

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Phyllis Reha  
J. Dennis O'Brien  
David Boyd  
Betsy Wergin

Acting Chair  
Commissioner  
Commissioner  
Commissioner

Mark Willers  
Community Wind South, LLC  
800 Kniss Avenue, Suite 2  
Luverne, Minnesota 56156

SERVICE DATE: May 1, 2012

DOCKET NO. IP-6871/WS-11-863

In the Matter of the Site Permit Application of Community Wind South, LLC for a 30.75 MW Large Wind Energy Conversion System in Nobles County

The above entitled matter has been considered by the Commission and the following disposition made:

**Adopted the attached Findings of Fact, Conclusions of Law and Order proposed for the 30.75 MW Large Wind Energy Conversion System in Nobles County.**

**Issued the proposed LWECS Site Permit for the Community Wind South, LLC Wind Farm to Community Wind South, LLC.**

The Commission agrees with and adopts the recommendations of the Department of Commerce which are attached and hereby incorporated in the Order. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION



Burl W. Haar  
Executive Secretary

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**BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

**COMMENTS AND RECOMMENDATIONS OF THE  
MINNESOTA DEPARTMENT OF COMMERCE  
ENERGY FACILITY PERMITTING STAFF**

**DOCKET NO. IP-6871/WS-11-863**

EFP Staff: Larry B. Hartman.....Tel: 651-296-5089

**In the Matter of the Application of CWS Wind Farm, LLC for a Large Wind Energy Conversion System Site Permit for the 30.75 MW Community Wind South Project in Nobles County.**

**Issues Addressed:** these comments, recommendations, and documents attached address the question of whether the Public Utilities Commission should issue or deny a Site Permit.

**Documents Attached**

1. Figure 1 — Project Vicinity
2. Figure 2 — Site Map
3. Figure 3 — Map of Existing Wind Turbines in Project Vicinity
4. Exhibit List
5. Proposed Findings of Fact, Conclusions of Law and Order
6. Proposed Site Permit with Turbine Layout Map

Additional documents and information are available on eDockets at:  
<https://www.edockets.state.mn.us/EFiling/search.jsp> (See eDocket filings (11-863).

The enclosed materials are work papers of the Department of Commerce 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.

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## **Introduction and Background**

The applicant, Community Wind South, LLC (“CWS, LLC”), has now identified CWS Wind Farm, LLC as the Permittee for the proposed 30.75 MW Community Wind South Project (“CWS Project”) in Nobles County and the entity responsible for complying with all site permit requirements.<sup>1</sup> CWS Wind Farm, LLC is a Delaware limited liability company formed in 2011 and is representing the interests of Zephyr Wind LLC; Moriah Wind, LLC; Chinook Wind, LLC; and Summit Transmission, LLC.

The CWS Project is intended to fulfill obligations of a 2003 Commission order approving a Certificate of Need for four high-voltage transmission lines in the Buffalo Ridge area and requiring Xcel to purchase small, locally owned wind generation.<sup>2</sup> CWS, LLC was formed to develop approximately 30 MW of the required 60 MWs of locally owned wind energy generation facilities as defined in an Order of the Commission. See Order Granting Certificates of Need (MPUC Docket No. E002/CN-01-1958, March 11, 2003). Subsequently, CWS, LLC created three ownership entities: Zephyr Wind, LLC (Zephyr), Moriah Wind, LLC (Moriah) and Chinook Wind, LLC (Chinook), each of which will own approximately 10 MW of the overall generating facility. In addition, CWS, LLC created Summit Transmission, LLC (Summit) as the entity that will design, install and operate the necessary transmission and interconnection facilities between each of the turbine transformers and the interconnection point at the NSP Nobles Substation.<sup>3</sup>

Each of the three wind entities (Moriah, Zephyr, and Chinook) have identical (with the exception of entity name) power purchase agreements (PPAs) for 20 years from the facility’s commercial operation date. The Moriah, Zephyr, and Chinook, LLCs will own one third of the entity known as Summit, which is the counter party to the MISO/NSP Generator Interconnect Agreement (GIA). Moriah, Zephyr and Chinook also have identical ownership structures. All three wind entities are owned 95% by CWS Wind Farm, LLC and 5% by the CWS, LLC. The 5% ownership of CWS, LLC will be offered later to local investors. Similarly, CWS, LLC (and future local investors), through its ownership position in the three entities, will maintain a 5% ownership in Summit Transmission, LLC.<sup>4</sup>

## ***Project Location***

The Project is in central Nobles County, approximately two miles south of the community of Wilmont and approximately 10 miles northwest of the city of Worthington (See Figure 1 in the Commissioner’s packet). The project site includes lands in the townships of Summit Lake (sections 17-20 and 30) and Larkin (13, 23-24). CWS Wind Farm, LLC currently has approximately 3,080 acres under lease for the Project, which includes all lands within the site except 11 acres. CWS Wind Farm, LLC has secured 23 leases with 36 landowners within the site boundary<sup>5</sup> (See Figure 2 in the Commissioner’s packet).

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<sup>1</sup> *Name Change of Applicant* (See eDoc. # [20123-73053-01](#)).

<sup>2</sup> In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for Certificates of Need for Four High Voltage Transmission Line Projects in Southwestern, Minnesota, MPUC Docket No. E-002/CN-01-1958, Order Granting Certificate of Need Subject to Conditions, March 11, 2003.

<sup>3</sup> *Site Permit Application* (See eDoc # [201110-67420-01](#)).

<sup>4</sup> Id. at p.1.

<sup>5</sup> Id. at p.5.

### ***Project Description***

The CWS Project expects to use 15 REpower 2.05 MW turbines (model MM92) yielding a total nameplate capacity of 30.75 MW. The hub height of the turbines is 328 feet (100 meters), with a rotor diameter of 303.5 feet (92.5 meters).<sup>6</sup>

The Project's associated facilities will include:

- gravel access roads (approximately 3.5 miles);
- turbine tower foundations
- 34.5 kV underground electrical collector lines to collect power from each of the turbines and deliver it to the collector yard;
- a collector yard and metering equipment;
- 34.5 kV underground feeder lines to deliver power from the collector yard to the NSP Nobles Substation;
- installation of a Supervisory, Control And Data Acquisition (SCADA) system for communication purposes; and
- one permanent meteorological tower with a height of 328 feet.

As proposed, the Project expects to achieve initial synchronization by August 1, 2012, and commercial operation by October 1, 2012.<sup>7</sup>

### **Regulatory Process and Procedures**

A site permit from the Commission is required to construct a Large Wind Energy Conversion System (LWECS), which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. This requirement became law in 1995. The Minnesota Wind Siting Act is found at Minnesota Statutes chapter 216F and rules to implement the permitting requirements are found in Minnesota Rules chapter 7854. The following provides an overview of the CN and Site Permit processes.

### ***Certificate of Need Process***

A site permit cannot be granted before a Certificate of Need (CN) is issued if a CN is required. CWS noted in its application that a CN from the Commission for a large electric power generating plant is not required because the Project is less than 50 MW in size and, therefore, does not meet the definition of large energy facility in Minnesota Statutes section 216B.2421.

Each of the three wind generation LLC's (Chinook, Moriah and Zephyr) have a 20 year power purchase agreement with Northern States Company for the CWS Project.

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<sup>6</sup> Id at p. 2-5.

<sup>7</sup> Id. at p.46.

In an order dated November 15, 2011, the Commission determined that a certificate of need is not required based on the information in the record.<sup>8</sup>

### ***Site Permit Process***

A site permit from the Commission is required to construct an LWECS, which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. This requirement became law in 1995. The Minnesota Wind Siting Act is found at Minnesota Statutes Chapter 216F. The rules to implement the permitting requirements for LWECS are in Minn. Rule 7854.

CWS Wind Farm, LLC, filed a site permit application for the wind Project with the Commission on October 17, 2011.<sup>9</sup> The Commission accepted the application as complete in its November 14, 2011 order.<sup>10</sup> Notice of Application Acceptance and Comment period complied with notice, distribution and publication requirements of Minn. Rules 7854.0600.<sup>11</sup> A public comment period was open through December 30, 2011, and three comments were received and eFiled. On February 6, 2012, a Commission order made a preliminary determination that a site permit should be issued and released a Draft Site Permit for public comment.<sup>12</sup> The Notice of Availability of Draft Site Permit and Public Meeting complied with the notice, distribution and publication requirements of Minn. Rules 7854.0900.<sup>13</sup> A public comment period was open through March 23, 2012 and four comments were received and eFiled. A public meeting was held in Reading, Minnesota on Monday, March 5, 2012. A court reporter prepared a record of the public meeting.<sup>14</sup>

### ***Standard for Permit Issuance***

The test for issuing a site permit for an LWECS is to determine whether a project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Pursuant to Minnesota Statute 216F.02, certain sections of Minnesota Statutes 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including 216E.03, subdivision 7 (considerations in designating sites and routes). Minnesota Statutes section 216F.04 (d) allows the Commission to place conditions in LWECS permits.

### ***County Ordinance Standards for LWECS***

Minnesota Statutes section 216F.08 authorizes counties to assume responsibility for processing permit applications for LWECS with a combined nameplate capacity of less than 25,000 kilowatts. Minnesota Statutes 216F.081 states counties may assume more stringent standards than Commission rules or permits.

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<sup>8</sup> *Commission Order* (See eDoc. # [201111-68337-01](#)).

<sup>9</sup> *Site Permit Application* (See eDoc. #'s [201110-67420-01](#) through [201110-67420-09](#) and [201110-67424-01](#) through [20111067424-05](#)).

<sup>10</sup> *Commission Order* (See eDoc. # [201111-68337-01](#)).

<sup>11</sup> *Notice of Application Acceptance & Comment Period* (See eDoc #'s [201111-68441-01](#), [20123-73048-01](#), [201112-68902-01](#), [201111-68723-01](#)).

<sup>12</sup> *Commission Order* (See eDoc. # [20122-71240-01](#)).

<sup>13</sup> *Notice of Availability of Draft Site Permit and Public Meeting* (See eDoc. #'s [20122-71772-01](#), [20123-73049-01](#), [20122-71874-01](#), [20122-71753-01](#), [20122-71732-02](#)).

<sup>14</sup> *Record of Public Meeting & Oral Comments* (See eDoc. # [20123-72784-01](#)).

Nobles County has not assumed responsibility for processing permit applications for LWECS with a combined nameplate capacity of less than 25,000 kilowatts, pursuant to Minnesota Statutes section 216F.08, and has not adopted ordinance standards for LWECS, pursuant to Minn. Stat. 216F.081. However, Nobles County Zoning Ordinance, section 729.4, has established setbacks for wind energy conversion systems (non-commercial and commercial) and meteorological towers. Certain standards adopted by ordinance by Nobles County are more stringent than the Commission's General Permit Standards as set forth in Docket No. E- G-999/M-07-1102.

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

During the two comment periods, seven comments were received and eFiled. Commenters included the Minnesota Department of Transportation, the Minnesota Department of Natural Resources (three (3) comments), the Minnesota Historical Society, Robert Schreiber and the Southwest Regional Commission. No significant issues or topics were identified.

The following EFP analysis summarizes the seven comments by resource topic or category (roads, natural resources, noise, and archaeological resources), responds to the comments and identifies appropriate site permit conditions. The analysis concludes with a review of the Nobles County Wind Regulations, the Wind Access Buffer requirements, a summary of other comments and the public meeting summary.

#### ***Roads***

**Minnesota Department of Transportation.** The letter from MnDOT requests that compliance with MnDOT's Utility Accommodation Policy, and similar policies of other road authorities, be included as a condition of the site permit.<sup>15</sup>

EFP Response: MnDOT's concern, as well as other federal and state agency permit and/or other requirements are addressed in the proposed site permit as follows: Section 10.5.1 [Compliance with Federal and State Agency Permits]. MnDOT's concern regarding other road authorities is addressed in the proposed site permit at Section 10.5.2 [Compliance with County, City or Municipal Permits] and at Section 7.8 [Roads].

Section 10.5.2 requires the Permittee to comply with all terms and conditions of permits or licenses issued by the counties, cities and municipalities affected by the Project that are not preempted by federal or state requirements.

Section 7.8 [Roads] provides general guidance on the use of public roads and directs the Permittee to make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over the roads to be used. It is now common practice for a LWECS Permittee and a county and/or townships to enter in to a "Development Agreement" that address road use, maintenance, repair, ditches and damages.

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<sup>15</sup> *MnDOT Comments (See eDoc. # [201112-69810-01](#)).*

CWS anticipates obtaining all necessary road permits required by MnDOT, as well as Nobles County, and the townships of Larkin and Summit Lake. CWS has indicated that they will enter into a “development agreement” with Nobles County and “road agreements” with the townships of Larkin and Summit. On January 23, and March 23, 2012, EFP staff spoke with Steve Schnieder, Nobles County Public Works Office. Mr. Schnieder indicated that the development agreement between Nobles County and the Permittee is very similar to the development agreement between Nobles County and enXco for the 201 MW Nobles Wind Project (Docket No. 09-584). Mr. Schnieder also indicated that the Permittee and the townships of Larkin and Summit Lake would enter into road agreements.

### ***Natural Resources***

**DNR.** The Minnesota Department of Natural Resources provided three (3) separate comments. Their first comment, December 30, 2011, states that: “The project developers sited the project well and the content of their application indicates that they reviewed the DNR Wind Guidance and included suggested analyses in the Site Permit Application.” In closing, DNR states, “the DNR does not recommend surveys at this time.”<sup>16</sup>

DNR’s second comment, March 14, 2012, was in response to the Applicant’s request for a crossing permit in the NE ¼ of Section 24, T103N-R42W, Larkin Township, in Nobles County. DNR’s response states: “Based on our review of the notification form, data and maps of the area, we have determined that the wetland(s)/watercourse are not under DNR protected waters jurisdiction and therefore the project does not require a DNR Public Waters permit.”<sup>17</sup>

DNR’s third comment, March 23, 2012, was a request “to review the bat acoustic results in the Fall of 2012.”<sup>18</sup>

EFP Response: The Permittee will provide DNR and EFP staff with the bat acoustic results.

Natural resource features are identified, discussed, and evaluated in terms of impact mitigation in the site permit application in Sections 8.13 through 8.19 the results of its “Avian and Bat Assessment: Review of Potential Avian and Bat Mortality” in Appendix F.

Comments from the DNR and the United States Fish and Wildlife Service (USFWS) in Appendix B of the site permit application have indicated that no occurrences of state or federally threatened or endangered species occur within the Project Area. Overall, the potential for impacts to rare or unique species within the Project Area is low. It is worth noting that wind turbines and access roads will be sited to avoid any wetlands, creeks and wooded areas. There are no documented communities of native prairie within the Project Area; therefore, impacts to native prairie are not anticipated.<sup>19</sup>

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<sup>16</sup> DNR Comment (See eDoc. # [20121-70633-01](#)).

<sup>17</sup> DNR Comment letter on Channel Crossing (See eDoc. # [20123-72645-01](#)).

<sup>18</sup> DNR Comment request for acoustic bat data (See eDoc. # [20123-73051-01](#)).

<sup>19</sup> Native Prairie Site Review (See eDoc. # [20122-71818-01](#)).

Because turbines and access roads will be sited to avoid wetlands and creeks, impacts to Topeka Shiner are not anticipated. Additionally, there are no Waterfowl Feeding and Resting Areas present within the Project Area.

EFP staff believes the need for pre-construction surveys and post-construction surveys should be based on factors unique to each wind project. The tiered approach outlined by USFWS in its Wind Advisory Committee Recommendations (WCAR) for assessing impacts to wildlife, which is a risk-based evaluation, implements this concept. The tiered approach allows decisions to be made based on the information gathered at each tier, which provides an opportunity for developers and agencies to evaluate a site based on specific questions and associated data.

Appendix F provides Tier 1 and Tier 2 results and summarizes field visit results by biologists in July 2011. Based on the Tier 1 and 2 results, field visit result, and agency review, the Applicant states: “The DNR considers the Project to be low risk for impacts to birds or bats and, as such, does not recommend pre-construction surveys. As a result, no Tier 3 studies were completed.”<sup>20</sup>

Since there were no special concerns coming out of Tier 1 and 2 results, coupled with DNR’s comments, the proposed Draft Site Permit only requires a standard Avian and Bat Protection Plan. See site permit, Section 6.7[Avian and Bat Protection Plan]. CWS Wind Farm has prepared an ABPP in consultation with EFP staff to ensure that the ABPP complies with the requirements of Section 6.7. A standard ABPP addresses steps to be taken to identify and mitigate impacts to avian and bat species during the construction and operation phase of the Project. These would include formal and informal monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the Project.<sup>21</sup> No comments were received on the ABPP filed on February 17, 2012.

On March 23, 2012, the U.S. Fish and Wildlife Service issued new Land-Based Wind Energy Guidelines. In these guidelines, the USFWS has elected to modify their reference to Avian and Bat Protection Plans (ABPPs) for wind energy projects by now referring to them as Bird and Bat Conservation Strategies (BBCS); whereas, for USFWS, ABPPs will now only refer to transmission projects.

### *Noise*

**Robert Schreiber.** EFP Staff received a written comment from Robert J. Schreiber (Reading, Minn.), stating: “...I do not want any more towers erected to the east or north of my property. I am currently seeking legal resolution to the current towers. If additional towers are to be erected, I wish to be included in any and all meetings, correspondence, notices, plans, discussions and any pertinent information and data.”<sup>22</sup>

EFP Response: Staff contacted the NSP Nobles Wind Project site manager, Nathan Svobda, to determine the nature of Mr. Schreiber’s complaints. Mr. Svobda indicated that he was not familiar with any complaints filed by Mr. Schreiber. EFP staff has also reviewed the monthly

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<sup>20</sup> Site Permit Application, Appendix F, page 3 (See eDoc. # [201110-67424-03](#)).

<sup>21</sup> Draft Avian and Bat Protection Plan (See eDoc. # [20122-71732-01](#)).

<sup>22</sup> Letter from Robert J. Schreiber, (See eDoc. # [20121-70631-01](#)).

compliance filings on eDockets (09-584) submitted by both enXco (the project developer) and NSP, the Project owner. This search revealed that Mr. Schreiber has not filed any formal complaints with enXco or NSP. However, EFP staff did find similar comments and concerns submitted by Mr. Schreiber during the comment period on the Draft Site Permit phase of the Nobles Wind Project (See Edockets 09-584, document id # 20099-42091-01, page 1 of 28, filed on September 14, 2009). EFP staff contacted Mr. Schreiber, by phone on January 23, 2012, and discussed with him his concerns. Mr. Schreiber indicated he has not contacted NSP, the owner of the Nobles Wind Project, to express his concerns about noise, primarily during nighttime low wind conditions, and shadow flicker. EFP staff has reviewed the project mailing list and Mr. Schreiber's name, address and email are now included. Therefore, he will receive Commission notices and mailings for the CWS Project.

The turbines for the CWS Project will be located about three miles to the west of Mr. Schreiber's residence. Cumulative noise modeling results in Appendix E of the Site Permit Application indicate that cumulative turbine noise from the project will be below PCA's most stringent noise requirement. The proposed site permit Section 6.6 [Noise] requires a post-construction noise survey.

### **Archaeological Resources**

**Minnesota Historical Society.** Comments from the Historical Society, February 28, 2012, noted "...one new archaeological site was identified as a result of this survey. We agree with the consultant's recommendation that this small lithic scatter (21NO0071) is **not eligible** for the National Register of Historic Places. Therefore, we concur that no further archaeological work is necessary."<sup>23</sup>

EFP Response: No response is necessary. See proposed Site Permit Section 6.3 [Archaeological Resources].

### ***Nobles County Wind Regulations***

Nobles County Zoning Ordinance (729) covers Wind Energy Conversion System Regulations. This ordinance at part 729.4 establishes setbacks for wind turbines and meteorological towers. Setback requirements are different for non-commercial and commercial turbines. Greater setbacks are required for commercial turbines. The Nobles County regulations do not apply to LWECS.

Based on information in its application, it appears that CWS has also designed the project to meet or exceed the setback requirements adopted by Nobles County for commercial turbines in its wind energy conversion system regulations (section 729.4 Setbacks). On January 21, 2012, EFP staff spoke with Wayne Smith, Environmental Services Director for Nobles County, regarding their setbacks for wind facilities. Mr. Smith acknowledged that the Applicant has met with the county regarding setbacks and that the project design complies with the county setback requirements.

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<sup>23</sup> Letter from Minnesota Historical Society (See eDoc. # [20123-72542-01](#)).

Several of the requirements in the Nobles County Wind Energy Conversion System Regulations are similar to those reflected in the Commission's General Permit standards set forth in Docket No. E-G-999/M-07-1102. However, the standards adopted by Nobles County for commercial turbines and meteorological tower setbacks to property lines, road rights-of-way, and wetlands (USFWS Types III, IV and V) are more stringent than the Commission's. Since the project as proposed is intended to comply with these setbacks, they are incorporated as Special Conditions in Section 13.1 of the Site Permit.

### ***Wind Access Buffers***

On January 26, 2012, EFP staff filed its Comments and Recommendations on the issuance of a draft site permit for the CWS Project.<sup>24</sup> Those comments provide analysis supporting site permit conditions for wind access buffers, turbine spacing requirements, wake loss, prevailing winds and non-prevailing winds, and Minnesota's laws on wind rights. The footnote above provides a link to that document.

The CWS Project design and layout complies with the requirements of the proposed site permit at Section 4.1 [Wind Access Buffer] and Section 4.10 [Turbine Spacing].

CWS Wind Farms sought assurances from NSP, the owner of the Nobles Wind Farm that the proposed CWS turbine locations do not interfere with the existing turbine locations in the Nobles Project.

The buffer setback requirement of five by three RD for each of the two projects provides for a combined setback of 10 by six RD between the two projects, thereby reducing or limiting the potential for wake loss from one project to affect the energy production and performance of the other project. The two combined buffer setbacks provide for efficient use of the wind resource.

The CWS Project design and layout also appears to satisfy all site permit setback requirements, including the Nobles County setback requirements identified in Section 13 [Special Conditions].

### ***Other Comments and Public Meeting Summary***

**Southwest Regional Development Commission.** Annette Bair, SRDC Physical Development Director submitted comments on March 22, 2012, that provides a history of the CWS Project going back to 2003 and Commission Docket No. E-002/CN-01-1958. Ms. Bair's comments also note:<sup>25</sup>

- 1) there is strong community support for the project;
- 2) more than 150 residents, primarily from southwest Minnesota are invested in the project;
- 3) CWS has invited all landowners (approximately 250) along the four Xcel Energy high voltage transmission line to participate in the ownership of the CWS project; and

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<sup>24</sup> EFP C&R (See eDoc. #[20121-70712-01](#)).

<sup>25</sup> SRDC Comments (See eDoc. #[20123-73050-01](#)).

- 4) EFP staff has encouraged the use of Development Agreements that not only assist the local unit of governments but also help the developer understand what is expected and what costs are likely to be.

### **Public Meeting Summary**

Approximately twenty five (25) people attended the public information meeting on the draft site permit held in Reading, Minnesota on March 5, 2012 and included CWS representatives and board members, Nobles County officials, project participants and landowners. After introductions, a statement from David Benson, Nobles County Commissioner, was read into the record focusing on the contribution of individuals and community members for their work that has gone into the CCWS project and how Nobles and other counties have benefitted from wind energy development in their area.

EFP staff provided an overview of the permitting process for LWECS in Minnesota. The primary purpose of the meeting was to receive comments on the draft site permit; therefore, EFP staff covered all aspects of the site permit requirements.

Several questions were directed to CWS representatives and EFP staff. Questions covered project timing, construction schedule, and turbine delivery, drain tiles, production taxes paid to the county and townships, and setbacks. No significant issues were identified.

This project will pay an annual production tax of about \$155,000 per year for the life of the project. The county receives 80 % and the townships receive 20% of the taxes paid. The project will also pay landowners an annual fee for hosting the wind facilities. Investors will also share in the proceeds. Other community benefits include providing assistance to 4H members for travel to the State Fair, funding of school projects and leaning opportunities for high school physics classes on field trips to wind energy facilities. As noted earlier a court reporter prepared a record of the public meeting.<sup>26</sup>

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EFP staff has used the information in the site permit application, compliance with procedural requirements, comments received in development of the record, and experience with other LWECS projects as a guide for evaluating whether a site permit may be issued for this project.

Based on the record of this proceeding, EFP staff concludes that the Community Wind South Project meets the procedural requirements and the considerations and standards for issuance of a site permit identified in Minnesota Statutes and Rules. The Site Permit Application and the record have been reviewed pursuant to the requirements of Minnesota Statutes chapter 216F and Minnesota Rules 7854.

EFP staff has prepared for Commission consideration an Exhibit List, proposed Findings of Fact, Conclusions of Law and Order, and a proposed Site Permit for the 30.75 MW Community Wind South project.

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<sup>26</sup> *Record of Public Meeting & Oral Comments (See eDoc. # [20123-72784-01](#)).*

### ***Exhibit List***

EFP staff has prepared and attached an exhibit list of documents that are part of the record in the site permit proceeding.

### ***Proposed Findings of Fact***

The attached proposed Findings 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 site considerations addressed in the proposed 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, 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.

### ***Proposed Site Permit***

EFP Staff has prepared a site permit for the Commission's consideration. See the attached document. The conditions in this proposed Site Permit are consistent with conditions included in other LWECS site permits issued by the Commission.

The proposed site permit is not significantly different from the draft site permit issued by the Commission, except for three minor modifications. For consistency purposes, all references to "ten (10) working days" in the draft site permit have been changed to "14 days". This modification makes the proposed site permit language consistent with a recently issued draft site permit in another Commission docket and pending permits in other dockets. The other two modifications are in Sections 5.6 [Pre-Construction Meeting] and 5.7 [Pre-Operation Compliance Meeting]. The language in these two conditions was modified to provide clarity on how the two meetings are arranged and scheduled. No substantive language changes have been made to the proposed site permit.

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## **Commission Decision Options**

### **A. Community Wind South Project Findings of Fact, Conclusions and Order**

1. Adopt the attached Findings of Fact, Conclusions of Law and Order proposed for the 30.75 MW CWS Project and associated facilities in Nobles County.
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 30.75 MW CWS Project**

1. Issue the proposed LWECS Site Permit for the Community Wind South Project to CWS Wind Farm, LLC.
2. Amend the proposed LWECS Site Permit as deemed appropriate.

3. Deny the proposed LWECS Site Permit.
4. Make some other decision deemed more appropriate.

**EFP Staff Recommendation:** Staff recommends options A1 and B1.

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FIGURE 1

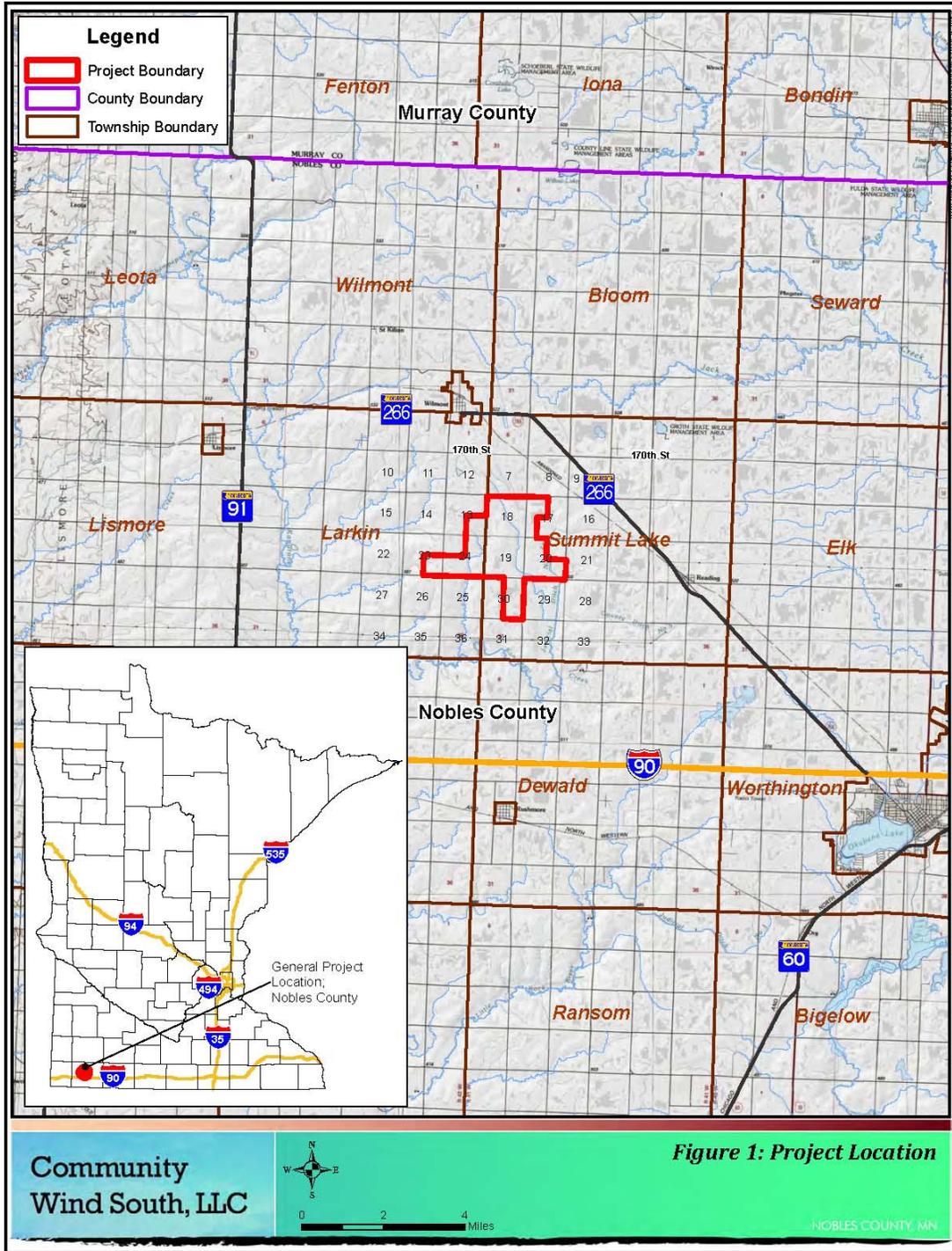


FIGURE 2

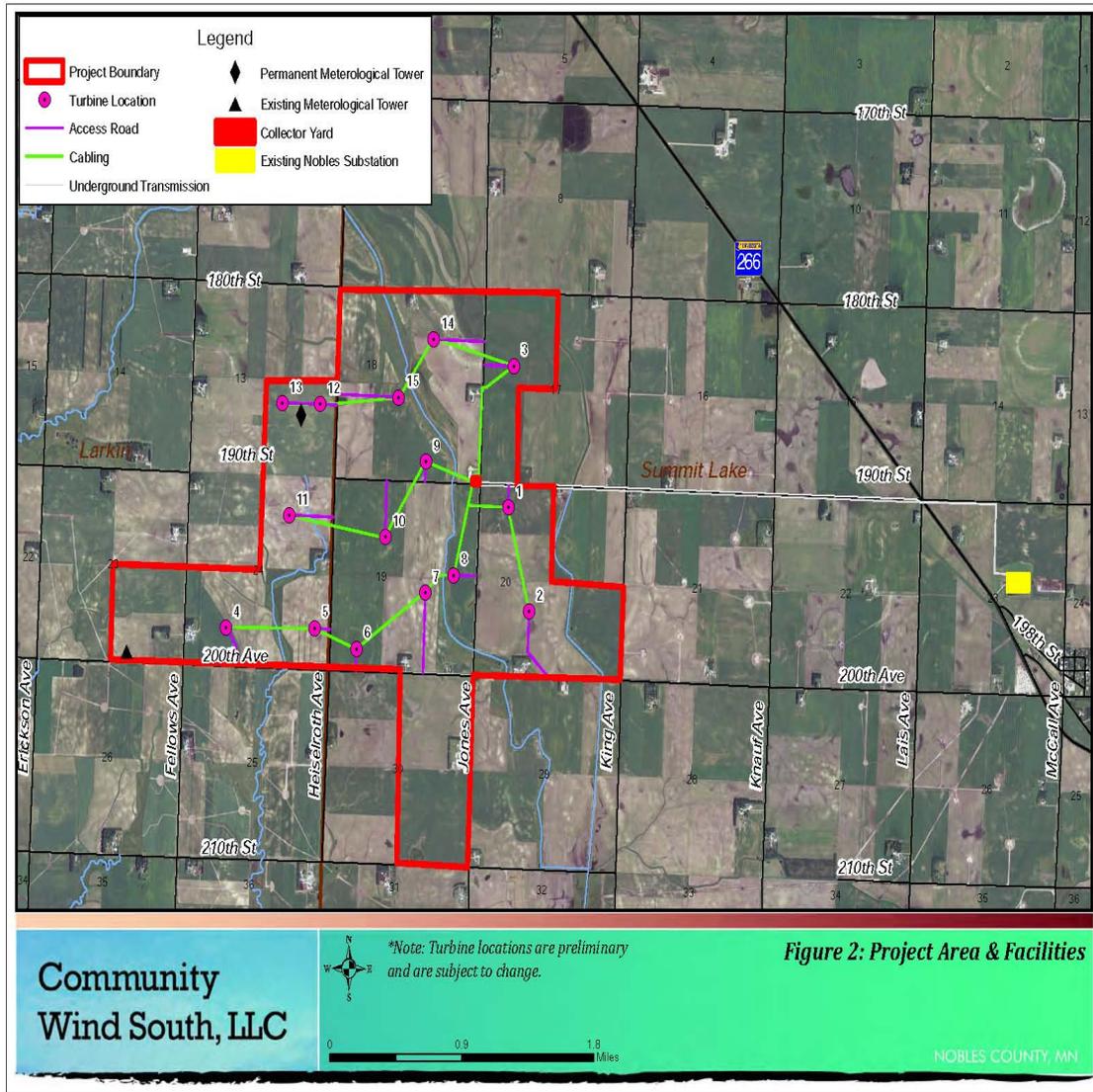
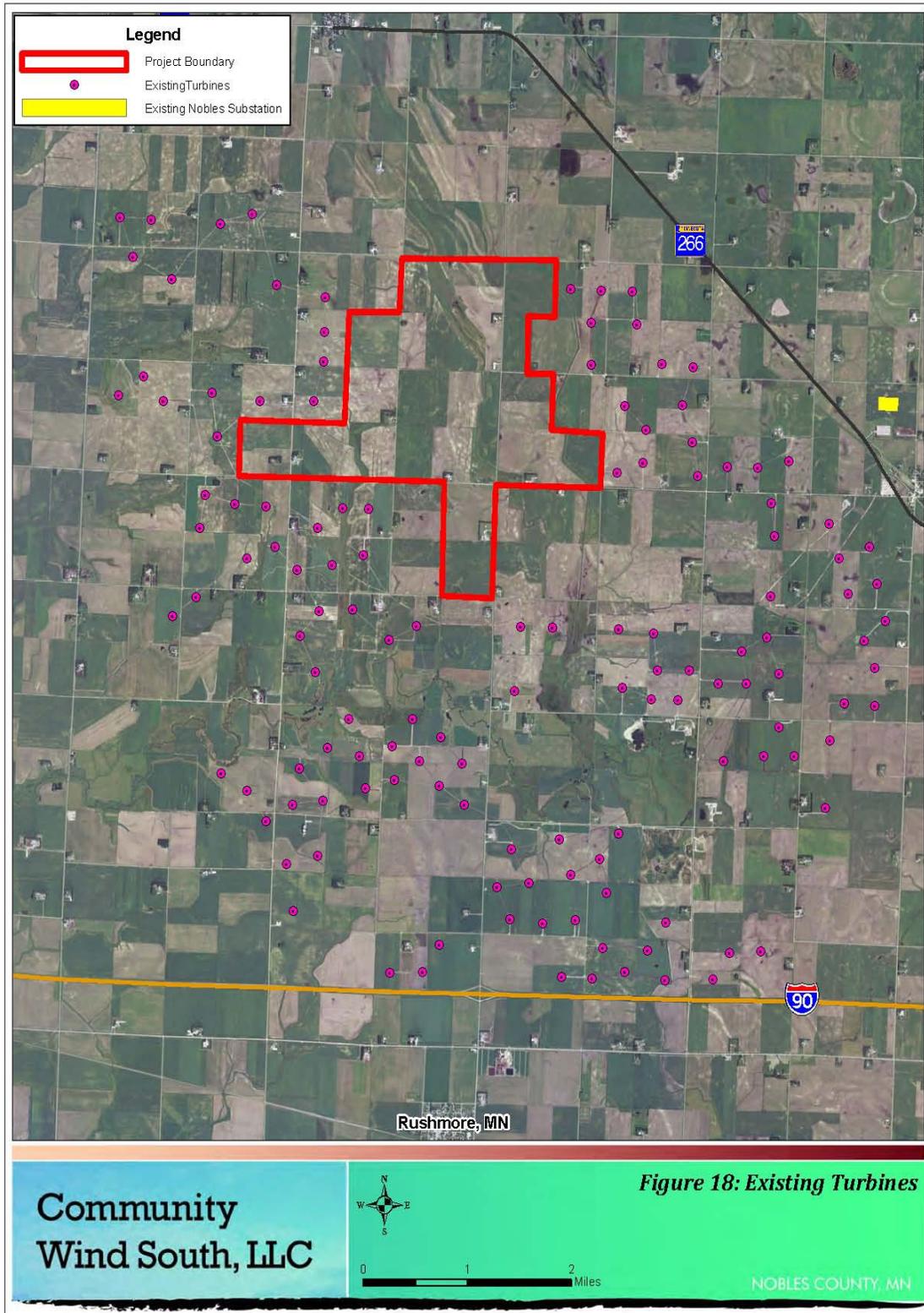


FIGURE 3



In the Matter of the Application of  
 CWS Wind Farm, LLC for a Large  
 Wind Energy Conversion System  
 Site Permit for the 30.75 Community  
 Wind South Project in Nobles County

## Exhibit List

PUC Docket No. IP-6871//WS-11-863

EFP Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
1	Community Wind South, LLC Site Permit Application and Appendices A – I, for a 30.75 Large Wind Energy Conversion System in Nobles County.	10-17-2011	<a href="#">201110-67420-01</a> <a href="#">201110-67420-02</a> <a href="#">201110-67420-03</a> <a href="#">201110-67420-04</a> <a href="#">201110-67420-05</a> <a href="#">201110-67420-06</a> <a href="#">201110-67420-07</a> <a href="#">201110-67420-08</a> <a href="#">201110-67420-09</a>  <a href="#">201110-67424-01</a> <a href="#">201110-67424-02</a> <a href="#">201110-67424-03</a> <a href="#">201110-67424-04</a> <a href="#">201110-67424-05</a>
2	Name Change of Applicant Submitted to EFP Staff	03-28-2012	<a href="#">20123-73053-01</a>
3	EFP Comments and Recommendations to the PUC on Application Acceptance	11-02-2012	<a href="#">201111-68053-01</a>
4	PUC Order accepting the Application as complete and granting a variance to Minnesota Rule 7854.0800 to extend the period for the PUC to make a preliminary determination on whether a site permit may be issued.	11-14-2011	<a href="#">201111-68337-01</a>
5	Notice of Application Acceptance & Comment Period.	11-18-2011	<a href="#">201111-68441-01</a>

<b>EFP Exhibit No.</b>	<b>Exhibit</b>	<b>eDocket Date</b>	<b>eDocket Document Number</b>
6	Notice of Application Acceptance & Comment Period published in <i>EQB Monitor</i> , Vol. 35. No. 24, on 11-28-11	03-28-2012	<a href="#">20123-73048-01</a>
7	Affidavit of Publication: Notice of Application Acceptance & Comment Period appeared in the <i>Worthington Daily Globe</i> 11-29-11.	12-02-2011	<a href="#">201112-68902-01</a>
8	Applicant's Affidavit of Service of mailing Notice of Application Acceptance and Site Permit Application to landowners and government officials (mailed 11-29-11).	11-29-2011	<a href="#">201111-68723-01</a>
9	Public and government agency comments on issues to consider in developing the draft site permit. a. Robert Schreiber b. MnDOT c. DNR	12-27-2011 12-30-2011 01-25-2012	<a href="#">20121-70631-01</a> <a href="#">201112-69810-01</a> <a href="#">20121-70633-01</a>
10	EFP Comments and Recommendations to the PUC on issuance of the Draft Site Permit.	01-26-2012	<a href="#">20121-70712-01</a>
11	PUC Order issuing Draft Site Permit for public review and comment.	02-06-2012	<a href="#">20122-71240-01</a>
12	Draft Avian and Bat Protection Plan for Community Wind South	02-17-2012	<a href="#">20122-71732-01</a>
13	Notice of Availability of Draft Site Permit and Public Meeting	02-21-2012	<a href="#">20122-71772-01</a>
14	Notice of Availability of Draft Site Permit and Public Meeting published in <i>EQB Monitor</i> , Vol. 36. No. 4, on 02-20-12.	03-28-2012	<a href="#">20123-73049-01</a>
15	Affidavit of Publication: Notice of Availability of Draft Site Permit and Public Meeting in the <i>Worthington Daily Globe</i> on 02-21-2012.	02-24-2012	<a href="#">20122-71874-01</a>

<b>EFP Exhibit No.</b>	<b>Exhibit</b>	<b>eDocket Date</b>	<b>eDocket Document Number</b>
16	Applicants Affidavit of Service for: <ul style="list-style-type: none"> <li>a. Notice of Availability of Draft Site Permit;</li> <li>b. Commission Order issuing Draft Siting Permit;</li> <li>c. Draft Site Permit; and</li> <li>d. Draft outline of Avian and Bat Protection Plan.</li> </ul>	02-21-2012	<a href="#">20122-71753-01</a> <a href="#">20122-71732-02</a>
17	Record of Public Meeting & Oral Comments in Reading, MN on March 5, 2012.	03-21-2012	<a href="#">20123-72784-01</a>
18	Letter from Minnesota Historical Society (February 28, 2012).	03-13-2012	<a href="#">20123-72542-01</a>
19	DNR Comment letter on Channel Crossing, No Permit Required.	03-15-2012	<a href="#">20123-72645-01</a>
20	Southwest Regional Development Commission, Annette Bair (March 22, 2012).	03-28-2012	<a href="#">20123-73050-01</a>
21	Memo from DNR, Jamie Schrenzel on CWS Project (March 23, 2012).	03-28-2012	<a href="#">20123-73051-01</a>
22.	Native Prairie Site Review	02-23-2012	<a href="#">20122-71818-01</a>

**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

Phyllis Reha  
David Boyd  
J. Dennis O'Brien  
Betsy Wergin

Acting Chair  
Commissioner  
Commissioner  
Commissioner

In the Matter of the Application of CWS  
Wind Farm, LLC for a Large Wind Energy  
Conversion System Site Permit for the  
30.75 MW Community Wind South Project  
in Nobles County

**ISSUE DATE: May 1, 2012**

**DOCKET NO. IP-6871/WS-11-863**

**FINDINGS OF FACT, CONCLUSIONS  
OF LAW AND ORDER, ISSUING A  
SITE PERMIT TO CWS WIND FARM,  
LLC FOR THE COMMUNITY WIND  
SOUTH PROJECT**

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The above-entitled matter came before the Minnesota Public Utilities Commission (Commission) on April 19, 2012, pursuant to an application submitted by CWS Wind Farm, LLC (Applicant or CWS) for a site permit to construct, operate, maintain, and manage the Community Wind South Project (Project), a 30.75 Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS), including associated facilities, in Nobles County.

A public meeting was held on March 5, 2012, in Reading, Minnesota. The meeting was presided over by the Department of Commerce (DOC) Energy Facility Permitting (EFP) staff. The meeting continued until all persons who desired to speak had done so. The public comment period closed on March 23, 2012.

**STATEMENT OF ISSUE**

Should the Applicant be granted a site permit under Minn. Stat. § 216F.04 to construct a 30.75 MW Large Wind Energy Conversion System in Nobles County?

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

## FINDINGS OF FACT

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## **Background and Procedure**

1. On October 17, 2011, CWS Wind Farm, LLC (formerly Community Wind South, LLC) (CWS) filed an application with the Public Utilities Commission for up to 30.75 megawatts of nameplate wind power generating capacity identified as the Community Wind South Project in Nobles County.<sup>1</sup>
2. CWS Wind Farm, LLC is a Delaware limited liability company formed in 2011.<sup>2</sup> CWS is representing the interests of Zephyr Wind LLC; Moriah Wind, LLC; Chinook Wind, LLC; and Summit Transmission, LLC. Each of the three wind entities (Moriah, Zephyr, and Chinook) have identical (with the exception of entity name) power purchase agreements (PPAs) for 20 years from the facility's commercial operation date. The Moriah, Zephyr, and Chinook, LLCs will own one third of the entity known as Summit, which is the counter party to the MISO/NSP Generator Interconnect Agreement (GIA). Moriah, Zephyr and Chinook also have identical ownership structures. All three-wind entities are owned 95% by CWS Wind Farm, LLC and 5% by the CWS, LLC. The 5% ownership of CWS, LLC will be offered later to local investors. Similarly, CWS, LLC (and future local investors), through its ownership position in the three entities, will maintain a 5% ownership in Summit Transmission, LLC.<sup>3</sup>
3. Department of Commerce Energy Facility Permitting (EFP) staff reviewed and recommended that the application complied with the application requirements of Minn. Rules, part 7854.0500.<sup>4</sup>
4. On November 14, 2011, the Commission issued an Order accepting the application for the Community Wind South Project as complete and granting a variance to Minn. Rules, part 7854.0800, to extend the period for the Commission to make a preliminary determination on whether a draft site permit may be issued.<sup>5</sup>
5. On November 18, 2011, EFP staff issued a notice of application acceptance and opportunity to comment on the permit application and issues to consider in the development of a draft site permit.<sup>6</sup> 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 and distributed met the requirements of Minn. Rules, part 7854.0600, subp. 2.
6. The notice of application acceptance appeared in the *EQB Monitor*, Volume 35, No. 24 on November 28, 2011,<sup>7</sup> and was published in the *Worthington Daily Globe* on

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<sup>1</sup> Exhibit 1, Site Permit Application, October 17, 2011

<sup>2</sup> Exhibit 2, [20123-73053-01](#)

<sup>3</sup> Exhibit 1, at p. 1.

<sup>4</sup> Exhibit 3, [201111-68053-01](#)

<sup>5</sup> Exhibit 4, [201111-68337-01](#)

<sup>6</sup> Exhibit 5, [201111-68441-01](#)

<sup>7</sup> Exhibit 6, [20123-73048-01](#)

November 29, 2011.<sup>8</sup> The published notice meets the requirement of Minn. Rules, part 7854.0600, subp. 2.

7. On November 28, 2011, the Applicant distributed copies of the Notice of Application Acceptance and Comment Period, and a copy of site permit application to government agencies and landowners within the Project area.<sup>9</sup> The application distribution met the requirements of Minn. Rules, part 7854.0600, subp. 3. County officials and all township boards and city councils within the project area were served.
8. Public comments on the site permit application and issues to consider in the development of a draft site permit were accepted through December 30, 2011. EFP staff received comments from Robert Schreiber, the Minnesota Department of Transportation (Mn/DOT), and the Minnesota Department of Natural Resources (DNR).<sup>10</sup>
9. On January 26, 2012, EFP staff recommended that a draft site permit may be issued and distributed for public comment.<sup>11</sup> On February 6, 2012, a Commission Order made a preliminary determination that a draft site permit may be issued.<sup>12</sup>
10. On February 21, 2012, EFP staff issued a notice of issuance of a draft site permit and public information meeting.<sup>13</sup> The notice content met the requirements of Minn. Rules, part 7854.0900, subp. 1.
11. Published notice of the issuance of a draft site permit appeared in the *EQB Monitor*, Vol. 36, No. 4 on February 20, 2012,<sup>14</sup> as required by Minn. Rules, part 7854.0900, subp. 2, and in the Worthington *Daily Globe* on February 21, 2012.<sup>15</sup> The deadline for submitting comments on the draft site permit was March 23, 2012.
12. On February 21, 2012, the Applicant distributed copies of: a) the Notice of Availability of the Draft Site Permit; b) the Commission Order issuing Draft Site Permit; c) the Draft Site Permit; and d) the draft outline of Avian and Bat Protection Plan.<sup>16</sup> County officials and all township boards and landowners within the project area were served. Notice and distribution of these documents met the requirements of Minn. Rules, part 7854.0900, subp. 2.
13. A public meeting was held in the afternoon of March 5, 2012, in Reading, Minnesota, to provide the public with an overview of the Commission's review and permitting process for LWECS and to receive comments on the CWS Project and the draft site permit. EFP staff provided of the permitting process and reviewed the requirements of the draft site permit with the public. The Applicant also provided an overview of the project,

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<sup>8</sup> Exhibit 7, [201112-68902-01](#)

<sup>9</sup> Exhibit 8, [201111-68723-01](#)

<sup>10</sup> Exhibits 9a, 9b and 9c, [20121-70631-01](#); [20121-69810-01](#); [20121-70633-01](#)

<sup>11</sup> Exhibit 10, [20121-70712-01](#)

<sup>12</sup> Exhibit 11, [20122-71240-01](#)

<sup>13</sup> Exhibit 13, [20122-71772-01](#)

<sup>14</sup> Exhibit 14, [20123-73049-01](#)

<sup>15</sup> Exhibit 15, [20122-71874-01](#)

<sup>16</sup> Exhibit 16, [20122-71753-01](#) & [20122-71732-02](#)

tentative schedule and responded to questions about the proposed project. Approximately 25 people attended the public meeting and several people offered comments.<sup>17</sup>

14. Two written comments were received by the close of the March 23, 2012, comment period, one from the Southwest Regional Development Commission in Slayton, Minnesota, and the other from Minnesota Department of Natural Resources. Both comments are addressed at the appropriate place in these findings.

### **Certificate of Need**

15. No Certificate of need is required for the Project. The Project is not a “large energy facility” as defined in Minn. Stat. Section 216B.2421 because it is less than 50,000 kW in size and its only transmission lines will be a 34.5 kV. See Minn. Stat. Section 216B.2421, Subd. 2(1) (2010).<sup>18</sup>

### **Permittee**

16. CWS Wind Farm, LLC (CWS) is the entity now responsible for development of the Project and all aspects of site permit compliance.

### **Interconnection Agreement**

17. The CWS Project has a generator interconnection agreement with the Midwest Independent Transmission System Operator and Northern States Power Company.

### **Project Description**

18. CWS anticipates that the Project will consist of 15 Repower 2.05 MW turbines (model MM92) for a rated nameplate capacity of 30.75 MWs. The turbines will have a hub height of 100 meters (328 feet) standing on tubular tower steel towers. The three bladed rotor assemblies will be 92.5 meters (303.5 feet) in diameter. The rotor swept area will be 6,717 square meters (72,308 square feet). Associated facilities will include pad mounted step-up transformers, underground electrical cables for delivery of the power generated by the turbines, communication cables for the supervisory control and data acquisition (SCADA) system for monitoring purposes, a collector yard, turbine access roads, tower foundations, and one permanent meteorological tower.<sup>19</sup>
19. A pad mounted step-up transformer located near the base of each turbine will accompany each wind turbine.<sup>20</sup> The purpose of the step-up transformer is to raise the voltage from 575 volts to a power collection line voltage of 34.5 kilovolts (kV).
20. The underground electrical collection system will be a 34.5 (kV) underground three (3) phase collection system. The underground trench will house three separate

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<sup>17</sup> Exhibit 17, [20123-72784-01](#)

<sup>18</sup> Exhibit 1, Site Permit Application at Section 2

<sup>19</sup> *Id.* at 6, p.5

<sup>20</sup> *Id.* at 6, p. 5

appropriately sized fully shielded direct bury medium voltage (MV) cables, a bare copper ground wire, and an appropriately sized armored fiber optic cable for transmittal of supervisory control and data acquisition (SCADA) information. A clean fill material such as sand or fine gravel will cover the cable before the native soil is backfilled to the top of the trench. The collection lines may require an above ground junction box when the collection lines from separate spools need to be spliced together. Separate collection systems will connect the Chinook, Moriah and Zephyr facilities and then converge at a common connection point. A fenced-in collector yard, comprised of appropriate protection and metering equipment will be located at the southeast corner of the SE ¼ of Section 18 in Summit Lake Township. Power will be sent approximately 19,908 feet by two sets of underground 34.5 kV cables to the existing Nobles County Substation owned by Northern States Power just north and west of Reading, Minnesota.<sup>21</sup> A Project substation is not necessary because all facilities will be included in NSP's Nobles County Substation.

21. Each wind turbine will communicate directly with the Supervisory Control and Data Acquisition (SCADA) system for the Project. The SCADA system will connect all turbines with the collector/protection and any operations and maintenance facilities using armored fiber optic cables. This system will transmit data from the turbines back to the responsible maintenance party, MISO, NSP, and others, as well as transmit commands from the maintenance party to the turbines to ensure real time management of all wind turbines within the facility and integration with the existing transmission grid.<sup>22</sup> The Permittee will maintain a computer program and database for tracking each wind turbine's maintenance history and energy production.
22. Construction of the Project will require approximately three to four miles of turbine access roads. The access roads will be located to facilitate construction of the turbines as well as operation and maintenance activities. The permanent turbine access roads will be comprised of graded dirt overlaid with geotechnical fabric, if necessary, and class-5 gravel cover, which will be adequate to support the size and width of maintenance vehicles. Turbine access roads will meet local county and township requirements. For purposes of construction, the turbine access roads will be approximately 28 feet in width to allow for passage of large construction equipment. A temporary gravel pad for crane operation is also necessary and will be installed near the turbine location. These pads are typically 40 by 100 feet in size. In addition, an approximately 400 by 400 foot area will be graded near the turbine location, if necessary, to allow for assembly of the turbine blades and nacelle components. Following construction, both the crane pad and assembly area will be restored to contour and all turbine access roads will be return to their permanent 16 foot width. The permanent turbine access roads will have a low profile design to allow for crossing by farming equipment.<sup>23</sup>
23. A licensed engineer in accordance with the manufacturer's specifications and code requirements based on site-specific conditions and applicable load criteria will design

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<sup>21</sup> *Id.* at 5, p. 4

<sup>22</sup> *Id.* at 10, p. 45

<sup>23</sup> *Id.* at 10, p. 45-46

individual turbine foundations. It is anticipated that a standard spread footer design will be used for each turbine location and have an approximately 50 foot diameter octagonal base approximately 4 feet deep with an approximately 18 foot circular pedestal at an additional four (4) foot depth for a total depth of 8 feet. Each turbine foundations will require approximately 300 to 400 cubic yards of concrete and 80,000 pounds of reinforcing steel. However, the design assumption is subject to modification based on the final geotechnical reports.<sup>24</sup>

24. One temporary anemometer tower is currently located in Larkin Township in the SE ¼, Section 23. This met tower was permitted by Nobles County and has been in operation since 2007. This temporary met tower will be decommissioned and removed prior to turbine assembly. The new permanent tower will be sited in accordance with International Electrotechnical Commission (IEC) guidelines for power performance testing of wind turbines and is currently proposed for placement in the SE ¼, Section 13 of Larkin Township.
25. Construction is scheduled to begin in the second quarter of 2012 and completion is expected by October 1, 2012. The total cost of the Project is estimated at 55 to 60 million dollars.<sup>25</sup>

**Project Location**

26. The Project is located in Nobles County in southwestern Minnesota, approximately two miles south of Wilmont, Minnesota, and includes portions of Summit Lake and Larkin townships as follows:<sup>26</sup>

County	Township Name	Township	Range	Section
Nobles	Summit Lake	103N	41W	17-20, 30
Nobles	Larkin	103N	42W	13, 23-24

The Project area is located within the Prairie Parkland Providence near the border of the Coteau moraines and Inner Coteau subsection. The site topography consists of gently rolling hills. Elevations range from 1648 feet above mean sea level (AMSL) in the southeast near the East Branch of Kanananzi Creek to 1748 feet AMSL near the southwestern portion of the Project area. The Project area is rural with an agricultural-based economy. Approximately 91 percent of land use within the Project area is primarily comprised of agricultural land, primarily corn and soybeans.<sup>27</sup>

27. The CWS Project site is also located within the footprint of the Nobles Wind Project on three sides. The existing 201 MW Nobles Wind Farm (Docket No. 09-584, permitted by an Order of the Commission on December 11, 2009) is comprised of 134 GE 1.5 MW turbines on 80 meter (262 foot) towers.<sup>28</sup>

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<sup>24</sup> *Id.* at 10, p. 45

<sup>25</sup> *Id.* at 10, p. 46

<sup>26</sup> *Id.* at 4, p. 2

<sup>27</sup> *Id.* at 5, p.4

<sup>28</sup> *Id.* at 4, p.2

## **Wind Resource Considerations**

28. Based on the correlation and terrain modeling, the long-term estimate at the CWS Project site is 19.58 mph (8.9 meters per second) at the 100 meter hub height.<sup>29</sup> Prevailing wind directions are generally from the northwest to north in the winter months and southerly in the warmer weather months at the CWS Project site. The seasonal cycle of the mean wind speed shows lower wind speeds during the warmer weather months and higher wind speeds during the winter and spring period with a maximum in April. The highest wind speeds occur during nighttime and in mid afternoon. Lower wind speeds typically occur during the early morning and in the late afternoon.
29. For this Project, turbines have been sited to have good exposure to winds from all directions with emphasis on exposure to the prevailing wind directions while considering site topography, natural resource features, setbacks, and wind resources. The turbines are typically oriented west to east, which is roughly perpendicular to the prevailing warmer southerly and colder northwest-north 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 northerly and southerly winds, turbine 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. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines. Wake loss occurs when a turbine is spaced too close downwind of another turbine, and therefore, produces less energy and is less cost-effective. Section 4.10 of the site permit addresses turbine spacing.
30. All turbines will be located 5 rotor diameters (RD) from the edge of the leased area along prevailing wind direction (generally the northern and southern edge) and 3 RD from the edge of the leased area along non-prevailing direction (generally the eastern and western edge) to accommodate for disruption of the normal wind flow and protect the wind rights of non-participating landowners. Similarly, internal turbine spacing will follow a general rule of 5 or more RD in predominant wind direction (generally north-south) and 3 RD in non-prevailing direction (generally east-west) with no more than 20 percent of the project turbines closer than the prescribed setback.<sup>30</sup>
31. According to site permit application, projected average net annual output will be approximately 113,135 to 126,000 megawatt hours (MWh) for a net capacity factor ranging from 42 to 47 percent.<sup>31</sup>

## **Wind Rights and Easement/Lease Agreements**

32. In order to build a wind facility, a developer needs to secure leases or easement 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

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<sup>29</sup> *Id.* at 9

<sup>30</sup> *Id.* at 5.1

<sup>31</sup> *Id.* at 10, p. 46.

that might interfere with the execution of the proposed Project. Land and wind rights will need to encompass the proposed LWECS, including all associated facilities such as access roads, meteorological towers, and electrical collection system.

33. The Applicant has executed easement agreements that grant CWS the necessary wind rights for the construction and operation of the Project. CWS has site control of approximately 3,070 acres within the Project area boundaries of 3,080 acres. CWS has secured wind rights through 23 leases with 36 landowners within the site to accommodate the turbines, associated facilities and setback requirements.<sup>32</sup> Section 10.1 of the site permit requires the Applicant to demonstrate it has obtained the wind rights necessary to construct and operate the Project at least fourteen days before the pre-construction meeting.

### **Site Considerations**

34. Minn. Stat. Chap. 216F and Minn. Rules Chap. 7854 apply to the siting of LWECS. 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.<sup>33</sup> Pursuant to Minn. Stat. § 216F.02, certain sections in Minn. Stat. Chap. 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including § 216E.03, subd. 7 (considerations in designating sites and routes). The analysis of the environmental impacts required by Minn. Rules, part 7854.0500, subp. 7, satisfies the environmental review requirements; no environmental assessment worksheet or environmental impact statement is required for a proposed LWECS project.<sup>34</sup> Therefore, environmental review is based on the application and the record. The following analysis addresses the relevant criteria that are to be applied to a LWECS project.

### **Human Settlement**

35. The Project area located in central Nobles County is rural and sparsely populated, which is characteristic of rural areas throughout southwestern Minnesota. The nearest incorporated city is Wilmont, approximately 2 miles north of the Project area.<sup>35</sup>
36. Nobles County Zoning Ordinance (729) covers Wind Energy Conversion Systems Regulations. This ordinance at part 729.4 establishes setbacks for wind turbines and meteorological towers. Setback requirements are different for non-commercial and commercial turbines. Greater setbacks are required for commercial turbines. The Nobles County regulations do not apply to LWECS.
37. Based on information in its application, it appears that CWS has also designed the project to meet or exceed the setback requirements adopted by Nobles County for commercial

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<sup>32</sup>*Id.* at 4., p. 2

<sup>33</sup> Minn. Statute 216F.03 and Minn. Rules, part 7854.0500

<sup>34</sup> Minn. Rules, part 7854.0500, subp. 7

<sup>35</sup> Exhibit 1 at 8.1

turbines in its wind energy conversion system regulations (section 729.4 Setbacks). On January 21, 2012, EFP staff spoke with Wayne Smith, Environmental Services Director for Nobles County, regarding their setbacks for wind facilities. Mr. Smith acknowledged that the Applicant met with the county regarding setbacks and that the project design complies with the county setback requirements. This was confirmed again with Mr. Smith on March 23, 2012.

38. Several of the requirements in the Nobles County Wind Energy Conversion System are similar to those in the Commission's General Permit standards set forth in Docket No. E-G-999/M-07-1102. However, the standards adopted by Nobles County for commercial wind turbines and meteorological tower setbacks to property lines, road rights-of-way, and wetlands (USFWS Types III, IV, and V) are more stringent than the Commission's. Because the Project site layout as proposed complies with these setbacks, they are incorporated as Special Conditions in Section 13.1 of the site permit.
39. CWS has committed to a setback of at least 1,200 feet (366 meters) to all residences.<sup>36</sup> Section 4.2 of the site permit incorporates this setback. CWS will also be required to setback its turbines a minimum of five rotor diameters on prevailing wind direction from non-participating landowners' property lines and three rotor diameters on non-prevailing wind direction, which can be found in section 4.1 of the site permit.
40. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.

## **Noise**

41. Wind turbines generate sound or noise when in motion. The level of sound (noise) varies with the speed of the wind, the turbines operating parameters and characteristics, the distance of the listener or receptor from the turbine, and surface characteristics of the site, as well as the time of the year. Based on Applicant's review of ambient noise levels measured in rural settings with high quality wind resources, typical noise levels range from 35 dBA to 45 dBA on an hourly equivalent sound pressure level (Leq) basis.<sup>37</sup> Noise levels near roads tend to be higher (45 to 60 dBA).
42. Noise impacts to nearby residents and other potentially affected parties have been factored into the turbine micro-siting process. The Applicant must demonstrate the Project can meet the noise standard pursuant to Minn. Stat. Chap. 7030 (site permit, sections 5.1 and 6.6). Noise levels have been predicted by a noise modeling program and will be verified per Section 5.1 to be compliant with the PCA Daytime and Nighttime L<sub>10</sub> and L<sub>50</sub> Limits as stated in Minn. Rules, part 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

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<sup>36</sup> *Id.* at 5, p. 4

<sup>37</sup> *Id.* at 8.3.2, p. 12

established in Minn. Rules, part 7030.0050. The NAC-1 was chosen for receivers in the Project area since this classification includes farm houses as household units. The nighttime  $L_{50}$  limit of 50 dBA is the most applicable stringent state limit.

43. CWS's proposed Project design must comply with the Minnesota Pollution Control Agency (PCA) noise standards pursuant to Minn. Rules Chapter 7030. Sections 4.2 and 4.4 of the site permit contain conditions for setbacks from residences and roads. The proposed wind turbine layout will meet or exceed those requirements.
44. A single turbine within the Project Area is warranted to generate a maximum apparent sound power level of no greater than 104 decibels immediately adjacent to the turbine at hub height (328 feet). The decibel level decreases with increased distance from the turbine. Generally, a setback of 1,000 feet from all receptors is necessary to insure that the noise generated by multiple turbines will be less than 50 decibels at any receptor.
45. WindPRO 2.7 software was used to model the wind turbine noise analysis. The analysis used the ISO-9613-2 general noise model and assumed a ground attenuation factor of 0.5 throughout the area. A ground attenuation factor represents the ability of the ground and surrounding area to absorb sound. It is represented by a number between 0 and 1 where 0 represents an urban area with all hard surfaces where sound is reflected by these surfaces. A ground attenuation factor of 1 represents a densely vegetated area where sound is absorbed by the surrounding surfaces, such as a densely wooded area. A factor of 0.5 was used for the analysis to indicate the existing conditions of not completely vegetated and not completely hard surfaces. This is a commonly used factor as an industry standard for analyses to reflect the existing ground cover in rural agricultural area. A total of 36 potential receptors (e.g. residences) were modeled. Figure 6 in the Site Permit Application (SPA) shows the anticipated noise impact caused by the proposed wind turbines. The analysis estimates the maximum noise impact caused when all 15 proposed turbines are operating simultaneously under normal conditions. The analysis estimates that the noise impact from the proposed turbines on any receptor within the Project Area will not be greater than 42.7 d(B)A.<sup>38</sup>
46. Therefore, any increase in noise levels is expected to be minimal due to the distance (1,200 feet) between the turbines and receptors. Noise modeling indicates that CWS Project will meet the PCA noise standards. As a result, the impact of the proposed Project on human settlement and public health and safety will be minimal. CWS will conduct a post-construction noise study. The purpose of the post-construction noise study is to confirm that PCA noise standards have been met. See section 6.6 of the site permit.

### **Shadow Flicker**

47. Shadow flicker occurs when the rotating blades of a wind turbine repeatedly pass in front of the sun to create recurring shadows or a repeating cycle of changing light intensity. Shadow flicker is described as a moving shadow on the ground resulting in alternating

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<sup>38</sup> *Id.* at Appendix E.

changes in light intensity. Shadow flicker computer models are used to simulate the path of the sun over the year and assess at regular time intervals the possible shadow flicker across a project area. The outputs of the shadow flicker model are useful in the design phase of a wind farm. Generally, shadow flicker usually occurs in the morning and evening hours when the sun is low in the horizon and the shadows are elongated. Shadow flicker does not occur when the turbine rotor is oriented parallel to the receptor or when the turbine is not operating. Shadow flicker is also influenced by many conditions, including the amount of cloud cover, time of day, the portion of the time the turbine is operating, the orientation of windows, ambient lighting conditions, sun path across the sky (various with seasons), orientation of turbine blades. No shadow flicker will be present when the sun seen from a receptor is obscured by clouds, fog, or other obstacles already casting a shadow such as buildings and trees.

48. Shadow intensity, or how “light” or “dark” a shadow appears at a specific receptor, will vary with the distance from the turbine. Closer to a turbine, the blades will block out a larger portion of the sun’s rays and shadows will be wider and darker. Receptors located farther away from a turbine will experience much thinner and less distinct shadows since the blades will not block out as much sunlight. Shadow flicker will be greatly reduced or eliminated within a residence when buildings, trees, blinds, or curtains are located between the turbine and receptor. Shadow flicker consultants generally agree that flicker is not noticeable beyond about 10 rotor diameters from a wind turbine.<sup>39</sup> Evidence of shadow flicker effects is hard to find, which indicates it is more of a nuisance issue. No standard of acceptable hours has been adopted by the State of Minnesota. To date there are no examples of turbines causing photosensitivity related problems. Several jurisdictions in other countries have established guidelines for acceptable levels of shadow flicker based on certain assumptions.
49. The Applicant has provided a preliminary shadow flicker analysis. WindPro software was used to model the anticipated shadow flicker from the turbines on receptors within the site. Two flicker scenarios were developed. The worst-case scenario estimates shadow flicker while assuming no shadow cover, and that the turbines are always directly perpendicular to the sun. The real-case scenario uses the estimated operating hours per direction and meteorological data to estimate the most likely flicker scenario. Since the flicker impacts to any residence will vary based on which direction the turbine is pointing (which depends on the direction the wind is blowing), assumptions were made about the number of hours per year the turbines will be operating in each direction. When evaluating the wind farm collectively, in the worst case scenario, four of the 35 receptors had more than 40 shadow flicker hours a year. In the realistic scenario, one receptor was above 30 hours (31.25 hours) per year, four between 10 and 30 hours, and 30 receptors were below 10 hours per year.<sup>40</sup>
50. As directed by section 6.2 of the site permit, at least fourteen (14) days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker impacts on each

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<sup>39</sup> Environmental Health Division, Minnesota Department of Health, *Public Health Impacts of Wind Turbines*, May 22, 2009, at 14, available at [http://energyfacilities.puc.state.mn.us/documents/Public\\_Health\\_Impacts\\_of\\_Wind\\_Turbines\\_5.22.09\\_Revised.pdf](http://energyfacilities.puc.state.mn.us/documents/Public_Health_Impacts_of_Wind_Turbines_5.22.09_Revised.pdf)

<sup>40</sup> Exhibit 1 at Appendix E

residence of non-participating landowners and participating landowners. Information shall include the results of modeling used, assumptions made, and the anticipated levels of impact from turbine shadow flicker on each residence. The Permittee shall provide documentation on its efforts to minimize shadow flicker impacts.

### **Visual Values**

51. The installation of the Project will alter the visual quality of the site. The topography in the vicinity is agricultural fields (row crops), farmsteads, gently rolling hills, interspersed with drainage ways, small-scattered wetlands and grasslands. Homesteads are scattered throughout the Project area and are often bordered by small groves of deciduous and coniferous trees planted as windbreaks. The turbines will be visible to residents in and near the Project.<sup>41</sup>
52. 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 (site permit, section 7.18). 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 turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.
53. Wind facilities can be perceived as a visual intrusion on the natural aesthetic value on the landscape or having their own aesthetic quality. Existing wind facilities have altered the landscape elsewhere in Minnesota from agricultural to wind plant/agricultural. This Project will modify the visual character of the area. This Project is also within the footprint of the existing Nobles Wind Farm, which consists of 134 GE 1.5 MW turbines mounted on 262 foot (80-meter) towers.
54. Visually, the Community Wind South Project will be similar to other LWECS projects in Nobles and adjacent counties.

### **Public Health and Safety**

55. There are no public airports within the Project boundary. The nearest registered airport is in Worthington, located approximately 11 miles southeast of the Project.<sup>42</sup>
56. Air traffic may be present near the Project for crop dusting of agricultural fields. Crop dusting is typically carried out during the day by highly maneuverable airplanes or helicopters. The installation of wind turbine towers in active croplands will create a potential for collisions with crop-dusting aircraft. The turbines themselves will be visible from a distance and lighted according to Federal Aviation Administration (FAA) guidelines (see section 7.18 of the site permit).

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<sup>41</sup> *Id.* at 8.4, p. 13

<sup>42</sup> *Id.* at 8.8, p. 24-25

57. Crop dusters can rely on GPS for locations of obstacles. All wind turbines in the Project will be registered with the FAA. All meteorological towers in the area will be free-standing, so there will be no guy wires, a serious issue for vision and avoidance. The Minnesota Aeronautical Chart produced by the Minnesota Department of Transportation is available and shows wind turbine locations throughout the state. This chart is updated annually and will include the Community Wind South Project turbine after construction is complete. An FAA Determination of No Hazard (DNH) has been provided for each of the turbine locations.<sup>43</sup>
58. Possible health concerns associated with wind turbines and transmission of electricity generally include those from electric and magnetic fields (EMF). The term EMF refers to electric and magnetic fields that are present around electrical devices. Electric fields arise from the voltage or electrical charges and magnetic fields arising from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors. When operating, the proposed Project will generate electromagnetic fields.
59. EMF from underground electrical collection lines dissipates very close to the line because they are installed below ground within insulated shielding. The electrical fields are negligible, and there is a small magnetic field directly above the lines that, based on engineering analysis, dissipates within several feet on either side of the installed cable.
60. EMF associated with the transformers at the base of each turbine completely dissipates within a relatively short distance from the transformer, so the 1,200-foot turbine setback from residences will be adequate to avoid any EMF exposure to homes.
61. While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate. Based on the most current research on electromagnetic fields, and the distance between any turbines or collector lines and houses, the Project will have no impact to public health and safety due to EMF.
62. 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. The setback requirements in Section 4 of the site permit provide further assurance that the turbines will be placed an adequate distance from residences, roads and other areas of human activity.

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<sup>43</sup> *Id.* at 8.8, p 24-25

63. CWS will prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the Project area (site permit, section 7.16). As with any large construction project, some risk of worker or public injury exists during construction. CWS and its construction representatives and workers will prepare and implement work plans and specifications in accordance with applicable worker safety requirements during construction of the Project. CWS will also control public access to the Project during construction and operation. CWS will provide security during construction and operation of the project, including fencing, warning signs, and locks on equipment and facilities. CWS will also provide landowners, interested persons, public officials, and emergency responders with safety information about the project and its facilities (see site permit sections 7.15 and 7.16).
64. 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 emergency response plan (site permit, sections 7.17 and 7.16).

### **Public Services and Infrastructure**

65. The proposed project is expected to have minimal effects on existing public infrastructure. The proposed Project would not generate an increase in traffic volumes or daily human activity, except for a short period of time during construction and occasionally during operation and maintenance activities. Some damage to roads is anticipated during the construction phase of the Project. Examples of the type of damage expected include rutting, heaving, and the development of potholes on roadway surfaces. CWS will enter road development agreements with Nobles County and the townships of Summit Lake and Larkin to address road damages and repair. Any damage to the roadways as a result of the Project will be repaired or reimbursed based on the road development agreements between CWS and Nobles County or affected townships.<sup>44</sup> (see site permit, section 7.8).
66. Other than short-term impacts, no significant permanent changes in road traffic patterns or volume are expected. The busiest traffic would occur when the majority of the foundation and tower assembly is taking place. Township and county officials will receive advance notice of the construction schedule, including the timing of the delivery of towers and turbines and arrival of the crane to erect project equipment (site permit, section 5.6). CWS will work with all parties involved to address concerns related to roadway use, and adhere to state, county, and township requirements for transportation infrastructure.
67. Access roads will be built adjacent to the towers, allowing access both during and after construction. The total length of these access roads would be approximately 4 miles.<sup>45</sup> The roads will be approximately 16 ft wide and have gravel as cover, adequate to support the size and weight of maintenance vehicles. These roads will meet state and local

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<sup>44</sup> *Id.* 8.5, p. 16-17

<sup>45</sup> *Id.* at 10.2, p. 44

requirements. The specific turbine locations will determine the amount of roadway that will be constructed for this Project. Temporary disturbances during construction of the Project include crane pads at each turbine site, temporary travel roads for the cranes, temporary lay down areas around each turbine, trenching in the underground electrical collection system, and storage/stockpile area.

68. If access roads are installed across streams or drainage ways, the Applicant, in consultation with 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 Minnesota Department of Natural Resources. See section 10.5 of the site permit for a list of other permits that may be required.
69. Prior to construction, Gopher State One Call will be contacted to locate underground facilities so they can be avoided. Further, section 7.15 of the site permit requires the Applicant to submit the location of all its underground cables and collector and feeder lines to Gopher State One Call. CWS will also coordinate with the local telecommunication providers to ensure that any collection or transmission lines installed as part of the Project will not disrupt, and are compatible with, the existing telephone communication systems. If any disruption occurs, CWS will work with the local providers to return service and then coordinate with the local provider to identify and agree upon further necessary improvements.<sup>46</sup> CWS will also work with the rural water system provider to avoid interference with their facilities.
70. Comsearch was retained by the Applicant to complete an analysis of the Project's potential impacts on: a) microwave beam paths; b) AM/FM radio stations; c) land-mobile stations; and d) off-air television station signals. For the CWS Project, 15 turbines were considered in the analysis, each with a rotor diameter of 303.5 feet (92 meters) and a turbine height of 328 feet (100 meters). The microwave analysis indicated one of the turbine locations (No. 4) could have a potential conflict with one microwave path. Therefore, the turbine was relocated to avoid a potential microwave conflict. The AM/FM analysis concluded that the presence of the proposed turbine locations will not impact AM/FM reception. The land-mobile analysis identified five land mobile sites near the project. Four of the land mobile sites are licensed to Nobles County and the State of Minnesota. Land mobile sites are sites typically unaffected by the presence of wind turbines. Therefore, impacts on land mobile radios are not anticipated. A total of nine licensed and operating television stations occur within 40 miles of the Project Area. Of these, six are full-power digital stations and three are low-power digital stations. If issues arise during the construction or operation of the Project, the permittee will work with the affected residents to determine the cause of the interference and reestablish acceptable reception. CWS will work with specific landowner to reach an agreeable solution. Potential mitigation strategies include having alternative television service installed, such as satellite reception.<sup>47</sup> The Applicant will not operate the wind farm so as to cause microwave, television, radio, telephone, or navigation interference contrary to FCC regulations or other law. In the event the wind farm or its operation causes such

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<sup>46</sup> *Id.* at 8.5, p. 17

<sup>47</sup> *Id.* at 8.5, p. 18-20 & Appendix D

interference, the Applicant will take the steps necessary to correct the problem. Section 6.4 of the site permit requires the Applicant to submit a plan to conduct an assessment of television signal reception and microwave signal patterns in the Project area.

71. Construction, operation, and maintenance of the proposed wind plant will comply with all of the required federal, state, and local permit requirements. See section 10.5 of the site permit.

### **Recreational Resources**

72. There are no public recreation opportunities within the Project boundary. However, there are five Wildlife Management Areas (WMAs) and one Waterfowl Production Area (WPA) located within five miles of the Project area. The nearest public land is located one mile away from the Project area. The proposed turbines may be visible from some of these areas; however, there are 134 existing wind turbines within the current view shed from the Nobles Wind project that border the CWS Project on three sides. Therefore, the additional visual impact of the 15 additional turbines is minimal.<sup>48</sup>
73. Scientific and Natural Areas (SNAs) are areas designated to protect rare and endangered species habitat, unique plant communities, and significant geologic features that possess exceptional scientific or educational values. There are no SNAs within the Project area.<sup>49</sup>

### **Community Benefits**

74. CWS will pay a Wind Energy Production Tax to the county and townships each year expected to be approximately 155,000 per year.<sup>50</sup> Landowners with wind turbines on their property will also receive payments from the Applicant. The Project is expected to create new job opportunities within the local community, both during construction and operation.

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<sup>48</sup>*Id.* at 8.7, p. 21-24

<sup>49</sup>*Id.* at 8.7

<sup>50</sup>*Id.* at 8.12

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

75. CWS estimates the total acreage of agricultural land permanently impacted by wind facilities to be about 5.2 acres within the 3,080 acre site, or less than 1 percent of the project area.<sup>51</sup> Overall, impact to agricultural lands as a result of the Project is anticipated to be short term and is not expected to significantly alter crop production. Agricultural activity is anticipated to continue between the turbine sites. Once in operation, it may be occasionally necessary for CWS to complete repairs or clear vegetation around a turbine or facility, which could result in additional temporary impacts to agricultural operations. These interruptions are expected to be infrequent and short term.
76. CWS will hold discussions with property owners to identify features on their property, including drain tile, that should be avoided. Impacts to drain tile due to Project construction and operation are not anticipated. However, in the event that there is damage to drain tile as a result of construction activities or operation of the LWECs, the tile will be repaired according to the agreement between CWS and the owner of any damaged tile.<sup>52</sup> Section 7 of the site permit addresses mitigation measures for agricultural lands.
77. According to the Applicant's February 23, 2012, filing, there is no native prairie within the Project site.<sup>53</sup>
78. There are no mining or forestry resources within the Project Area. Construction of the Project will provide an economic benefit to the owners and operators of this facility<sup>54</sup>

## **Property Values**

79. A study conducted by the Lawrence Berkley National Laboratory found an absence of negative impacts to property values from wind farms within a project view shed.<sup>55</sup> On June 1, 2010, the Stearns County Assessor's Office prepared "A Study of Wind Energy Conversion System in Minnesota," which did not find any changes in property valuation to properties hosting a wind tower based on information provided by assessors from Dodge, Jackson, Lincoln, Martin, Mower, and Murray counties. However, the study acknowledged that there is insufficient data to allow for a reasonable analysis of the development of wind facilities on property values. The Stearns County study also cited studies completed by the Renewable Energy Policy Project, which analyzed 25,000 sales inside and outside of view sheds of a wind facility and concluded that property values appear not be affected, and a study conducted by the Royal Institute of Chartered Surveyors, which examined the impact of wind facilities on property values in the United Kingdom and found that almost 30 percent of the respondents reported a decrease in property values.

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<sup>51</sup> *Id.* at 8.10, p. 26-27

<sup>52</sup> *Id.*

<sup>53</sup> Exhibit 22, Native Prairie Site Review.

<sup>54</sup> Exhibit 1 at 8.10.

<sup>55</sup> Ben Hoen et al., *The Impact of Wind Power Projects on Residential Property Values in the United States*, Lawrence Berkeley National Laboratory (Dec. 2009).

## **Archaeological and Historical Resources**

80. The CWS Project area is near the border of two archeological regions. The western portion of Nobles County is within the Southwest Riverine archeological region and the eastern portion is within the Prairie Lakes region. The Rock River is the major drainage way of the Southwest Riverine region. Blondo Consulting, LLC was retained to perform a preliminary investigation of previously identified archeological resources within the Project area and within a 0.5 mile buffer surrounding the Project area. Subsequent to the preliminary investigation, Blondo also recommended that a Phase I Cultural Resource Reconnaissance Survey be undertaken. The State Historic Preservation Office (SHPO) was also contacted regarding the presence of any archaeological, architectural, or historic sites within the Project area. No historic structures were identified within the Project area, however many of the historic architectural properties in the State have not been identified, so an absence of properties in does not preclude their existence. Two archaeological sites were identified; however, these are designated as security information and cannot be disclosed under Minn. Statute 307.08, subd. 11.<sup>56</sup>
81. Section 6.3 of the site permit requires the Applicant to conduct an archaeological reconnaissance survey (Phase I). A Phase I archaeological was prepared and submitted to the SHPO. A February 28, 2012, letter from the SHPO to WSB & Associates states: “We agree with the consultant’s recommendation that this small lithic scatter (21N00071) is not eligible for the National Register of Historic Places. Therefore, we concur that no further archaeological work is necessary.”<sup>57</sup>
82. In the event that an archeological site is found during construction, the integrity and significance of the site will be addressed in terms of the potential of the site to be eligible for listing in the National Register of Historic Places (NRHP). If such sites are found to be eligible for listing in the NRHP, mitigation measures will be developed in consultation with SHPO, the State Archeologist, and any relevant American Indian communities. If previously unknown archaeological resources are encountered during construction and/or operation, the discoveries will be reported to SHPO. Section 6.3 of the site permit also requires the Applicant to stop work and notify the SHPO and the Commission if any unrecorded cultural resources are found during construction.

## **Air and Water Emissions**

83. No harmful air or water emissions are expected from the construction and operation of the Project.

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<sup>56</sup> Exhibit 1 at 8.6, p. 20-21

<sup>57</sup> Exhibit 18

## Wildlife

84. The Project area is used primarily for agricultural purposes, with cropland contributing the vast majority of disturbed vegetative cover (89.6 percent).<sup>58</sup> In examining impacts on wildlife, the United States Fish and Wildlife Service's Wind Turbine Advisory Committee Recommendations (March 2010) were used to conduct a preliminary site assessments for the Project. The Recommendations consists of a tiered approach. Tier 1 involves a preliminary evaluation or screening of potential project sites. This was completed by performing a desktop evaluation of the Project area to determine if species or habitat of concern was present in the immediate vicinity of the Project area. Publicly available databases were used to qualify the site for potential development. Tier 2 is site characterization, which involves determining if any site-specific risks to wildlife could occur as a result of wind development. This was completed by contacting Federal, State, and local authorities to determine if any risks to wildlife resources existed within the Project area. A site visit was also conducted to assess the quality and availability of habitat within the Project Area. Tier 3 consists of field studies to document the wildlife conditions on site and predict project impacts. To date, the Applicant has completed Tier 1 and 2 of the Recommendations.<sup>59</sup>
85. A December 30, 2011, memorandum from DNR staff to EFP staff noted that: "The project developers sited the project well and the content of their application indicates that they reviewed the DNR Wind Guidance and included suggested analysis in the Site Permit Application. Also, due to the siting for this project and based on available information, the DNR does not recommend surveys at this time."<sup>60</sup> As a result, no additional Tier 3 studies are anticipated.
86. Wildlife habitat impacts are expected to be minimal because turbines and access roads will be placed exclusively on cropped land. 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 greatest impact of concern to wildlife would primarily be to avian and bat populations. The Project will minimize avian impacts by using tubular towers to minimize perching and placing electrical collection lines underground.
87. CWS will continue to collect Anabat acoustic bat data until September 2012. DNR's comments on the Draft Site Permit, dated March 23, 2012, requested that the department be given the opportunity to review the 2012 bat acoustic results when available.<sup>61</sup>
88. On March 23, 2012, the U.S. Fish and Wildlife Service (USFWS) issued new Land-Based Wind Energy Guidelines. In these guidelines, the USFWS has elected to modify the reference to Avian and Bat Protection Plans (ABPPs) for wind energy projects by now referring to them as Bird and Bat Conservation Strategies (BBCS); USFWS will use ABPP's for transmission projects.

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<sup>58</sup> Exhibit 1, 8.18, p. 1.

<sup>59</sup> *Id.* at 8.19, p. 34 & Appendix F

<sup>60</sup> Exhibit 9c

<sup>61</sup> Exhibit 21

89. Section 6.7 of the site permit requires the Applicant to prepare an avian and bat protection plan (ABPP) or BBCSs, submit quarterly avian and bat reports, and report five or more dead or injured non-protected avian or bat species or a single dead or injured migratory, state threatened, endangered, species of special concern, and federally listed species discovered within 24 hours of discovery. Section 6.1 requires the Applicant to conduct pre-construction desktop and field inventories of potentially impacted native prairies, wetlands, and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered, or species of special concern or federally listed species. Section 6.1 also requires the Applicant to submit any biological survey or studies conducted. Section 4.5 requires that turbines and associated facilities will not be constructed in wildlife management areas, state scientific and natural areas or parks, and a setback of five rotor diameters in prevailing wind and three rotor diameters in non-prevailing wind is applied to such public lands.

### **Rare and Unique Natural Resources**

90. Special consideration is often given to raptor species at wind farms because diurnal raptors are generally at higher risk for collision with turbines than are many other avian species (National Wind Coordinating Collaborative [NWCC], 2010). Mean use of raptor species within the Project area was low and observed flight behavior did not indicate high risk of collision mortality. Based on projected low use of the Project area, overall risk to raptor species as a result of Project development is expected to be low.<sup>62</sup>
91. Waterfowl mortality has been reported at wind farms in the United States, though fatalities of other avian groups are much more common. Several post construction studies have shown reduced use of flight paths near wind turbines by migrating waterfowl. There are no waterfowl feeding and resting areas present with the Project area. The nearest waterfowl feeding and resting Area is 24 miles to the east on Heron Lake in Jackson County.<sup>63</sup>
92. Both the DNR and USFWS have indicated that no occurrences of state or federally threatened or endangered species occur within the Project area. Overall, the potential for impact to rare or unique species in the Project area is low.<sup>64</sup>

### **Vegetation**

93. 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. Section 4.7 of the site permit will require a prairie protection and management plan if native prairie could be impacted, including areas temporarily affected by construction.

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<sup>62</sup> Exhibit 1 at 8.19 p. 34 - 41.

<sup>63</sup> *Id.* at 8.19.2 p. 39.

<sup>64</sup> *Id.* at 8.20.2, p. 41

## **Soils**

94. 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. The Project will be subject to the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) stormwater permit for construction activity. 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 (site permit, section 7.11).

## **Geologic and Ground Water Resources**

95. The project is located on deposits of glacial till more than 300 feet thick. The underlying bedrock is Cretaceous shale and sandstone. The glacial sediments are mostly unsorted till that is primarily clay and silt. The eastern half of the project is located on till that was deposited beneath glacial ice. The western half of the project is located on till that was deposited as a moraine or sediment piled up by the edge of the moving ice. Both of these tills are locally stream-washed and coarser grained than typical for the area. Finally, there is sand and gravel deposited by melting ice, located generally in the center of the area. No unusual geological conditions, such as sinkholes, are expected at the site. Construction impacts to geologic and groundwater resources are not anticipated. Operationally, water supply needs will be quite limited and local supplies are adequate.<sup>65</sup>

## **Surface Water and Wetlands**

96. Wind turbines and associated facilities will not be located in public water wetlands, except that collector and feeder lines may cross if authorized by the appropriate permitting agency (site permit, section 4.6). A permit may be required if surface waters are impacted (see section 10.5.1 of the site permit).

## **Future Development and Expansion**

97. Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. Other large wind projects, such as the Nobles Wind project, have been permitted in Nobles County.
98. 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. EFP staff will continue to monitor for impacts and issues related to wind energy development.

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<sup>65</sup> *Id.* 1 at 8.15 p. 29.

99. The Commission is responsible for siting of LWECS “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources.”<sup>66</sup> Section 4.1 of the site permit provides for buffers between adjacent wind generation projects to protect wind production potential.

### **Operations and Maintenance**

100. Each wind turbine will communicate directly with the Supervisory Control and Data Acquisition (SCADA) system. The SCADA system will connect all turbines with the collector/protection and any operations and maintenance facilities using armored fiber optic cables. This system will transmit data from the turbines back to the responsible maintenance party as well as transmit commands from the maintenance party to the turbines so as to ensure real time management of all wind turbines within the facility as well as integration with the existing transmission grid.<sup>67</sup>
101. On-site turbine maintenance will involve routine inspections and regular and unscheduled maintenance of the turbines and associated facilities.<sup>68</sup>

### **Decommissioning and Restoration**

102. A decommissioning plan outlining the anticipated means and cost of removal will be completed in accordance with the Nobles County permitting and zoning requirements. At the time turbines are no longer operated physically or the Project is not viable economically, turbines will be decommissioned. Restoration of the area will be completed according to Nobles County permitting and zoning requirements, leases and the Commission’s site permit. At the time turbines are decommissioned, they will be removed from site and either refurbished or salvaged depending on condition. All subsurface infrastructure will be removed to four feet below ground level and reclaimed as specified in the land leases, and all surface infrastructure will be removed and reclaimed to pre-construction conditions.<sup>69</sup> Section 9.2 of the site permit requires removal of wind facilities to a depth of four feet and restoration and reclamation of the site to the extent feasible. The Project site would be restored within 18 months after Project expiration.
103. Section 9.1 of the site permit, requires the Applicant to carry out its obligations to provide for the resources necessary to fulfill its requirements to decommission the Project at the appropriate time. Section 9.1 requires the applicant to submit a Decommissioning Plan to the Commission prior to the pre-operation meeting.

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<sup>66</sup> Minn. Statute 216F.03

<sup>67</sup> Exhibit 1 at 10.6, p. 45

<sup>68</sup> *Id.* at 10.6

<sup>69</sup> *Id.* at 10.10 at p. 46.

### **Site Permit Conditions**

104. All of the above findings pertain to the Applicant's requested permit for a 30.75 MW LWECS project.
105. Most of the conditions contained in the site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Public Utilities Commission. Comments received by the Commission have been considered in development of the site permit. Minor changes that provide for clarification of site permit conditions have been made.
106. 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 over this matter pursuant to Minn. Stat. § 216F.04.
3. The Applicant has substantially complied with the procedural requirements of Minn. Stat. Chap. 216F and Minn. Rules Chap. 7854.
4. The Minnesota Public Utilities Commission has substantially complied with all procedural requirements required of Minn. Stat. Chap. 216F and Minn. Rules Chap. 7854.
5. The Minnesota Public Utilities Commission has considered all the pertinent factors relative to its determination of whether a site permit should be approved.
6. The Community Wind South Project is compatible with the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources under Minn. Stat. § 216F.03.
7. The Minnesota Public Utilities Commission has the authority under § 216F.04 to place conditions in a permit and may deny, modify, suspend, or revoke a permit. The conditions in the site permit are reasonable and appropriate.

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

**ORDER**

An LWECS Site Permit is hereby issued to CWS Wind Farm, LLC to construct and operate the up to 30.75 MW Community Wind South Project in Nobles County in accordance with the conditions contained in the site permit and in compliance with the requirements of Minn. Stat. § 216F.04 and Minn. Rules Chap. 7854 for Docket No. IP-6871/WS-11-863.

The site permit is attached hereto, with maps showing the approved site and preliminary turbine layouts.

BY THE ORDER OF THE COMMISSION



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Burl W. Haar  
Executive Secretary

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**STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION**

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

**IN  
NOBLES COUNTY MINNESOTA**

**ISSUED TO  
CWS WIND FARM, LLC**

**PUC DOCKET NO. IP-6871/WS-11-863**

In accordance with Minn. Stat. § 216F.04 this site permit is hereby issued to:

CWS Wind Farm, LLC

CWS Wind Farm, LLC is authorized to construct and operate up to a 30.75 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 thirty (30) years from the date of this approval.

Approved and adopted this 1st day of May 2012

BY ORDER OF THE COMMISSION



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BURL W. HAAR  
Executive Secretary

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