Project will create approximately 200 temporary<sup>407</sup> jobs during the construction phase and approximately ten permanent jobs during operation.

271. The record demonstrates that the Project, if built, will result in both short-and long-term benefits to the local economy. There is no evidence in the record regarding direct or indirect costs of the project to the community.

272. Freeborn Wind maintains that wind farms benefit the environment and health of the regional community by reducing emissions from fossil fuels. Throughout their operational life-cycle, LWECs operations emit the smallest amount of greenhouse gasses (GHGs) compared to other energy generation methods. Wind energy does not emit sulphur oxides (SOx), nitrogen oxides (NOx), particulate matter (PM<sub>10</sub>), or mercury, and drastically reduces water

consumption.<sup>415</sup> When asked what emissions would be avoided, to substantiate the claims and provide a direct link, "There are no specific agreements/contracts that can be identified."<sup>5</sup>

275. The Administrative Law Judge concludes that there is insufficient evidence to make a determination as to whether and how the Freeborn Wind project would generally contribute to public health by helping to reduce the emission of GHG's in Minnesota.- There is no evidence in the record regarding criteria air pollutants of fossil fuel emissions.

291. AFCL argued that much of Freeborn Wind's witness testimony regarding the health effects of wind turbines was not relevant because causation is not an issue in this administrative permitting proceeding. AFCL reasons that causation is not an issue because Freeborn Wind is the

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<sup>5</sup> AFCL-27, Freeborn Wind Response to AFCL IR 26.

applicant, seeking a site permit, and that this is not a personal injury case where proving causation is the burden of a plaintiff. Applicant must demonstrate that its project meets the criteria of Minn. Stat. §216E.03, Subd. 7, and proving that there is no causal link is not among the criteria. bears the burden of proof.<sup>453</sup>

292. The Administrative Law Judge agrees that, as the Applicant, Freeborn Wind bears the burden of proof in this proceeding. However, causation and the burden of proof are two different concepts. Minn. Stat. § 216E.03, subd.7 (2016), lists some of the criteria the Commission must consider in deciding whether to grant a site permit. The subdivision states, in relevant part:

(b) To facilitate the study, research, evaluation, and designation of sites and routes, the commission shall be guided by, but not limited to, the following considerations:

(1) evaluation of research and investigations relating to the effects on land, water and air resources of large electric power generating plants . . . and the effects of . . . electric and magnetic fields resulting from such facilities on public health and welfare . . . .<sup>454</sup>

This statutory language contemplates consideration of a causal relationship between the impacts of large electric power generating plants and on public health and welfare, but it does not require demonstration of a causal link or association. It does require consideration of whether the criteria is met and whether the project will comply with statutes, rules, and standards.

298. The Administrative Law Judge finds that it is not in the best interest of the local community where a wind farm is being located, or of the wind energy industry generally, to locate wind turbines in a manner that annoys, angers, and alienates the people whose lives are most directly affected by the turbines.

300. The Commission approved for release and comment the Draft Site Permit based upon the noise analysis in Freeborn Wind's Application, which included a summary prediction of ambient noise, but no predictions of combined ambient and turbine noise.<sup>461</sup> As discussed in Section XI.D.v. of this Report, the total average background noise  $L_{50}$  levels, including both ambient and turbine nighttime noise levels, exceed those permitted by Minn. R. 7030.0040.<sup>462</sup>

302. In light of the revised total noise predictions, and the lack of evidence that Freeborn Wind took the required 500 additional feet into account in establishing residential setbacks, the Administrative Law Judge recommends that, if the Commission issues a Site Permit in this docket, the Draft Site Permit conditions be amended to require Residential setbacks of 1500 feet for all non-participating landowners.<sup>466</sup> The standards do not differentiate between participating and non-participating landowners.

306. Freeborn Wind reported that it is coordinating with applicable emergency and non-emergency response staff in the area, such as regional air ambulance services, sheriff's offices, and fire departments to develop a safety plan during construction and operation of the Project. Freeborn Wind planned to be in contact with local first responders to offer information about the Project.<sup>470</sup> There is no evidence in the record regarding anticipated costs for these emergency services and first responders and how those costs would be paid.

310. Draft Site Permit Condition 4.4, which provides for a setback of 250 feet from public road ROW and designated public trails (such as the identified snowmobile trail), does not fully address this concern.<sup>477</sup> The turbine closest to the snowmobile trail (turbine 20) is 538 feet away from the snowmobile trail, exceeding the minimum setback in the Draft Site Permit (250 feet), as well as the setback required by Section 26-51 of the Freeborn County Ordinance (1.1 times the turbine height), and the likely distance the ice was thrown from the turbine at the Bent Tree Wind farm on February 22, 2018.<sup>478</sup> Based on the estimated distance of the ice throw, if the Commission issues a Site Permit in this docket, the setback from public roads should be a minimum of 350 feet.

316. Several local units of government, local officials, and members of the public raised concerns regarding the potential for Project construction to damage local roads.<sup>485</sup> Freeborn Wind states it is committed to repair all damage to local roads and to negotiate in good faith with Freeborn County and Hayward, London, Oakland, and Shell Rock Townships to develop an agreement that will address local concerns regarding development, road use, and drainage issues.<sup>486</sup> However, Freeborn does not accept execution of road agreements as a permit condition,<sup>6</sup> and testified that if there is no road agreement, Freeborn Wind will proceed without an agreement.<sup>7</sup>

317. The Draft Site Permit contains provisions that adequately address the use of public roads, the construction of turbine access roads, and private roads. For example, the Draft Site Permit requires Freeborn Wind to make satisfactory arrangements with the appropriate road authorities for use, maintenance and repair of the roads that may be subject to increased impacts due to transportation of equipment and Project components.<sup>487</sup> While this requirement can be satisfied in a number of ways,<sup>488</sup> Freeborn Wind reports it has begun meeting with local road authorities and offered to negotiate a road use agreement that establishes Freeborn Wind's responsibilities to maintain the roads in safe condition and repair roads and public drainage infrastructure damaged during construction.<sup>489</sup> As above, however, Freeborn does not accept execution of road agreements as a permit condition,<sup>8</sup> and testified that if there is no road agreement, Freeborn Wind will proceed without an agreement.<sup>9</sup>

(FoF 319 – 413 – AFCL defers to expertise and knowledge of KAAL)

415. There are Wildlife Management Areas (WMA) and Waterfowl Protection Areas (WPA) within ten miles of the Project Area. The Shell Rock WMA and the Shell Rock Water Trail is are located adjacent to the Project Area.<sup>626</sup> The MPCA expressed concern about impacts to the Shell Rock River.<sup>10</sup>

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<sup>6</sup> AFCL 18, Freeborn Wind Response to AFCL IR20.

<sup>7</sup> Litchfield, Tr. Vol. 1A, p. 27-28.

<sup>8</sup> AFCL 18, Freeborn Wind Response to AFCL IR20.

<sup>9</sup> Litchfield, Tr. Vol. 1A, p. 27-28.

<sup>10</sup> EERA-5, Agency Comments (20182-139859-01).

417. Recreational impacts will generally be visual in nature, affecting individuals using public lands near the Project Area for recreation.<sup>629</sup> Turbines will be set back from these public lands a minimum of the three RD by five RD setbacks from all non-leased properties per the Commission's siting guidelines, but will be visible from the Shell Rock River, WMA and Shell Rock River Water Trail.<sup>630</sup>

418. Based on the record, ~~no anticipated there may be~~ adverse impacts to recreational resources ~~have been established, particularly the Shell Rock River,~~ as a result of the Project.

422. In the event that there is damage to agricultural drain tile as a result of the Project, the tile will be repaired according to the agreement between Freeborn Wind and the landowner.<sup>635</sup> Freeborn Wind has committed to repairing all agricultural tile damage that occurs during the construction phase of the Project, whether that of participants or non-participants.<sup>636</sup> Additionally, the Draft Site Permit contains conditions adequate to address drain tile damage. The conditions require Freeborn Wind to "avoid, promptly repair or replace all tile lines broken or damaged during all phases of the Project," and to fairly restore or compensate landowners for damage to drain tile during construction.<sup>637</sup>

435. Commenter John Thisius, an experienced aerial crop sprayer with 13,500 hours of ag flying time, testified that you cannot safely fly within a wind farm and he would not put himself or his pilots at risk, and while it is possible to treat crops on the outskirts of a wind facility, it is impossible to safely do so within a wind farm because of the turbulence from the moving blades and problems with depth perception.<sup>654</sup>

436. Commenter Ray Rauenhorst, ~~also an experienced formerly an~~ aerial crop sprayer, testified that wind farms were first appearing as he approached retirement, and thus he is not experienced flying near turbines. He had sprayed among widely spaced turbines. He also pointed out that turbines can be turned off to reduce the hazard they pose.<sup>655</sup>

438. AFCL argues based on the testimony of John Thisius, a pilot actively in the business of aerial spraying, that the project will result in barring aerial spraying and seeding in the Project Area causing farmers to incur more expense to accomplish these tasks or the project eliminates the option of aerial spraying and seeding.<sup>658</sup> AFCL provided no testimony witness on the issue of aerial spraying and seeding.

439. The record contains no evidence that any of the affected landowners use aerial spraying. Nor is there a record of the cost of aerial spraying or its cost relative to other methods. ~~It is unclear from the record how closely Mr. Thisius or Mr. Rauenhorst had studied the Project and considered how its turbine layout would affect aerial spraying.~~ The Administrative Law Judge finds no insufficient basis for recommending a determination that the site permit be denied because of any regarding impacts the Project will have on aerial spraying and seeding.

452. After being notified of possible additional eagle nests in the area, Freeborn Wind conducted several additional surveys of the area but did not find any omitted eagle nests in or near the Project Area.<sup>691</sup> There is no comment in the record from USFWS regarding the list of eagles, nests, and foraging areas provided by AFCL.



453. If any additional new bald eagle or raptor nests isare identified in the Project Area in the future, Freeborn Wind asserts that it will follow the procedures identified in the Avian and Bat Protection Plan (ABPP) and consult with MDNR, USFWS, and DOC-EERA <sup>692</sup> as necessary.

455. Project operation may result in avian mortality from collision with the Project's turbines or other structures. <sup>697</sup> Post-construction monitoring completed at wind facilities located on agricultural landscapes in southern Minnesota and northern Iowa show avian fatality estimates ranging from 0.27 to 5.59 birds per megawatt produced per year. <sup>698</sup> Given the lack of unique ecological features within the Project Area that would attract birds, estimated avian fatality rates at the Project would be expected to be within this range or lower. <sup>699</sup> There is no statement from USAWS in the record regarding whether USFWS recommends an eagle take permit for this project.

494. Throughout their operational life-cycle, LWECS operations emit the smallest amount of greenhouse gasses compared to other energy generation methods by replacing energy generated by fossil fuels. Freeborn claims wind energy production also eliminates emission of SOx, NOx, PM<sub>10</sub>, and mercury, as well as drastically reduces water consumption. <sup>771</sup>

When asked what emissions would be avoided, to substantiate the claims and provide a direct link, "There are no specific agreements/contracts that can be identified."<sup>11</sup> There is no evidence in the record regarding a comparison of wind energy and solar.

496. Increased deployment of wind and other renewable resources with near-zero life-cycle greenhouse gas (GHG) emissions leads to a direct reduction in the use of fossil fuels like coal and natural gas if fossil fuel generation is not used and is shut down. As described in the comment submitted by Minnesota Center for Environmental Advocacy (MCEA), the Project will aid Minnesota in meeting its statewide GHG emission reduction goals and reducing harmful air pollutants. <sup>773</sup>

However, no direct link was demonstrated in the record.

497. ~~The~~ Any avoided air emissions from the Wind Farm "will benefit all Minnesotans, especially helping children with asthma, seniors with COPD, and others with respiratory conditions."<sup>774</sup> A representative from the American Lung Association in Minnesota attended the public hearing and stated that "projects like this are important for avoiding the use of fossil fuels and helping protect the air quality we all breathe."<sup>775</sup>

499. The Administrative Law Judge finds that the Project, if a Site Permit is issued by the Commission, that although the record does not demonstrate a direct link, it will-may not have a negative impact on water emissionsquality, and will-may have a positive impact on air emissions.

509. Once the Easement terminates, Freeborn Wind is obliged to "remove above-ground and below-ground . . . Windpower Facilities" and to restore the subject property "to a condition reasonably similar to its original condition."<sup>787</sup>

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<sup>11</sup> AFCL-27, Freeborn Wind Response to AFCL IR 26.

512. The Administrative Law Judge finds that the Easement Agreement requires that any future owners of any wind energy facilities built as part of the Freeborn Wind Project will be required to bear the costs of decommissioning, as defined in ~~the~~ any Site Permit the Commission grants to Freeborn Wind, to the same extent as Freeborn Wind is required to bear those costs.

513. AFCL asserts that Freeborn Wind has not complied with Freeborn County's ordinance regarding decommissioning requirements.<sup>790</sup> EERA's Davis testified that he was not aware that Freeborn County has decommissioning requirements in its wind ordinance.<sup>12</sup> ~~While~~ The limited comments Freeborn Wind made in its Site Permit Application regarding decommissioning do not meet Freeborn County's requirements, but, the Ordinance has no timeline attached to it. ~~Thus, Freeborn Wind is not in violation of the Ordinance.~~

514. Freeborn Wind testified, and answered IRs, regarding decommissioning, and stated it "will comply with the terms of the Site Permit as it relates to the preparation, content and distribution of a decommissioning plan."<sup>13</sup> Pursuant to Section 11.1 of the Draft Site Permit, Freeborn Wind will develop a Project decommissioning and restoration plan in accordance with the requirements of Minn. R. 7854.0500, subp. 13, prior to the Project's pre-operation meeting with DOC-EERA.<sup>791</sup> At the end of commercial operation, the Project owners will be responsible for removing wind facilities, and removing the turbine foundations to a depth of four feet below grade.<sup>792</sup>

515. AFCL objects to Freeborn Wind's proposal to develop its decommissioning and restoration plan after the Site Permit is issued. AFCL argues notes that Minn. R. 7854.0500, subp. 13 requires these plans be submitted with the application.<sup>793</sup> AFCL argues the Commission should deny the permit application because Freeborn Wind has not provided these plans.

516. The onus of meeting application requirements is on the applicant, and enforcing compliance rests with EERA and the Commission. Minn. R. 7854.0500 addresses what information must be provided in an application, and subp. 13 regarding decommissioning requires:

The applicant shall include the following information regarding decommissioning of the project and restoring the site:

- A. the anticipated life of the project;
- B. the estimated decommissioning costs in current dollars;
- C. the method and schedule for updating the costs in current dollars;
- D. the method of ensuring that funds will be available for decommissioning and restoration;  
and
- E. the anticipated manner in which the project will be decommissioned and the site restored.

517. The Wind Siting Standards state:

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<sup>12</sup> Davis, Tr. Vol. 2, p. 175, l. 13 – p. 176, l. 2.

<sup>13</sup> AFCL 21, Freeobrn wind Response to AFCL IR16.

**Decommissioning Plan.** As a part of its permit application, the permittee must submit a decommissioning plan describing the manner the permittee plans on meeting the requirements of Minnesota Rule 7836.0500, subpart 13 (now 7854.0500, Subpart 13).<sup>14</sup>

517518. The Decommissioning Plan information included in Freeborn Wind’s Application estimates the service life of Project to be thirty years, and states that “[p]roject decommissioning has not yet been determined.”<sup>794</sup> Freeborn Wind goes on to state that it will create a “thorough decommissioning cost estimate prior to construction begins . . . .”<sup>795</sup> Freeborn Wind’s Litchfield testified regarding cost of decommissioning that “I’ve never looked at actual costs of actual wind decommissioning.”<sup>15</sup> No “estimated decommissioning costs in current dollars” been provided nor has a “method and schedule for updating the costs in current dollars” been provided. No “method of ensuring that funds will be available for decommission and restoration” been provided.<sup>16</sup> The Decommissioning Plan in Regarding “the anticipated manner in which the project will be decommissioned and the site restored” is nominal, the Application includes language stating that Freeborn Wind will remove the improvements from properties, and restore them to their approximate original condition. Specifically, it says that decommissioning “will include the removal of above-ground wind facilities . . . .” In addition, “[f]oundations will be removed to a depth of 48 inches below current grade.” Unless landowners want them to remain, access roads will be removed, and disturbances created from the decommissioning itself will be restored.<sup>796</sup> The record reflects that to Litchfield’s knowledge, Invenergy has not been involved in any decommissioning.<sup>17</sup>

518.519 The Commission issued its Order Finding Application Complete and Varying Time Limits; Notice and Order for Hearing [Order] on August 31, 2017.<sup>797</sup> The Commission’s Summary notes that “In this Order the Commission finds that Freeborn Wind’s application is substantially complete.” Id. In the Commission Action paragraph, the Order stated, “The Commission concurs with the EERA that the application is substantially complete. The Commission will, however, direct Freeborn Wind to respond to all reasonable requests regarding the project and to facilitate in every reasonable way the continued examination of the issues by the EERA and Commission staff.” Id. Further, Order point 1 states, “The Commission hereby accepts Freeborn Wind Farm, LLC’s site permit application as substantially complete.” ~~AFCL did not raise its decommissioning and restoration plan concerns in comments prior to the issuance of the Order. No one requested reconsideration of the Order. Accordingly, the Commission’s Order is final. There were no intervening parties to this proceeding at the time of the Commission’s comment period or the Commission’s order. Id., VII (C).~~

519520. The Commission found the application “substantially complete.” and did not address the requirements of Minn. R. 7854.0500, subp. 13.<sup>798</sup> The Commission’s order was also silent regarding the Wind Siting Standards requirement of a decommissioning plan in the application.<sup>18</sup> The Commission’s order granted variances to the time frames for consideration of application completeness and for issuance of a draft site permit, but did not grant a variance, and none was

<sup>14</sup> AFCL – 8, Order Establishing General Wind Permit Standards, p. 15 of pdf (January 11, 2008, PUC Docket E,G-999/M-07-1102).

<sup>15</sup> Litchfield, Tr. Vol. 1A, p. 46, l. 13-25.

<sup>16</sup> Litchfield, Tr. Vol. 1A, p. 43, l. 8-17.

<sup>17</sup> Litchfield, Tr. Vol. 1A, p. 46, l. 13-25.

<sup>18</sup> AFCL – 8, Wind Siting Standards, p. 15, PUC Docket E,G-999/M-07-1 102, # **4897855**

requested, for the submission of developed decommissioning and restoration plans.<sup>799</sup> Contrary to the rule, ¶the Draft Site Permit contemplates submission and review of decommissioning and restoration plans after construction has been completed but before commencing operations.<sup>800</sup> This is not consistent with Minn. R. 7854.0500, subp. 13.

520521. The Commission referred this matter to the Office of Administrative Hearings because AFCL had “identified contested issues of fact.”<sup>801</sup> The Commission did not specifically identify decommissioning and restoration plans in its referral. However, the Commission further explained: “The ultimate issue in this case is whether Freeborn Wind’s proposed site application meets the criteria set forth in Minn. Stat. § 216F and Minn. R. ch. 7854. This turns on numerous factors that are best developed in formal evidentiary proceedings.”<sup>802</sup> The Administrative Law Judge interprets the Commission’s referral to request findings and recommendations as to whether the requirements of ch. 7854 have been met with regard to permit issuance. The Commission’s declaration that the application was substantially complete, and referral to OAH, does not relieve DOC-EERA or the Commission of its responsibility to assure application requirements are met.

524522. DOC-EERA proposed to add language to the Draft Site Permit Section 11.1 that “requires the Permittee to update the decommission plan every five years, and also to identify all sureties and financial securities that are established to ensure site restoration.”<sup>803</sup> With DOC-EERA’s proposed language included, Section 11.1 reads:

The Permittee shall submit a decommissioning plan to the Commission at least fourteen 14 days prior to the pre-operation meeting, and provide updates to the plan every five years thereafter. The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.

The Permittee shall also submit the decommissioning plan to the local unit of government having direct zoning authority over the area in which the project is located. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.<sup>804</sup>

522523. Deferral of drafting and approval of the decommissioning plan to a time after the permit is granted removes this from the public view, where there is no opportunity to

comment. This shift in timing is contrary to the intent of the Commission's process and commitment to public participation.

524. The Commission's referral of this matter to the Office of Administrative Hearings requests findings and recommendations concerning the Draft Site Permit's compliance with Minnesota Rules chapter 7854. Minnesota Rule 7854.0500, subpart 13 requires decommissioning and restoration plans be submitted with the application. The decommissioning information supplied with the application, and subsequently in the record, is not what is required by the rule and siting standards, and is insufficient to constitute a decommissioning plan. The application is not complete and there is not sufficient decommissioning information in the application or the record to support issuance of a permit.

523-525 Freeborn Wind and DOC-EERA assert that the requirement in section 11.1 of the Draft Site Permit that Freeborn Wind submit a fully-developed plan to comply with subpart 13 at least 14 days prior to commencing operations satisfies subpart 13 sufficiently to allow a permit to issue. This position may be reasonable concerning some details of the decommissioning process that can be more meaningfully developed once construction is completed. It is likely substantially easier to estimate costs of removing structures and restoring the site after construction. Furthermore, as noted above, Freeborn Wind stated in its Application that it would provide a "thorough decommissioning cost estimate prior to construction begins . . . ." <sup>805</sup>  
However, this procedure is not compliant with Minn. R. 7854.0500.

525. Subpart 1 of Minn. R. 7854.0900 (2017) requires public notice of draft site permits. It further requires that an informational public meeting be held and offers the opportunity to request a contested case proceeding. ~~No similar n~~ Notice requirements ~~or and~~ procedural rights are implicated by the pre-operation filings of decommissioning and restoration plans where the public is deprived of the opportunity to review and comment on all aspects of the decommissioning plan in meetings, public hearing, comments, and briefing. <sup>807</sup>

526. Freeborn Wind employee Daniel Litchfield stated that he is a member of a Commission working group on decommissioning. He stated that the Commission is considering whether "they need to change permit conditions on decommissioning" and the working group is considering "establishing some form of financial assurance, independent from just a promise that the project will get removed." <sup>808</sup> Mr. Litchfield's testimony was that he had never looked at costs of decommissioning, and that Invenergy has not been involved in decommissioning of a wind project. <sup>19</sup> This suggests that both regulators and industry participants recognize that financial guarantees should be secured during the permitting process.

527. The Administrative Law Judge concludes that the requirements of chapter 7854 are not met unless Freeborn Wind demonstrates its capacity to guarantee it can fund the decommissioning and restoration of its Project prior to ~~commencing construction~~ issuance of a permit. Furthermore, the Draft Site Permit contains appropriate conditions to ensure proper decommissioning and

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<sup>19</sup> Litchfield, Tr. Vol. 1A, p. 46, l. 13-25.

~~restoration of the Project site, with the exception of demonstrating that it has the resources necessary to carry out decommissioning and restoration.~~<sup>809</sup>

538. The Administrative Law Judge finds that the existing complaint procedures, as set forth at Attachment A to the Commission's Draft Site Permit, are insufficient pursuant to the requirements of Minn. R. 7829.1500, .1600, and .1700 (2017), and the Commission should incorporate revised complaint procedures into this permit, if issued. There is insufficient evidence in the record for the Administrative Law Judge to recommend specific changes in the procedures.

~~539. The Administrative Law Judge recognizes that the Commission may develop new procedures which it believes will be more effective in the future and may choose to substitute those procedures for the procedures proposed in the Draft Site Permit. Should the Commission decide to issue a Site Permit in this proceeding, it would be appropriate for it to use either the Complaint Procedures in as attached to the Draft Site Permit, or to use revised procedures currently being developed.~~

548. In light of the revised total noise predictions, and the lack of evidence that Freeborn Wind took the required 500 additional feet into account in establishing residential setbacks, the Administrative Law Judge recommends that Draft Site Permit Condition 4.2 be amended to require Residential setbacks of 1500 feet for all participating and non-participating landowners.<sup>818</sup>

**BEFORE THE  
MINNESOTA PUBLIC UTILITIES COMMISSION**

**Nancy Lange  
Dan Lipschultz  
Matt Schuerger  
Katie Sieben  
John A. Tuma**

**Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner**

In the Matter of the Application of Freeborn  
Wind Energy, LLC for a Large Wind Energy  
Conversion System Site Permit for the 84  
MW Freeborn Wind Farm in Freeborn County

**PUC Docket No. IP6946/WS-17-410**

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**ASSOCIATION OF FREEBORN COUNTY LANDOWNERS**

**PETITION FOR RECONSIDERATION**

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Association of Freeborn County Landowners (AFCL), intervenor in the above-captioned docket, and participant in the concurrent transmission siting docket (IP6946/TL-17-322), bring this Motion for Reconsideration of the Commission’s decision to grant a site permit to Invenergy’s Freeborn Wind project, deliberated by the Commission on September 20, 2018, and the Order filed on December 19, 2018. Minn. Stat. §216B.27; Minn. R. 7829.3000. This is an issue of first impression, where for the first time, a contested case proceeding had been ordered for a wind project application, where review was under the auspices of the Power Plant Siting Act, and coincidentally, this is the first time that an Administrative Law Judge has recommended the permit be denied. Or not coincidentally... The evidence shows that the project could not

demonstrate it could and would comply with state noise regulation. Because it can't demonstrate it can comply, no permit should be granted. To grant a permit in such a situation without that demonstration, and to push that demonstration to a future "pre-construction meeting" is legal error.

AFCL brings this Petition for Reconsideration and requests the Commission reconsider its decision and amend its Order to adopt the Recommendation of the Administrative Law Judge and deny the permit. In the alternative, AFCL requests that the Commission reconsider its decision and table this docket until the Applicant provides a solid demonstration that it can and will comply with state standards, and that demonstration is filed and receives due process, that it is made public and is subject to iterative Comment and agency review.

Reconsideration is appropriate where there are errors of law, and there are errors of law in this case. The Order granted Freeborn Wind a site permit, but did so without noise modeling that demonstrates that the project will comply with Minnesota's noise standards. The noise modeling provided by the applicants in its application, and the ambient noise monitoring provided after the hearing as requested by the ALJ, was disregarded, and the permit was granted on the basis of modeling to be provided in the future with unknown results. The permit was also granted on a last minute proposed condition filed by the applicants, and based on a handout shown and discussed by the applicant but not visible on the screen, no handouts were provided, it was not filed subsequent to the Commission meeting, and the exhibit had to be requested, at which time it was filed, days later. This "exhibit" is not in the record. The modeling is not in the record, and the Commission's Order is unsupported by the evidence, and in fact, contrary to the evidence.

The ALJ's Recommendation was filed, May 14, 2018, recommending denial of the



permit, or that Freeborn Wind be granted time to submit noise modeling demonstrating it would comply with Minnesota noise standards. During the hearing, the ALJ had requested the applicant comply with Commerce guidance and provide ambient noise modeling, which they did in one week. Here, the Applicants had from May 14, 2018 until the Commission meeting on September 20, 2018, and yet they filed absolutely nothing to provide the Commission with a basis for finding that they would comply with the noise standard. At the last minute, in a full court press with Commerce and the MPCA, Applicant produced a promise and a piece of paper. The Commission's decision is unsupported by substantial evidence in the record, and is far in excess of its authority, pulling a permit out of thin air.

**I. RECONSIDERATION AND STANDARD OF REVIEW**

Reconsideration is appropriate where there are new issues, new and relevant evidence, errors or ambiguities in the prior order, or when the Commission is otherwise persuaded that it should rethink the decisions set forth in its order, which the Commission may take up on its own, or upon a petition setting out specific grounds or errors. Minn. Stat. §216B.27, Subd. 2; Minn. R. 7829.300, Subp. 2.

The appellate court may reverse or remand an agency decision if it is a) in violation of constitutional provisions; b) in excess of the statutory authority or jurisdiction of the agency; c) made upon unlawful procedure; d) affected by other error of law; e) unsupported by substantial evidence in view of the entire record as submitted; or f) arbitrary and capricious. Minn. Stat. §14.69.

An agency's decision will be deemed arbitrary or capricious if "its determination represents its will and not its judgment." *Id.* It will also be deemed arbitrary and capricious if the agency relied on factors which the legislature had not intended it to consider, if it entirely

failed to consider an important aspect of the problem, if it offered an explanation for the decision that runs counter to the evidence, or if the decision is so implausible that it could not be ascribed to a difference in view or the product of agency expertise. *Trout Unlimited, Inc. v. Minn. Dep't of Agric.*, 528 N.W.2d 903, 907 (Minn. App. 1995), *review denied* (Minn. Apr. 27, 1995). In this case, the Commission was intent on granting a permit, contrary to the Recommendation of the Administrative Law Judge, and despite the ALJ's finding that the Applicant had not demonstrated it would comply with noise standards, then granted a permit without any demonstration that the applicant could indeed comply with state noise standards. Further, it granted a permit and allowed for modeling to be provided after the permit was issued, just 14 days prior to a pre-construction meeting, with no opportunity for public review, comment, or cross-examination. This decision is counter to the evidence, and beyond the authority of the Commission. The Order is in excess of the Commission's statutory authority; it is made upon unlawful procedure and legal errors; is unsupported by substantial evidence; and is arbitrary and capricious.

Association of Freeborn County Landowners asks for Reconsideration of the Commission's Order in this matter of first impression, and for modification of the Order in several specific ways to result in an Order supported by the law and facts of this case.

## **II. THE LEGAL STANDARD FOR WIND SITING PERMIT**

The Commission makes an error of law in issuing the Site Permit. In this case of first impression, the Site Permit cites only Minn. Stat. Ch. 216 F and Minn. R. Ch. 7854. There is no mention of the Power Plant Siting Act and the PPSA siting factors. Minn. Stat. §216E.03, Subd. 7. The Draft Site Permit was the same, only citing Minn. Stat. Ch. 216 F and Minn. R. Ch. 7854 despite a specific request/warning during the hearing to include Minn. Stat. §216E.03, Subd. 7.

Davis, Tr. Vol. 2, p. 158-170.

Under Minnesota's Chapter 216F, Wind Energy Conversion Systems, wind projects are granted exemptions from the Power Plant Siting Act, except for several sections which do apply, most notably the siting criteria of the Power Plant Siting Act's (PPSA) Minn. Stat. §216E.03, Subd. 7.

**216F.02 EXEMPTIONS.**

(a) The requirements of chapter 216E do not apply to the siting of LWECS, except for sections 216E.01; **216E.03, subdivision 7**; 216E.08; 216E.11; 216E.12; 216E.14; 216E.15; 216E.17; and 216E.18, subdivision 3, which do apply.

Minn. Stat. §216F.02 (emphasis added).

In addition to being the first wind project sited using a contested case proceeding, the Freeborn Wind Project's application is the first project in Minnesota to be sited under the umbrella of Minn. Stat. §216E.03, Subd. 7 siting criteria. In testimony, the Commerce project manager had no idea what Minn. Stat. 216E.03, Subd. 7 was and why it should be incorporated into the permit. EERA proved unequipped to evaluate the Freeborn Wind proposal because Davis was not familiar with the criteria to review this project and upon which permitting would be based. When asked about adding the statutory criteria to the parts of EERA Comments and Recommendations and the Draft Site Permit addressing authority and citing only Minn. Stat. Ch 216F and Minn. R. 7854, Davis stated that he wasn't clear why a reference to Minn. Stat. §216E.03, Subd. 7 should be added to the Comments and Recommendations and Draft Site Permit. Davis, Tr. Vol. 2, p. 158-170.

I would question whether our permit does not meet that already and our review does not meet that.

Davis, Tr. Vol. 2, p. 169, l. 19-22.

It should be noted that the Commission and Commerce-EERA have been siting wind projects using small wind siting standards, designed for projects under 25 MW and for use by counties if a project is small and locally sited. These “siting standards” are vague and variable, and setbacks for residences are established in the site permit using boilerplate language. Despite Commerce-EERA claims that “[t]he rules to implement the permitting requirements for LWECs are in Minn. Rule 7854,” that is false. There are no statutory siting criteria or rules for siting. See Minn. Stat. Ch. 216F; Minn. R. ch. 7854, cited on the first page of the Freeborn Wind site permit.. There are siting standards which were developed a decade ago for small wind, in a rushed hybrid process that was not a rulemaking. AFCL-8, Wind Siting Standards (Unique ID # [4897855](#)); see PUC Docket No. E,G-999/M-07-1102. Commerce uses a boilerplate site permit, with setbacks set at 1,000 feet. The origin of that distance? From the hearing:

The origin of the commonly used 1,000 foot setback, as found in Section 4.2 of the Freeborn Wind draft Site Permit, is not based in statute, rule, or standards, is arbitrary and is unknown:

Q: ... it lists 1,000 feet as a setback from residences. Where does that number come from? It's for the SDP template. Where do you get that number?

A: For the template or for what we've submitted for the preliminary?

Q: Both, really. But where do you get – where does the thousand foot come from?

A: Thousand foot. I don't know exact – the exact location of where that comes from. But in the most recent site permit applications that have been approved in the most recent site permits that have been issued by the Commission, that has been the standard distance that they've approved, along with the consideration of noise standards being met.

Davis, Vol. 2, p. 171-173; see also EERA-8, DSP, p. 3.

The residential setback for the Freeborn Wind project is 1,000 feet. Permit, §4.2, p. 2.

There is no basis for this number in the record – it is not supported by evidence.

This use of the PPSA siting criteria was raised in the proceeding, it was properly addressed by the Administrative Law Judge, but Commission's Site Permit's silence makes this

error of law.

**II. A PROJECT MUST DEMONSTRATE ABILITY TO COMPLY WITH STATE REGULATIONS**

The Commission's decision, while claiming to adopt the Recommendation of the Administrative Law Judge, turns it full circle by permitting the project with no demonstration of ability to comply until the pre-construction meeting. Order, p. 29. The Commission misstates the MPCA's noise rule, and alters Findings to backwards engineer the desired result, and pulls numbers out of the air – the Order and the amended Findings are arbitrary and capricious.

Throughout the hearing, Invenergy/Freeborn Wind repeated the mantra that their sound studies were conservative, in large part due to the modeling assumption for the ground factor, set at 0.0, and the 3 dBA margin of error. Tr. Vol. 1B at 64-65, 115-116. The ground factor used of 0.0 was frequently raised in filings, written and oral testimony, and in briefs. From Hankard's Pre-Construction Noise Analysis:

A ground factor of **0.0** represents a completely reflective surface such as pavement, which would result in a higher level of sound reaching a receiver. A ground factor of 1.0 represents absorptive ground such as thick grass or fresh snow, resulting in a lower level of sound reaching the receiver. For this Project, a ground factor of 0.0 (completely reflective) was used to be conservative. Actual ground conditions could, at rare times, be 0.0 when the ground is completely frozen and bare, but would generally be closer to 0.5 when the ground is covered with vegetation or is bare and unfrozen.

Ex. A, Application, Appendix B, Pre-Construction Noise Analysis, p. 12; see also FoF 230-231, 234 (& fn. 364), 236-237.

At the last minute, the afternoon before the Commission meeting, the Applicant's proposed a "Special Condition," which presented a changed ground factor, one of 0.5, rather than 0.0, and setting a "turbine-only noise limit at 47 dB(A)." p. 2, September 19, 2018 letter. These two changes are significant. There is nothing in the record regarding the impact of a change from 0.0 to 0.5 as a ground factor.

The state noise standard is set at 50 dB(A) and it includes all noise from any source. Minn. R. 7030.0040. Freeborn claimed that “3 dB(A) is the generally recognized minimum detectable change in environmental noise levels...” and that this change “would result in a non-significant increase in total sound of less than 3 dB(A).” **3 dB(A) is a doubling of sound pressure.** Hankard, Tr. Vol. 1B at 64-65; 113-115. A doubling of sound pressure is significant.

Applicant argued that this change would make for an ‘noise regulation, but in a manner than can actually be measured following the applicable rules and standards.’ p. 2, September 19, 2018 letter. However, the “but” negates what comes before it. The state noise rules have clear measuring protocol, utilized by the Department of Commerce in a wind noise enforcement action. See Minn. R. 7030.0060; see also EERA-9, Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report [20183-140949-02](#); Bent Tree Noise Monitoring and noise Study Phase I – September 29, 2017 [01712-138411-07](#); Ambient sound is incorporated into the noise rule, and separating it out is compliance via sleight of hand. When measuring noise, part of that task is separating out the “rustling leaves or the dawn chorus” and that is what the consultants do. See Schedule E, Hansen Rebuttal Testimony, where the consultant states that he can hear birds chirping and wind blowing, but “he cannot discount the wind facility as being a main contributor.”

At the Commission meeting, Invenergy produced a chart labeled “Special Condition -- Example” but it was not eFiled, there were no copies for parties, and though it was put up on the viewer, it was not centered and was not legible, and the camera was focused on the speakers and not the chart. It was not filed until two weeks after the Commission meeting. Likely, it is not legally in the record. What was said at the meeting made no sense, and the numbers, such as the Turbine Level of 47 dB(A) was a number grabbed out of the air, as was the number 45 dB(A).

As above, the baseline ground factor changed from 0.0 to 0.5, and the mantra of 3 dB(A), a doubling of sound, was repeatedly claimed to be a “non-significant” increase. Letter and Attachment A, Proposed Special Condition Language. The production of modeling to demonstrate compliance was shuttled off until the “pre-construction meeting,” which would occur after granting of a permit, not before to demonstrate compliance. The “pre-construction meeting” is a meeting that occurs behind closed doors, there is no public review, and there is no public comment. Not only was the permit granted, but the work to demonstrate ability to comply with noise standards was not completed before the Commission meeting. There were at least four months in which the Applicants could have produced the modeling, but they did not, and instead, changed the parameters and pushed off their production of modeling into the back room where we have no way of evaluating their work. Given the four months from May to September to perform modeling that could demonstrate compliance, which they did not do, and given the last minute “Proposed Special Condition Language,” the Applicant’s claims that they can comply with Minnesota’s noise rules have little credibility.

The ALJ’s basis for determining that the project would not meet state standards was specific:

241. Table 2 in FR-18 shows that there are many instances where total noise will be quite close to, or exceed, 50 dB(A). There are approximately 254 homes in the Freeborn Wind Project footprint.<sup>373</sup> According to Table 2, any time the ambient noise level is 50 dB(A), added wind turbine noise results in 53 homes experiencing levels of 51 dB(A) and 25 homes at levels of 52 dB(A), for a total of 78 homes experiencing more noise than permitted by Minn. R. 7030.0040.<sup>374</sup> Two of the homes will experience 58 dB(A) if the ambient noise is 57 dB(A).<sup>375</sup> None of these homes was predicted to experience wind turbine noise alone above 48.9 dB(A). Many were predicted to experience wind turbine noise alone in the very low-to-mid 40’s range.<sup>376</sup> Thus, the addition of ambient noise is significant in that it raises the predicted nighttime noise exposure of more than 30 percent of the homes in the footprint of the Project beyond what is allowed in Minn. R. 7030.0040.

FOF 241, Recommendation, p. 48. This is legitimate cause for concern.

After the Commission took two months to revise the Findings to fit its Order, Finding 241 looks like this:

**Finding 241**

Table 2 in FR-18 shows that there are many instances where total noise will be quite close to, or could exceed, 50 dB(A). There are approximately 254 homes in the Freeborn Wind Project footprint.<sup>373</sup> The turbines have yet to be built. However, pre-construction, it is the modeling Freeborn Wind conducted that is relevant for determining whether the Project will comply with the Noise Standards once operational. The record here demonstrates that Freeborn Wind included very conservative assumptions in its modeling and calibrated its modeling with real world data to ensure that modeled estimates are conservatively high.<sup>1</sup> If changes are made to the turbine layout, number of turbines, or turbine type, the Noise Analysis will be updated accordingly. According to Table 2, any time the ambient noise level is 50 dB(A), added wind turbine noise results in 53 homes experiencing levels of 51 dB(A) and 25 homes at levels of 52 dB(A), for a total of 78 homes experiencing more noise than permitted by Minn. R. 7030.0040.<sup>374</sup> Two of the homes will experience 58 dB(A) if the ambient noise is 57 dB(A).<sup>375</sup> None of these homes was predicted to experience wind turbine noise alone above 48.9 dB(A). Many were predicted to experience wind turbine noise alone in the very low-to-mid 40's range.<sup>376</sup> Thus, the addition of ambient noise is significant in that it raises the predicted nighttime noise exposure of more than 30 percent of the homes in the footprint of the Project beyond what is allowed in Minn. R. 7030.0040. Table 2 in Ex. FR-18 shows that when background noise levels are 45 dB(A) or less, total sound levels are 50 dB(A) or less regardless of the turbine-only noise level. When background noise levels are in the 45 to 50 dB(A) range, turbines contribute to the total when turbine-only noise levels are approximately 44 dB(A) or greater.

**Footnote(s)**

1. See evidentiary hearing transcript Volume 1B at 111-112 (February 21, 2018 (Hankard)).

The Commission also exercised its will in gutting one of the ALJ's conclusions regarding noise:

**Finding 301**

The Commission's January 11, 2008 Order Establishing General Wind Permit Standards states that turbines must be setback from homes at least 500 feet and sufficient distance to meet the State noise standard, whichever is greater. While Freeborn Wind's proposed project meets the setback requirements based on Freeborn County's ordinance, it is not clear that it meets the requirements of the Commission's 2008 Order Establishing General Wind Permit Standards.<sup>463</sup> Those standards call for a setback distance of 750-1,500 feet, "depending on turbine model, layout, and specific site conditions."<sup>464</sup> In addition, for homes, the required setback is "at least 500 feet plus the distance required to meet the state noise standard."<sup>465</sup>

**Footnote(s)**

463. Ex. AFCL-8 (Order Establishing General Standards, PUC Docket No. E.G-999/M-07-1102 (Jan.11, 2008));

465. Id. at 8.



The line-by-line changes are an exercise in working the ALJ's Recommendation to the opposite of the ultimate Recommendation, allowing for permitting of the project.

The site permit section on noise does specifically require compliance with MPCA noise standards. See Site Permit, § 4.3. The Commission cannot change the black letter regulation of MPCA's noise standards. Minn. R. 7030.0400.

The Commission handled this meeting flouting their "expertise," but there was no discussion of the impact of changing the ground effect from 0.0 to 0.5, and numbers of 50, 47, and 45 dB(A) were plugged in arbitrarily. The site permit was approved, the findings rewritten, with a result contrary to the admittedly advisory Recommendation of the Administrative Law Judge – that is arbitrary and capricious on its face. The noise standards are a black and white rule with specific, unambiguous definitions, limits and measurement methodology. The Commerce guidance with attached MPCA clarifying comments are equally unambiguous. Applicants argued in briefs that the guidelines are neither law nor rule, and have no weight. Commissioners in deliberation repeated several times, "this is not a rulemaking," and that is correct. It is an act of will on the part of the Commission, a willful desire to permit a project that could not demonstrate compliance, and despite the Commission's "expertise," to permit the project despite the evidence calling the project's compliance into question. The Commission made last minute changes in conditions, allowed Applicants to engineer last minute material changes that claimed compliance through a last minute Applicant filing, facilitated a presentation orchestrated with Commerce and MPCA to the Commission focused on a last minute proposal and a document not available to the public,<sup>1</sup> and acted in a manner to remove the project from public scrutiny and process. This is demonstration of acting against evidence, a decision not

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<sup>1</sup> AFCL was asked in this deliberation flurry whether the proposed change was better than nothing, and of course, the response is "Yes, but..." and a detailed list of issues not addressed and why that was not sufficient is in the meeting transcript.

supported by evidence, and doing so in a way that is contrary to the statutory “broad spectrum citizen participation as a principal of operation.” Minn. Stat. §216E.08. The Commission failed to act responsibly, instead permitting the Freeborn Wind project against evidence and without requiring a demonstration of likely compliance prior to granting the permit.

The Commission should reconsider its modifications of the ALJ’s findings, conclusions, and recommendation in Attachment 1 of the Order. The Order is not supported by the evidence, and is arbitrary and capricious. The Commission should reconsider its Order that Freeborn Wind Energy LLC shall provide an updated pre-construction noise analysis demonstrating that the Project will comply with the noise permit conditions recommended by the Department as modified by the conditions proposed by the Company.

III. **SHADOW FLICKER WAS DEMONSTRATED TO BE SIGNIFICANT ISSUE BUT DISMISSED BY COMMISSION**

Shadow flicker is a common issue and consideration in siting of wind project. The record reflects that shadow flicker occurs when the turbines block the sun and although there is no regulation of shadow flicker in Minnesota, flicker is typically limited for nearby homes to 30 hrs/yr. See Recommendation, p. 49-53, FoF 242-262. Wind developers perform shadow flicker monitoring, but shadow flicker occurs, whether someone is a “receptor” or not. Wind companies propose “mitigation” using blinds and shades, leaving people to sit in the dark in daytime, or as Freeborn’s Litchfield suggested in writing, “go to Florida for the winter.” See Public Comment, Kathy Nelson, 7/3/2017 ([20177-133467-02](#)). Freeborn Wind did “receptor” specific shadow flicker modeling, which revealed potential for beyond 30 hours. Recommendation FoF 256; Litchfield Rebuttal, Ex. RF-11 p. 5. The modeling itself, however, seems to show a much greater number of hours. Litchfield Rebuttal, Ex. RF-11, Flicker modeling results; Nelson 20183-141036-02; Robbins 20183-141040-01; Hansen 2-17010-136232-01; 20183-141225-02.

The Commission's Order understates the shadow flicker impacts, claiming that 2 locations would receive between 27 and 30 hours per year, but that was not the ALJ's Finding. There are at least seven "receptors" over 30 hours, three participating landowners, and four non-participating. FoF 256, Recommendation p. 51; Ex. FR-1, at App. B (Shadow Receptor Coordinates & Realistic Shadow Hours). The ALJ's Finding 261 was gutted, and the level of concern for monitoring was raised from 27 hours to 30. This change is not supported by the evidence, and is another example of the Commission jettisoning its expertise and instead exercising its will. See FoF 260 and 261, Recommendation, p. 52-53.

The Commission should reconsider its modifications of the ALJ's findings, conclusions, and recommendation in its Order. The Order is not supported by the evidence, and is arbitrary and capricious. The Commission should reconsider its Order that monitoring only be required at those locations where 30 hours or more of shadow flicker are predicted.

**IV. DECOMMISSIONING RULES REQUIRING INFORMATION TO BE INCLUDED IN THE APPLICATION WERE CIRCUMVENTED.**

The Commission has expertise in decommissioning, from decommissioning plans to the actual decommissioning of turbines, which is occurring now in southwest Minnesota. In this case, the Commission has disregarded its expertise and acted against interest in permitting a project that has not provided information on decommissioning, and by pushing off decommissioning planning to a post-hearing private process between the Applicants and Commerce. What lessons learned from the ongoing decommissioning of turbines were brought to this project?

The required decommissioning information was not included in the application. The Commission let that omission through, declaring the Application "substantially complete." Minnesota Rules require a minimum of decommissioning information:

**Subp. 13. Decommissioning and restoration.**

The applicant shall include the following information regarding decommissioning of the project and restoring the site:

- A. the anticipated life of the project;
- B. the estimated decommissioning costs in current dollars;
- C. the method and schedule for updating the costs of decommissioning and restoration;
- D. the method of ensuring that funds will be available for decommissioning and restoration; and
- E. the anticipated manner in which the project will be decommissioned and the site restored.

Minn. R. 7854.0500, Subp. 13.

Despite this requirement, and both the Commission's and Commerce's responsibility to assure an application is complete, EERA did not raise this omission to the Commission, and the Commission blithely declared the Application complete without any acknowledgement of the omission of decommissioning information. This abdication and postponement of decommissioning planning is a systemic problem, but in this case, a specific problem for this project. In practice, Commerce has not been addressing decommissioning until the "Pre-construction meeting," where there is no public scrutiny or review, no opportunity for comment.

When questioned about decommissioning, Invenergy's Litchfield was not able to provide any information, either in Data Requests or testimony. There is virtually no information from Applicants on decommissioning in the record.

Despite the Commission's and Commerce's disregard for the rule, and despite failure of the Applicants to provide the required information in the course of the proceeding, the Commission granted the permit with language amendment in the permit regarding decommissioning. Permit, p. 23-24. The language acknowledges Minn. R. 7854.0500, Subp.

13. The Commission did not establish a requirement that the information and decommissioning plan be provided to parties or the public, there is no process for review for adequacy, and no specifics on requirements for financial assurance. There is a section on Abandoned Turbines, but evidence in the record reveals lease provisions specifying that if turbines are not decommissioned, the landowner may decommission and turn to Freeborn Wind for collection:

If Grantee fails to remove such Windpower Facilities within twelve (12) months of termination of the Easement, or such longer period as Owner may provide by extension, Owner may do so, in which case grantee shall reimburse Owner for reasonable and documented costs of removal and restoration incurred by Owner.

AFCL-35, Wayne Brandt Public Comment from Public Hearing, p. “15;” see also Brandt, Public Hearing, p. 133-139.

No permit should be granted until a thorough decommission plan has been vetted and financial assurance has been provided, opened for comment, and reviewed by Commerce, the public, and the Commission, as contemplated by the requirement that decommissioning information be in the application. The Commission’s Order is not supported by evidence.

V. **FREEBORN WIND IS ALREADY NOT COMPLYING WITH PERMIT**

The site permit requires that Invenergy/Freeborn Wind maintain current contact information for Complaints and Complaint Reporting. Freeborn gives the address of 120 East Main St., Glennville, but that office is empty, walk unshoveled, numbers taken off the mailbox.



Freeborn Wind must provide a legitimate address for the permit. Also, a Post Office Box is not an office.

**VI. NEW INFORMATION HAS SURFACED THAT HAS AN IMPACT ON PROJECT PERMITTABILITY.**

New information has become available that the Commission should consider.

**A. Data Practices Act Requests show confusion and Freeborn Wind efforts to gain access to county easements for transmission – an admission that it does not have sufficient land rights for the project – and Freeborn County seeks guidance on its legal issue from Commerce staff.**


As in the transmission docket, there is new information from Data Practices Act Requests, the responses from Freeborn County and the Dept. of Commerce. The documents produced by both the County and Commerce show acknowledgement of easement and land acquisition problems through the stated questions and concerns of Freeborn Wind regarding use of the County's road easements for transmission, and concern about utility status and eminent domain, not available to a non-utility, trying to find a way to get the transmission line across 803th Avenue. There is also an issue in the siting docket of whether there is sufficient land to build the project. We have been told numerous times that there is no room to move any turbines. Litchfield, Tr. Vol. 1A, p. 81; 83. If they do not have land rights, they cannot build the project as planned.

The Freeborn County responses show that the County was seeking and receiving advice from Commerce's Larry Hartman regarding use of county road easements for transmission and Freeborn's utility status.

**B. World Health Organization addresses Wind Turbine Noise.**

For the first time, the World Health Organization has addressed the issue of wind turbine noise and offered precautionary noise guidelines. Exhibit G (selected). This is a conditional

strength guideline, with sufficient support from the WHO scientists to be included in this year’s Environmental Noise Guideline. The 45 dB noise limit is in line with that found in Wisconsin for wind turbines, and is lower than that of Minnesota. Wis. PSC Code Ch. 128; Minn. R. Ch. 7030.

 Wind turbine noise	Strength
<p><b>Recommendation</b></p> <p>For average noise exposure, the GDG conditionally recommends reducing noise levels produced by wind turbines below <b>45 dB <math>L_{\text{den}}</math></b>, as wind turbine noise above this level is associated with adverse health effects.</p> <p>No recommendation is made for average night noise exposure <math>L_{\text{night}}</math> of wind turbines. The quality of evidence of night-time exposure to wind turbine noise is too low to allow a recommendation.</p>	Conditional
<p>To reduce health effects, the GDG conditionally recommends that policy-makers implement suitable measures to reduce noise exposure from wind turbines in the population exposed to levels above the guideline values for average noise exposure. No evidence is available, however, to facilitate the recommendation of one particular type of intervention over another.</p>	Conditional

AFCL asks that the Commission reconsider its Order, and to review the WHO Environmental Noise Guidelines and consider these voluntary limitations on noise for the Freeborn Wind project. Each part of the WHO Environmental Guidelines regarding wind should be given serious consideration and incorporated into the Order and Site Permit.

**VII. THE COMMISSION SHOULD RECONSIDER ITS ORDER AND DENY THE PERMIT, OR TABLE THE MATTER AND REQUIRE FREEBORN WIND DEMONSTRATE COMPLIANCE PRIOR TO ISSUANCE OF A PERMIT.**

AFCL asks that the Commission reconsider its Order, and that the permit be denied. In the alternative, AFLC requests that it be remanded to the Administrative Law Judge for Findings

and a Recommendation consistent with the evidence regarding Freeborn Wind's lack of land rights to build this project, and a recommendation that the permit be denied for lack of land rights, or held in abeyance until such land rights are acquired. The Applicant must demonstrate that it has land rights for the entire project and not encroach on non-participants' land. Beyond that, in respect for affected landowners, Association of Freeborn County Landowners takes no position as to the route of the project. Overall, AFCL's position is clear: The community does not consent to this project.

Respectfully submitted,

January 8, 2019



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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matthew Schuerger	Commissioner
Katie J. Sieben	Commissioner
John A. Tuma	Commissioner

In the Matter of the Application of Freeborn  
Wind Energy LLC for a Route Permit for the  
Freeborn Wind Transmission Line in  
Freeborn County

ISSUE DATE: December 19, 2018

DOCKET NO. IP-6946/TL-17-322

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**ASSOCIATION OF FREEBORN COUNTY LANDOWNERS**  
**PETITION FOR RECONSIDERATION**

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Association of Freeborn County Landowners (AFCL), participant in the above-captioned docket and intervenor in the related and concurrent wind siting docket (IP6946/WS-17-410), bring this Motion for Reconsideration of the Commission's decision to grant a route permit to Invenergy's Freeborn Wind transmission project, deliberated September 20, 2018, and the Order filed on December 19, 2018. Minn. Stat. §216B.27; Minn. R. 7829.3000. AFCL requests the Commission reconsider its decision and amend its Order to deny the permit and to reflect that Invenergy/Freeborn Wind is not a public service corporation, does not have sufficient land rights to build the project, and because it is not a utility, does not have the power of eminent domain.

The Administrative Law Judge and the Commission are to address the factors set forth in the Power Plant Siting Act:

- A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
- B. effects on public health and safety;

- C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
- D. effects on archaeological and historic resources;
- E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
- F. effects on rare and unique natural resources;
- G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
- H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
- I. use of existing large electric power generating plant sites;
- J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
- K. electrical system reliability;
- L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
- M. adverse human and natural environmental effects which cannot be avoided; and
- N. irreversible and irretrievable commitments of resources.

Minn. Stat. §216E.03, Subd. 7; Minn. R. 7850.4100.

The Commission's decision is an error of law because the Commission ignored or dismissed crucial information regarding Applicant's lack of land rights, fraudulent actions on the part of Applicant's employees. The Order and process was flawed because AFCL exceptions were not included with or addressed in the Staff Briefing Papers, and there was no opportunity for the Commission to consider the specifics of the AFCL exceptions; in error because it grossly misstates Robert B. Knutson's comments and documentation and did not take into account the Dept. of Commerce enforcement action of revocation of notary commission and fine of Thomas Spitzer,

documentation of which was provided by Robert Knutson and filed August 10, 2018,<sup>1</sup> and by AFCL on July 24, 2018.<sup>2</sup> There is new information that should be considered by the Commission, including responses to AFCL’s Data Requests of Freeborn County in late November, and Commerce’s responses in January 2019, that acknowledge failure of Freeborn to secure all necessary land rights and efforts to use county right-of-way, and evidence of discussions between the County and Commerce staff not assigned to the project seeking advice on use of county right of way. The other important piece of new information is the World Health Organization’s Environmental Noise Guidelines, released October 10, 2018. The Commission’s decision is also flawed due to procedural errors and the exceptional disregard of the Administrative Law Judge for Commission process, statutory requirements of notice of Prehearing Conference, the public, and specifically, for Association of Freeborn County Landowners. The Recommendation in this case reads as if we were not there.

Public participation is to be the Commission’s principle of operation:

**Subd. 2. Other public participation.**

The commission shall adopt broad spectrum citizen participation as a principal of operation. The form of public participation shall not be limited to public hearings and advisory task forces and shall be consistent with the commission's rules and guidelines as provided for in section [216E.16](#).

There was no “broad spectrum citizen participation” allowed in this docket.

**I. ADMINISTRATIVE LAW JUDGE SYSTEMATICALLY AND REPEATEDLY DISREGARDED AND DISMISSED COMMENTS OF ASSOCIATION OF FREEBORN COUNTY LANDOWNERS.**

1

<a href="#">20188-145696-01</a>	PUBLIC	17-322	ROBERT B KNUTSON	OTHER--REQUEST TO DENY PERMIT DUE TO FRAUDULENT NOTARIZING OF LEASE AND REQUIRE RENEWAL OF ALL LEASES BY REMOVED NOTARY	08/10/2018
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<a href="#">20187-145162-02</a>	PUBLIC	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	LETTER--TO PUC RE COMMERCE ORDER REVOKING NOTARY COMMISSION OF THOMAS SPITZER INVENERGY	07/24/2018
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In this transmission docket, the Administrative Law Judge systematically and repeatedly disregarded and dismissed comments of Association of Freeborn County Landowners, whether oral testimony or written comments.<sup>3</sup> AFCL raised these issues in Exceptions, but the Commission failed to consider these fundamental problems. For this reason, AFCL is including our line-by-line exceptions within in this Petition for Reconsideration.

From the beginning, in Comments to the Commission, and following in Comments to the ALJ, AFCL has raised the issues of fraudulent notarization; inability of the project to be constructed only on participant land; misguided claims of availability of the power of eminent domain to Freeborn Wind, LLC; missing locations of eagle nests; impact of the project on Shell Rock Water Trail; lack of inclusion of county and township zoning ordinances for consideration of

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<a href="#">20187-145162-02</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	LETTER--TO PUC RE COMMERCE ORDER REVOKING NOTARY COMMISSION OF THOMAS SPITZER INVENERGY	07/24/2018
<a href="#">20187-144869-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--AFCL-MOTION TO SUSPEND TRANSMISSION PROCEEDING,PENDING COMMISSION ACTION ON SITING PERMIT.	07/13/2018
<a href="#">20187-144769-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	LETTER--NOTICE OF DATA PRACTICES ACT REQUEST TO COMMERCE INVESTIGATIONS	07/12/2018
<a href="#">20186-144263-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--MOTION TO SUSPEND PROCEEDING OR DENY WITHOUT PREJUDICE OR CERTIFY TO COMMISSION	06/27/2018
<a href="#">20186-143993-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--MOTION TO STRIKE FREEBORN FILINGS AS UNTIMELY	06/19/2018
<a href="#">20186-144003-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--TO STRIKE OR IN THE ALTERNATIVE REOPEN	06/19/2018
<a href="#">20186-144006-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	MOTION--AMENDED MOTION TO STRIKE OR IN THE ALTERNATIVE REOPEN	06/19/2018
<a href="#">20186-143735-01</a>	17-322	DORENNE HANSEN, FOR ASSOCIATION OF FREEBORN COUNTY LANDOWNERS (AFCL)	COMMENTS--RE: TRANSMISSION LINE ROUTE AND POTENTIAL ISSUES.	06/12/2018
<a href="#">20186-143738-01</a>	17-322	DORENNE HANSEN, FOR ASSOCIATION OF FREEBORN COUNTY LANDOWNERS (AFCL)	COMMENTS--RE: OMISSIONS AND ISSUES WITH THE TRANSMISSION LINE APPLICATION.	06/12/2018
<a href="#">20186-143756-01</a>	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	COMMENTS	06/12/2018

community concerns and impacts; the 22 foot diagonal crossing of 830<sup>th</sup> Avenue over non-participants land; the misleading minimization of magnetic field potential; conflating magnetic fields with electric fields for interference with pacemakers, etc; gathering of Iowa generated electricity into this project substation; minimal cost analysis and no identification or attribution of MISO system upgrade costs; impact on property values and marketability, and many factual and legal errors and omissions in the application, record, and the ALJ's Recommendation and adoption by the Commission. At the public hearing, AFCL requested its members and the public be provided the opportunity to testify under oath or affirmation, and encountered resistance from the Administrative Law Judge, but each of those testifying in support of AFCL was ultimately sworn on oath.

In this docket, there is no indication that the community has been heard. The community does not consent to this project.

In addition to these issues documented in the record, there is also new information. AFCL filed Data Practices Act Requests with Freeborn County regarding the land to which Applicants do not have land-rights to build its transmission line. Freeborn County delayed considerably, and then produced the documents at an outrageous price. From these documents, it was apparent that the Dept. of Commerce had a role, and a subsequent Data Practices Act request was filed with Commerce. The results of those Data Practices Act requests are attached as Exhibit E and F.

## **II. THE PROCESS WAS FRAUGHT WITH PROCEDURAL IRREGULARITIES.**

There were significant procedural irregularities and errors as this docket proceeded forward. The Association of Freeborn County Landowners raised these issues as they occurred and/or before the Commission, and the Commission failed to take these errors into account.

AFCL chose to participate in this transmission docket as participants, not intervenors, as provided by Minn. Stat. §216E.08 and Minn. R. 1405.1800. The First Prehearing Order for this transmission case was issued after the Prehearing Conference on April 2, 2018. However, there

was no notice provided of this Prehearing Conference by either the PUC or OAH.<sup>4</sup> Without notice, how does one participate?

The first and only Prehearing Order did not include the standard boilerplate language regarding participation versus intervention that is included in other Prehearing Orders:

5. It is not necessary to be an intervenor or party to participate in these proceedings. Members of the public may submit written comments during the comment periods, appear at all hearings and forums, and participate in the public hearing. The public hearing will provide an opportunity for individuals and groups to present evidence and argument on the issues in this case, and to question all persons testifying. Members of the public:

- (1) may offer testimony without or without the benefit of oath or affirmation;
- (2) are not required to pre-file their testimony;
- (3) may offer testimony or other material in written form, at or following the hearing;
- (4) may question any person testifying or who has offered pre-filed testimony, either directly or by submitting questions to the Administrative Law Judge, who will then ask the questions of the witness.

Prehearing Order, Freeborn Wind Site Permit Docket, p.2 (IP6946/TL-17-410).<sup>5</sup>

The First Prehearing Order in this Freeborn transmission docket also did not provide the standard language regarding providing testimony in a hearing “without benefit of oath or affirmation” and its weight given:

6. Oral testimony or written testimony provided without benefit of oath or affirmation, and which is not subject to cross-examination, shall be given such weight as the Administrative Law Judge deems appropriate [citing Minn. R. 1405.0800].

Id.<sup>6</sup> This language should always be included in Prehearing Orders because the ALJ and

<sup>4</sup> Take a look, find it – good luck with that!

<sup>5</sup>

<a href="#">20179-135814-01</a>	PUBLIC	17-410	<input type="checkbox"/>	WS	OAH	ORDER--RE-SERVE FIRST PREHEARING ORDER	09/26/2017
<a href="#">20179-135781-01</a>	PUBLIC	17-410	<input type="checkbox"/>	WS	OAH	ORDER--FIRST PREHEARING ORDER	09/25/2017

Commission assign weight to testimony, and the public would have no way of knowing or understanding the importance of testifying under oath. Why is this important? The Commission has previously questioned whether public testimony was given under oath or not, while deliberating. Offering testimony under oath is important for full inclusion and consideration – the matter of testifying under oath was raised before this public hearing began, and the ALJ did not want to offer the public the option of affirmation or swearing under oath. Despite this, during the public hearing, AFCL members and other public testifiers requested to be sworn in, and were sworn. This is not noted in the Recommendation. Swearing in of witnesses should not be an issue at public hearings, and a testifier’s request to be sworn should not be challenged.

There were additional problems. **NONE** of the typical OAH language regarding options and methods of participation appear in the transmission docket Orders, either the First Prehearing Order or the following First Prehearing Order with amended filing dates, the only Prehearing Orders filed.<sup>7</sup> The “Prehearing Order” in this docket contains only nominal scheduling information, and the barest of information regarding Notice and the public hearing. There was only the “First Prehearing Order” in its two versions, and no other orders.

The connected nature of the wind project site permit and this dependent transmission project route permit were brought to the forefront in Completeness comments and again by AFCL after the Recommendation regarding the wind site permit was issued. Freeborn Wind is waffling on this dependence and linkage between the projects:

Condition 16: Any permit issued should have a “Special Condition” that “the

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<sup>6</sup> . Prior to the beginning of the hearing, the judge was requested to offer oath and affirmation, and he was reluctant. Each AFCL member, testifying as an individual, requested to be placed under oath, and did testify under oath, as did the undersigned (which was objected to by Freeborn’s attorney!). Swearing in was also an issue at a previous hearing in another docket, indication of a systemic problem.

<sup>7</sup>

<a href="#"><u>20185-143153-01</u></a>	PUBLIC	17-322	OAH	ORDER--AMENDED FIRST PREHEARING	05/17/2018
<a href="#"><u>20184-141685-01</u></a>	PUBLIC	17-322	OAH	ORDER--FIRST PREHEARING	04/04/2018

Project will not be constructed unless the Commission issues a Site Permit for the Freeborn Wind Farm,” and that if permitted, it may be transferred to, owned and built only by a public service corporation.

“Freeborn Wind indicates it will only construct the project if the wind farm is permitted.” (EA, at page i.) In its reply comments Freeborn Wind indicates that it “finds it necessary to clarify that it would intend to proceed with construction of the Project to support the Worth County wind turbines. Accordingly, Freeborn Wind requests that a Route Permit be granted to allow construction of the Transmission Line irrespective of the Commission’s decision in the Site Permit docket.” (Reply Comments, at page 6) Staff believes this condition is unwarranted.

Commerce-EERA Comments, 6/28/2018. Freeborn Wind has not amended its application.

On May 14, 2018, the Administrative Law Judge assigned the Freeborn Wind Project site permit (IP6946/WS-17-410) filed her Recommendation:

The Administrative Law Judge concludes that Freeborn Wind has failed to demonstrate that the proposed Project will meet the requirements of Minn. R. 7030.0040, the applicable Minnesota Noise Standards. Therefore, the Administrative Law Judge respectfully recommends that the Commission either deny Freeborn Wind’s Application for a Site Permit, or in the alternative, provide Freeborn Wind with a period of time to submit a plan demonstrating how it will comply with Minnesota’s Noise Standards at all times throughout the footprint of the Freeborn Wind Project.

Summary of Recommendations, p. 2. On May 27, 2018, following the filing of the site permit Recommendation of denial, AFCL filed a Motion to Suspend the transmission proceeding because the underlying Freeborn Wind project site permit is in limbo. In the alternative, this application should be denied without prejudice, or be Certified to the Commission for consideration. This Motion was ignored, neither granted nor denied, nor listed in the “Procedural History.” There is no mention of the ALJ’s transmission Recommendation of the transmission line’s dependence on the wind project and its site permit and the impact of the ALJ’s wind site permit recommendation on need or timing of transmission for Freeborn Wind.

Consideration of timing in this transmission route proceeding is not prohibited by either rule or statute. Minn. Stat. §216E.02, Subd. 2; Minn. R. 7850.4200. Because of the significance of a recommendation of permit denial or opportunity for a demonstration of compliance, the timing of



this transmission project and proceeding is a material issue – the wind project and this connected transmission project should be delayed. The Commission’s order, however, was to the contrary.

Disregard, discounting, and dismissal of the public and issues raised by the public is disappointing, but it is not surprising, given the minimalist Prehearing Order. Intervention is not necessary under the rules, participation is encouraged, participants have rights. To issue a Recommendation “based on the Applicant’s preference” goes beyond, and is not acceptable. For decades it has been law:

The commission shall adopt broad spectrum citizen participation as a principal of operation.

Minn. Stat. §216E.08. It’s a great theory, but in practice, it isn’t working. In the line by line Exceptions, AFCL noted some of the specific facts and issues not incorporated, but they were not regarded as “relevant documents” by Commission staff. The Commission never had a chance to review and consider filings not deemed “relevant” by staff.

### **III. . “THE APPLICANT’S PREFERENCE” IS NOT A VALID ROUTING CRITERIA!**

The ALJ’s Recommendation in this this transmission docket is an error of law. Instead of adhering to the applicable statutory factors of the Power Plant Siting Act, in this transmission docket it is the “applicant’s preference”<sup>8</sup> that rules, and the Recommendation of the ALJ was based on the “applicant’s preference.” In three instances, the Applicants was a deciding factor.

- **Given the Applicant’s preference** for the Purple Parallel Route, the Commission should **GRANT** the Route Permit for the Purple Parallel Route...<sup>9</sup> (emphasis added).
- 262. As set forth above, because the Teal, Orange, and Purple Parallel routes make use of existing ROW and generally compare favorably in terms of cost to the route alternatives, the record demonstrates that the Teal, Orange, and Purple Parallel routes best meet Minnesota’s route selection criteria. **Based on** consideration of all routing factors **and the Applicant’s preference**, the Orange Route combined with the Purple Parallel Route is the best route for the Project (emphasis added).<sup>10</sup>

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<sup>88</sup> See ALJ Recommendation, p. 2; FOF 262 p. 51; p. 53.

<sup>9</sup> See ALJ Recommendation, p. 2.

<sup>10</sup> FOF 262 p. 51.

Twice in the two paragraph “Recommendations” – once in each paragraph/sentence, the Applicant’s preference is the focus:

## **RECOMMENDATIONS**

The Commission should **GRANT** a Route Permit with the general and special route permit conditions for a 161 kV HVTL along the Purple Parallel Route **based on Applicant’s preference** and with Applicant’s proposed modification to narrow the route by 130th Street to match the Orange Route in this area.

In the alternative, the Commission should grant a Route Permit for the Orange Route with the general and special route permit conditions **based on the Applicant’s preference**.

Recommendation, p. 53. The ultimate Recommendation is in large part “based on Applicant’s preference.” The Commission adopted the ALJ’s Recommendation including the “based on the Applicant’s preference” statements. This is an error of law – the Applicant’s preference is not a criteria for routing a transmission line.

### **IV. APPLICANT DOES NOT HAVE LAND RIGHTS TO BUILD THIS PROJECT AND IS ATTEMPTING TO CIRCUMVENT NON-PARTICIPANTS’ FEE INTEREST.**

The ALJ’s Recommendation, adopted by the Commission is dependent on Applicant’s ability “to maintain the entire route on participating landowners’ property.”<sup>11</sup> The Commission’s order ignores determinative facts in the record. The Commission’s narrative stated that:

AFCL questioned whether Freeborn Wind has, or will obtain, the necessary property rights to build its project. It argued that the Company’s land agents acted inappropriately in securing and documenting easements, that the county lacks authority to use road easements for transmission lines, and that the law does not grant Freeborn Wind eminent domain powers to acquire easements without a landowner’s consent.

Order, p. 9. However, AFCL demonstrated that Freeborn Wind does not have all the necessary property rights, and both Freeborn Wind and AFCL entered evidence that the Company’s land agents acted inappropriately.”

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<sup>11</sup> Recommendation, p. 2.

Freeborn Wind repeatedly states that it has land rights sufficient to build this project, but admittedly does not have all land rights. Freeborn Wind was concerned about both its non-utility status and using the county's road easements to build over the non-participating landowners. Newly discovered evidence, from Data Practices Act requests to Freeborn County and the Dept. of Commerce show multiple discussions and references to discussions of these topics. See attached Exhibits E and F.

The repeated statements that Freeborn has all land rights to build this project is a false statement, and the project should not go forward. Minn. Stat. §216E.14(1).

**A. Freeborn Wind employees and contractors have not acted in good faith in securing land rights.**

In its application, Appendix A, Freeborn Wind admits an employee was fired for lying. Notice of this land agent's firing was sent in a letter of many subjects, and copies were included in the Application, Appendix A:

9. We hire experienced and trustworthy professionals to spend the time at kitchen tables and in the field negotiating our land agreements. Unfortunately, a land agent working on our project in 2015 did not live up to this standard and was exposed to be blatantly lying to some landowners. He was fired as soon as we found out, as we deem this behavior completely unacceptable. I don't know what else to say about this – I'm sorry for those who were lied to. It is not ok. We are doing the best we can do rebuild trust.

See e.g., Application, Appendix A, p. 58 of 78.

Another employee fraudulently notarized a lease, notarizing a signature purporting to be that of Robert B. Knutson when he did not sign the document and was not present when it was notarized. Knutson's comments and documentation regarding this were disregarded by the ALJ and the Commission, which grossly misrepresented the situation. From the Commission's

Order:

**D. Robert B. Knutson**

Robert B. Knutson, who is a notary, alleged irregularities on the part of a person who notarized some of the leases related to the Project.

Order, p. 9.

Where did the Commission come up with this statement? Not from the record! Robert B. Knutson is not a notary – he is the landowner who filed a Complaint with the Department of Commerce, which revoked the Commission of said Notary, Thomas Spitzer, and fined him \$500. On August 10, 2018, Mr. Knutson filed a notarized statement that he was the one who made the Complaint and requested that his lease be terminated.<sup>12</sup> Exhibit A. At no time did he represent himself as a notary, and he did notify the Commission of this impropriety that affects land rights. AFCL filed the Dept. of Commerce Enforcement Department’s Order on July 24.<sup>13</sup> Exhibit B.

It has recently come to AFCL’s attention that there are irregularities in Invenergy/Freeborn Wind’s leases from its contractor William Gillen. Mr. Gillen signed his easements as “a single person” on September 10, 2015; July 24, 2017; and April 10, 2018. However, his marriage license is dated 9/21/2013 and filed September 21, 2013. Mr. Gillen can easily correct this error, but given his position with Invenergy/Freeborn Wind, the fired employee early in the process, the revocation of Spitzer’s notary commission -- how many other such errors are there? The Commission should verify all claims of land rights for this project.

These questions of land rights play into the projects lack of land where the transmission route would cross a county road. The fact of non-participants’ land in Freeborn’s proposed corridor on the recommended Purple route along 830<sup>th</sup> Avenue is repeated in the Recommendation:

<sup>12</sup>

<a href="#">20188-145696-01</a>	PUBLIC	17-322	ROBERT B KNOTSON	OTHER--REQUEST TO DENY PERMIT DUE TO FRAUDULENT NOTARIZING OF LEASE AND REQUIRE RENEWAL OF ALL LEASES BY REMOVED NOTARY	08/10/2018
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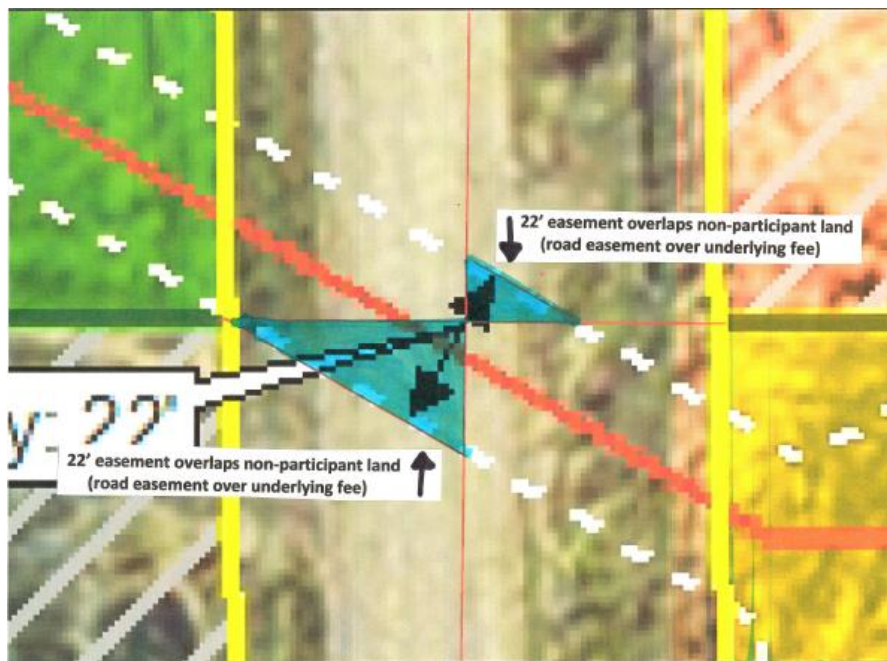
<a href="#">20187-145162-02</a>	PUBLIC	17-322	ASSOCIATION OF FREEBORN COUNTY LANDOWNERS	LETTER--TO PUC RE COMMERCE ORDER REVOKING NOTARY COMMISSION OF THOMAS SPITZER INVENERGY	07/24/2018
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This is the proposed alignment from the Application:

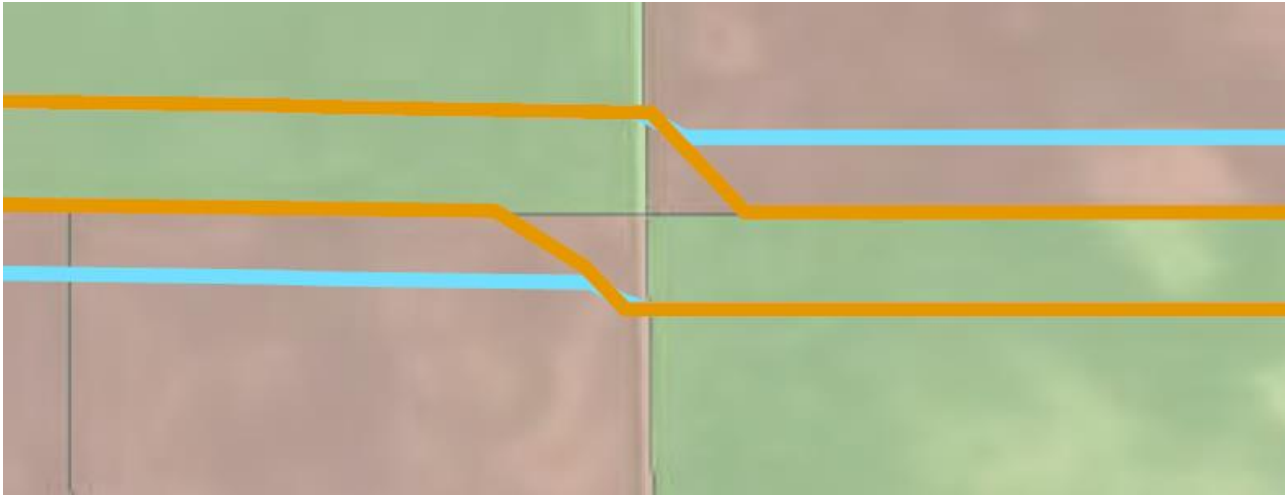


Freeborn Transmission Application, p. 18.

There is no information in the record specifically regarding the fee interests underlying the County road, and there should be, although non-participating landowners are admittedly at that intersection. The underlying fee interests of these non-participants looks like this blue shaded area:



AFCL Route Comments to ALJ, June 12, 2018. This non-participating landowner interest is also shown in the Environmental Assessment map:



Environmental Assessment, Map 6 Participating and Non-Participating Landowners, Landowner Participation, crop of Map 3 of 3.

This issue of the interests of the fee landowners was raised in the public comments, orally, and in writing, and is included in the Environmental Assessment, in narrative and noted visually in maps, as well as the June 28, 2018 comments of Commerce.

The underlying fee interest of non-participant landowners should have been prominent in the Recommendation, because at least one landowner specifically brought this to the attention of the Administrative Law Judge. The fact of non-participants' land in the proposed corridor is also found repeatedly in the Application, as is the Applicant's attempt to skirt non-participants' land through use of improperly narrow 22 foot easement over the road. This 22 foot "easement" proposal, through making the easement as narrow as possible, runs right over the non-participants' fee interest in the property over which the county has its road easement. The Recommendation's Findings of Fact state:

53. The Purple Route Segment was proposed during scoping and follows an existing transmission line corridor. The EA studied two possibilities for this route segment: running the proposed HVTL parallel to the existing ITC Line (paralleling) (Purple Parallel) or overbuilding the proposed HVTL above the ITC Line on new structures within the existing ITC ROW (overbuilding) (Purple Overbuild). The Purple Route Segment includes a small area of the route width of this route segment, located to the east of 810th Avenue crossing 130th Street, **with two non-participating landowners**, but the Purple Parallel routing option could be constructed entirely on participants' land (emphasis added).

54. Traveling south to north, the Purple Route Segment breaks from the Teal/Orange route in the NE 1/4 of S28, T101, R20W where it continues west approximately 1,000 feet along field lines to the existing ITC Line. The route segment turns north and travels along the ITC Line for approximately one and one-quarter miles until it reaches 130th Street, where it rejoins the Teal and Orange routes. Route widths vary from 250, 400, and 600 feet. Constructing the Purple Overbuild Route south of 120th Street would cause some of the ROW to be on a nonparticipant's land. Overbuilding for the first half mile north of 120th could be done all on participating land. The remaining half mile towards 130th Street would require **two new transmission easements**. (emphasis added)

61. For certain segments, Freeborn Wind proposes to use a vertical configuration, with all conductors located on one side of the pole. **This design is needed to create the correct approach angle for the segment of turn 2 to turn 3 that uses the 22-foot wide ROW across County Road 108/830th Avenue.** For the single-circuit 161 kV vertical-designed poles, a braced post structure TSP-161 structure type will be used (emphasis added).

67. Route widths vary from 250, 400, and 600 feet for the Purple Route. The Purple Route includes a small area with **two non-participating landowners**, but the Purple Parallel routing option could be constructed entirely on participants' land (emphasis added).

73. In one location, at the crossing of County Road 108/830th Avenue at one quarter mile south of 120th Street, **a narrowed ROW is proposed to maintain the ROW for the Project within land owned by participating landowners and within public road ROW where Freeborn Wind is seeking a utility permit from Freeborn County.** A vertical design with a **22-foot ROW** will be used on this single, short span. Freeborn Wind engineers developed a design in this limited area that can be operated in a **22-foot ROW**, which is within the 66-foot wide County Road 108 ROW. To ensure adequate clearances, Freeborn Wind proposes a special design using two dead-end structures. The two poles will be located feet apart and the **22-foot ROW** would apply only to the area between the two poles. The area needed for construction will be contained on the participating landowners' parcels. The existing distribution line will be buried in this location. **Freeborn Wind continues to talk with adjacent landowners and Freeborn County and may propose to change the design and alignment if a voluntary easement is obtained or to meet Freeborn County requirements.** When the proposed line is parallel to a roadway, Freeborn Wind does not intend to locate structures within road ROW, and poles will be placed within the private ROW adjacent to the roadway ROW (emphasis added).

89. The Orange and Purple Parallel routes have the least impact on nonparticipating landowners. Freeborn Wind has, through voluntary agreements, obtained the rights necessary to construct the Project along the Teal, Orange, and Purple Parallel routes on participants' land **except for a road crossing associated with 830 Avenue.** Freeborn Wind is **seeking a utility permit from Freeborn County for this road crossing to keep the transmission line entirely within**

**participating landowner property or public ROW** (emphasis added).

152. Prior to construction, Freeborn Wind will coordinate with the applicable local and state road jurisdictional authorities to **obtain the necessary permits for road access and public road ROW use**. For example, Freeborn Wind is seeking a **utility permit from Freeborn County for the crossing of County Road 108/830th Avenue at one-quarter mile south of 120th Street, where Freeborn Wind has proposed a narrowed ROW in order to maintain the ROW for the Project within land owned by participating landowners and within public road ROW**. Freeborn Wind has had multiple constructive discussions with Freeborn County Staff and Shell Rock Township officials, and is confident a thorough Three Part Agreement will be reached that will address all of these issues.

The Findings of Fact repeatedly refer to Freeborn's efforts in "seeking a utility permit from Freeborn County for this road crossing to keep the transmission line entirely within participating landowner property or public ROW." Recommendation, FOF 89; see also FOF 73, 152. In the same vein, Commerce Comments state, "Freeborn Wind, in its reply comments, indicates that it is negotiating a Three Part Agreement "to address issues related to utility permits for use of public [right-of-way], including the 108/830th Avenue crossing." (Reply Comments, at 8)." No mention is made regarding authority for such an agreement. There is no mention of the township road. The record does not contain any information regarding whether the county owns the 830<sup>th</sup> and 108th road Right of Way in fee, or whether the County has an easement for the roads. The record does not contain any information regarding notice to the non-participating landowners regarding Freeborn's efforts in "seeking a utility permit from Freeborn County for this road crossing," and/or whether landowners have been invited or participated in these discussions regarding their land. Further, there is no evidence in the record to support the notion that the County or Township have rights to convey an easement to the utility. There is no example in the record of County or Township road easement having any authority or permission to site a transmission line on this non-participant land. This is why the county has been seeking guidance and approval from staff at Commerce. Exhibits E and F.

New information shows that Freeborn Wind was concerned about this and raised it with the



County and Commerce. A Data Practices Act Request to the County revealed documentation of several discussions between Freeborn Wind and the County, and between County staff and Dept. of Commerce employees, including Larry Hartman, not assigned to this project, who advised the County on legal issues regarding both utility status and use of private easements by Freeborn Wind. Exhibit E, Freeborn County Data Practices Act response (selected). A follow up Data Practices Act Request to the Dept. of Commerce reflects Freeborn Wind's continued concern about land rights at 380<sup>th</sup> Avenue, but there were, apparently, no records of Larry Hartman's discussions with county staff. Attachment F, Dept. of Commerce Data Practices Act response (selected).

It is at best not appropriate for Commerce staff not assigned to the project to be opining about legal issues and/or encouraging county facilitation of Freeborn Wind encroachment onto non-participant's land. It appears that the County and Commerce/Hartman are working hard to pave the way for Freeborn Wind, that government staff is promoting and facilitating the project, to roll right over the non-participant landowners who do not want transmission on their land.

On the other hand, there is law that holds that while a county, township, or city may have an easement for the road, non-participants' have a fee interest in the land beneath the road:

*The general rule applicable to the question is this: If a deed bounds the land upon a street or highway, title passes to the center thereof, subject to the public easement, if there be nothing in the deed, or the location of the land, or the relation of the parties showing a different intention; but where a deed expressly makes the near external line of the highway or street the boundary line of the tract conveyed, and no other language is used indicating a contrary intention, no title to the street passes to the grantee.*

**Pratt v. Quirk**, 119 Minn. 316, 319, 138 N.W. 38, 39 (1912). The Applicant may attempt to take this land by eminent domain<sup>14</sup> or through the county or township, not only because it is not a utility, but "if forced to bring an inverse condemnation action to protect his rights, [a party] may be entitled to recover attorney fees and costs. *See* Minn. Stat. § 117.195, subd. 2 (1994) (when

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<sup>14</sup> Application, p. 1.

proceeding dismissed or discontinued, owner may recover reasonable costs and expenses from petitioner); *State v. Miller Home Dev., Inc.*, 243 Minn. 1, 9, 65 N.W.2d 900, 904-05 (1954) (when state brought proceeding to condemn land and right of access appurtenant to land, but abandoned that part of proceeding involving right of access, landowners entitled to costs incurred in defending that taking).” In the Matter of the Condemnation of Certain Lands in the City of White Bear Lake by the City of White Bear Lake Housing and Redevelopment Authority.<sup>15</sup>

The matter of the fee interest extending to the centermost point of the road was also an issue in a recent CapX 2020 eminent domain case, which was provided to all parties in a prior AFCL finding<sup>16</sup>. The landowner’s Buy the Farm claim was challenged by the utility, claiming its parcels were not contiguous, but the court found that they were contiguous, meeting under the road. Applicants may choose to ignore landowners’ fee interest at their risk.

Encroachment on landowners is also an issue for the Gold Route. The Findings of Fact note that the Gold Route traverses non-participants’ land and note impacts:

28. On January 25, 2018, DOC-EERA filed comments summarizing the EA scoping process and informing the Commission of the route and route segments that DOC-EERA intended to recommend for inclusion in the scoping decision for the EA. DOC-EERA considered the comments submitted during the scoping process regarding the various alternatives proposed. DOC-EERA identified the “Purple Route” and the “Gold Route” segments as alternative routes that co-locate or parallel the Project with existing transmission infrastructure. DOC-EERA recommended that the Deputy Commissioner of Commerce include in the scoping decision the original route proposed by Freeborn Wind (which it calls the “Teal Route”), the Orange Route (which limits the route to participating landowners’ property), and the Purple Route. DOC-EERA did not recommend the Gold Route be included in the scope due **to impacts to non-participating landowners and other issues** (emphasis added).

**87. The Gold Route would have the most impact on non-participating landowners because it would require placing the Project on non-participants’ land. Impacts to nonparticipating landowners along the Gold routing options are unavoidable, and will be long-term and significant** (emphasis

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<sup>15</sup> In the Matter of the Condemnation of Certain Lands in the City of White Bear Lake by the City of White Bear Lake Housing and Redevelopment Authority, C4-96-744, November 12, 1996 (Unpublished)(online: <https://mn.gov/law-library-stat/archive/ctappub/9611/c496744.htm> ).

<sup>16</sup> See AFCL Exceptions, end of document, eDocket #[20186-143686-01](#).

added)

Recommendation, FoF 28, 87 (citations omitted).

The Gold Route was specifically not recommended by Commerce-EERA or the ALJ due to routing over non-participants' land. The same rejection must also apply to the Purple Route and Orange Route modification. Further, there is no evidence in the record to support a finding that the County and/or Township have authority to grant an easement for transmission, and there is no evidence in the record to support a finding that they will. Freeborn Wind, LLC does not have the power of eminent domain. The Commission should not approve the Freeborn transmission project because it encroaches over non-participants' land.

**V. FREEBORN WIND IS ALREADY NOT IN COMPLIANCE WITH PERMIT**

The site permit requires that Invenergy/Freeborn Wind maintain current contact information for Complaints and Complaint Reporting. Freeborn gives the address of 120 East Main Street in Glennville, Minnesota, but that office is now empty. Freeborn Wind must correct the address. Also, a Post Office Box is not an office.

**VI. AFCL'S EXCEPTIONS POINT OUT FATAL FLAWS IN ALJ RECOMMENDATION AND COMMISSIONS ORDER.**

The AFCL Exceptions are attached below, and included, among other things, procedural errors and objections to the ALJ's multiple statements in Findings giving great weight to "the Applicant's preference," because "the Applicant's preference" is not a factor for routing. Exceptions also pointed out in technicolor, as above, the Applicant's lack of land rights sufficient to build the project.

**VII. NEW INFORMATION HAS BECOME AVAILABLE THAT THE COMMISSION SHOULD CONSIDER.**

New information has become available that the Commission should consider.

**A. Data Practices Act Requests show confusion and Freeborn Wind efforts to gain access to county easements for transmission – an admission that it**

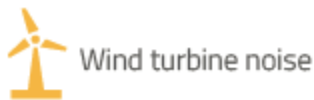
**does not have sufficient land rights for the project – and Freeborn County seeks guidance on its legal issue from Commerce staff.**

As above, there is new information from Data Practices Act Requests, the responses from Freeborn County and the Dept. of Commerce. The documents produced show acknowledgement of problems through stated concern of Freeborn Wind regarding use of the County’s road easements for transmission, and concern about utility status and eminent domain, not available to a non-utility.

The Freeborn County responses show that the County was seeking and receiving advice from Commerce’s Larry Hartman regarding use of county road easements for transmission and Freeborn’s utility status.

**B. World Health Organization addresses Wind Turbine Noise.**

For the first time, the World Health Organization has addressed the issue of wind turbine noise and offered precautionary noise guidelines. Exhibit G (selected).



Recommendation	Strength
<p>For average noise exposure, the GDG conditionally recommends reducing noise levels produced by wind turbines below 45 dB <math>L_{\text{day}}</math>, as wind turbine noise above this level is associated with adverse health effects.</p> <p>No recommendation is made for average night noise exposure <math>L_{\text{night}}</math> of wind turbines. The quality of evidence of night-time exposure to wind turbine noise is too low to allow a recommendation.</p>	<p>Conditional</p>
<p>To reduce health effects, the GDG conditionally recommends that policy-makers implement suitable measures to reduce noise exposure from wind turbines in the population exposed to levels above the guideline values for average noise exposure. No evidence is available, however, to facilitate the recommendation of one particular type of intervention over another.</p>	<p>Conditional</p>

The Commission should review the WHO Environmental Noise Guidelines and consider these

voluntary limitations on noise in the Freeborn Wind project, to be discussed in more detail in that docket's Reconsideration.

**VIII. THE COMMISSION SHOULD RECONSIDER ITS DECISION IN THIS TRANSMISSION INTERCONNECTION DOCKET, AND THE ROUTE PERMIT SHOULD BE DENIED, PENDING DEMONSTRATION THAT ALL LAND RIGHTS NEEDED HAVE BEEN ACQUIRED.**

The Commission should reconsider its decision, and the Invenergy/Freeborn Wind Transmission Route Permit should be denied. Beyond that, in respect for affected landowners, Association of Freeborn County Landowners takes no position as to the route of the project. Overall, AFCL's position is clear: The community does not consent to this project.

Respectfully submitted,

January 8, 2019



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## LINE BY LINE EXCEPTIONS

These are Exceptions of Association of Freeborn County Landowners, and are not all inclusive. Omission of an exception is not acceptance or agreement with any Finding.

AFCL asks that this transmission permit Recommendation be rejected in its entirety. If a wind site permit (IP6946/WS-17-410) should be approved at some point in the future, this transmission docket should be then remanded and set for rehearing. In the alternative, the application should be put on hold, until land rights are secured and a decision is made to grant the Freeborn Wind project site permit (IP6946/WS-17-410), and then remanded and set for rehearing.

Nonetheless, AFCL offers these Exceptions:

### SUMMARY OF RECOMMENDATIONS

The Administrative Law Judge concludes that Freeborn Wind has partially satisfied the criteria set forth in Minnesota law for a Route Permit and that both the Orange Route and the Orange Route with the Purple Parallel Segment (Purple Parallel Route) meet the routing criteria and minimize impacts to the human and natural environments.

~~Given the Applicant's preference for the Purple Parallel Route, the Commission should GRANT the Route Permit for the Purple Parallel Route with the modification the Applicant proposed to maintain the entire route on participating landowners' property. That modification would narrow the route at 130th street to match the Orange Route in this area. (invalid due to consideration and weight of "Applicant's preference.")~~

~~Given the Recommendation of the Administrative Law Judge in the wind siting case which this transmission line is to serve, Applicant's preference for the Purple Parallel Route, the Commission should not GRANT the Route Permit unless and until a site permit is granted for the Freeborn Wind Project and the transmission route has been demonstrated to be routed only on participants land. The Administrative Law Judge in this transmission docket recommends for the Purple Parallel Route with the modification the Applicant proposed to maintain the entire route on participating landowners' property. That modification would, however, improperly narrow the route at 130th street to match the Orange Route in this area.~~

In the alternative, the Administrative Law Judge recommends the Commission should grant a Route Permit for the Orange Route but should not GRANT the Route Permit unless and until a site permit is granted for the Freeborn Wind Project and the transmission route has been demonstrated to be routed only on participants land.

### FINDINGS OF FACT

2. As part of Invenergy's various generation projects, including wind farms, natural gas facilities, solar projects, and battery storage, Invenergy has, in other states, built 401

miles of transmission lines greater than 69 kV and continues to operate 251 miles of those lines.<sup>5</sup>

5. Freeborn Wind has entered into an agreement with Xcel Energy whereby Xcel Energy will acquire Freeborn Wind upon conclusion of all development activities and subsequently construct, own, and operate the Project.<sup>10</sup> On September 21, 2016, Freeborn Wind entered into a Purchase and Sale Agreement (PSA) with Xcel Energy, and Invenergy.<sup>11</sup> The Commission approved the Purchase and Sale Agreement on September 1, 2017.<sup>12</sup> Xcel Energy's acquisition of Freeborn Wind was part of a 1,550 MW wind portfolio proposed by Xcel Energy and approved by the Commission.<sup>13</sup> Thus, no Certificate of Need is required, and no Certificate of Need has been issued. Xcel Energy will assume the obligations of Freeborn Wind, whether made by the company or imposed by the Commission.<sup>14</sup> Permits, ownership and operation will continue under the Freeborn Wind, LLC, organization.:

7. The Commission's rules establish two tracks for the permitting of HVTL. The "full permitting process" includes preparing an environmental impact statement (EIS) and holding a contested case hearing.<sup>18</sup> The "alternative permitting process" in practice generally applies to modestly sized projects that are not contested or controversial.<sup>19</sup> It requires an EA instead of an EIS and a public hearing instead of a contested case hearing.<sup>20</sup> This permitting proceeding is controversial.

15. Fifteen public comments were received during the initial and reply comment periods on the completeness of the Application. The comments were largely related to the potential impacts of the Project and requested the appointment of an advisory task force.<sup>35</sup> The Association of Freeborn County Landowners (AFCL) raised completeness issues including organizational form of Freeborn Wind; issues of timing; Minnesota's policy of non-proliferation; viewshed; a listing of eagle nests; no disclosure of eagle and transmission collision potential; County and Township land use plans; routing over non-participants; lack of cost analysis; lack of attribution and apportionment of system upgrade costs; conflicting interconnection information; and requested that "[b]ecause this project and the Freeborn Wind project<sup>36</sup> are tied and dependent, these two dockets should be joined as one, ideally the pre-existing 17-410."<sup>37</sup> The dockets were not joined.

17. On November 2, 2017, DOC-EERA filed a letter stating that Freeborn Wind's reply comments provided the requested information, including Freeborn's statement that it has acquired all land needed for the project and that it has the power of eminent domain.<sup>39</sup>

19. On November 8, 2017, Commission Staff filed Briefing Papers for the November 16, 2017, Commission meeting.<sup>41</sup> Staff recommended that the Commission refer this matter to an Administrative Law Judge for a "summary proceeding" which would involve findings of fact, conclusions of law, and a recommendation.<sup>42</sup> On November 16, 2017, Staff filed amended decision options to provide an option to "combine this application with Docket IP6946/17-410" as requested by AFCL.<sup>43</sup> The interdependent nature of this

transmission docket and the wind project siting docket is noted in light of the AJL's Recommendation in Docket IP6946/17-410.

25. On January 2 and January 3, 2018, three individuals filed public comments.<sup>50</sup> On January 3, 2018, AFCL filed 10 pages of comments, raising issues regarding use of eminent domain; future development and relationship to the land; property values and marketability; MISO interconnection and size/spec of line questions; policy of non-poliferation; existing local corridors; no prohibition of consideration of size, type, and timing; 16 proposed permit conditions and an alternate route (expressly stated as not acceptance of that route).<sup>51</sup>

28. On January 25, 2018, DOC-EERA filed comments summarizing the EA scoping process and informing the Commission of the route and route segments that DOC-EERA intended to recommend for inclusion in the scoping decision for the EA.<sup>54</sup> DOC-EERA considered the comments submitted during the scoping process regarding the various alternatives proposed.<sup>55</sup> DOC-EERA identified the "Purple Route" and the "Gold Route" segments as alternative routes that co-locate or parallel the Project with existing transmission infrastructure.<sup>56</sup> DOC-EERA recommended that the Deputy Commissioner of Commerce include in the scoping decision the original route proposed by Freeborn Wind (which it calls the "Teal Route"), the Orange Route (which limits the route to participating landowners' property), and the Purple Route.<sup>57</sup> DOC-EERA did not recommend the Gold Route be included in the scope due to impacts to non-participating landowners and other issues.<sup>58</sup> Impacts to landowners on any route option are unavoidable, and will be long-term and significant.

31.5 On February 15, 2015, the Commission filed "Public Comment Batch One" which contained 16 comments supporting the project, from those with a stated interest such as a participant, a business/contractual interest, or a wind developer/financier.

34. On April 2, 2018, a prehearing conference was held before Administrative Law Judge Jim Mortenson. There is no eFiled notice of this prehearing conference. On April 4, 2018, the Administrative Law Judge issued the First Prehearing Order, establishing a schedule for the proceedings.<sup>67</sup> On May 17, 2018, the Administrative Law Judge issued an Amended First Prehearing Order.<sup>68</sup>

43. Minn. Stat. § 216B.243, subd. 2 (2016) states that "no large energy facility" shall be sited or constructed in Minnesota without the issuance of a Certificate of Need by the Commission.<sup>86</sup> The proposed Project is not classified as a "large energy facility" under Minn. Stat. §§ 216B.243 and 216B.2421, subd. 2(3) (2016).<sup>87</sup> While the Project is an HVTL with a capacity of 100 kV or more, it is not more than 10 miles long in Minnesota and it does not cross a state line.<sup>88</sup> Therefore, a Certificate of Need is not required for the Project.<sup>89</sup> Because no Certificate has been issued, there is no prohibition of consideration of size, type, and timing.<sup>1</sup>

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<sup>1</sup> Minn. Stat. §216E.02, Subd. 2; Minn. R. 7850.4200.



48. The Project is located entirely within Shell Rock Township in Freeborn County, Minnesota.<sup>100</sup> This transmission project is expressly designed to serve the Freeborn Wind project, located in Shell Rock, London, Hayward and Oakland townships in Minnesota's Freeborn County, as well as the Iowa Freeborn Wind project in Worth County, Iowa.<sup>2</sup> All of the Freeborn Wind project's Minnesota and Iowa generation will be sent through a collector system to the project substation, and through this transmission line to the Glenworth substation.

52. In response to comments at the scoping meeting that the route width should be located entirely on land owned by participating landowners, "EERA staff provided Freeborn Wind with a route alternative that also moves the route width to participating landowners' property . . . In response, Freeborn Wind suggested that an adapted EERA route replace the proposed route and be included in the scoping decision. Freeborn Wind proposed a reduced route width for a more precise route location and a slight expansion in the route width for the half-mile segment south of 130th Street to allow for potential colocation with the existing ITC Line, should the company be able to secure easement agreements to obtain adequate right-of-way."<sup>102</sup> Freeborn Wind proposed a new route with the same alignment as the Teal Route, but with a narrower route width that attempts to avoids non-participants' land through use of a 22 foot wide diagonal crossing of a county and township road intersection. This narrowed easement does encroach on the corners of non-participants land. This route is identified as the Orange Route. The Orange Route is not constructible. The Orange Route follows the same alignment as the Teal Route with route widths varying from 225, 250, and 400 feet.<sup>103</sup>

53. The Purple Route Segment was proposed during scoping and follows an existing transmission line corridor.<sup>105</sup> The EA studied two possibilities for this route segment: running the proposed HVTL parallel to the existing ITC Line (paralleling) (Purple Parallel) or overbuilding the proposed HVTL above the ITC Line on new structures within the existing ITC ROW (overbuilding) (Purple Overbuild).<sup>106</sup> The Purple Route Segment includes a small area of the route width of this route segment, located to the east of 810th Avenue crossing 130th Street, with two non-participating landowners,<sup>107</sup> but the Purple Parallel routing option could be constructed entirely on participants' land.<sup>108</sup> As an LLC, Freeborn Wind does not have the power of eminent domain. The Purple Parallel route is not constructible.

54. Traveling south to north, the Purple Route Segment breaks from the Teal/Orange route in the NE 1/4 of S28, T101, R20W where it continues west approximately 1,000 feet along field lines to the existing ITC Line. The route segment turns north and travels along the ITC Line for approximately one and one-quarter miles until it reaches 130th Street, where it rejoins the Teal and Orange routes. Route widths vary from 250, 400, and 600 feet.<sup>109</sup> Constructing the Purple Overbuild Route south of 120th Street would cause some of the ROW to be on a nonparticipant's land. Overbuilding for the first half mile north of 120th could be done all on participating land. The remaining half mile towards 130th Street would require two new transmission easements.<sup>110</sup> As an LLC, Freeborn Wind does not have the power of eminent domain. Without the two new

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<sup>2</sup> See Freeborn Wind application, PUC Docket IP6946/WS-17-410.

transmission easements, this route is not constructible.

61. For certain segments, Freeborn Wind proposes to use a vertical configuration, with all conductors located on one side of the pole.<sup>120</sup> This design is needed to create the correct approach angle for the segment of turn 2 to turn 3 that uses the 22-foot wide ROW across County Road 108/830th Avenue.<sup>121</sup> For the single-circuit 161 kV vertical-designed poles, a braced post structure TSP-161 structure type will be used.<sup>122</sup> Any route attempting to utilize the 22-foot wide ROW encroaches on non-participant land and is not constructible.

67. Route widths vary from 250, 400, and 600 feet for the Purple Route.<sup>132</sup> The Purple Route includes a small area with two non-participating landowners,<sup>133</sup> but there is no documentation in the record that the Purple Parallel routing option could be constructed entirely on participants' land.<sup>134</sup> As an LLC, Freeborn Wind does not have the power of eminent domain. Without the landowner easements, this route is not constructible.

70. Contrary to Minnesota's policy of route non-proliferation,<sup>3</sup> the entire length of the proposed Project will require new ROW.<sup>137</sup>

73. In one location, at the crossing of County Road 108/830th Avenue at one quarter mile south of 120th Street, a narrowed ROW is proposed to maintain the ROW for the Project within land owned by participating landowners and within public road ROW where Freeborn Wind is seeking a utility permit from Freeborn County. A vertical design with a 22-foot ROW will be used on this single, short span. Freeborn Wind engineers developed a design in this limited area that can be operated in a 22-foot ROW, which is within the 66-foot wide County Road 108 ROW. To ensure adequate clearances, Freeborn Wind proposes a special design using two dead-end structures. The two poles will be located 123 feet apart and the 22-foot ROW would apply only to the area between the two poles. The area needed for construction will be contained on the participating landowners' parcels. The existing distribution line will be buried in this location. Freeborn Wind continues to talk with adjacent landowners and Freeborn County and may propose to change the design and alignment if a voluntary easement is obtained or to meet Freeborn County requirements.<sup>140</sup> As an LLC, Freeborn Wind does not have the power of eminent domain. There is no information in the record regarding authority of Freeborn County to enter into an agreement regarding the 22-foot ROW. Without landowner agreements, this is not constructible. When the proposed line is parallel to a roadway, Freeborn Wind does not intend to locate structures within road ROW, and poles will be placed within the private ROW adjacent to the roadway ROW.<sup>141</sup>

76. Total Project costs are estimated to be approximately \$3.8-8.05 million, depending on which route option is approved and a variety of other factors, including

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<sup>3</sup> People for Environmental Enlightenment & Responsibility (PEER), Inc. v. Minnesota Environmental Quality Council, 266 N.W.2d, 858, 868 (Minn. 1978); Minn. Stat. §216E.03, Subd. 7(e).