

## Staff Briefing Papers

Meeting Date May 17, 2018 Agenda Item 9\*\*

Company Trimont Wind I, LLC

Docket No. **IP6907/WS-13-258**

**In the Matter of the Site Permit of Trimont Wind I, LLC in Martin and Jackson Counties, Minnesota**

Issue Should the Commission grant the site permit amendments as requested?

Staff Tricia DeBleeckere [Tricia.DeBleeckere@state.mn.us](mailto:Tricia.DeBleeckere@state.mn.us) 651-201-2254



### Relevant Documents

### Date

Trimont Wind I, LLC – Permit Amendment Application (4 parts)	December 21, 2017
DOC-EERA – Comments on Completeness and Process	January 5, 2018
PUC – Notice of Public Information Meeting and Comment Period	January 24, 2018
Mankato Building Trades – Comments	February 21, 2018
DNR – Comments	February 21, 2018
DOC-EERA – Comments (Public Information Meeting Record/Notes)	February 22, 2018
DOC-EERA – Extension Variance Request	February 27, 2018
Trimont Wind I, LLC – Comments	March 12, 2018
DOC-EERA – Comments and Recmd’ns on a Site Permit Amendment	March 19, 2018
Trimont Wind I, LLC – Reply (Proposed Findings and Permit)	March 19, 2018
DOC-EERA – Trimont ... Edits to 2004 Site Permit	March 19, 2018
DOC-EERA – Trimont ... Edits to Current (Generic) Site Permit	March 19, 2018
Trimont Wind – Comments (6 Parts: 1 Trade Secret)	April 2, 2018
PUC – Notice of Extended Comment Period	April 5, 2018
DNR – Comments	April 13, 2018
DOC-EERA – Reply Comments	April 19, 2018
Mankato Building Trades	April 23, 2018
PUC – Public Comments (Algonquin/Odell Extension Request)	April 24, 2018

**I. STATEMENT OF THE ISSUES**

Should the Commission grant the site permit amendments as requested?

**II. STATUTES AND RULES**

Under Minn. Stat. § 216F.03, the siting of a large wind energy conversion system will be done in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.

Under Minn. Stat. § 216F.04 (d), the Commission may place conditions in a permit and may deny, modify, suspend, or revoke a permit. Minn. R. 7854.1300, subp. 2, provides that the Commission may amend a site permit for a large wind energy conversion system at any time if the Commission has good cause to do so.

**III. PROJECT DESCRIPTION**

The Trimont Wind project is an existing 100.5 megawatt Large Wind Energy Conversion System (LWECS) that encompasses approximately 22,400 acres within Cedar townships in Martin County and Kimball Township in Jackson County, Minnesota. The project received its first site permit on June 17, 2004, with a subsequent permit amendments on October 21, 2004.<sup>1</sup>

As constructed, the facility included 67-1.5 MW General Electric (GE) turbines and the repowering project is proposing to increase the existing turbines to 1.6 MW (including the following new project characteristics):

**Table 2 Existing and Proposed Turbine Dimensions**

Design Parameter	Existing	Proposed	Change
Hub Height	80 m (262 feet [ft])	80 m (262 ft)	No change
Rotor Diameter	77 m (253 ft)	91 m (299 ft)	14 m (46 ft)
Total Tip Height	118.5 m (389 ft)	125.5 m (412 ft)	7 m (23 ft)
Nameplate Capacity	100.5 MW	107.2 MW	6.7 MW

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<sup>1</sup> The facility also received a certificate of need from the Commission on June 2, 2004.

#### IV. PROCEDURAL BACKGROUND

On December 21, 2017, Trimont Wind I, LLC (Trimont) filed a LWECS Site Permit Amendment Application (Application) for the Trimont Wind Facility in Jackson and Martin Counties, Minnesota.

On January 5, 2018, the Department of Commerce Energy Environmental Review and Analysis (DOC-EERA) filed comments concerning the completeness of the Application and the appropriate review process. DOC-EERA concluded that the Application was properly developed using the DOC-EERA LWECS guidance document<sup>2</sup> and contained the appropriate information identified under Minn. R. 7854.0500. The DOC-EERA also recommended that the Application be reviewed under the informal process developed by DOC-EERA and Commission staff and that was presented at a 2017 Commission Planning Meeting (and which was outlined in DOC-EERA's comments). The informal review process generally follows the permit amendment process and includes: submission of the application, DOC-EERA review of the application for completeness, a public meeting and comment period, DOC-EERA recommendation on merits of application, and a Commission decision.

On January 24, 2018, the Commission issued a Notice of Public Information Meeting and Comment Period. The notice was sent to a list compiled by Trimont of potentially affected landowners (those within and adjacent to the site permit boundaries) and local government units. The notice was also published in the EQB Monitor, the Jackson County Pilot, and the Fairmont Sentinel.

On February 6, 2018, a public information meeting was held at Triumph Hall in Trimont, Minnesota. Staff from the Commission and the DOC-EERA and representatives for Trimont were available at the meeting to answer questions. Approximately 30 persons attended the meeting. Questions and comments included the following:

- Tim Stahl, the County Engineer wanted to ensure that the development agreement, which included a road use agreement and public drainage agreement would be adhered to in during the retrofit/repowering project.
- Neal Von Ohlen, a project participant, indicated that all landowners with turbines on their property agreed to the extended lease terms which led him to believe that there was likely no issue with noise, birds or visual impact from the project. He also indicated that Trimont does a great job with drain tile repair and Trimont has been great in cooperating with the landowners whenever it is needed and 'everyone is very happy'.

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<sup>2</sup> Department of Commerce Energy Environmental Review and Analysis, [Application Guidance for Site Permitting of Large Wind Energy Conversion Systems in Minnesota](#), August 5, 2010.

- Steve Flohrs, a Martin County Commissioner, raised a question regarding the number of parcels and impact the requested waiver to the 3 by 5 rotor diameter setback may have.

Following the public information meeting, a written comment period was open until February 28, 2018, which was extended to March 19, 2018 per a DOC-EERA extension request. Comments were received by the DOC-EERA, the Department of Natural Resources (DNR) and Mankato Building Trades.

DOC-EERA’s March 19, 2018 comments indicated that it was concerned that the Site Permit Amendment Application did not contain all the information necessary for the Commission to approve exempting its wind access buffer (WAB) permit condition in the 21 instances in which Trimont had requested waivers. EERA suggested that either the applicant could file a supplement with information supporting why the WAB waivers should be granted (among a few other items noted by the DOC-EERA) or the Commission could approve a modified version of Trimont’s requested permit amendment (approving the repowering project, but not the waivers). Nonetheless, the DOC-EERA provided proposed updated permit language.

On April 2, 2018, Trimont filed a supplemental comments which provided:

- Technical information on the retrofitted blade efficiency which Trimont argued demonstrated that the new blades would result in reduced wake losses for the project, supporting its WAB waiver request.
- Updated information that upon rerunning the WAB model with a modified wind direction reduced the number of turbines needing a waiver down to 20 (from 21), and the range of exceedances was reduced to 16-179 feet (from 16-226 feet).
- Further information on its landowner outreach regarding the repowering project and waivers requests.
- Additional information on internal wake loss, and an additional requested permit request: due to the rerunning of the WAB model, the impact was greater on the internal spacing, and therefore, Trimont requested the permit condition (which currently allows a 10 percent variance in internal turbine spacing) be increased to 30 percent<sup>3</sup>;
- It’s rationale for its disagreement with DOC-EERA’s proposed long-term avian and bat data collection parameters (in Section 7.5.1 of the permit).
- Alternative language in response to DOC-EERA’s recommended permit language filed on March 19.

Due to the supplemental information filed by Trimont, the Commission issued a notice of comment period. Comments were due by April 23, 2018.

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<sup>3</sup> Recent Commission site permit allow a 20 percent variance as typical language.

Comments were filed during the supplemental period by the MNDNR, DOC-EERA, Mankato Building Trades, and Algonquin Power on behalf of Odell Wind Farm (an adjacent landowner/project). DOC-EERA recommended the Commission issue an amended site permit to Trimont.

## **V. SITE PERMIT AMENDMENT APPLICATION**

As described in the Site Permit Amendment Application, Trimont has proposed to upgrade the facility's turbines. The upgrades would consist of replacing equipment within the nacelle (gearbox, oil cooler, drive shaft, pitch drive, etc.), refurbishing of the existing generator from 1.5 to 1.6 MW, update of electronic controls, and replacing the rotor assembly which would include installing longer turbine blades. To facilitate the project upgrades, Trimont has requested the Commission grant the following amendments to the existing site permit:

- Increase the permitted rotor diameter from 77 meters to 91 meters;
- Increase of the permitted project nameplate capacity from 100.5 to 107.2 MW (by increasing each of the 67 turbines from 1.5 MW to 1.6 MW);<sup>4, 5</sup>
- Extend the permit expiration date to allow 30-years from the issued amended permit term; and,
- Authorize adjustments to permit setbacks, specifically, the 3 by 5 rotor diameter setback in 20 instances.<sup>6</sup>

Staff summarizes the key points associated with the proposed upgrades, as identified by Trimont in its Application:

- The longer turbine blades would increase the existing rotor diameter by approximately twenty meters (71 m to 91 m).
- The turbine locations, meteorological tower locations, and the permitted site boundary would not change.
- All turbines would remain at least 500 feet from residences (no less than 800-feet).
- Turbine towers would remain the same height.
- The turbine upgrades would increase individual turbine generator capacity and the permitted nameplate capacity of the facility.

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<sup>4</sup> Trimont's Mid-Continent Independent System Operator (MISO) Generator Interconnection Agreement (GIA) is currently for 105 MW net at the point of interconnection. Trimont noted it needed to go through an GIA amendment process with MISO and Xcel to identify the retrofit equipment and to agree to cap the output of the facility to 105 MW. However, Trimont is seeking a permit from the Commission for 107.2 MW to allow for a potential to increase the MISO GIA in the future.

<sup>5</sup> The retrofit would also increase the net capacity factor of the project. Trimont estimated that the capacity factor would increase by roughly 15%.

<sup>6</sup> As noted in Trimont's revised, Supplemental Comments filed on April 2, 2018.

- Turbine upgrades would increase overall efficiency and net capacity factor.
- Increased production taxes paid to the counties are anticipated to amount to \$2.3 million for the retrofit and \$3.5 million for the permit extension.
- Trimont would continue to own and operate the facility.
- Trimont has a power purchase agreement (PPA) with Great River Energy (GRE) for the plant's current energy production (100.5 MW).<sup>7</sup>
- Upgrades would require seven to 11 days per turbine and upgrades are expected to be completed by December 31, 2020.
- Each turbine would require an adjacent and temporary 400 x 400-foot laydown area.
- Due to the increase in rotor diameter, 20 turbines would not meet the Commission's current 3 RD by 5 RD wind access buffer setback.
- Trimont noted its intention to comply with the Minnesota Pollution Control Agency Noise Standards through siting and mitigation options, as needed.
- Shadow flicker analyses were not required when the project was originally permitted. Using conservative inputs (which would overestimate hours of flicker) Trimont indicated that the following hours of shadow flicker were modeled:
  - Existing facility: 6 receptors exceed 30 hours per year (30-61 hours)
  - Proposed facility: 10 receptors exceed 30 hours per year (31-88 hours)

Trimont proposed site permit modification language both in their site permit amendment and in comments filed on March 19, 2018. DOC-EERA also filed a proposed amended site permit on March 19, 2018, both are too detailed to repeat here but amended language is discussed below within the staff discussion.

## **VI. SUMMARY OF COMMENTS RECEIVED**

Following the public information meeting, a written comment period was open until March 19, 2018. Comments were received by DNR, Mankato Buildings Trades, DOC-EERA, and Trimont. Due to supplemental information filed by Trimont, a subsequent comment period was authorized and comments were received by DNR, Mankato Building Trades, DOC-EERA, and Algonquin Power/Odell Wind Farm.

### **A. Department of Natural Resources**

The DNR focused on three topics within its two comments filed on this docket: wind access buffers, wetland permitting, and turbine feathering.

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<sup>7</sup> Staff is uncertain whether the current PPA allows for an increase in capacity and/or whether the additional MW/Hr produced will be purchased by GRE or sold on the spot market. Staff is uncertain of the term length of the GRE PPA, however assumes it is 20-years.

### *Wind Access Buffer*

The DNR noted that as a non-participating landowner, it did not support exemptions to the WAB setback being applied to DNR administered lands. Comments on this issue are discussed below.

### *Wetland Permitting*

The DNR sought to clarify wording provided in the application, and noted that wetland permits should be obtained prior to any impacts occurring onsite.

### *Turbine Feathering*

The DNR requested that current blade feathering requirement language used by the Commission be utilized for the Trimont project. Trimont had suggested a variation on the feathering language (requiring feathering only when over 50 degrees Fahrenheit (F)), but both the DNR and the DOC-EERA is supportive standard feathering language that the Commission has utilized for several recent site permits.

7.5.4 Blade Feathering: All operating turbines at the facility must be equipped and operated with software enabling adjustment of turbine cut-in speeds. The Permittee shall operate all facility turbines so that all turbines are programmed to be locked or feathered at wind speeds up to the manufacturer's standard cut-in speed, from one-half hour after sunrise, from April 1 to October 31 of each year of operation through the life of the project.

Trimont objects to this language as it is different from their internal feathering protocols (which occur for a more limited time period (July 15 to October 15) and only during periods in which the temperature is above 50 degrees Fahrenheit. Discussed further below.

## **B. Mankato Building Trades Council**

Mankato Building Trades Council (or MBTC) indicated its support of the use of local labor, to which MBTC characterizes that Avangrid committed to using commercially reasonable efforts to maximize the use of local labor. In reply comments, the MBTC expressed support for Trimont's proposed wind access buffer requirements as a waiver would assist in the repowering efforts that create local jobs.

## **C. Algonquin Power/Odell Wind Farm**

Algonquin Power filed a request for an extended comment period at the close of the second comment period. It is staff's understanding from both Algonquin and Trimont that following the request, Trimont and Algonquin had a conference call and Algonquin no longer requested an extended comment period. Staff views the request as rescinded.

#### **D. Trimont Wind**

Trimont Wind provided a revised site permit with suggested language modifications on March 19, 2018 and provided further comments on the permit conditions in its April 2, 2018 comments (in an attachments). Those comments are noted below in the staff discussion section. Staff notes that there are a number of permit conditions where the DOC-EERA, the DNR and Trimont are not in agreement on. Other issues in which Trimont provided comment are interspersed in the staff discussion below.

#### **E. Department of Commerce Energy Environmental Review and Analysis**

DOC-EERA ultimately concluded that the exemptions from setback requirements for certain turbines is justified and reasonable and recommended that the Commission grant the amendments requested by Trimont. Staff discusses several issues that arose in the comment process more thoroughly below in the staff discussion section.

### **VII. STAFF DISCUSSION**

Typically in petitions for amendments to site permits, the Commission considers several factors in its decision:

1. New information that would substantially change the findings accompanying the Commission's original permit decisions and potentially change the Commission's determination that the project is compatible with the standards set out in Statute and Rule;
2. Compliance with existing site permit terms and conditions,
3. Consistency with current Commission standards; and,
4. Permit distribution and landowner notification requirements.

Staff reviews each of these factors and delves into several issues in which staff believes further consideration is necessary.

- 1. New information that would substantially change the findings accompanying the Commission's original permit decisions and potentially change the Commission's determination that the project is compatible with the standards set out in Statute and Rule**

First, the findings for the original permit decision are likely not available (as the original project was permitted by the Environmental Quality Board (EQB)) therefore, generally, staff compares the proposed project revisions to the statute and rule language that existed at the time (which



is same or similar to what exists today). Minn. Stat. 216F.03 requires that: *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.*

The Application provided an analysis of the potential impacts of the proposed turbine upgrades; the areas in which the Commission is required to consider when issuing a site permit are available in Minn. R. 7854.0500, subp. 7.<sup>8</sup> As the application states, for this project specifically, there are increased impacts from shadow flicker, noise, and visual impacts from the increased blade length. The question for the Commission is whether these changes would cause the Commission to find the project is either furthering, or incompatible with, environmental preservation, sustainable development and the efficient use of resources. Staff discusses the wind access buffer setback, internal turbine spacing, noise, and shadow flicker in detail below. Some of these issues are specific to Trimont, while others are likely to be faced with any repowering project before the Commission.

## **A. Wind Access Buffer Setback**

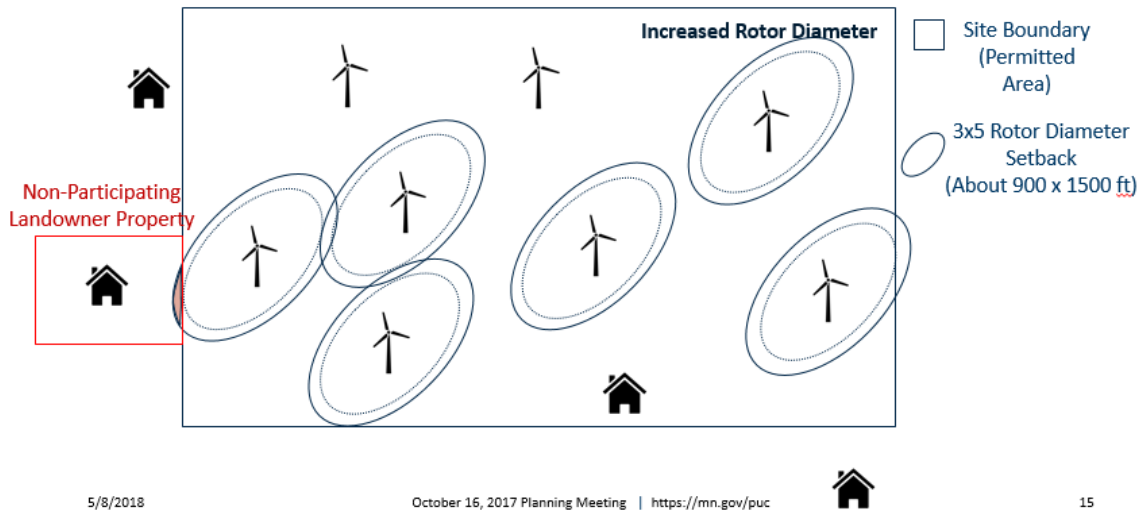
### **i. Overview and DNR Position**

Trimont was the first repowering project application to be submitted to the Commission. Lake Benton Repowering Project (proposed by Allele Clean Energy), which is to be considered at the same agenda meeting followed the Trimont application; both repowering/amendment applications request variances to the WAB setbacks to accommodate the increased rotor diameter (due to the increased blade length). Staff brought this general issue to the Commission's attention at two planning meetings in 2017, as it appeared that the issue of whether to vary the Commission's WAB setback was forthcoming.

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<sup>8</sup> Demographics, including people, homes, and businesses; noise; visual impacts; public services and infrastructure; cultural and archaeological impacts; recreational resources; public health and safety, including air traffic, electromagnetic fields, and security and traffic; hazardous materials; land-based economics, including agriculture, forestry, and mining; tourism and community benefits; topography; soils; geologic and groundwater resources; surface water and floodplain resources; wetlands; vegetation; wildlife; and rare and unique natural resources.

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There were three comments made on the WAB in the record by the DNR, a county commissioner who questioned how the waiver would impact parcels, and the Mankato Buildings Trades Council. Other than the DNR, no commenter identified specific impacts of concern regarding the WAB waiver request. The DNR expressed a broader concern about granting a waiver from a setback from a non-participating landowner. The DNR noted that for many wind project its lands abut, it considers itself a non-participating landowner (staff notes that DNR lands are not present at this project site).

The DNR argued the WAB setback was designed to protect the wind rights on non-participating landowners, landowners are non-participating because they did not want the project on or near their land, and the increased blade length will be more visible to adjoining non-participating landowners. The DNR also argued that the increase in rotor swept zone would likely increase bat fatalities within Minnesota, especially when located near suitable habitat.

The DNR suggested new projects may need an increased WAB to account for future repowering. The DNR recommended the Commission establish clear policy on exemptions to existing WAB before allowing them on any project. The DNR has consistently held this view in recent dockets; in the Blazing Star 2 Project, Commission Docket No. WS-17-700, the DNR suggested increasing setbacks by an additional 200-feet to allow for potential future repowering. The Commission and DOC-EERA have not adopted a formal position on this issue in the Blazing Star 2 docket as 1) the project is only mid-way through the permitting process and 2) since no WAB had been varied at the time of the decision, the position was not supported as necessary.<sup>9</sup>

<sup>9</sup> Additionally, knowing a waiver of the WAB is possible, provides no incentives for developers of new

Trimont indicated in its Application and supplemental comments that there are currently 20 existing turbine locations that would not meet the five rotor diameter (RD) wind access setback from non-participating properties with an increased rotor diameter.<sup>10</sup>

## ii. Definitions

Staff provides a summary of commonly used terms relating to wind and property terms:

- **Non-Participating Landowner:** A landowner that *has not* signed an agreement with a developer for a wind easement, land easement or participation agreement.
- **Participating Landowner:** A landowner that *has* signed an agreement with the developer for a wind easement, land easement, or participation agreement.
- **Wind Rights or Easement:** A legal description (in Minn. Stat. 500.30) defining the right, whether or not stated in the form of a restriction, easement, covenant, or condition, in any deed, will, or other instrument executed by or on behalf of any owner of land or air space for the purpose of ensuring adequate exposure of a wind power system to the winds.
- **Participation Agreement:** Sometimes referred to as good-neighbor payments, a participation agreement is a payment or contract (terms vary) in which a neighboring landowner (one typically without a wind or land easement/lease) receives a payment(s) by a developer.
- **Wind Access Buffer:** A term not defined in law, which refers to the setbacks area (buffer) in which it is reasonably assumed to be protective of the rights of neighboring landowner to the wind flow over their property. The Commission first officially discussed this term in the 2008 *Order Establishing General Wind Standards*.

## iii. Wind Access Buffer History

When the original site permit was issued and amended in 2004, LWECS permitting authority was under the jurisdiction of the EQB. The WAB was originally developed to address the potential for wake effects, or turbulence, between wind turbines. The WAB was memorialized by the Commission in requirements for local developers in a 2008 Commission Order: *Order Establishing General Wind Permit Standards*. Staff believes this order provides useful context for the Commission to consider in its decision on this matter. In relevant part (at page 4):

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project to account for future repowering (by allowing a greater turbine setback).

<sup>10</sup> Section III.C.1 of the original 2004 Site Permit provided that “wind turbines shall not be placed less than 5 rotor diameters from the perimeter of the site.”

Seventeen C-BED participants and advocates filed comments on setback issues.<sup>11</sup> They asserted that the wind access buffer setback historically applied by the Commission<sup>12</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.

#### **iv. Current Trimont Wind Access Buffer Waiver Request**

In this docket, Trimont is requesting the Commission provide a waiver for the 20 instances in which the turbines cannot meet the 5 rotor diameter setback from non-participating parcels. In its amendment application, Trimont requested the waiver based on the Commission's statutory requirement in Minn. Stat. 216F.03 in which the Commission shall site LWECs consistent with,

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<sup>11</sup> Original 07-1102 Order Footnote: 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>12</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).

“environmental preservation, sustainable development, and the efficient use of resources.” Trimont argued that allowing a repowering project to proceed would be ‘efficient use of resources’ and that would be a sufficient basis to allow the waiver and the repowering project to proceed.

**v. DOC-EERA Comment**

The DOC-EERA provided reply comments that indicated that there are concerns with the level of information put forth by Trimont to substantiate its request. DOC-EERA outlined two ways this issue could be viewed; first, the waiver could be viewed as an encroachment on the wind rights of a neighboring landowner (however, DOC-EERA noted that the WAB was a Commission standard or setback and the Commission does not have the authority to allow the Permittee to utilize wind rights for which it does not hold lease). Second, waivers could be looked at as a relief from the existing standards (to accommodate the upgrades and to avoid the construction of new wind turbines). DOC-EERA however noted the second viewpoint would need to be validated by a showing that it is: 1) legally allowable; and 2) would not have a significant impact on the neighboring landowner. DOC-EERA provided additional comments on the WAB setback generally noting the following:

- 1) the WAB has not been applied consistently over time;
- 2) the WAB is effectively 6-10 rotor diameters (as it is applied to both abutting properties) and therefore a waiver of 16-226 (later revised to 16-179 feet) could be considered de minimis;
- 3) wake losses were expected to be less following the repowering and therefore impacts on neighboring landowners would be decreased;
- 4) WAB is not a legal term nor has the practice been codified and therefore the Commission is able to make case by case decisions.

First, staff notes it believes the WAB has been applied consistently overtime by the Commission when it assumed permitting authority in 2005. Staff believes variances (or inconsistencies) from the WAB were made by the EQB and not by the Commission (staff does not mean to insinuate they were improperly decided. Staff only intends to indicate the Commission has not had the question before them on waivers and has largely kept the 3x5 RD standard since it assumed authority). Additionally, from staff’s recollection, the number of wind permits and MW’s permitted pre-2005 (EQB) is significantly lower than the post-2005 (Commission) issued wind permits, therefore, staff questions the weight and consideration that should be given to early variances or inconsistent applications of the WAB. Staff recommends the Commission review these requests with the information and experiences the Commission has on wind siting from 2005 to date.

Second, staff notes the original WAB 3RD x 5RD for the Trimont Project was 759-feet by 1,165-feet (due to a 253-foot rotor diameter). With the proposed increased blade length (to a 299-foot rotor diameter), the 3RD by 5RD would increase to 897-feet by 1,495-feet. The 5RD setback is the impetus for the waiver request. Trimont noted in its revised comments that the waiver is needed for 20 turbines in which the 5RD setback cannot be met by a range varying from 16 to 179-feet.

Sixteen feet is 1.1 percent of the total (1,495-foot) setback and 179-feet is approximately a 13.2 percent variance. Staff believes the de minimis term in regulation is more often applied to amounts either less than one percent or in instances where a number was statistically insignificant. Trimont also characterized the waiver requests as minimal (or other terms) however, while some of the waivers may be 'minimal', to a non-participating landowner – they may be viewed as 'more than' minimal.

Staff believes the consideration and characterization of these waiver requests by the Commission is important as they are the first of their kind (repowering); are an important policy decision (balancing keeping distance from non-participating landowners or the ability of projects to have a 100 percent repower of an existing site) and need to be weighed in the context of larger Minnesota-policy and perception around wind projects.

Third, staff notes the assertion by Trimont that the wake loss would be less was provided via email from Trimont to DOC-EERA and was not included in the record at the time of the initial comment period. Additionally, it does not appear supporting information to substantiate the claim was included either in the email or the record at this time. Trimont later filed (April 2, 2018) information on wake loss and energy yield as trade secret data in response to the DOC-EERA recommendation.

Fourth, staff agrees with the statement that WAB is not a legal term nor has the practice been codified and therefore the Commission is able to make case-by-case decisions. Not only are most all Commission setbacks applied on a case-by-case basis (in order to preserve flexibility and accommodate changing industry and environmental conditions) but the standard or basis for a Commission to change the applied practice is even less stringent than the rule variance requirements in Minn. R. 7829.3200, although staff believes the three-factor test are reasonable criteria to consider.

DOC-EERA ultimately recommended Trimont did not provide sufficient information in its initial filing to ensure its proposal would not have a significant impact on a neighboring landowner but noted it did not believe the requested waivers would violate any wind access buffer protections. The DOC noted it did not support the WAB waiver at this time as:

- The Commission would need to determine if making exemptions to the WAB setbacks in this case would compromise its commitment to the 3x5 WAB setbacks in its general standards and in other and upcoming permits.
- The Application provides ample argument of why the repowering is beneficial; it does not necessarily present a sufficient technical argument that it should be allowed exemptions to the WAB in order to do so.
- The Application does not describe any outreach to nonparticipating landowners. (Staff discussed this further below).

EERA suggested the Commission revisit the issue under the following conditions:

- The Applicant should provide technical evidence that the retrofitted blades would perform as stated. If newer blades can actually be proven to create less downstream wake loss, it improves the argument for adjusting the wind access buffer commensurately.
- The Applicant should describe its efforts to coordinate with landowners of affected parcels, or develop a plan to do so. No comment was received from this quarter during the review period, but that doesn't of itself inform the Commission of consent or understanding.

#### **vi. Trimont Supplemental Filing**

Trimont filed a supplement on April 2, 2018 which provided data on its energy yield analysis and wake loss data (largely trade secret). This information concluded the "wake loss would be less" at the site following the repowering/retrofit turbine modifications. The data did not provide further specifics on the decreased wake loss (other than 'it would be less' than the existing site average wake loss) or a distance by which the wind turbine wake would not have an impact. Staff has read the trade secret filing and does not believe it provides a thorough narrative or calculation on how the wake loss was calculated to be less (calculations are not shown) but this may be a limitation of staff's knowledge of wake loss calculations.

Trimont provided at page 3, "If the operation of the current turbines does not impinge on the wind rights of adjacent parcels, it follows that the operation of the retrofitted turbines, which will generate lower internal wakes, will not impinge on those wind rights."

Staff struggles with this literal interpretation of the DOC-EERA's comments that simply proving the 'wake loss' (production calculation) to be less, would substantiate the basis for the waiver for a certain distance from a turbine wake buffer (distance) standard. The Commission may agree with Trimont and DOC-EERA that this definition and interpretation is acceptable, but staff questions the use of a science-based production output calculation (averaged for the site) for a waiver to a rule-of-thumb per turbine distance standard, without, at a minimum, baseline data calculated in the same manner upon which it is being compared. Staff is not sure how (or if)

the calculated percent reduction in site-average wake loss translates or substantiates the requested 1-13 percent reduction in a WAB setback.

The filing also responded to other issues including the clarification of the number of turbines (21 down to 20) in which a WAB waiver was needed, the range in distance for which a waiver was necessary (revised to be between 16-179 feet), additional information on landowner outreach (discussed below), an additional request to modify the internal turbine spacing adjustment allowance from 20 percent (previously permitted) to 30 percent (discussed below), and lastly, Trimont provided further amendments and objections to the DOC-EERA's proposed permit amendments (again discussed further below).

### **vii. DOC-EERA Supplemental Comments**

In its April 20, 2018 Supplemental Comments, the DOC-EERA indicated with the additional information, it now supported the requested WAB waiver request for all 20 turbines. The DOC-EERA provided:

*EERA believes that, since the standard was established to protect adjacent wind rights, exemptions from that standard that do not impinge on the resource or development opportunities of adjacent landowners should be permissible. In this case, the Applicant's request does not appear to impinge on any neighboring wind resource development potential.*

*To be clear, EERA would not support exemptions that encroached on wind rights of uncontrolled properties. In its original comments, EERA noted that it was unclear whether the requested exemptions made the required protections. The Applicant responded by filing an energy yield assessment providing technical documentation that the turbine retrofit would result in a decrease in wake loss. The resulting equation is that 1) the current turbines and blades are in compliance, and 2) the replacement blades result in less wake loss, so 3) even though the turbines would no longer meet the 3 RD x 5 RD standard, they do meet the intended requirement of the wind access buffer to protect adjacent wind rights.*

*EERA is not suggesting the Commission should alter its general permit standards. The long standing 3 RD x 5 RD setbacks have continued use as a practical standard and precedent. However, in this instance, the Applicant requires a number of minor exemptions in order to execute its retrofit of the Trimont Wind Project. The retrofit improves the efficiency of the Project, maximizes use of the wind resource, and does so within the Applicant's own wind rights-controlled area. EERA would advise that the requested exemptions honor the Commission's intent in establishing the wind access buffer.*



### viii. Staff Conclusion on the Wind Access Buffer

Staff understands this question will be a recurring question many repowering projects will be facing. As the DNR stated, the WAB is a setback from a non-participating parcel that is non-participating for one reason or another. A waiver of the WAB, while originally intended to be used solely for the protection of wind rights and wind use on an adjacent property, it is also (in most instances) the largest setback from a non-participating landowner. The home setback is 500-feet from a residence and the noise standard is also based upon the location of a home (or receptor), the WAB is a setback from a property line.

Staff believes that the Commission should consider whether to grant the waiver to the WAB, or whether it should take some other approach. One avenue not discussed in this record (notwithstanding DOC-EERA's attempt to have Trimont answer related questions) is whether or not an attempt was made to negotiate with non-participating landowners with either participation agreements options or other solutions. In some instances, the participation of a neighbor is a matter of cost which affect the repowering proposal costs. In other areas of the state, the issue is opposition to the project. The issue regarding obtaining by-in from neighboring parcels for Trimont-specifically is discussed further below – but it is still not known whether Trimont attempted to get easements/agreements on the parcels in which a waiver is sought and could not, or whether it was not attempted at all.

Staff understands the challenge repowering proposers face, as the non-participating landowners likely will still not want to participate in the project and the original reasoning behind the most stringent setback may potentially not be needed (if used as originally intended to protect neighboring wind use). However, as noted, the WAB has become the Commission's controlling and most stringent setback (and it could be viewed by some as a 'protection' for those landowner who do not wish to be involved in the project). Staff notes that there were *no written comments* from the project landowners – either participating or not, and notice was provided to all landowner in the project area and those adjacent to it. As the DOC-EERA characterized this in their initial comments, “..but that doesn't of itself inform the Commission of consent or understanding [by a landowner of the implication of the requested waiver].”

Staff believes this is a policy decision that the Commission will need to make. Staff shares concerns expressed by the DOC-EERA, that as initially proposed by Trimont, the WAB waiver without a substantiating basis on why the repowering project is different from another project (or a new project), may cause future developers of new projects to advocate for the waiver of the WAB. Staff believes the 3x5RD WAB provides a level of distance between the project and a non-participating landowner that is greater than any other setback the Commission utilizes and that there are inherent protections in that distance (decreased noise, shadow flicker, visual impacts, etc).

Staff notes that permitting decisions are made on a case-by-case basis and any decision made in this case does not need to weigh on the outcome of any other future decision, however, staff believes these repowering projects are under consideration for many other permitted wind farms and what occurs in this case (and other initial repowering cases) will likely carry over to future developer proposals. Staff wants to ensure a thorough review of the decisions and implications of those decisions are made in this docket.

The Commission could authorize the waivers in this instance, and continue to monitor the issue in future proposals for public input or opposition, or it could initially not allow waivers without participation agreements or further record development on landowner outreach (again, discussed further below).

### **B. Internal Turbine Spacing**

Similar to the reduced WAB setbacks, Trimont requested in their April 2, 2018 supplemental comments an exception to allow up to 30 percent of the turbines to be less than the current site permit turbine spacing requirement of 3 RD between turbine towers (crosswind) and 6 RD between strings of turbine towers (downwind). The current site permit language reads:

The turbine towers shall be constructed within the site shown on the map attached as Figure 1. The turbine towers shall be spaced no closer than 3 rotor diameters (RD) for crosswind spacing (distance between the turbines) and 6 RDs downwind spacing (distance between strings of turbines). If required during final micro siting of the turbine towers to account for topographic conditions, the [Chair] may authorize up to 10 percent of the towers to be sited closer than the above spacing restrictions. Any other changes in spacing requirements shall be addressed on a case-by-case basis within the [MEQB].

Trimont requested to be allowed to have a 30 percent deviation from the turbine spacing requirement (standard is 20 percent). The increased rotor diameter is the only factor causing an increase in turbines not meeting the internal setbacks, as no turbines are being relocated.

### **C. Project Site Noise Levels and Compliance with the MPCA Noise Standard**

Staff reads Trimont's repowering application and attached Figure 14 (the results of the noise modeling of the proposed repowered site) to indicate that there are at least one residential receptors (potentially another five) that are not in compliance with the MPCA noise standard, as proposed/repowered. Figure 14 is attached to this briefing paper.

Since noise models or monitoring was not conducted for the originally built site<sup>13</sup> (as it was not a requirement at that time), with this application, Trimont ran a model for the existing site (as built) and claimed the model showed the existing site is in compliance with the state noise standard. Trimont did not provide the data or modeling contour maps nor has noise monitoring been conducted for this site (as it was not required to do so). Staff questions whether the residential receptor between turbines 43 and 55 is in compliance with the state noise standard as-built, based solely on the limited data staff has before it (which include the contours of the repowered site and the sheer number of turbines surrounding the property). Additionally, Trimont has requested (potentially unintentionally) the Commission modify the site permit condition regarding the MPCA Noise Standard to language so it could be interpreted to affirm that the existing site is in-compliance with the state noise standards. Staff does not support the inclusion of that language as there has never been such a finding by the Commission or the MPCA (however this was likely an unintentional addition/outcome). Staff discusses the permit condition language (proposed and existing) in a later section and focuses on the repowering noise modeling in this section.

The Repowering/Amendment Application at page 18:

The PUC's General Wind Permit Standards enacted after the issuance of the Trimont Wind Site Permit specify that turbines must comply with the state noise standard (the most restrictive of which is 50 dBA at night).<sup>14</sup> The sound power level of the existing wind turbines is 104.0 dBA and the proposed retrofit results in a slight increase of 2.5 dBA, resulting in a sound power level of 106.5 dBA. The MPCA's "A Guide to Noise Control in Minnesota" identifies that changes of approximately one dBA are not noticeable and the threshold of a perceivable difference is about three dBA (4).

A sound model based on the vendor's stated sound power level showed that all existing turbines are compliant with the current Site Permit noise standard. A preliminary sound model was conducted for the proposed retrofit based on the vendor's 106.5 dBA sound power level (refer to Figure 14). Trimont Wind will coordinate with the turbine manufacturer on potential noise mitigation measures, such as installing low noise trailing edges on blades at specific turbines as needed, to maintain Facility noise levels in compliance with state standards. The final noise model will be provided to the PUC at the preconstruction meeting.

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<sup>13</sup> This may be a lack of electronic documentation however, if a noise study was conducted, it may simply may not be on the eDockets system and should be supplied.

<sup>14</sup> Staff note: While the PUC's General Wind Permit Standards were enacted after the issuance of the Trimont site permit, the MPCA noise standards have been in existence for a much longer period of time.

It appears to staff that to be compliant with the state noise standards, Trimont is proposing after-the-fact mitigation measures for an unknown number of homes, with unknown/undisclosed mitigation measures. This is contrary to Commission and DOC-EERA past practice for permitting, generally. The homes in question are participating residences, but for the MPCA noise standard, 'participation' is not a consideration. The issue of noise was not commented on in the record by any person or commenter.

First, projects that are modeled to not be in compliance with the state noise standard have never been authorized by the Commission or recommended to be approved by the DOC-EERA (in staff's recollection). Second, the purpose of the Commission's permitting process (and to be compliant with state environmental review laws) requires the consideration of first, the full impacts of a proposal, and second, whether those impacts can be avoided, minimized, or mitigated. If mitigation, as a last option (after avoid and minimize), is proposed, the mitigation measures proposed must be shown to be sufficient to protect human health and the environment. The impacts are not defined (it appears one, maybe up to six receptors may not comply with the MPCA noise standards) as the contour map is inconclusive on this point and the supporting data was not provided. Mitigation proposed by Trimont is not defined (options will be discussed with the turbine manufacturer at a future time) and as they are undefined, the Commission is unable to determine whether they are sufficiently protective (or whether appropriate options exist at all).

In reviewing Figure 14, staff questioned whether there was a way the Commission could authorize a 'partial amendment' and authorize some turbines to be retrofitted at this time, avoiding any turbines that appear to be contributing to the potential noise standard exceedances. However, due to the complicated nature of noise propagation, and the additive effect of multiple turbines, and due to the numerous properties in which it is unclear as to whether they are anticipated to exceed the nighttime noise standard, staff does not believe a partial authorization would be possible with the data before it. On a cursory look, staff has concerns about the (participating) homes near the following turbines:

- Residence between turbines 48 and 60
- Residence near turbines 61 and 62
- Residence between turbines 36 and 37
- Residence between turbines 41 and 29
- Residence between turbines 43, 44, 55 and 56
- Residence near turbines 65 and 66<sup>15</sup>

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<sup>15</sup> This list should not be used as a comprehensive list of receptors of concern, due to the lack of data and map scale, this list is/may not be comprehensive or representative.

Last, staff notes that Trimont was not subject to noise modeling or monitoring requirements when it was originally permitted. Largely for any permit amendment brought before the Commission (to date all have been pre-construction) have added the requirement to do noise modeling and post-construction monitoring. Staff believes this is a reasonable permit condition to add to the Trimont Wind Project and both Trimont and DOC-EERA are in agreement it should be included. Discussed in the permit condition section below.

However, due to the concern and lack of record development on expected compliance with the MPCA noise standard, staff recommends the Commission deny the repowering of the Trimont wind project at this time and without prejudice.

#### **D. Shadow Flicker**

As with noise, the issue of shadow flicker was not discussed by other parties; staff believes it is important to acknowledge that there will be some increased impacts from flicker. Per the application, shadow flicker analyses were not required when the project was originally permitted. Using conservative inputs (which would overestimate hours of flicker) Trimont indicated the following hours of shadow flicker were modeled for the existing facility and for the new turbines:

- Existing facility: 6 receptors exceed 30 hours per year (30-61 hours)
- Proposed facility: 10 receptors exceed 30 hours per year (31-88 hours)

For new projects, most developers configure a site so that expected hours of shadow flicker on non-participating residences is roughly 30 hours per year or less. There is no standard in Minnesota, but 30 hours per year has become a general industry and informal international practice. Again, while no party or commenters proposed conditions relating to this increased impact, the Commission may want to consider including a permit condition requiring mitigation measures (or a mitigation plan) in the event of a landowner having complaints or for those experiencing greater than 30 hours of flicker. Another options would be for the Commission to consider grandfathering in the current level of shadow flicker, and imposing mitigation measures to those experiencing greater than 60 hours of flicker. If any Commissioner has interest in imposing such a condition at any level, staff could assist in drafting language to propose.

## **2. Compliance with existing site permit terms and conditions**

Staff has conducted a review of Trimont's current permit filing requirements (monthly complaint reports, etc.) and has found Trimont to be current on all required filings.<sup>16</sup>

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<sup>16</sup> This staff assessment should not be interpreted as a finding by the Commission. Compliance for all

### 3. Consistency with current Commission standards

Largely, these issues have been discussed above in the section on changed project impacts. The DOC-EERA has provided a revised permit language, using the Commission’s updated permit standards (updated in 2013 and incrementally thereafter). Here staff only discusses areas of disagreement or items in which the Commission should focus. Staff will file a draft site permit, following issuance of this briefing paper, consistent with the agreed upon permit terms between DOC-EERA and Trimont and further staff-proposed modifications as noted below.

Permit Conditions which remain in contention include:

- 2.0 Project Description

Staff has modified this condition to indicate that turbine bases will not be modified as part of this approval. Comments in the application indicate that further turbine base work may be required pending additional study outcomes, however there is no information on what level of construction that would entail if it is ultimately required. Trimont and DOC-EERA have agreed to eliminate conditions relating to an Invasive Species Management Plan due to the low level of construction and ground disturbance. Staff believes the level of ground disturbance would change if the turbine bases need modification, and therefore, additional approval and review would be required due to the assumptions provided for the project as proposed.

- 4.1 Wind Access Buffer (Whether to authorize the 20 waivers to the WAB)

DOC April 20, 2018 Proposed: 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. In order to support the retrofit of 91-meter turbine blades, the Commission grants exemption from its General Wind Permit Standard 3 RD x 5 RD setback for turbines 4, 6, 7, 12, 16, 17, 18, 19, 22, 23, 34, 46, 47, 48, 54, 55, 56, 57, 58, and 59.

Staff believes the wording of this condition is reasonable if the Commission authorizes the WAB setback modification. If the Commission declines to authorize the waiver, the

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past and future filing and permit requirements remains the responsibility of the Permittee.

original language should be included. Staff has included the WAB waiver language into the proposed permit.

- 4.3 Noise (Staff believes phrasing should be modified to ensure it is not unintentionally make findings about previous compliance with the MPCA noise standard). Staff proposes:

The wind turbine towers, at all times, shall comply with noise standards established by the Minnesota Pollution Control Agency...

- 4.10 Turbine Spacing

Trimont made a request in the second comment period requesting the internal spacing adjustment may be up to 30% (instead of 10%).

DOC-EERA April 20, 2018 Proposed: The turbine towers are 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, up to ~~20~~ 30 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.

Staff believes this condition modification is reasonable.

- 5.4 Electrical Collector Lines

DOC-EERA and Trimont are in agreement on modification to this condition to strike the last sentence, however the proposed language in Trimont's April 2, 2018 comments has the last two sentences removed. Staff supports only the removal of the last sentence of the condition regarding submittal of engineering drawings:

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.~~

- 7.1 Biological and Natural Resource Inventories

DOC-EERA and Trimont are in agreement to remove the entirety of this condition as this work was already largely conducted either through the initial permitting and/or through

the site permit amendment process, however staff believes the last sentence is still valid and should remain. Trimont should file any additional studies done on the project site.

~~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.~~

- 7.4 Noise Studies

Currently Trimont and DOC EERA agree on the following standard Commission language for the conduct of a post-construction noise study.

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.

Due to the existing issue surrounding noise compliance, staff believes this condition is warranted and has included it in the attached site permit. Additionally staff recommends the Commission delegate authority to the Executive Secretary to implement the monitoring using an independent 3rd party to be recommended by the Permittee, approved by the Executive Secretary, and reporting directly to and filing the results directly with EERA and Commission staff. This is the same manner in which the Commission has required of noise monitoring in recent dockets.

- 7.5.1 Avian and Bat Protection

DOC-EERA and Trimont are in disagreement with this condition. DOC-EERA supports use of the standard language required of all developers in Minnesota. Trimont believes it is



not consistent with their internal corporate protocols and challenges the requested methods validity. DOC-EERA considered Trimont's comments and still recommended the standard condition. Staff supports DOC-EERA (and related comments from the DNR about ensuring consistency) and use of the Commission's standard permit language.

- 7.5.3 Immediate Incident Reports

DOC-EERA and Trimont remain in disagreement regarding several words in this condition. Trimont prefers the use of the term 'identification' versus 'discovery' which starts the time frame in which they have to report certain incidents to the Commission and Trimont prefers the use of 'coordinate' vs 'turbine' for reporting of the location. Last, Trimont suggested that reporting should not include species proposed for listing as they are not yet subject to federal regulations.

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 vs. identification) 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.

Staff supports the Commission's existing permit language (that was proposed by the DOC-EERA and has longstanding support by other agencies). Staff agrees with the DOC-EERA that there isn't sufficient reason why Trimont should be subject to different reporting requirements. Staff also believes that Trimont could report both the nearest turbine number (as required by the permit) and coordinates if it so wishes.

- 7.5.4 Blade Feathering

There is disagreement on this condition between Trimont and the DOC-EERA and the DNR. DOC-EERA and the DNR request more recent standard permit language and Trimont made repeated requests to employ a different standard that matches Trimont's current internal corporate protocol. However Trimont's internal protocols are less stringent than the requirements requested of the DNR and the DOC-EERA. Staff does not support the Trimont amendment and has included the Commission's general blade feathering language.

- 10.6 As-Builts

Trimont and DOC-EERA are in agreement with this condition, however, due to comments in the application, staff has concerns that additional foundation work may be required for some turbines. Trimont noted that certain studies were still underway and it would provide additional detail at the time of the pre-construction meeting. Therefore, staff proposes to amend this condition to require Trimont to submit copies of final as-built plans and specifications for any turbine in which the base was modified.

- 10.8 Project Energy Production and 10.9 Wind Resource Use

Here Trimont is seeking permit conditions that are modified to explicitly allow data to be filed as trade secret. This has not been a practice allowed by the Commission in any docket for any permittee for these filings and permits currently state the information should be filed as public. Trimont is one of the projects in which information is continually filed as trade secret. Commission staff is currently undergoing a systematic review of all filings made that are trade secret and determining how to proceed. Staff believes the original language is most accurate and is what has been expressed to permittees to do. Staff is looking into whether the trade secret filings are appropriate, and due to the continued filings being made as such, whether a permit violation is occurring (as the trade secret information could be viewed as non-compliant filing). Staff does not propose an amendment to the Commission's standard language.

#### **4. Permit distribution and landowner notification requirements**

##### *Historic Compliance with Distribution and Notification Requirements*

Typically, for this compliance review, DOC-EERA or the Commission reviews confirmation of permit distribution from the time of the original permit issuance, as required by a permit condition. Per a letter from DOC-EERA staff to the Permittee, dated April 8, 2013, the DOC-EERA confirmed there was documentation of the site permit issuance to local landowners.

New permit requirements (and those proposed for this repowering project and essentially, new permit reissue) also have similar language requiring notice to local landowners and governmental units which has been proposed here. Staff believes these requirements (and proposed new permit conditions are reasonable for future landowner notifications).

### *Repowering Notification*

On a related matter, one of the issues raised is to what extent Trimont sought to obtain participation agreements from landowners within the WAB area in which it seeks a waiver from the Commission. The DOC-EERA attempted to retrieve this information through the comment period, DOC-EERA Initial Comments (March 19, 2018):

The Applicant should describe its efforts to coordinate with landowners of affected parcels, or develop a plan to do so. No comment was received from this quarter [group of people] during the review period, but that doesn't of itself inform the Commission of consent or understanding.

Trimont responded in reply comments (April 2, 2018) that:

- It had followed the requirements for seeking to amend its permit and had relied on the noticing and public participation process conducted by the Commission.
- No members of the public spoke out in opposition to the project and that Trimont took objections to DOC-EERA's characterization that the public may not have understood the issue.
- The Commission's notice was clear and members of the public appeared at the public meeting.
- There was an extended comment period allowing members of the public to comment.
- The lack of complaints on the project, as noted in the monthly complaint filing supports its claim that there is public support for the project.
- Requiring consent from non-participating landowners affected by the WAB waiver would amount to handing these landowners a potential veto over the project which Trimont believes would not be consistent with statutory mandate.

### DOC-EERA Reply Comments (April 20, 2018)

The Applicant provided less meaningful information regarding EERA's second question concerning communication with landowners. EERA's intention in the request was to determine if there had been any special efforts to share information of the impacts of the retrofitting with non-participating landowners.

Staff raises this issue to the Commission's attention largely since this is the first repowering project before it and input on public process may be beneficial for staff and other developers. Staff believes for this project there are many options before it – however, staff is taking a close look at this project as (noted earlier) this is the first repowering project before the Commission.

#### **VIII. COMMISSION DECISION OPTIONS**

1. Grant the amendments to the Trimont LWECS Site Permit as proposed by staff.  
*Staff notes the permit authorizes the WAB waiver as requested.*
2. Grant the issuance of the amended site permit as attached for the Trimont LWECS Site Permit, as modified.
3. Deny the request to amend the Trimont LWECS Site Permit, without prejudice.
4. Commission delegate authority to the Executive Secretary to implement the monitoring using an independent 3rd party to be recommended by the Permittee, approved by the Executive Secretary, and reporting directly to and filing the results directly with EERA and Commission staff.
5. Authorize staff to make further administrative permit modifications as necessary to ensure consistency with the record and recently issued permits.
6. Take some other action deemed appropriate.

**Staff Recommendation:** 3

**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

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

**IN  
JACKSON AND MARTIN**

**ISSUED TO  
TRIMONT WIND I, LLC**

**PUC DOCKET NO. IP6907/WS-13-258**

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

**TRIMONT WIND I, LLC**

The Permittee is authorized by this site permit to construct and operate a 107.2-megawatt nameplate capacity Large Wind Energy Conversion System on the site identified in this site permit. 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 \_\_\_\_ day of \_\_\_\_\_

**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 Trimont Wind I, LLC (Permittee) pursuant to Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854. This permit authorizes the Permittee to construct and operate the Trimont Wind Project (Project), a 107.2 megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Jackson and Martin counties. 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 107.2-MW LWECS Project authorized to be constructed in this Permit is referred to as the Trimont Wind Project (“Project or Facility”). The Project will consist of up to 67 turbines, using 1.6 MW GE wind turbines with a maximum nameplate capacity of 107.2 MW. Turbines are interconnected by communication and electrical power collection facilities within the wind farm. These facilities will include transformers and underground collection lines and overhead feeder lines that will deliver wind-generated power to GRE’s Martin County Substation located in Section 19 in Cedar Township in Martin County. The retrofit turbine blades will have a 91 meter rotor diameter. There will be no changes to the Facility boundary, turbine locations, turbine towers, turbine bases, meteorological towers, or underground electrical collection system outside of the substation.

### **2.1 Associated Facilities**

There will be no changes to electrical equipment, collector and feeder lines, and other associated facilities. Existing access roads may have temporary construction to widen and add turning radii for deliveries and these access road improvements will be removed after construction

### **2.2 Project Location**

The project is located in the following:

County	Township Name	Township	Range	Section
Jackson	Kimball	T104	R34	11-14, 22-28, 34, 36
Martin	Cedar	T104	R33	7, 17-21, 29-30

### **3.0 DESIGNATED SITE**

The site designated by the Commission for the Trimont Wind Project is the site depicted on the official site permit maps attached to this permit.

### **3.1 Turbine Layout**

The wind turbine and associated facility layouts are shown on the official site maps attached to this permit. Trimont Wind is not proposing to modify the turbine layout as a result of the proposed retrofitting activities. The Trimont Wind site layout was originally developed to minimize the overall potential human and environmental impacts of the Project, which were evaluated in the permitting process. The location of each wind turbine and associated facilities is located within the Project boundary.

### **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. The Commission authorizes a variance to the setbacks for 20 turbines: 6, 7, 12, 16, 17, 18, 19, 22, 23, 34, 46, 47, 48, 54, 55, 56, 57, 58, and 59.

#### **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 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 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.

#### **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 turbines 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 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.

#### **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 30 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 [Site Permit Application Date and Title], 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.

#### 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 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 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.

## **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.

## **7.0 SURVEYS AND REPORTING**

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

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. 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.

## **7.3 Wake Loss Studies**

At least 14 days prior to the pre-construction meeting, the Permittee shall file with the Commission 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 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.

## **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, 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.

## **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 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 Jackson and Martin Environmental Offices 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 the Jackson and Martin Environmental 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 [*County in which site is located*] Environmental 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.

#### **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 any final as-built plans and specifications developed during the repowering/retrofit 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 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.

### **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.

### **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.