



**BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

**COMMENTS AND RECOMMENDATIONS OF THE  
MINNESOTA OFFICE OF ENERGY SECURITY  
ENERGY FACILITY PERMITTING STAFF**

**DOCKET NO. IP-6728/WS-09-553**

Meeting Date: February 11, 2010 ..... Agenda Item # \_\_\_\_\_

Company: Heartland Wind, LLC (Now: Elm Creek Wind II, LLC)

Docket No. **PUC Docket Number: IP-6728/WS-09-553**

**In the Matter of the Application of Heartland Wind, LLC, for a Large  
Wind Energy Conversion System (LWECS) Site Permit for the 150 MW  
Elm Creek II Wind Project in Jackson and Martin Counties.**

Issue(s): Should the Commission issue Elm Creek Wind II, LLC, a Large Wind Energy  
Conversion System Site Permit for the Elm Creek II Wind Project?

OES EFP Staff: Matthew A. Langan ..... 651-296-2096

**Relevant Documents**

Site Permit Application..... May 19, 2009  
OES EFP Staff Comments and Recommendations ..... August 6, 2009

The enclosed materials are work papers of the Office of Energy Security (OES) Energy Facility Permitting (EFP) Staff. They are intended for use by the Public Utilities Commission and are based on information already in the record unless otherwise noted. This document can be made available in alternative formats; i.e., large print or audio tape by calling (651) 201-2202 (Voice) or 1-800-627-3529 (TTY relay service).

**Documents Attached:**

1. Elm Creek II Wind Project Site Map
2. Proposed Findings of Fact and Conclusions
3. OES EFP Staff Exhibit List
4. Proposed Site Permit

(Note: see eDockets (09-553) or the PUC Facilities Permitting website for additional documents: <http://energyfacilities.puc.state.mn.us/Docket.html?Id=20051>.)

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**Statement of the Issue**

Should the Commission issue Elm Creek Wind II, LLC, a Large Wind Energy Conversion System Site Permit for the Elm Creek II Wind Project in Jackson and Martin counties?

**Introduction and Background**

On May 19, 2009, Heartland Wind, LLC, (applicant) submitted a site permit application for the proposed 150 megawatt (MW) project in Jackson and Martin counties (Exhibit 1). Heartland Wind, LLC, is a wholly-owned subsidiary of Iberdrola Renewables, Inc. In its application, Heartland stated that it will “transfer the ownership of the Elm Creek II Wind Project to a project-specific, Iberdrola Renewables subsidiary Limited Liability Company prior to, during or after construction of the project.” (Site Permit application, pages 1-1 and 1-2.) Elm Creek Wind II, LLC, a wholly-owned subsidiary of Iberdrola Renewables, Inc. will own and operate the Elm Creek II Wind Project. Iberdrola requests that the Commission issue the LWECs site permit in the name of Elm Creek Wind II, LLC.

***Project Location and Land Control***

The Elm Creek II Wind Project will be located north and east of the city of Jackson and has identified a Project area of approximately 30,339 acres located in Sections 1, 2, 11-15, 20-29, 32-36 of Enterprise Township and Sections 1-5, 8-12 in Wisconsin Township, Jackson County; and, Sections 17-20, 29-32 of Cedar Township, Sections 5-8, 17-20, 29-32 of Elm Creek Township, and Sections 6-7 of Jay Township in Martin County. Of the 30,339 acres within the project area, approximately 10,000 acres are under option or lease control by the applicant. These rights and easements will be used to site the turbines and all associated facilities and provide the necessary wind access buffers and setbacks. Land and wind rights will need to encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access roads, meteorological towers, electrical collection system and electric lines located on or along public road rights-of-way.

The Project Area is zoned agricultural. Elevation varies from 1,245 to 1,451 feet above mean sea level. The dominant land use is agricultural, with the main crops being corn and soybeans. Jackson and Martin counties are also the state’s top producers of livestock, especially hogs and pigs. Depending upon final design, the Applicant anticipates that the Project would occupy less than 50 acres.

### ***Elm Creek II Wind Project***

The Elm Creek II Wind Project is comprised of between 50 and 100 wind turbine generators mounted on freestanding tubular towers and associated facilities. The applicant has not reached a final decision on turbine models, but anticipates using one of the following models: GE 1.5 MW, Gamesa 2.0 MW, Mitsubishi 2.4 MW, or Vestus 3.0 MW. Depending on the turbine model selected, the minimum hub height would be 78 meters or 256 feet (Gamesa 2.0 MW), and the maximum hub height would be 105 meters or 344 feet (Vestus 3.0 MW.) Depending on turbine model selected, the minimum rotor diameter would be 77 meters or 256 feet (GE 1.5 MW) and the maximum rotor diameter would be 95 meters or 312 feet (Mitsubishi 2.4 MW.) Depending on the turbine selected, the minimum overall height of the tower, nacelle and blade would be 118.5 meters or 389 feet (GE 1.5 MW) when one blade is in the vertical position and the maximum height would be 150 meters or 492 feet (Vestus 3.0 MW.)

The project will also include an underground automated supervisory control and data acquisition system (SCADA) for communication purposes. Two to three permanent free standing 80 meter meteorological towers will be used as part of the communication system. Other components of the project include a concrete and steel foundation for each tower, pad-mounted step-up transformers, all weather class 5 roads of gravel or similar material, an underground and overhead energy collection system, one permanent sonic detection and ranging unit (SODAR), expansion of the Trimont Wind Electrical Substation, and a project operation and maintenance building. All of the proposed wind turbines and associated facilities will be located in Jackson and Martin counties.

Each turbine will be interconnected through an underground and overhead electrical collection system at 34.5 kV. All of the proposed feeder lines would connect to the existing Trimont Wind Electrical Substation within the project area boundary. The substation is located in the northeast portion of the project area (Cedar Township, Section 19, Martin County.) The project substation steps up the voltage from the 34.5 kV collection systems to the 345 kV transmission system level. The Trimont Wind Energy Substation connects to the Lakefield Generation Substation via an existing 345 kV span. The interconnection details have been determined as a result of studies and agreements with transmission owners and Midwest Independent System Operator Standards.

### **Regulatory Process and Procedures**

A site permit from the Commission is required to construct a Large Wind Energy Conversion System, which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity (Minnesota Statutes Chapter 216F). This requirement became law in 1995. The rules to implement the permitting requirements for LWECS are in Minnesota Rules Chapter 7854.

A Certificate of Need (CN) from the Commission for a large electric power generating plant is also required because the Project exceeds 50 MW in size (Minn. Stat. §216B.243). On June 8, 2009, Heartland filed an Application for a CN from the Commission. [See PUC Docket Number IP-6728/CN-09-471.] A site permit cannot be granted before a CN is issued. The applicant requested that processing of the site permit application and CON application, along with public participation steps, be combined to the extent practicable. OES EFP staff combined portions of the site permit public participation process with portions of the environmental review process in the CN proceeding for the Project, as has been done in several recent cases to achieve process

efficiencies. This included combining notices, public information and environmental review scoping meetings, and comment periods to provide the public consolidated opportunities to participate in the site permit and CN proceedings for the Project. Because a Certificate of Need is required for this Project, an Environmental Report (ER) was prepared by OES EFP staff on November 23, 2009. Upon completion of the environmental report, OES published notice in the November 30, 2009 *EQB Monitor* of the availability of the environmental report and mailed notice of the availability of the document to those persons who had requested to be notified. OES EFP staff provided a copy of the document to the Commission and to any other public agency with authority to permit or approve the proposed project. OES EFP staff posted the environmental report on the agency's Web page. The Office of Administrative Hearings conducted a public hearing on the CN proceedings, including the environmental report, on December 15, 2009. The presiding Administrative Law Judge issued a hearing summary on January 12, 2010.

### ***Site Permit Application, Preliminary Determination and Draft Site Permit***

On May 19, 2009, Heartland, filed a site permit application with the Public Utilities Commission for the 150 MW Elm Creek II Wind Project. On June 30, 2009, a Commission Order accepted the site permit application as complete. The applicant provided notice of the site permit application acceptance and an opportunity to comment on the permit application to government agencies and landowners within the Project area on July 14, 2009. This notice was also published in the *Fairmont Sentinel* on July 1, 2009, and in the *Jackson County Pilot* on July 2, 2009. Comments on the application and issues to address in the site permit were accepted until July 24, 2009. On August 11, 2009, the Commission issued an Order issuing a draft site permit for review and comment. Notice of Public Information Meeting and Availability of Draft Site Permit was issued and published in the *EQB Monitor*, the *Fairmont Sentinel* and the *Jackson County Pilot* and sent to governmental agencies and landowners in the Project area.

### ***Public Participation Process***

The rules provide opportunities for the public to participate in deliberations on the LWECs site permit application. The public was advised of the submission of the site permit application after the application was accepted. OES EFP staff held a public information meeting in Jackson, Minn. on September 3, 2009, to provide the public with an overview of the permitting process for LWECs and to receive comments from the public on the site permit application and draft site permit. The meeting also provided the public with an opportunity to ask questions of OES EFP staff and the applicant and to express concerns or issues related to the Project. Representatives of the applicant were available to describe the project and answer questions. Approximately 40 people attended the public meeting.

### ***Summary of Public Comments***

In addition to general questions regarding the LWECs wind permitting process, project specific questions at the September 3, 2009, public meeting were related to location of collector lines, human settlement impacts, road damage, and wireless broadband internet signal disturbance. These questions are addressed in Findings 32, 33, 47, 48 and 49.

In addition to the comments addressed in EFP staff's August 6, 2009, Comments and Recommendations to the Commission (**included in relevant documents**), one comment letter from Minnesota Department of Transportation (MnDOT) District 7 and one comment letter from the applicant were received prior to the close of the comment period on September 23, 2009.

On July 20, 2009, MnDOT District 7 staff submitted comments on the proposed project stating MnDOT's permitting and coordination requirements (Exhibit 6). EFP staff responds to MnDOT's comments under the Staff Analysis and Comments section below.

On September 23, 2009, Iberdrola Renewables, Inc. submitted a comment letter requesting various changes to the Draft Site Permit (Exhibit 12). EFP staff responds to Iberdrola's comments under the Staff Analysis and Comments section below.

### ***Standards for Permit Issuance & Site Permit***

The test for issuing a site permit for a Large Wind Energy Conversion System is to determine whether a project is compatible with environmental preservation, sustainable development, and the efficient use of resources (Minnesota Statutes Chapter 216F). The wind statutes incorporate certain portions of the Power Plant Siting Act, including the environmental considerations. Also, the law allows the Commission to place conditions in LWECS permits [Minnesota Statutes 216F.04 (d)].

### **OES EFP Staff Comments and Analysis**

Based on the record of this proceeding, OES EFP staff concludes that the Elm Creek II Wind Project meets the procedural requirements and the criteria and standards for issuance of a site permit identified in Minnesota Statutes and Rules. The site permit application has been reviewed pursuant to the requirement of Minnesota Rules Chapter 7854 (Wind Siting Rules).

OES EFP staff has prepared for Commission consideration proposed Findings of Fact, Conclusions and Order, an Exhibit List and a proposed Site Permit for the Elm Creek II Wind Project.

The site criteria addressed in the Findings of Fact (such as human settlement, public health and safety, noise, recreational resources, community benefits, effects on land based economies, archaeological and historical resources, animals and wildlife, and surface water) track the factors described in the Commission's rules for other types of power plants that are pertinent to wind projects. The conditions in this proposed Site Permit are essentially the same as conditions included in other LWECS site permits issued by the Environmental Quality Board and the Commission.

### ***Staff Responses to Comments and Issues Raised***

OES EFP staff analysis lists the categories of issues raised and how the proposed site permit or other jurisdictions will address this issue.

**Transportation:** MnDOT indicated no concerns with the Elm Creek II Wind Project, but clarified MnDOT's permitting and coordination requirements. If any turnoff point from a state highway requires work in the state right-of-way, or materials or structures need to be stored or placed in the right-of-way, a MnDOT District 7 permit will be required. Comments from the public information meeting also identified concerns with damage to local roads.

*OES EFP Response:* These requirements are addressed in the site permit application, Findings 49, 50, and 53, and in the Site Permit at Condition III.B.8 a, III.B.8.b, and III.K.7.

**Collector Line Locations:** Members of the public asked about the placement (underground or overhead) of the project's collector line system.

*OES EFP Response:* The proposed project will have approximately 25 miles of underground cables for the collector lines on private property within the wind farm, and approximately 10 miles of overhead collector cables. Underground electrical lines will be buried in trenches and run to the edge of the farm field. Overhead lines will follow existing roadways, as possible. This is also addressed in Finding 48. Permit Conditions III.E.7 and III.E.8 both require underground cables to be sited in a manner acceptable to affected landowners.

**Applicant Comments on Draft Permit Language:** Iberdrola Renewables, Inc. noted the need to include a sonic detection and ranging (SODAR) unit in the project description of the site permit. Iberdrola requested a change in the site restoration procedures at Permit Condition III.B.12. Iberdrola suggested changing the title of Permit Condition III.E.7 from “Electrical Cables” to “Collector Lines” to more accurately reflect the type of infrastructure used. Iberdrola also requested changes in Permit Condition III.H.1 and 2 to streamline Energy Reporting requirements.

*OES EFP Response:* EFP has amended Site Permit item II to include a SODAR unit as part of the project description, as was reflected in the site permit application. EFP did not change the site restoration requirements at Condition III.B.12, which require the permittee to restore the area affected by the construction of each turbine, not the entire project, within eight months of completing construction. Because of the duration of construction activities, restoring the site only after all of construction is completed could delay site restoration at some turbine locations long past the eight months required by this permit condition. EFP has changed the title of Permit Condition III.E.7, as suggested, to more accurately define the electrical infrastructure and has added a definition of junction boxes to the Condition for further clarification. Changes have recently been made to the energy reporting permit conditions to streamline the data acquisition process.

***Proposed Findings of Fact***

The proposed Findings (see Attachment 2 in the Commissioner’s packet) address the procedural aspects the process followed, describe the project, and address the environmental and other considerations of the project. The proposed Findings of Fact reflect some findings that were also made for other LWECs projects. The following outline identifies the categories of the Findings of Fact.

<u>Category</u>	<u>Findings</u>
Background and Procedure	1 – 11
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Project Description	13 – 21
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Wind Resource Considerations	25 – 27
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***Exhibit List***

OES EFP staff has prepared an exhibit list of documents that are part of the record in this permit proceeding.

***Proposed Site Permit***

The OES EFP Staff has prepared a site permit for the Commission’s consideration. See Attachment 4 in the Commissioner’s packet.

## **Commission Decision Options**

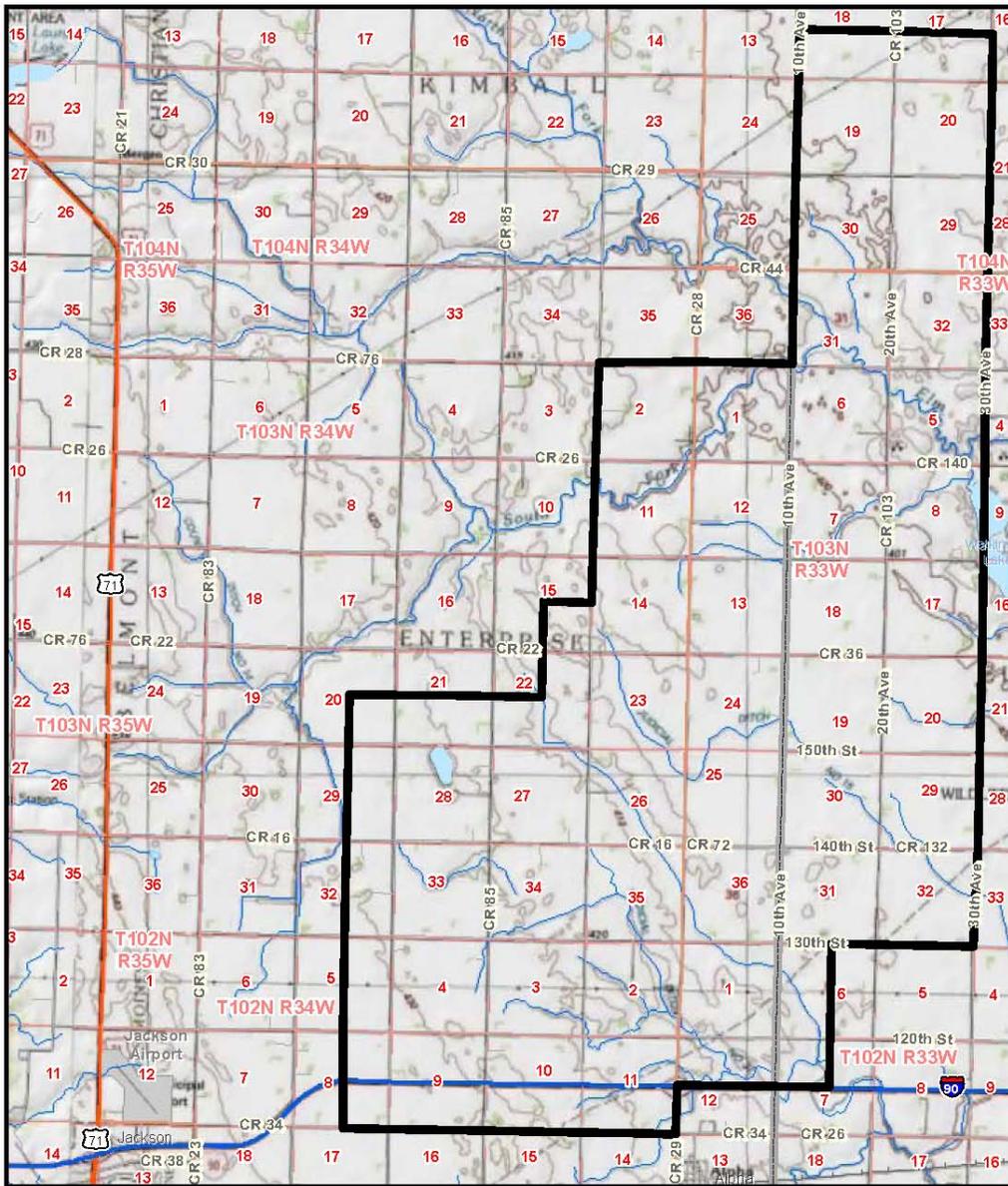
### **A. Elm Creek II Wind Project Findings of Fact and Conclusions**

1. Adopt the attached Findings of Fact, Conclusions of Law and Order prepared for the 150 MW Elm Creek II Wind Project in Jackson and Martin counties.
2. Amend the Findings of Fact and Conclusions of Law as deemed appropriate.
3. Make some other decision deemed more appropriate.

### **B. LWECS Site Permit for the 150 MW Elm Creek II Wind Project**

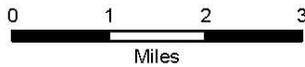
1. Issue the proposed LWECS Site Permit for the 150 MW Elm Creek II Wind Project to Elm Creek Wind II, LLC.
2. Amend the proposed LWECS Site Permit as deemed appropriate.
3. Deny the LWECS Site Permit.
4. Make some other decision deemed more appropriate.

**OES EFP Staff Recommendation:** The staff recommends Options A1 and B1.



**Legend**

- Interstate Highway
- US/State Highway
- County Highway
- Local Roads
- Project Area
- Section Lines



**Figure 1-2**  
**Project Location Map**  
 Elm Creek II Wind Project  
 Jackson & Martin  
 Counties, MN

Modify Date: 5/14/2009

File: Z:\Projects\WNElm Creek\MapDocuments\Report Figures\EC-II - LWEC\Figure 1-2 - Project Location Map.mxd

**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

David Boyd	Chair
J. Dennis O'Brien	Commissioner
Tom Pugh	Commissioner
Phyllis Reha	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Application of Heartland Wind, LLC, for a Site Permit for the Elm Creek II Wind Project, an up to 150 Megawatt Large Wind Energy Conversion System in Jackson and Martin Counties

**ISSUE DATE:**

**DOCKET NO.**

IP-6728/WS-09-553

**FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER, ISSUING A SITE PERMIT TO ELM CREEK WIND II, LLC, FOR THE ELM CREEK II WIND PROJECT**

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The above-entitled matter came before the Minnesota Public Utilities Commission (Commission) pursuant to an application submitted by Heartland Wind, LLC, (Heartland) for a site permit to construct, operate, maintain and manage a 150 Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Jackson and Martin counties.

All of the proposed wind turbines and associated facilities will be located in Jackson and Martin counties. Associated facilities will include pad mounted step-up transformers for each wind turbine, access roads, an electrical collection and feeder system, expansion of an existing substation, a sonic detection and ranging system, an operations and maintenance building, and up to three permanent meteorological towers. The energy from the proposed 150 MW project will be delivered from the Trimont Wind Energy Substation to the Lakefield Generation Substation via an existing 345 kV span.

**STATEMENT OF ISSUE**

Should Elm Creek Wind II, LLC, (Applicant) be granted a site permit under Minnesota Statutes section 216F.04 to construct a 150 MW Large Wind Energy Conversion System in Jackson and Martin counties?

Based upon the record created in this proceeding, the Public Utilities Commission makes the following:

## FINDINGS OF FACT

### Background and Procedure

- 1) On May 19, 2009, Heartland Wind, LLC, filed a site permit application with the Public Utilities Commission for the 150 MW Elm Creek II Wind Project (Exhibit 1).
- 2) Office of Energy Security (OES) Energy Facility Permitting (EFP) staff reviewed and determined that the May 19, 2009, application complied with the application requirements of Minnesota Rules, part 7854.0500. In its comments and recommendations to the Commission, dated June 16, 2009, OES EFP staff recommended that the Commission accept the application (Exhibit 2).
- 3) On June 30, 2009, a Commission Order accepted the application for the Elm Creek II Wind Project (Exhibit 3).
- 4) Published notice of site permit application acceptance, and opportunity to comment on the permit application appeared in the *Fairmont Sentinel* on July 1, 2009 and the *Jackson County Pilot* on July 2, 2009 (Exhibit 4). The published notice provided: a) description of the proposed project; b) deadline for public comments on the application; c) description of the site permit review process; and d) identification of the public advisor. The notice published meets the requirements of Minnesota Rules, Part 7854. 0600 subp 2.
- 5) On July 14, 2009, the applicant distributed copies of the “Site Permit Application for the Elm Creek II Wind Project and Notice of Application Acceptance” to government agencies and residences (Exhibit 5).
- 6) Public comments on the site permit application were accepted until July 24, 2009. Six comment letters were received (Exhibit 6) and they are summarized in the OES Comments and Recommendations presented to the Commission at its August 6, 2009, meeting in conjunction with the request for issuance of a “Draft Site Permit” for the Elm Creek II Wind Project (Exhibit 7). One comment letter was submitted following the comment deadline.
- 7) On August 11, 2009, a Commission Order issued a “Draft Site Permit” for the Elm Creek II Wind Project (Exhibit 8).
- 8) On August 19, 2009, OES EFP staff issued a notice of application acceptance and public information meeting. The published notice provided: a) location and date of the public information meeting; b) description of the proposed project; c) deadline for public comments on the application and draft site permit; d) description of the Commission site permit review process; and e) identification of the public advisor. The notice meets the requirements of Minnesota Rules, Part 7854.0900 subp 1. This notice was sent to interested persons and governmental agencies on August 19, 2009, as required by Minnesota Rules, Part 7854.0900, subp. 2 (Exhibit 9).
- 9) Published notice of site permit application acceptance, and opportunity to comment on the permit application and draft site permit appeared in the *Fairmont Sentinel* on August 19,

2009 and the *Jackson County Pilot* on August 20, 2009, and in the *EQB Monitor* on August 24, 2009, as required by Minnesota Rules, Part 7854.0900, subp. 2 (Exhibits 10 and 11). The published notice contained all of the information required by Minnesota Rules part 7854.0900 subp. 1

- 10) The OES EFP staff held a public information meeting on the evening of September 3, 2009, in Jackson, Minn. to provide an overview of the Commission permitting process and to receive comments on the site permit application and draft site permit. Approximately 40 people attended the meeting. The applicant's representatives were also present. OES EFP staff provided an overview of the LWECs site permitting process, the draft site permit and responded to questions. OES EFP staff and the applicant responded to project specific questions and general questions about wind energy. Project specific questions were related to location of collector lines and potential road damage. These questions are addressed in Findings 48 and 49. The deadline for submitting comments on the site permit application, draft site permit was September 23, 2009.
- 11) There were no written public comments received on the draft site permit.

### **Permittee**

- 12) Heartland Wind, LLC, has submitted a site permit application for the proposed 150 megawatt (MW) project in Jackson and Martin counties. Heartland Wind, LLC, is a wholly-owned subsidiary of Iberdrola Renewables, Inc. Iberdrola owns and operates four other wind farms in Minnesota (150MW MinnDakota, 100MW Moraine I and II, 100MW Trimont and 100MW Elm Creek I.) The site permit application states "Heartland Wind, LLC will transfer the ownership of the Elm Creek II Wind Project to a project-specific, Iberdrola Renewables subsidiary Limited Liability Company prior to, during, or after construction of the project. The new project-specific LLC will construct, own, and operate the Elm Creek II Wind Project." (route permit application, pages 1-1 and 1-2) Iberdrola's wholly-owned subsidiary that will construct, own and operate the Elm Creek II Wind Project will be Elm Creek Wind II, LLC, an Oregon based company. Iberdrola requests that the Commission issue the LWECs site permit in the name of Elm Creek Wind II, LLC. The Site Permit acknowledges this request, and is written for Elm Creek Wind II, LLC.

### **Project Description**

- 13) The Elm Creek II Wind Project is comprised of between 50 and 100 wind turbine generators mounted on freestanding tubular towers and associated facilities. The applicant has not reached a final decision on turbine models, but anticipates using one of the following models: GE 1.5 MW, Gamesa 2.0 MW, Mitsubishi 2.4 MW, or Vestus 3.0 MW.
- 14) Depending on the turbine model selected, the minimum hub height would be 78 meters or 256 feet (Gamesa 2.0 MW), and the maximum hub height would be 105 meters or 344 feet (Vestus 3.0 MW.) Depending on turbine model selected, the minimum rotor diameter would be 77 meters or 256 feet (GE 1.5 MW) and the maximum rotor diameter would be 95 meters or 312 feet (Mitsubishi 2.4 MW.) Depending on the turbine selected, the minimum overall height of the tower, nacelle and blade would be 118.5 meters or 389 feet (GE 1.5 MW) when

one blade is in the vertical position and the maximum height would be 150 meters or 492 feet (Vestus 3.0 MW.)

- 15) The project will also include an underground automated supervisory control and data acquisition system (SCADA) for communication purposes. Two to three permanent free standing 80 meter meteorological towers will be used as part of the communication system. Other components of the project include a concrete and steel foundation for each tower, pad-mounted step-up transformers, all weather class 5 roads of gravel or similar material, an underground and overhead energy collection system, one permanent sonic detection and ranging unit (SODAR), expansion of the Trimont Wind Electrical Substation, and a project operation and maintenance building.
- 16) All turbine models under consideration are three-bladed, upwind, active yaw, and active aerodynamic control regulated wind turbines with power/torque control capabilities. Each turbine is equipped with a wind direction sensor. The wind direction sensor communicates with the computer system, which evaluates the measured wind parameters, and within a specified time interval, activates the yaw drives to align the nacelle to the wind direction.
- 17) Each turbine is interconnected through an underground and overhead electrical collection system at 34.5 kV. All of the proposed feeder lines would connect to the Trimont Wind Electrical Substation within the project area boundary. The substation is located in the northeast portion of the project area (Cedar Township, Section 19, Martin County.) The project substation steps up the voltage from the 34.5 kV collection systems to the 345 kV transmission system level. The Trimont Wind Energy Substation connects to the Lakefield Generation Substation via an existing 345 kV span. The interconnection details have been determined as a result of studies and agreements with transmission owners and Midwest Independent System Operator Standards.
- 18) The blades will be either white or grey in color. The blades will be equipped with lightning protection. The entire turbine is also grounded and shielded to protect against lightning.
- 19) Each tower will be secured by a concrete foundation that will vary in size depending on the soil conditions. A control panel that houses communication and electronic circuitry is placed in each tower. In addition, a step-up, pad-mounted transformer is necessary for each turbine to collect the power from the turbine and transfer it to a 34.5 kV collection system via underground cables.
- 20) All turbines and the two to three permanent meteorological towers will be interconnected with fiber optic communication cable that will be installed underground. The communication cables will run back to a central host computer which will be located at the new operations and maintenance building. Signals from the current and potential transformers at each of the delivery points will also be fed to the central SCADA host computer. The SCADA system will be able to give status indications of the individual wind turbines and the substation and allow for remote control of the wind turbines locally or from a remote computer. This computerized supervisory control and data acquisition network will provide detailed operating and performance information for each wind turbine. The

Permittee will maintain a computer program and database for tracking each wind turbine's maintenance history and energy production.

- 21) Housed inside the fiberglass nacelle that sits on the top of the tower are the generator, brake system, yaw drive system and other miscellaneous components.

### **Site Location and Characteristics**

- 22) The Elm Creek II Wind Project will be located north and east of the city of Jackson and has identified a Project area of approximately 30,339 acres located in Sections 1, 2, 11-15, 20-29, 32-36 of Enterprise Township and Sections 1-5, 8-12 in Wisconsin Township, Jackson County; and, Sections 17-20, 29-32 of Cedar Township, Sections 5-8, 17-20, 29-32 of Elm Creek Township, and Sections 6-7 of Jay Township in Martin County. Of the 30,339 acres within the project area, approximately 10,000 acres are under option or lease control by the applicant. The Project Area is zoned agricultural. Elevation varies from 1,245 to 1,451 feet above mean sea level. The dominant land use is agricultural, with the main crops being corn and soybeans. Jackson and Martin counties are also the state's top producers of livestock, especially hogs and pigs.
- 23) Construction of the turbines sites and access roads will involve temporarily disturbing approximately 50 acres for contractor staging areas, foundation construction, underground power lines, and tower and turbine assembly. Permanent roads are expected to be about 16 feet wide. Depending upon final design, the Applicant anticipates that the Project would occupy less than 50 acres.
- 24) Wind turbine and road access will be sited to take into account the contours of the land and prime farmland locations to minimize impact. The Project will be subject to the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit. An erosion and sediment control plan and Storm Water Pollution Prevention Plan (SWPPP) will also be prepared for the Project and the disturbed areas will be seeded after construction to stabilize the area.

### **Wind Resource Considerations**

- 25) The Project area has an average estimated wind speed of 7.7 meters per second (17 miles per hour) at the 80 meter (262 foot) hub height. Wind speeds are generally greater in the night and early morning hours and decline at midday. Regionally, the prevailing wind directions are generally south-southeast and west-northwest. There exist differences in diurnal production from season to season where the summer has a large change in production from night to day. Conversely the winter and spring months exhibit more consistent wind speeds throughout the day. Of the annual energy budget, a higher percentage results from southerly winds, which are most frequent in the warmer weather months. The north and northwest winds typically occur in winter.
- 26) For this project, turbines will be sited so as to have good exposure to winds from all directions with emphasis on exposure to the prevailing southerly and northwesterly wind

directions. The turbine spacing, according to the site application, maximizes use of the available wind and minimizes wake and array losses within the topographical context of the site. The turbines are typically oriented east to west, which is roughly perpendicular to the prevailing southerly and northwest winds. Turbine placement, aside from other resource features where setbacks or wind access buffers are required, will be designed to provide sufficient spacing between the turbines to minimize internal wake losses. Given the prevalence for southerly and northerly winds, the spacing is widest in the north-south direction. Greater or lesser spacing between the turbines or turbine strings may be used in areas where the terrain dictates the spacing. This is addressed in the permit at III.E.5. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines.

- 27) Assuming net capacity factor of 35 - 45 percent, projected average annual output will be approximately 459,900 and 591,300 megawatt hours per year. The base energy calculation presented assumes a normal or average wind year.

### **Land Rights and Easement Agreements**

- 28) In order to build a wind plant, a developer needs to secure site leases and easement option agreements to ensure access to the site for construction and operation of a proposed project. These lease or easement agreements also prohibit landowners from any activities that might interfere with the execution of the proposed project.
- 29) The applicant has obtained lease and easement option agreements and/or rights to approximately 10,000 acres within the project site boundary. These rights and easements will be used to site the turbines and all associated facilities and provide the necessary wind access buffers and setbacks.
- 30) The applicant has options, leases or easement on the land and wind rights necessary within the site to build the Project. Land and wind rights will need to encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access roads, meteorological towers, electrical collection system and electric lines located on or along public road rights-of-way.

### **Site Criteria**

- 31) Minnesota Rules chapter 7854 applies to the siting of Large Wind Energy Conversion Systems. The rules require an applicant to provide a substantial amount of information to allow the Commission to determine the potential environmental and human impacts of the proposed project and whether the project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minn. Rules Parts 7854.0500 through 7854.0600. The following analysis addresses the relevant criteria that are to be applied to a LWECs project.

### **Human Settlement, Public Health and Safety**

- 32) The site is in an area of relatively low population density, characteristic of rural areas throughout southern Minnesota. The applicant's turbine locations will be at least 623 feet from the closest residence within the site. The applicant will also maintain a set back of five rotor diameters (1263 -1558 feet) on the prevailing wind axis from non-participating landowner's property lines and three rotor diameters (758 - 935 feet) on the non-prevailing wind axis. The applicant's proposed project design will comply with the Minnesota Pollution Control Agency (PCA) noise standards. As a result, the impact of the proposed LWECS on human settlement, public health and safety will be minimal. The site permit, at part III.C has conditions for setbacks from residences and roads. The proposed wind turbine layout will meet or exceed those requirements. The proposed project is not expected to affect any water wells (used, unused or unsealed) or any rural water system that services the area.
- 33) There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.
- 34) The Permittee will provide security during construction and operation of the project, including fencing, warning signs, and locks on equipment and facilities. The Permittee will also provide landowners and interested persons with safety information about the project and its facilities. See site permit condition III.B.15.
- 35) In winter months ice may accumulate on the wind turbine blades when the turbines are stopped or operating very slowly. Furthermore, the anemometer may ice up at the same time, causing the turbine to shut down during any icing event. As weather conditions change, any ice will normally drop off the blades in relatively small pieces before the turbines resume operation. This is due to flexing of the blades and the blades' smooth surface. Although turbine icing is an infrequent event, it remains important that the turbines are not sited in areas where regular human activity is expected below the turbines during the winter months.
- 36) Each turbine will be clearly labeled to identify each unit and a map of the site with the labeling system will be provided to local authorities as part of the fire protection plan. See permit condition III.B.17.

### **Noise**

- 37) Background noise levels in the Project Area are typical of those in a rural setting, where existing nighttime noise levels are commonly in the low to mid-30 dBA. The dBA scale represents A-weighted decibels based on the range of human hearing. Higher levels exist near roads and other areas of human activity. Wind conditions in the Project Area tend to increase ambient noise levels compared to other rural areas.
- 38) Noise levels predicted by computer models were compared to the Minnesota Pollution Control Agency Daytime and Nighttime L10 and L50 Limits as stated in Minn. Rule 7030.0040. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conversation requirements for

receivers within areas grouped according to land activities by the Noise Area Classification (NAC) system established in Minn. Rule. 7030.0050. The NAC-1 was chosen for receivers in the Project Area since this classification includes farm houses as household units. Daytime and nighttime limits for this classification are (1) L50 limit of 60 dBA and L10 limit of 65 dBA in daytime, and (2) L50 limit of 50 dBA and L10 limit of 55 dBA at nighttime. The nighttime L50 limit of 50 dBA is the most stringent limit.

- 39) Wind turbines, when in motion, do generate sound or noise. Transformers installed at the Project Substation also produce noise. The level of sound (noise) varies with the speed of the turbine and the distance of the listener or receptor from the turbine. On relatively wind days, the turbines create more noise; however, the ambient or natural wind noise levels tend to override the turbine noise as distance from the turbine increases.
- 40) Noise impacts to nearby residents and other potentially affected parties will be factored into the turbine micro-siting process. Based on noise levels stated by manufacturers and third party noise assessments for the turbine models under consideration for the Project – GE 1.5 MW, Gamesa 2.0 MW, Mitsubishi 2.4 MW, and Vestus 3.0 MW – the applicant has incorporated setbacks of at least 623 feet from residences in developing the proposed project layout. The 623-foot setback is based on the distance calculated to meet the PCA's 50 dBA noise standard.

### **Visual Values**

- 41) The placement of up to 100 turbines for the Elm Creek II Wind Project, will incrementally affect the appearance of the area, adding to the view of two existing wind farms (Trimont and Elm Creek I) which operate 133 turbines. The wind turbines will be mounted on tubular towers that are 256 or 344 feet tall. The rotor blades will have a diameter of 256 to 312 feet. The turbine towers and rotor blades will be prominent features on the landscape. There will be views of the turbines to passing motorists on Interstate 90, State Highway 71, and local roads. Motorists and drivers may travel within 250 feet of some turbines.
- 42) The visual impact of the wind turbines will be reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration (permit condition III.E.4). All site permits issued by the Commission require the use of tubular towers; therefore, the turbine towers will be uniform in appearance. Blades used in the proposed project will be white or grey. The wind turbines in this project, while prominent on the landscape, also blend in with the surrounding area. The project site will retain its rural character. The turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.
- 43) From one perspective, the proposed project might be perceived as a visual intrusion on the natural aesthetic value on the landscape, characterized by an additional (up to) 100 tubular steel structures approximately 256 to 344 feet high in the area, standing on formerly undisturbed high-ground, with an overall height of approximately 389 to 492 feet when one blade is in the vertical position. Wind plants have their own aesthetic quality, distinguishing them from other non-agricultural uses. Existing wind plants have altered the landscape elsewhere in Minnesota from agricultural to wind plant/agricultural. This project will

incrementally modify the visual character of the area. Because wind generation development is likely to continue in southern Minnesota, this visual presence will continue to increase as wind development occurs.

- 44) Visually, the Elm Creek II Wind Project will be similar to other LWECS projects located in the immediate project area and southwestern Minnesota.

### **Recreational Resources**

- 45) Recreational opportunities in Redwood and Brown counties include hiking, biking, boating, fishing, camping, swimming, horseback riding, skiing, hunting and nature viewing. The Artz Wildlife Management Area (WMA) is located within the project area boundary. Turbines will not be placed less than 5 rotor-diameters from the WMA in the prevailing wind direction, and 3 RDs away in the non-prevailing direction (Site Permit condition C.1.) An All-terrain vehicle trail exists in the northern portion of the project area, and a snowmobile trail is located in the southern portion of the project area. No other WMAs, county parks or state parks are located within two miles of the project area.

### **Public Services and Infrastructure**

- 46) The existing roadway infrastructure in and around the project area is characterized by township and county roads that generally follow section lines. Interstate 90 runs east-west along the southern portion of the project area, and State Highway 71 runs north-south two miles west of the project area.
- 47) The applicant has conducted a microwave beam path analysis of the project area. Tower placement will not cause microwave, broadband, radio, telephone, or navigation interference contrary to FCC regulations or other law.
- 48) The proposed project will have approximately 25 miles of underground cables for the collector lines on private property within the wind farm, and approximately 10 miles of overhead collector cables. Electrical lines will be buried in trenches and run to the edge of the farm field. The underground collection lines will occasionally require an above-ground junction box when the collection lines from separate spools need to be spliced together. Placement of collector and feeder lines is addressed in the site permit at III.E.7 and 8. The proposed wind farm is expected to have a minimal effect on the existing infrastructure.
- 49) The project will require the use of public roads to deliver construction supplies and materials to the work site. Site permit condition III.B.8 addresses this topic. Wear and tear on roads will occur as a result of the transport of heavy equipment and other materials. The site permit at III.B.8, addresses road damages.
- 50) Construction of the project requires the addition of approximately 17 miles of access roads that will be located on private property. The access roads will be routed along the wind turbines, fence lines, and field edges to minimize disturbance to agricultural activities. The typical access road will be approximately 16 feet in width and covered in Class 5 gravel (or similar material). Access roads shall be constructed in accordance with all necessary

township, county or state road requirements and permits. The access roads will be low profile roads to allow for the movement of agricultural equipment. The site permit at III.B.8 (b) addresses this topic. During operation and maintenance of the wind plant, operation and maintenance crews, while inspecting and servicing the wind turbines, will use access roads. Periodic grading and maintenance activities will be used to maintain road integrity. The Permittee may do this work or contract it out.

- 51) If access roads are installed across streams or drainage ways, the Permittee in consultation with the Minnesota Department of Natural Resources will design, shape and locate the road so as not to alter the original water flow or drainage patterns. Any work required below the ordinary high water line, such as road crossings or culvert installation, will require a permit from the Minnesota Department of Natural Resources. See site permit at III.K.7.
- 52) The proposed wind farm will not affect water supplies, railroads, telecommunication facilities, and radio reception. The presence or operation of the wind plant could potentially impact the quality of television reception in the area. Previous work on television reception issues indicates that in some cases new antennas or relocation of existing antennas can restore television signal strength reception. The Permittee will address the concerns of residents in the area of the project site before and after project construction to document and mitigate any television reception impacts that might occur. This is addressed in the site permit at III.D.3.
- 53) Construction, operation, and maintenance of the proposed wind plant will comply with all of the required federal and state permit requirements. See site permit at III.K.7.

### **Community Benefits**

- 54) The Elm Creek II Wind Project will pay an annual Wind Energy Production Tax to Jackson and Martin counties and Enterprise, Wisconsin, Cedar, Elm Creek and Cedar townships. Landowners with turbine(s) and/or wind easements on their property will also receive payments from the Permittee.
- 55) To the extent possible, local contractors and suppliers will be used for portions of the construction. Wages and salaries paid to contractors and workers in Jackson and Martin counties will contribute to the total personal income of the region.

### **Effects on Land-Based Economies**

- 56) The wind turbines and access roads will be located so that the most productive farmland will be left as intact as possible. The Applicants anticipate that less than 50 acres of agricultural land will be permanently displaced as a result of the project. The site permit at III.B. 2., 3, 4., 5., 6., 7., 8(c), 9., and 10 addresses mitigation measures for agricultural lands. The proposed project does not adversely affect any sand or gravel operations.

## **Archaeological and Historical Resources**

- 57) In a March 2, 2009 letter to the applicant, the Minnesota State Historic Preservation Office (SHPO) recommended that an archaeological survey be completed for the Project. The site permit at III. D.2. requires the Permittee to conduct an archaeological reconnaissance survey (Phase I). An archaeology reconnaissance survey consists of the following tasks: consultation, documentation, and identification. It provides enough information to allow consideration of avoidance if a site is to be impacted by an undertaking and to gather enough information to allow for reasonable recommendations for more detailed work should it be necessary. The applicants have included a protocol for performing the Phase I survey in the LWECS site permit application.
- 58) If any archaeological sites are found during the Phase I survey, their integrity and significance should be addressed in terms of the site's potential eligibility for placement on the National Register of Historic Places (NRHP). If such sites are found to be eligible for the NRHP, appropriate mitigative measures will need to be developed in consultation with the Minnesota State Historic Preservation Officer (SHPO), the State Archaeologist, and consulting American Indian communities. The site permit (III.D.2.) also requires the Permittee to stop work and notify the Minnesota Historical Society and Commission if any unrecorded cultural resources are found during construction.

## **Air and Water Emissions**

- 59) No harmful air or water emissions are expected from the construction and operation of the LWECS.

## **Animals and Wildlife**

- 60) With proper planning neither construction nor operation of the Project is expected to have a significant impact on wildlife. Based on studies of existing wind power projects in the United States and Europe, the only impact of concern to wildlife would primarily be to avian and bat populations. The final report on avian monitoring studies at Buffalo Ridge, Minnesota "Final Report-Avian Monitoring Studies at the Buffalo Ridge, Minnesota Resource Area: Results of a 4-Year Study" (September 2000) identified the following impacts:

61a. Following construction of the wind turbines, there is a reduction in the use of the area within 100 meters of the turbines by seven of 22 species of grassland breeding birds. It was hypothesized that lower avian use may be associated with avoidance of turbine noise, maintenance activities, and less available habitat. The researchers stated "on a large scale basis, reduced use by birds associated with wind power development appears to be relatively minor and would not likely have any population consequences on a regional level." (p. 44)

61b. Avian mortality appears to be low on Buffalo Ridge, compared to other wind facilities in the United States, and is primarily related to nocturnal migrants. Resident bird mortality is very low and involves common species. The researchers stated that "based on

the estimated number of birds that migrate through Buffalo Ridge each year, the number of wind plant related avian fatalities at Buffalo Ridge is likely inconsequential from a population standpoint.” (p. iv)

61c. Bat mortality was also studied at Buffalo Ridge, instigated by bat collision victims found during the avian monitoring studies. The bat study was conducted in 2001 and 2002. (“Bat Interactions with Wind Turbines at the Buffalo Ridge, Minnesota Wind Resource Area,” November 2003). The overall conclusion is that bat activity at turbines and the numbers of bat fatalities do not share a statistical relationship. Bat collisions were found to be very rare, given the amount of bat activity documented at the turbines. Most fatalities involved migrating or dispersing bats occur in the fall. Fatality estimates at Buffalo Ridge indicate that the population of bats susceptible to turbine collisions is large, and that the observed number of fatalities “is possibly not sufficient to cause significant, large-scale population declines.” (p. 6-1)

61) Mitigation measures are prescribed in the site permit and include, but are not limited to: a) a pre-construction inventory of existing biological resources, native prairie, state listed and threatened species and wetlands in the project area (Site Permit III.D.1); and b) turbines and associated facilities will not be constructed in wildlife management areas, recreation and state scientific and natural areas or parks (Site Permit III.C.4) and a 5 by 3 rotor diameter setback is provided (Site Permit III.C1). The site permit has requirements to implement sound water and soil conservation practices during construction and operation of the project throughout the Project’s life in order to protect topsoil and adjacent resources and to minimize soil erosion (Site Permit III.B.9). This also applies to any work in proximity to watercourses (Site Permit III.C.5).

### **Vegetation**

62) No public waters, wetlands or forested land are expected to be adversely affected by the project. No groves of trees or shelterbelts will need to be removed to construct and operate the system. Native prairie will also be avoided. If native prairie cannot be avoided, the site permit, at III. C.6., provides for preparation of a prairie protection and management plan.

### **Soils**

63) Construction of the wind turbines and access roads in farmland increases the potential for erosion during construction. The site permit at III. B. 9. requires a soil erosion and sediment control plan. The project will also require a storm water run-off permit from the Minnesota Pollution Control Agency.

### **Surface Water and Wetlands**

64) Access roads or utility lines will not be located in surface water or wetlands, unless authorized by the appropriate permitting agency. See site permit at III.C.5.

## **Future Development and Expansion**

- 65) Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. In the future, wind turbines used in Jackson, Martin, and surrounding counties will consist of several types and sizes supplied by different vendors and installed at different times.
- 66) While large-scale projects have occurred elsewhere (Texas, Iowa and California), little systematic study of the cumulative impact has occurred. Research on the total impact of many different projects in one area has not occurred. OES EFP staff will continue to monitor for impacts and issues related to wind energy development.
- 67) The Commission anticipates more site permit applications under Minnesota Statutes section 216F.04 (a). The Commission is responsible for siting of LWECS “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.” Minnesota Statutes section 216F.03.
- 68) Minnesota Statutes section 216E.03, subd. 7 requires consideration of design options that might minimize adverse environmental impacts. By using larger turbines, fewer turbines are required, reducing siting needs for turbines and related facilities. Turbines must also be designed to minimize noise and aesthetic impacts. Buffers between strings of turbines are designed to protect the turbines’ production potential. The site permit also provides for buffers between adjacent wind generation projects to protect production potential. See site permit at III.C.1.
- 69) The location and spacing of the turbines are critical to the issues of orderly development and the efficient use of wind resources. Turbines are likely to be located in the best winds, and the spacing dictates, among other factors, how much land area the project occupies. There is strong public support for orderly development.
- 70) One efficiency issue is the loss of wind in the wake of turbines. When wind is converted to rotational energy by the blades of a wind turbine, energy is extracted from the wind. Consequently, the wind flow behind the turbine is not as fast and is more turbulent than the free-flowing wind. This condition persists for some distance behind the turbine as normal wind flow is gradually restored. If a turbine is spaced too close downwind of another, it produces less energy and is less cost-effective. This is the wake loss effect. If the spacing is too far, wind resources are wasted and the projects’ footprint on the land is unnecessarily large.
- 71) Other factors that lead to energy production discounts include turbine availability, blade soiling, icing, high wind hysteresis, cold weather shutdown, electrical efficiency and parasitic. Total losses typically range from 13 to 16 percent.

## **Maintenance**

- 72) Equipment will be monitored by local operations and maintenance staff and remotely by the applicant’s operations and scheduling desk, which is staffed 24 hours a day, seven days per

week. When needed during off hours, local personnel will be dispatched to the site by the remote monitoring staff. The route permit application describes a maintenance protocol for the life of the project.

### **Decommissioning and Restoration**

- 73) The applicant expects the life of the Project will be no less than 20 years and reserves the right to re-apply for a LWECS site permit and continue operation of the Project. LWECS site permit renewal may be under a new long-term power purchase agreement (PPA), merchant operation of the Project, or replacement and re-powering of the Project.
- 74) Decommissioning activities will include (1) removal of all wind turbine components and towers; (2) removal of all pad mounted transformers; (3) removal of all above-ground distribution facilities; (4) removal of foundations; and (5) removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible. The Permit (III.G.1.) requires the Permittee to submit a Decommissioning Plan to the Commission prior to commercial operation. The Permit (III.G.2.) addresses site restoration and paragraph (III.G.3.) addresses turbines abandoned prior to termination of operation of the LWECS.

### **Site Permit Conditions**

- 75) All of the above findings pertain to the Applicant's requested permit for a 150 megawatt wind project.
- 76) Most of the conditions contained in this site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Environmental Quality Board and the Public Utilities Commission. Comments received by the Commission have been considered in development of the site permit. Minor changes and additions that provide for clarifications of the draft site permit conditions have been made.
- 77) The site permit contains conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other aspects of the Project.

Based on the foregoing findings, the Minnesota Public Utilities Commission makes the following:

### **CONCLUSIONS OF LAW**

1. Any of the foregoing findings which more properly should be designated as conclusions are hereby adopted as such.
2. The Minnesota Public Utilities Commission has jurisdiction under Minnesota Statute 216F.04 over the site permit for Elm Creek Wind II, LLC, for the 150 megawatt Elm Creek II Wind Project.

3. The Heartland Wind, LLC, application for a site permit was properly filed and noticed as required by Minnesota Statutes 216F.04 and Minnesota Rules 7854.0600 subp 2 and 7854.0900 subp 2.
4. The Minnesota Public Utilities Commission has afforded all interested persons an opportunity to participate in the development of the site permit and has complied with all applicable procedural requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854.
5. The Minnesota Public Utilities Commission is the agency directed to carry out the legislative mandate to site LWECS in an orderly manner compatible with environmental preservation, sustainable development and the efficient use of resources. The proposed 150 megawatt Elm Creek II Wind Project will not create significant human or environmental impacts and is compatible with environmental preservation, sustainable development, and the efficient use of resources.
6. The Minnesota Public Utilities Commission has the authority under Minnesota Statutes section 216F.04 to establish conditions in site permits relating to site layout, construction and operation and maintenance of an LWECS. The conditions contained in the site permit issued to Elm Creek Wind II, LLC, for the Elm Creek II Wind Project are appropriate and necessary and within the Minnesota Public Utilities Commission's authority.

Based on the foregoing Findings of Fact and Conclusions of Law, the Minnesota Public Utilities Commission issues the following:

### **ORDER**

A LWECS Site Permit is hereby issued to Elm Creek Wind II, LLC, to construct and operate the 150 megawatt Elm Creek II Wind Project in Jackson and Martin counties in accordance with the conditions contained in the site permit and in compliance with the requirements of Minnesota Statute 216F.04 and Minnesota Rules Chapter 7854 for PUC Docket No. IP6728/WS-09-553.

The site permit is attached hereto, with a map showing the approved site.

BY THE ORDER OF THE COMMISSION

\_\_\_\_\_  
Burl W. Haar  
Executive Secretary

( S E A L )

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Energy Facility Permitting  
 85 7th Place East, Ste 500  
 Saint Paul, MN 55155-2198  
 Minnesota Department of Commerce

In the Matter of the Application of Heartland Wind, LLC, for a Site Permit for the Elm Creek II Wind Project, an up to 150 Megawatt Large Wind Energy Conversion System in Jackson and Martin Counties

**EXHIBIT LIST**

**1-29-10**

PUC Docket NO.: IP-6728/WS-09-553

<b>EXHIBIT NO.</b>	<b>DATE</b>	<b>DESCRIPTION</b>	<b>e-DOCKET LOCATION</b>
1.	5/19/2009	Heartland Wind, LLC's application for a LWECS Site Permit for the Elm Creek II Wind Project	<a href="#">20095-37644-01</a> <a href="#">20095-37644-02</a> <a href="#">20095-37644-03</a> <a href="#">20095-37644-04</a> <a href="#">20095-37644-05</a>
2.	6/16/2009	DOC EFP Comments & Recommendations to the PUC on acceptance of Heartland Wind, LLC's, LWECS Site Permit Application.	<a href="#">20096-38611-01</a>
3.	6/30/2009	PUC Order accepting Heartland Wind, LLC's LWECS Site Permit Application	<a href="#">20096-39070-01</a>
4.	7/1/2009, 7/2/2009	Affidavits of Publication: Notice of PUC's acceptance of the LWECS application appearing in <i>Fairmont Sentinel</i> and <i>Jackson County Pilot</i> .	<a href="#">20097-39622-01</a> <a href="#">20097-39621-01</a>
5.	7/14/2009	Affidavit of Mailing: Notice of the PUC's acceptance of the LWECS application to all affected landowners	<a href="#">20097-39626-01</a>
6.	7/24/2009	Public & Agency comments on Heartland Wind, LLC, LWECS Site Permit Application	<a href="#">20097-40114-01</a> <a href="#">20097-40119-01</a> <a href="#">20097-40093-01</a> <a href="#">20097-40115-01</a> <a href="#">20097-40116-01</a> <a href="#">20097-40118-01</a> <a href="#">20098-40519-01</a>
7.	7/28/2009	DOC Comments & Recommendations on Issuance of Draft Site Permit	<a href="#">20097-40215-01</a>



Energy Facility Permitting  
 85 7th Place East, Ste 500  
 Saint Paul, MN 55155-2198  
 Minnesota Department of Commerce

8.	8/11/2009	PUC Order Issuing Draft Site Permit for public review and comment	<a href="#">20098-40702-01</a>
9.	8/19/2009, 8/31/2009	Notice of Public Information Meeting and Affidavit of Mailing	<a href="#">20098-40901-01</a> <a href="#">20098-41333-01</a>
10.	8/19/2009, 8/20/2009	Affidavits of Publication: Notice of Public Information Meeting published in <i>Fairmont Sentinel</i> and <i>Jackson County Pilot</i> .	<a href="#">20098-41334-01</a> <a href="#">20098-41335-02</a>
11.	8/24/2009	Notice of Public Information Meeting published in EQB Monitor	<a href="#">20101-46436-01</a>
12.	9/23/2009	Applicant comments on Draft Site Permit (Heartland Wind, LLC)	<a href="#">20099-42094-01</a>
13.	12/23/09	Applicant comments on Draft Site Permit (Iberdrola Renewables, Inc.)	<a href="#">200912-45360-01</a> <a href="#">200912-45360-03</a> <a href="#">200912-45360-05</a> <a href="#">200912-45360-07</a>

**LARGE WIND ENERGY CONVERSION SYSTEM  
SITE PERMIT  
FOR  
ELM CREEK II WIND PROJECT  
IN  
JACKSON AND MARTIN COUNTIES  
PUC DOCKET NO. IP-6728/WS-09-553**

In accordance with Minnesota Statutes Section 216F.04 this Site Permit is hereby issued to:

**ELM CREEK WIND II, LLC**

Elm Creek Wind II, LLC is authorized to construct and operate up to a 150 Megawatt Large Wind Energy Conversion System on the site identified in this Site Permit and in compliance with the conditions contained in this Permit.

This Permit shall expire on: December 31, 2040

Dated: \_\_\_\_\_

BY ORDER OF THE COMMISSION

\_\_\_\_\_  
BURL W. HAAR  
Executive Secretary

(S E A L)

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## **I. SITE PERMIT**

This Site Permit for a Large Wind Energy Conversion System (LWECS) authorizes Elm Creek Wind II, LLC (hereinafter “Permittee”) to construct up to a 150 Megawatt (MW) LWECS and associated facilities in Jackson and Martin counties, on a site of approximately 30,339 acres in accordance with the conditions contained in this Permit. The site boundary is shown on the map that is attached hereto as Attachment 1.

## **II. PROJECT DESCRIPTION**

The up to 150 MW LWECS authorized to be constructed in this Permit will be owned and operated by Elm Creek Wind II, LLC. The Project will consist of 50 to 100 wind turbine generators ranging from 1.5 to 3.0 MW in capacity with a combined nominal nameplate capacity of no more than 150 MW. Turbines are interconnected by communication and overhead and underground electrical power collection facilities within the wind farm. These facilities will include transformers, overhead and underground collector and feeder lines that will deliver wind-generated power to the project substation. Associated facilities will include wind turbine access roads, underground collection lines, SCADA wiring, feeder lines, pad mounted turbine transformers, a sonic detection and ranging unit, permanent meteorological towers, expansion of the Trimont Wind Electrical Substation, and an expanded or new Operations and Maintenance Building.

## **III. CONDITIONS**

The following conditions shall apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other phases of the LWECS. The Commission preserves all available remedies for violation of any of these Permit conditions, including revocation or modification of the Permit.

### **A. GENERAL CONSTRUCTION CONDITIONS**

#### **1. SITE PLAN**

Prior to commencing construction, the Permittee shall submit to the Commission a site plan for all turbines, roads, electrical equipment, collector and feeder lines and other associated facilities to be constructed and engineering drawings for site preparation, construction of the facilities, and a plan for restoration of the site due to construction. The Permittee shall document compliance with the setbacks and site layout restrictions required by the permit. The Permittee may submit a site plan and engineering drawings for only a portion of the LWECS if the Permittee is prepared to commence construction on certain parts of the Project before completing the site plan and engineering drawings for other parts of the LWECS. In the event that previously unidentified environmental conditions are discovered during construction which by law or pursuant to conditions outlined in this Permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine sites. The Permittee shall notify the Commission of any turbines that are to be relocated before the turbine is constructed on the new site and demonstrate compliance with the setbacks and site layout restrictions required by the permit.

## **2. FIELD REPRESENTATIVE**

Prior to the start of construction and continuously throughout construction and site restoration, the Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this Permit. This person (or a designee) shall be accessible by telephone during normal business hours. This person's address, phone number and emergency phone number shall be provided to the Commission, who may make the number available to local residents and officials and other interested persons. The Permittee may change the field representative by notification to the Commission.

## **3. PRECONSTRUCTION MEETING**

Prior to the start of any construction, the Permittee shall conduct a preconstruction meeting with the person designated by the Commission to coordinate field monitoring of construction activities.

## **4. NOTICE OF PERMIT 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.

## **B. MITIGATION MEASURES**

### **1. SITE CLEARANCE**

The Permittee shall disturb or clear the site only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the LWECS.

### **2. TOPSOIL PROTECTION**

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

### **3. 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.

### **4. LIVESTOCK PROTECTION**

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

### **5. 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.

## **6. DRAINAGE TILES**

The Permittee shall take into account the location of drainage tiles during project layout and construction. The Permittee shall promptly repair or replace all drainage tiles broken or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner.

## **7. EQUIPMENT STORAGE**

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with landowner. Temporary staging areas shall not be located in wetlands or native prairie.

## **8. ROADS**

### **(a) Public Roads**

Prior to commencement of construction, the Permittee shall identify all state, county or township roads that will be used for the LWECS 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 LWECS. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles and all other heavy components to and from the turbine sites.

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 LWECS for maintenance and repair of roads that will be subject to extra wear and tear due to transportation of equipment and LWECS components. The Permittee shall notify the Commission of such arrangements upon request of the Commission.

### **(b) Turbine Access Roads**

The Permittee shall construct the smallest number of turbine access roads it can. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ways without required permits and approvals from DNR, FWS and/or USACOE. When access roads are constructed across streams and drainage ways, the access roads shall be designed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Access roads shall also be constructed in accordance with all necessary township, county or state road requirements and permits.

(c) 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.

**9. SOIL EROSION AND SEDIMENT CONTROL**

The Permittee shall develop a Soil Erosion and Sediment Control Plan prior to construction and submit the Plan to the Commission. This Plan may be the same as the Storm Water Pollution Prevention Plan (SWPP) submitted to the Minnesota Pollution Control Agency (MPCA) as part of the National Pollutant Discharge Elimination System (NPDES) permit application. A goal of the Soil Erosion and Sediment Control Plan is to minimize soil erosion, to revegetate non-cropland and range areas disturbed by construction with wildlife conservation species, and, wherever possible, to plant appropriate native species in cooperation with landowners.

The Soil Erosion and Sediment Control Plan shall address what types of erosion control measures will be implemented during each Project phase, and shall at a minimum identify plans for grading, construction and drainage of roads and turbine pads; necessary soil information; detailed design features to maintain downstream water quality; a comprehensive re-vegetation plan to maintain and ensure adequate erosion control and slope stability and to restore the site after temporary Project activities; and measures to minimize the area of surface disturbance. Other practices shall include containing excavated material, protecting exposed soil, and stabilizing restored material and removal of silt fences or barriers when the area is stabilized. The plan shall identify methods for disposal or storage of excavated material. Erosion and sedimentation control measures shall be installed prior to construction and maintained throughout the Project's life.

**10. CLEANUP**

The Permittee shall remove all waste and scrap that is the product of construction, operation, restoration and maintenance from the site and properly dispose of it upon completion of each task. Personal litter, bottles, and paper deposited by site personnel shall be removed on a daily basis.

**11. TREE REMOVAL**

The Permittee shall minimize the removal of trees and the Permittee shall not remove groves of trees or shelter belts without notification to the Commission and the approval of the affected landowner.

**12. RESTORATION**

The Permittee shall, as soon as practical following construction of each turbine, considering the weather and preferences of the landowner, restore the area affected by any LWECs activities to the condition that existed immediately before construction began, to the extent possible. The

time period may be no longer than eight months after completion of construction of the turbine, unless otherwise negotiated with the landowner. Restoration shall be compatible with the safe operation, maintenance, and inspection of the LWECS.

### **13. HAZARDOUS WASTE**

The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean up and disposal of hazardous wastes generated during any phase of the Project's life.

### **14. APPLICATION OF HERBICIDES**

The Permittee shall restrict herbicide use to those herbicides and methods of application approved by the Minnesota Department of Agriculture and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. The Permittee shall contact the landowner or his designee to obtain approval for the use of herbicide prior to any application on their property. The landowner may request that there be no application of herbicides on any part of the site within the landowner's property. All herbicides shall be applied in a safe and cautious manner so as to not damage crops, orchards, tree farms, or gardens. The Permittee shall also, at least ten days prior to the application, notify beekeepers with an active apiary within one mile of the proposed application site of the day the company intends to apply herbicide so that precautionary measures may be taken by the beekeeper.

### **15. PUBLIC SAFETY**

The Permittee shall provide educational materials to landowners within the site boundaries and, upon request, to interested persons, about the Project and any restrictions or dangers associated with the LWECS Project. The Permittee shall also provide any necessary safety measures, such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all "underground facilities," as defined in Minnesota Statute 216D.01, Subdivision 11, to Gopher State One Call.

### **16. FIRE PROTECTION**

The Permittee shall prepare a fire protection and medical emergency plan in consultation with the fire department having jurisdiction over the area prior to LWECS construction. The Permittee shall submit a copy of the plan to the Commission upon request. The Permittee shall also register the LWECS with the local governments' emergency 911 services.

### **17. TOWER IDENTIFICATION**

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

## **C. SETBACKS**

### **1. WIND ACCESS BUFFER**

Wind turbine towers shall not be placed less than 5 rotor diameters (RD) on the prevailing wind directions and 3 RD on the non-prevailing wind directions from the perimeter of the lands where the Permittee does not hold the wind rights, without the approval of the Commission.

### **2. RESIDENCES**

Wind turbine towers shall not be located closer than 500 feet from the nearest residence, or the distance required to comply with the noise standards established by the MPCA at paragraph III.E.3, whichever is greater.

### **3. ROADS**

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

### **4. WILDLIFE MANAGEMENT AREAS**

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in Waterfowl Production Areas, State Wildlife Management Areas or Scientific and Natural Areas or in county parks.

### **5. WETLANDS**

Wind turbines and associated facilities including foundations, access roads, underground cable and transformers, shall not be placed in public waters wetlands, as defined in Minnesota Statutes section 103G.005, subp. 15a. However, electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to DNR, United States Fish and Wildlife Service (FWS) and/or United States Army Corps of Engineers (USACE) permits and approvals.

### **6. NATIVE PRAIRIE**

Upon request of the Commission, the Permittee shall, with the advice of the DNR and any others selected by the Permittee, prepare a prairie protection and management plan and submit it to the Commission and DNR Commissioner 60 days prior to the start of Project construction. The plan shall address steps to be taken to identify native prairie within the Project area, measure to avoid impacts to native prairie, and measures to mitigate for impacts if unavoidable. Wind turbines and all associated facilities, including foundations, access roads, underground cable and transformers, shall not be placed in native prairie unless addressed in the prairie protection and management plan. Unavoidable impacts to native prairie shall be mitigated by restoration or management of other native prairie areas that are in degraded condition, or by conveyance of conservation easements, or by other means agreed to by the Permittee and the Commission.

## **7. 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 with notice given to the owner of the sand and gravel operation.

### **D. PRECONSTRUCTION SURVEYS**

#### **1. BIOLOGICAL PRESERVATION INVENTORY**

The Permittee, in consultation with DNR and other interested parties, shall conduct a pre-construction inventory of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the site and assess the presence of state- or federally-listed or threatened species. The results of the inventory shall be submitted to the Commission and DNR prior to the commencement of construction.

#### **2. ARCHAEOLOGICAL RESOURCES**

The Permittee shall work with the State Historic Preservation Office (SHPO) at the Minnesota Historical Society and the State Archaeologist. The Permittee shall carry out a Phase 1 or 1A Archaeology survey for all proposed turbine locations, access roads, junction boxes and other areas of project construction impact to determine whether additional archaeological work is necessary for any part of the proposed Project. The Permittee will contract with a qualified archaeologist to complete such surveys, and will submit the results to the Commission, the SHPO and the State Archaeologist.

The SHPO and the State Archaeologist will make recommendations for the treatment of any significant archaeological sites which are identified. Any issues in the implementation of these recommendations will be resolved by the Commission in consultation with SHPO and the State Archaeologist. In addition, the Permittee shall mark and preserve any previously unrecorded archaeological sites that are found during construction and shall promptly notify the SHPO, the State Archaeologist, and the Commission of such discovery. The Permittee shall not excavate at such locations until so authorized by the Commission in consultation with the SHPO and the State Archaeologist.

If human remains are encountered during construction, the Permittee shall immediately halt construction at that location and promptly notify local law enforcement authorities and the State Archaeologist. Construction at the human remains location shall not proceed until authorized by local law enforcement authorities or the State Archaeologist.

If any federal funding, permit or license is involved or required, the Permittee shall notify the MHS as soon as possible in the planning process to coordinate section 106 (36 C.F.R 800) review.

Prior to construction, construction workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If any archaeological sites are found during construction, the Permittee shall immediately stop work at the site and shall mark and preserve the site and notify the Commission and the MHS about the discovery. The Commission and the MHS shall have three working days from the time the agency is notified to conduct an inspection of the site if either agency shall choose to do so. On the fourth day after notification, the Permittee may begin work on the site unless the MHS has directed that work shall cease. In such event, work shall not continue until the MHS determines that construction can proceed.

### **3. ELECTROMAGNETIC INTERFERENCE**

Prior to beginning construction, the Permittee shall submit a plan to the Commission for conducting an assessment of television signal reception and microwave signal patterns in the Project area prior to commencement of construction of the Project. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television reception or microwave patterns in the event residents should complain about such disruption or interference after the turbines are placed in operation. The assessment shall be completed prior to installation of the turbines. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the LWECS and associated facilities so as to cause microwave, television, radio, telecommunications or navigation interference contrary to Federal Communications Commission (FCC) regulations or other law. In the event the LWECS and its associated facilities or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

### **E. SITE LAYOUT RESTRICTIONS**

#### **1. WIND TURBINE TOWERS**

Structures for wind turbines shall be self-supporting tubular towers. The towers may be between 78 meters (256 feet) and 105 meters (344 feet) above grade measured at the hub.

#### **2. METEOROLOGICAL TOWERS**

Permanent towers up to 80 meters high for meteorological equipment shall be free standing. Temporary meteorological towers, which are those that will be removed no more than one year after the Project in-service date, may be guyed if the landowner has given written permission and the guys are properly marked with safety shields.

Up to three permanent meteorological towers are authorized to be constructed for the Project by this Permit. New temporary and 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 lands the Permittee holds the wind or other development rights.

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

### **3. NOISE**

The wind turbine towers shall be placed such that the Permittee shall comply with noise standards established as of the date of this Permit by the Minnesota Pollution Control Agency at all times at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. Turbines shall be moved or modified or removed from service if necessary to comply with this condition. The Permittee or its contractor may install and operate turbines, as close as the minimum setback required in this Permit but in all cases shall comply with PCA 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. FEDERAL AVIATION ADMINISTRATION**

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

### **5. TURBINE SPACING**

The turbine towers shall be constructed within the site boundaries as shown in Attachment 1. The turbine towers shall be spaced no closer than 3 RD in the non-prevailing wind directions and 5 RD 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.

### **6. 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.

## **7. COLLECTOR LINES**

The Permittee shall place electrical lines, known as collectors, and communication cables underground when located on private property. Collectors and cables shall also be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner. Junction boxes are also required when underground cables need to be spliced together. The junction boxes shall be located adjacent to wind turbines or at the edge of a field so as not to interfere with farming practices on the parcel, to the extent possible. This paragraph does not apply to feeder lines.

## **8. FEEDER LINES**

The Permittee shall place overhead or underground 34.5 kV electric lines, known as feeders, within public rights-of-way or on private land immediately adjacent to public rights-of-way if a public right-of-way exists, except as necessary to avoid or minimize human, agricultural, or environmental impacts. A change in feeder line locations may be made as long as feeders remain on public rights-of-way and approval has been obtained from the governmental unit responsible for the affected right-of-way. When placing feeders on private property, the Permittee shall place the feeder in accordance with easements negotiated with the affected landowner. In all cases, the Permittee shall avoid routing feeder lines in locations which may interfere with agricultural operations. Notwithstanding any of the requirements in paragraph III.D. to conduct surveys before any construction can commence, the Permittee may begin immediately upon issuance of this permit to construct the 34.5 kV feeder lines that will be required as part of this Project. The Permittee shall submit the site plan and engineering drawings required under paragraph III.A.1. for the feeder lines before commencing construction. Any guy wires on the structures for feeder lines shall be marked with safety shields.

The Permittee must fulfill, comply with, and satisfy all Institute of Electrical and Electronics Engineers, Inc. (IEEE) standards applicable to this Project, including but not limited to IEEE 776, IEEE 519, and IEEE 367, provided the telephone service provider(s) have complied with any obligations imposed on it pursuant to these standards. Upon request by the Commission, the Permittee shall report to the Commission on compliance with these standards.

## **F. STUDIES**

### **1. WAKE LOSS STUDIES**

The Permittee shall provide to the Commission with the site plan required by paragraph III.A.1., the preconstruction micro siting analysis leading to the final tower locations and an estimate of total Project wake losses. The Permittee shall provide to the Commission any operational wake loss studies conducted on this Project.

### **2. NOISE**

On request of the Commission, the Permittee shall submit a proposal to the Commission for the conduct of a noise study. Upon the approval of the Commission the Permittee shall carryout the

study. The study shall be designed to determine the noise levels at various distances from the turbines at various wind directions and speeds.

## **G. DECOMMISSIONING/RESTORATION/ABANDONMENT**

### **1. DECOMMISSIONING PLAN**

Prior to commercial operation, the Permittee shall submit to the Commission a Decommissioning Plan documenting the manner in which the Permittee anticipates decommissioning the Project in accordance with the requirements of Minnesota Rules part 7854.0500, subp.13. 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.

### **2. SITE RESTORATION**

Upon expiration of this Permit, or upon earlier termination of operation of the LWECS, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables, foundations, buildings and ancillary equipment to a depth of four feet. A LWECS shall be considered a discontinued use after one year without energy production, unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the LWECS to service. To the extent possible 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. Any agreement for removal to a lesser depth or for no removal shall be recorded with the county and shall show the locations of all such foundations. 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 after expiration.

### **3. ABANDONED TURBINES**

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the LWECS. The Commission may require the Permittee to decommission any abandoned turbine.

## **H. REPORTING**

### **1. PROJECT ENERGY PRODUCTION**

The Permittee shall submit a report no later than February 1<sup>st</sup> following each complete year of project operation. The report shall include: a) the rated nameplate capacity of the permitted LWECS project; b) the total monthly energy generated by the LWECS in Megawatt hours; c) the monthly capacity factor; d) yearly energy production and capacity factor; 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 will be considered public and must be submitted electronically.

## **2. WIND RESOURCE USE**

The Permittee shall upon request of the Commission report to the Commission on the monthly energy production of the Project and the average monthly wind speed collected at one permanent meteorological tower selected by the Commission during the preceding year or partial year of operation.

The provisions of paragraph III.K.5 shall apply to the Commission's review of data provided pursuant III.H.2.

## **3. EXTRAORDINARY EVENTS**

Within 24 hours 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, collector or feeder line failure, injured LWECs worker or private person, kills of migratory, threatened or endangered species, or discovery of a large number dead birds or bats of any variety on site. In the event of avian mortality the DNR shall also be notified within 24 hours. The Permittee shall, within 30 days of the occurrence, submit a report to the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

## **4. COMPLAINTS**

Prior to the start of construction, the Permittee shall submit to the Commission the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the Commission all complaints received concerning any part of the LWECs in accordance with the procedures provided in Attachment 2 of this Permit.

## **I. FINAL CONSTRUCTION**

### **1. AS-BUILT PLANS AND SPECIFICATIONS**

Within 60 days after completion of construction, the Permittee shall submit to the Commission a copy of the as-built plans and specifications. The Permittee must also submit this data in a geographic information system (GIS) compatible format so that the Commission can place it into the Land Management Information Center's geographic data clearinghouse located in the Office of Geographic and Demographic Analysis.

### **2. FINAL BOUNDARIES**

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this Project. If done, this Permit may be modified, after notice

and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this Permit.

### **3. 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 LWECS. The Commission will respond to the requested change in accordance with applicable statutes and rules.

## **J. AUTHORITY TO CONSTRUCT LWECS**

### **1. WIND RIGHTS.**

The Permittee shall advise the Commission of the obtaining of exclusive wind rights within the boundaries of the LWECS authorized by this Permit within 30 days of receiving such wind rights. The Permittee shall submit documentation of such exclusive wind rights if requested by the Commission.

### **2. OTHER PERMIT APPLICATIONS.**

Nothing in this Permit shall be construed to preclude any other person from seeking a site permit to construct a large 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.

### **3. PREEMPTION OF OTHER LAWS**

Pursuant to Minnesota Statute 216F.07, this Site Permit shall be the only site approval required for the location 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. Nothing in this Permit shall release the Permittee from any obligation imposed by law that is not superseded or preempted by law.

### **4. POWER PURCHASE AGREEMENT**

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 power purchase agreement or enforceable mechanism. 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 applicable statutes and rules, including Minnesota Statute 216F.05 and Minnesota Rule 7854.1300.

## **K. MISCELLANEOUS**

### **1. 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 the Permit. No modification may be made except in accordance with applicable statutes and rules.

### **2. FAILURE TO COMMENCE CONSTRUCTION**

If the Permittee has not completed the pre-construction surveys required in paragraph III.D. and commenced construction of the LWECs 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 may determine 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 Minnesota Statute 216F.05 and Minnesota Rule 7854.1300.

### **3. 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 facility; or
- (c) Existence of other grounds established by rule.

### **4. REVOCATION OR SUSPENSION OF THE 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; or
- (c) There has been a material violation of a provision of an applicable statute, rule or an order of the Commission.

In the event the Commission shall determine that it is appropriate to consider revocation or suspension of this Permit, the Commission shall proceed in accordance with the requirements of Minnesota Statute 216F.05 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 the Permit suspended or revoked.

## **5. PROPRIETARY INFORMATION**

Certain information required to be submitted to the Commission under this Permit, including energy production and wake loss data, may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law and is not to be made available by the Commission. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

## **6. TRANSFER OF PERMIT**

The Permittee may not transfer this Permit without the approval of the Commission. If the Permittee desires to transfer this Permit, the holder shall advise the Commission in writing of such desire. The Permittee shall provide the Commission with such information about the transfer as the Commission requires to reach a decision. The Commission may impose additional conditions on any new Permittee as part of the approval of the transfer.

## **7. OTHER PERMITS**

The Permittee shall be responsible for acquiring any other federal, state, or local permits or authorizations that may be required to construct and operate a LWECS within the authorized site. The Permittee shall submit a copy of such permits and authorizations to the Commission upon request.

## **8. SITE MANAGER**

The Permittee shall designate a site manager who shall be the contact person for the Commission to contact with questions about the LWECS. The Permittee shall provide the Commission with the name, address, and phone numbers of the site manager prior to placing any turbine into operation. This information shall be maintained current by informing the Commission of any changes, as they become effective.

## **9. NOTICE TO LOCAL RESIDENTS**

The Permittee shall, within ten working days of receipt of this Permit, send a copy of the Permit to the office of the auditor of each county in which the site is located and to the clerk of each city and township within the site boundaries. If applicable, the Permittee shall also, within 10 working days of issuance, send a copy of this Permit to each regional development commission, local fire district, soil and water conservation district, watershed district, and watershed management district office with jurisdiction in the county where the site is located. Within 30 days of issuance of this Permit, the Permittee shall send a copy of the Permit to each affected landowner within the site. In no case shall the affected landowner receive the site permit less than five days prior to the start of construction on their property.

## **10. RIGHT OF ENTRY**

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

(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.

## **11. MORE STRINGENT RULES**

The Commission 's issuance of this Site 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.

## **L. EXPIRATION DATE**

This Permit shall expire on December 31, 2040.

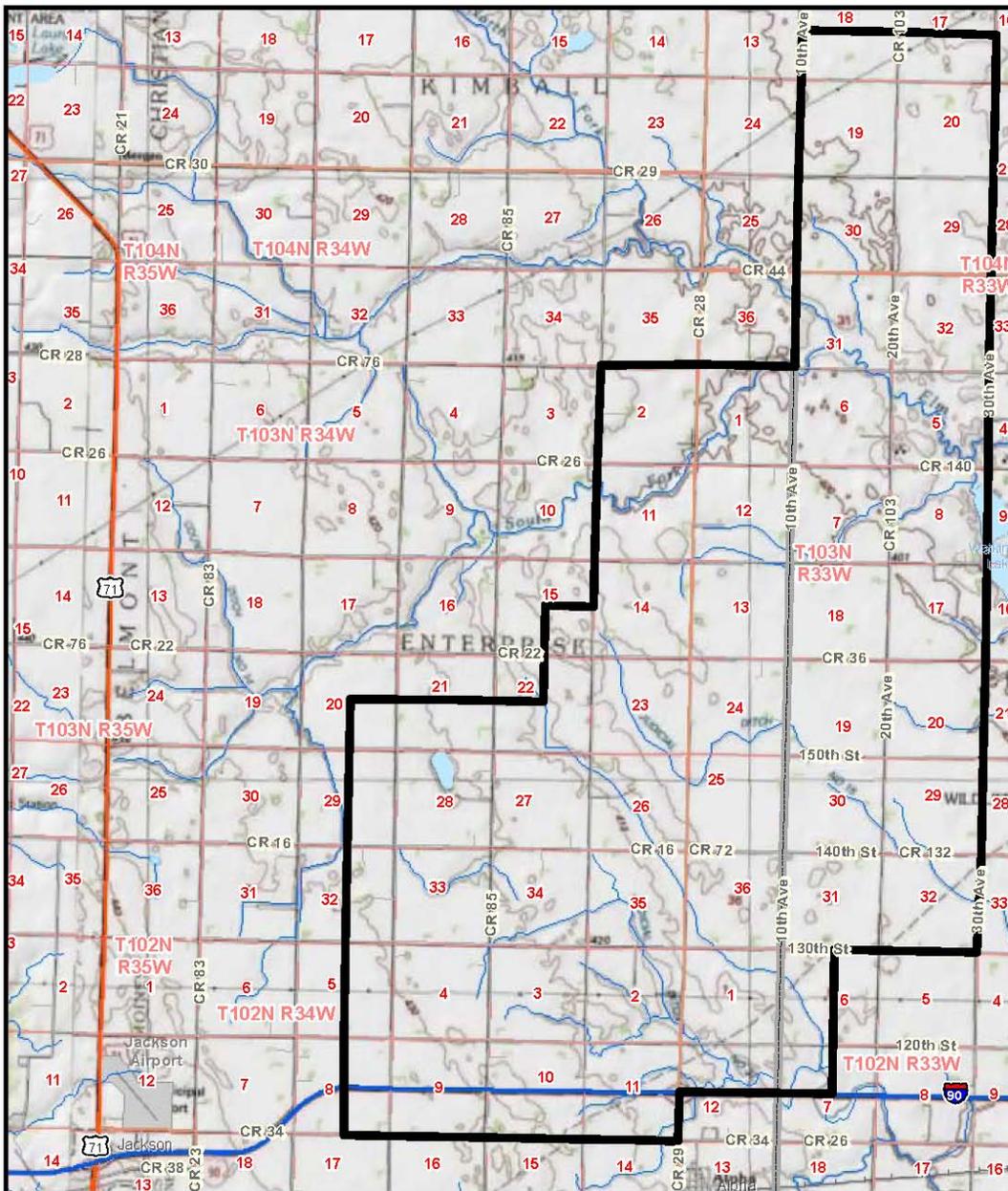
## **M. SPECIAL CONDITIONS**

Special conditions shall take precedence over any of the other conditions of this Permit if there should be a conflict between the two. No special conditions have been identified.

## **12. PERMIT COMPLIANCE MEETING**

Prior to the start of commercial operation, the Permittee shall conduct a permit compliance meeting with the person designated by the Commission to coordinate permit compliance activities.

# ATTACHMENT 1: SITE PERMIT MAP



**Legend**

- Interstate Highway
- US/State Highway
- County Highway
- Local Roads
- Project Area
- Section Lines


Miles

**Figure 1-2**  
**Project Location Map**  
**Elm Creek II Wind Project**  
**Jackson & Martin**  
**Counties, MN**

Modifv Date: 5/14/2003

File: Z:\Projects\WNE\Elm Creek\MapDocuments\Report Figures\EC-II - LWEC\Figure 1-2 - Project Location Map.mxd

MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLAINT HANDLING PROCEDURES  
FOR  
LARGE WIND ENERGY CONVERSION SYSTEMS

A. **Purpose:**

To establish a uniform and timely method of reporting complaints received by the Permittee concerning Permit conditions for site preparation, construction, cleanup and restoration, operation and resolution of such complaints.

B. **Scope:**

This document describes Complaint reporting procedures and frequency.

C. **Applicability:**

The procedures shall be used for all complaints received by the Permittee.

D. **Definitions:**

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

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

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

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

E. **Complaint Documentation and Processing:**

1. The Permittee shall document all Complaints by maintaining a record of all applicable information concerning the Complaint, including the following:
  - a. Name of complainant, address, phone number, and e-mail address.
  - b. Precise property description or parcel number.
  - c. Name of Permittee representative receiving Complaint and date of receipt.
  - d. Nature of Complaint and the applicable Site Permit conditions(s).
  - e. Activities undertaken to resolve the Complaint.
  - f. Final disposition of the Complaint.
2. The Permittee shall designate an individual to summarize Complaints for substantial to the Commission. This person's name, phone number and e-mail address shall accompany all complaint submittals.

3. A Person presenting the Complaint should, to the extent possible, include the following information in their communications:
- a. Name, address, phone number, and e-mail address.
  - b. Date
  - c. Tract or parcel
  - d. Whether the complaint relates to (1) a Site Permit matter, (2) a LWECS and associated facility issue, or (3) a compliance issue.

**F. Reporting Requirements:**

The Permittee shall report all complaints to the Commission according to the following schedule:

**Immediate Reports:** All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to Wind Permit Compliance, 1-800-657-3794, or by e-mail to:

[DOC.energypermitcompliance@state.mn.us](mailto:DOC.energypermitcompliance@state.mn.us), or. Voice messages are acceptable.

**Monthly Reports:** By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be Filed to Dr. Burl W. Haar, Executive Secretary, Public Utilities Commission, using the Minnesota Department of Commerce eDocket system (see eFiling instructions attached to this permit).

If no Complaints were received during the preceding month, the permittee shall submit (eFile) a summary indicating that no complaints were received.

**G. Complaints Received by the Commission or OES:**

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

**H. Commission Process for Unresolved Complaints:**

**Initial Screening:** Commission staff shall perform an initial evaluation of unresolved Complaints submitted to the Commission. Complaints raising substantial LWECS Site Permit issues shall be processed and resolved by the Commission. Staff shall notify Permittee and appropriate person(s) if it determines that the Complaint is a Substantial Complaint. With respect to such Complaints, each party shall submit a written summary of its position to the Commission no later than ten days after receipt of the Staff notification. Staff shall present Briefing Papers to the Commission, which shall resolve the Complaint within twenty days of submission of the Briefing Papers.

**I. Permittee Contacts for Complaints:**

**Mailing Address:** Complaints filed by mail shall be sent to the address below:

<p>Keith Powers, Project Manager          Elm Creek Wind II, LLC          c/o Iberdrola Renewables, Inc.          201 King of Prussia Rd, Ste 500          Radnor, PA 19087          Tel: 484-654-1875          Email: <a href="mailto:kpowers@iberdrolausa.com">kpowers@iberdrolausa.com</a></p>
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**MINNESOTA PUBLIC UTILITIES COMMISSION  
COMPLIANCE FILING PROCEDURE  
FOR PERMITTED ENERGY FACILITIES**

**1. Purpose**

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

**2. Scope and Applicability**

This procedure encompasses all compliance filings required by permit.

**3. Definitions**

Compliance Filing – A sending (filing) of information to the Commission, where the information is required by a Commission site or route permit.

**4. Responsibilities**

A) The permittee shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, Public Utilities Commission, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website:

<https://www.edockets.state.mn.us/EFiling/home.jsp>

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

B) All filings must have a cover sheet that includes:

- 1)Date
- 2)Name of submitter / permittee
- 3)Type of Permit (Site or Route)
- 4)Project Location
- 5)Project Docket Number
- 6)Permit Section Under Which the Filing is Made
- 7)Short Description of the Filing

C) Filings that are graphic intensive (e.g., maps, plan and profile) must, in addition to being eFiled, be submitted as paper copies and on CD. Copies and CDs should be sent to: 1) Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7<sup>th</sup> Place East, Suite 350, St. Paul, MN, 55101-2147, and 2) Department of Commerce, Energy Facility Permitting, 85 7<sup>th</sup> Place East, Suite 500, St. Paul, MN, 55101-2198. Additionally, the Commission may request a paper copy of any eFiled document.

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

**PERMITTEE:** Elm Creek Wind II, LLC  
**PERMIT TYPE:** LW ECS Site Permit  
**PROJECT LOCATION:** Jackson and Martin counties  
**COMMISSION DOCKET NUMBER:** IP-6728/WS-09-553

<b>Filing Number</b>	<b>Condition</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>
<b>1</b>	A.1.	Site Plan	Prior to starting construction	
<b>2</b>	A.2.	Field Representative	Prior to and throughout construction	
<b>3</b>	B.8.	Roads	Identify access roads and obtain road damage agreements before starting construction	
<b>4</b>	B.9.	Soil Erosion and Sediment Control Plan	NDPES Stormwater Runoff Control Permit	
<b>5</b>	B.15	Educational Materials	Submit Upon Request	
<b>6</b>	B.16	Fire Protection Plan	Submit Upon Request. Must Register in 911 Program	
<b>7</b>	C.6.	Native Prairie Protection Plan	60 days prior to the start of construction, if required	
<b>8</b>	D.1.	Biological Survey	Pre-construction Meeting	
<b>9</b>	D.2	Archaeological Resources	Pre-construction Meeting and as Recommended by the State Historic Preservation Office	
<b>10</b>	D.3.	Electromagnetic Interference	Pre-construction Meeting	

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

<b>Filing Number</b>	<b>Condition</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>
<b>11</b>	F.1	Wake Loss	Include with site plan or operation studies if performed	
<b>12</b>	F.2	Noise Study	Upon Request	
<b>13</b>	G.1.	Decommissioning Study	Prior to commercial operation	
<b>14</b>	H.1	Project Energy Production	Due 2/1 each year	
<b>15</b>	H.2	Wind Resource Use	Upon Commission Request	
<b>16</b>	I.1.	As Built	Within 60 days of Completions of Construction	
<b>17</b>	J.1.	Wind Rights	Within 30 days of Acquiring. Upon Request.	
<b>18</b>	K.2.	Failure to Start Construction	Within 2 years of Permit Issuance	
<b>19</b>	K.8	Site Manager	Prior to Operation	
<b>20</b>	Complaints	Report	Due Each Month or within 24 hours	