

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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SERVICE DATE: February 3, 2010

DOCKET NO. IP-6688/WS-08-973

In the Matter of the Application of EcoHarmony West Wind, LLC, for a Site Permit for a 280-Megawatt Large Wind Energy Conversion System and Associated Facilities in Fillmore 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 prepared for the 280 MW EcoHarmony West Wind Farm and associated facilities in Fillmore County.

Issued the proposed LWECS Site Permit for the 280 MW EcoHarmony West Wind Project to EcoHarmony West Wind, LLC.

The Commission agrees with and adopts the recommendations of the Office of Energy Security which are attached and hereby incorporated in the Order.

BY ORDER OF THE COMMISSION



Burl W. Haar
Executive Secretary

(S E A L)

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BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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

DOCKET No. IP-6688/WS-08-973

Meeting Date: January 28, 2010.....Agenda Item # 4

Company: **EcoHarmony West Wind, LLC (EcoHarmony/EcoEnergy)**

Docket No. **PUC Docket Number: IP-6688/WS-08-973**

**In the Matter of the Application of EcoHarmony West Wind, LLC, for a
Site Permit for a 280-Megawatt Large Wind Energy Conversion System
and Associated Facilities in Fillmore County**

Issue(s): Should the Commission grant a site permit to EcoHarmony West Wind, LLC,
for the 280 MW EcoHarmony West Wind Project?

OES EFP Staff: Larry B. Hartman651-296-5089

Relevant Documents

Site Permit Application for EcoHarmony West Wind Project January 26, 2008
ALJ Summary of Public Testimony December 21, 2009

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

Documents Attached:

1. EcoHarmony Project Site Map
2. Proposed Findings of Fact and Conclusions
4. OES EFP Staff Exhibit List
5. Proposed Site Permit

(Note: see eDockets (08-973) or the PUC Facilities Permitting website for additional documents: <http://energyfacilities.puc.state.mn.us/Docket.html?Id=19910>.)

Statement of the Issue

Should the Commission grant a site permit to EcoHarmony West Wind, LLC, for the 280 MW EcoHarmony West Wind Project?

Introduction and Background

EcoHarmony West Wind, LLC, (EcoHarmony/EcoEnergy) applied for a site permit to the Commission on January 26, 2009, to develop the proposed 200-Megawatt EcoHarmony West Wind Project. In July 2009, EcoHarmony submitted a letter informing the Commission of a request to increase the size of the proposed project by 80 MW to 280 MW. Plans for Phase II EcoHarmony East Wind Project are unknown at this time.

Project Location, Site Characteristics and Land Control

The proposed EcoHarmony West Wind Project is located in south central Fillmore County, just north of the Iowa border, as shown on the accompanying map. See Attachment 1 in Commissioner's packet.

The project boundary includes the townships of Harmony, Bristol, York, Carimona, Forestville and Preston, all in Fillmore County. The project boundary encompasses approximately 50,000 acres. These townships are zoned agricultural. The topography within the site is comprised of rolling hills with long low ridges and intermittent drainage ways and minor streams. The site includes a number of broad ridges with elevations approximately 1,350 above mean sea level. Surrounding elevations are lower by as much as 150 to 200 feet. The primary ridge in the area lies in an easterly to westerly direction and is a prominent landscape feature. The project area includes karst, a landform shaped by the slow dissolution of limestone rock. The dominant land use is agricultural, comprised of corn and soybeans. There are also numerous woodlots and windbreaks within the proposed site boundaries. Average farm size in Fillmore County is approximately 280 acres; the county has a population density of around 24 persons per square mile, which is considered low.

Within the project site boundary there are approximately 475 landowners and approximately 50,000 acres of land. EcoHarmony has obtained lease and easement option agreements and/or rights to such agreements with 118 different property owners of 327 parcels totaling approximately 24,750 acres of land within the project site boundary. If necessary, additional wind rights and buffers may need to be obtained to comply with site permit setback

requirements. Land and wind rights will need to encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access roads, meteorological towers, electrical collection system and electric lines located on or along public road rights-of-way.

Additional land rights will need to be acquired for the 8.5 mile long 161 kV transmission line.

EcoHarmony West Wind Project

The EcoHarmony West Wind Project as proposed was to have a nameplate capacity of 200 hundred megawatts, and then EcoHarmony amended its CN and site permit applications to increase nameplate capacity from 200 MW to 280 MW for the following reasons: a) the demand for renewable energy will support an investment in a larger project, b) the wind resource in Fillmore County and within the existing footprint of the West Wind Project will allow for the operation of a larger project, and c) the MISO interconnect line planned for the EcoHarmony West Wind Project can handle the additional power. A final decision on turbine selection and design has not been made, but the project will consist of turbine with a rated output between 1.5 and 3.0 MW in such number and combination as produce 280 MW. Turbines are typically placed on towers 80 meters (262 feet) in height. Rotor diameters vary from 77 to 101 meters (253 to 331 feet).

Some of the proposed permit conditions for large wind energy conversion system (LWECS) are based on criteria that are dependent on turbine size. Turbines must be placed within the project boundary and meet all permit conditions. Accordingly, the final siting (“micro-siting”) of wind turbines for the project will depend on, among other factors, the size of the turbines chosen for the project.

The project will also include an underground automated supervisory control and data acquisition system (SCADA) for communication purposes. Up to four permanent meteorological towers will be used as part of the communication system. Other components of the project include a concrete and steel foundation for each tower, pad-mounted step-up transformers, all weather class 5 roads of gravel or similar material, and an underground energy collection system and a project substation.

The blades are typically made of fiberglass with a smooth layer of gel coat that provides ultraviolet protection. The blades will be either white or grey in color. The blades will be equipped with lightning protection. The entire turbine is also grounded and shielded to protect against lightning.

A separate 161 kV transmission line approximately 8.5 miles in length will connect the EcoHarmony West Project substation to a new EcoHarmony switching station that will tie into a ITC owned 161 kV transmission line southeast of Harmony. The EcoHarmony 161 kV transmission line is being reviewed by the PUC (See PUC Docket No. IP-6688/TL-09-601).

Regulatory Process and Procedures

A Certificate of Need (CON) from the Commission is required for this project (Minn. Stat. §216B.243). On January 15, 2009, a Commission Order accepted the Certificate of Need Application from EcoHarmony West Wind Project. (PUC Docket No. IP-6688/CN-08-961). In its Order the Commission approved the use of an informal review process and requested that the Office of Administrative Hearings coordinate with Commission staff and hold at least one public hearing on the project. OES prepared an Environment Report for those proceedings.

A site permit from the PUC 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 (Minnesota Statute Chapter 216F). This requirement became law in 1995. The rules to implement the permitting requirement for LWECS are in Minnesota Rules Chapter 7854. In accordance with Minnesota Rule 7854.0500 Subp.2., a site permit may not be issued until the certificate of need or other commitment requirement has been satisfied.

Site Permit Application and Preliminary Determination on Draft Site Permit

On January 26, 2009, EcoHarmony filed a site permit application with the Commission. On February 27, 2009, the Commission accepted EcoHarmony's application for a Site Permit for the Project, authorized the OES EFP staff to name a public advisor for the Project, approved a proposed draft site permit for the Project for distribution and public comment, and authorized EFP staff to initiate the public participation process found in Minnesota Rule 7854.0900.

Public Participation Process

The rules provide opportunities for the public to participate in deliberations on the LWECS site permit application. The public was advised of the submission of the site permit application after the application was accepted. OES EFP staff held a public information and scoping meeting in Harmony, Minnesota, on April 15, 2009, to provide the public with an overview of the permitting process for LWECS and to receive comments from the public on the site permit application, draft site permit and issues to be addressed in the Environmental Report. The meeting also provided the public with an opportunity to ask questions of the applicant and express concerns or issues directly to EFP and EcoHarmony.

Approximately 75 people attended the meeting. OES EFP staff provided an overview of Certificate of Need (CON) and LWECS site permitting processes and responded to questions. OES EFP staff and EcoHarmony representatives responded to project specific questions and general questions about wind energy.

Questions were asked about the need for the project, transmission requirements, project timing, geology (karst), audible noise, low frequency noise, impacts on property values, shadow flickers, stray voltage, aerial spraying, property tax and public services required by turbines, setbacks from residences and homes, production taxes, avian impacts, decommissioning, liability for turbine accidents, emergency response situations, turbine lighting, use of local labor, television and phone reception, icing, and decommissioning. Following the public meeting

OES staff did receive several calls from people who attended the meeting and had additional questions after reviewing some of the project related materials. The deadline for submitting comments on the site permit application, draft site permit and topics (scoping comments) to be included in the Environmental Report required for the CN was May 20, 2009.

Public Comments

Ten written comments were received by the close of the comment period. Five comment letters were from the public (Ty and Dacia Bester, Hilary and Kathy Bianchi, Brian Huggenvik, Donald and Margaret Schoepski, and Galyn Simon); four comment letters from state agencies (Minnesota Board of Water and Soil Resources (BWSR), Minnesota Department of Natural Resources (DNR), Minnesota Department of Transportation (MnDOT), and the Minnesota Pollution Control Agency (PCA); and a letter from a representative of EcoHarmony are summarized below. (See Exhibit 9).

- a) Ty and Dacia Bester commented about noise, shadowing, visual impacts, property valuation, soil damage, and setbacks. Ty and Dacia Bester also stated: “Create a 2,000 -2,500’ setback, depending on turbine size, from properties that choose not to participate with this current project. By creating this type of setback one can minimize or eliminate the noise, shadowing and visual issues at hand.”
- b) Hilary and Kathy Bianchi commented that the turbines will reduce the value of their home.
- c) Brian Huggenvik commented that he believes there should be a larger setback for non-participating landowners, to mitigate noise, shadow flicker and visual impacts. In conclusion, Mr. Huggenvik stated “I think it is reasonable and responsible to seek an increase in the setbacks to protect the non-participating citizens of Fillmore County from some of the negative effects of industrial wind.
- d) Donald and Margaret Schoepski recommended “A minimum distance of 1/3 of a mile from property boundaries would give a much needed buffer for the people that receive the same good feelings about clean energy as any other person in the state, but are the only people in the state that have the negative impacts like decreased property values, increased noise levels and construction dangers.”
- e) Galyn Simon comments expressed concern about locating turbines in areas characterized by karst topography and asked that due respect be given to non-participating landowners.
- f) Steve Lawler, Minnesota Board of Water and Soil Resources, commented that wetland assessment, delineation and wetland conservation act (WCA) application activities should be coordinated with the Local Governing Unit for wetlands in Fillmore County.

- g) Randall Doneen, Minnesota Department of Natural Resources, commented about view sheds from the Forestville State Parks, the Cherry Grove Wildlife Management Area and the Cherry Grove Blind Valley Scientific and Natural Area are also close to the project area and suggested preparation of a view shed analysis. DNR also commented about the applicant doing bat surveys.
- h) Chris Moates from the Minnesota Department of Transportation (MnDOT) commented that “three miles of MN 139 are within the project area and may be affected by transmission and substation location proposals in the future.”
- i) Jessica Ebertz, Minnesota Pollution Control Agency (PCA) commented that: “It is actually the Stormwater Pollution Prevention Plan (SWPPP), which is required as part of the application for the NPDES Permit and which site owners and their construction operators must jointly create, that lays out the specific BMPs, along with their locations and functions. Ms. Ebertz also commented that new impaired waters are regularly being identified, and that the list is updated every two years.
- j) A representative of EcoHarmony also submitted a letter indicating that: 1) EcoHarmony is committed to analyzing the project’s view shed impacts and discussing these findings with the DNR; 2) the Applicant will keep the DNR advised of the work being done on the bat study; and 3) up to four met towers may be required for the project, rather than two as originally proposed.

A public hearing was held in Harmony on November 29, 2009. Administrative Law Judge (ALJ) Steve M. Mihalchick presided at the public hearing and was asked to prepare a summary of public testimony presented at the hearing. The ALJ’s summary of testimony was filed with the Commission and eDocket system on December 21, 2009.

OES EFP Staff Comments and Analysis

EFP staff has reviewed the “Summary of Testimony at Public Hearing” prepared by the ALJ, exhibits introduced into the hearing record as well as the written comments summarized above. The following EFP staff comments and analysis address several of the concerns or comments identified in the ALJ’ Summary of Public Testimony. Some of the concerns expressed above are addressed in the proposed Finding and it is not necessary to re-state or address them here.

Karst Landscape-Galyn Simon and Brian Huggenvik

The comments offered by Galyn Simon and Brian Huggenvik both expressed concerns over the potential of sinkholes occurring in the Project area, caused by the karst layer in the local geology. Mr. Huggenvik pointed out that there were numerous sinkholes in the vicinity of some of the proposed turbine sites and suggested “that any borings done to determine the nature of the ground for siting of individual turbines be overseen by an agency with experience in this topography.”

EcoHarmony Response: To address this concern, Eco Energy Wind contracted with a geotechnical consulting firm, American Engineering Testing, to analyze, evaluate, and plan mitigation for potential issues with the karst topography. AET developed a *Work Plan for Geotechnical Investigation*, which includes but is not limited to the following:

At each of the wind turbine sites, the geotechnical investigation will consist of three phases – (1) a geophysical investigation (electrical resistivity) to explore for voids in the bedrock; (2) followed by soil/bedrock borings to check the results of the electrical resistivity survey; (3) followed by a series of electric cone penetrometer (CPT) soundings if the potential for loose zones in the soil overburden are suspected.

AET also describes methods for ensuring that each wind turbine foundation is properly constructed depending on the soil conditions. As EcoHarmony stated in its application at page 45:

The evaluation process will eliminate the selection of potential turbine sites that may be susceptible to sinkhole formation. In addition to the site evaluation, a system to monitor potential ground subsidence at turbine sites will be incorporated into project construction.

OES EFP Response: The proposed site permit incorporates the requirements of the “*Work Plan for Geotechnical Investigation*” as a special condition in the proposed site permit at III.M.4, to insure that turbine placement also considers karst features. The geotechnical investigation will also be filed as a compliance document prior to the start of construction. It is also in EcoHarmony’s best interest to avoid the placement of turbines in areas where sinkholes are likely to occur.

Shadow Flicker, Noise, Visual Impacts and Setbacks—Brian Huggenvik and others

Ms. Huggenvik and other commenter’s expressed concerns about shadow flicker, noise, visual impacts and setbacks and offered suggestions as to what he considered appropriate setbacks and questioned how issues such as compliance with noise requirements impacts are addressed and followed up on when there is an issue.

EcoHarmony Response: EcoHarmony performed a shadow flicker analysis and noise analysis for the recently commissioned Stephenson County, Illinois wind farm that resulted in turbines being moved from their proposed locations. EcoHarmony noted that the closest turbine to a house at Stephenson County was 1,371 feet and at that distance there was “absolutely no shadow flicker.” EcoHarmony committed to performing a similar study for shadow flicker and noise for the proposed Project.

OES EFP Response: Shadow flicker is described as “a moving shadow on the ground resulting in alternating changes in light intensity.” Shadow flicker computer models 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 model are useful in the design phase of a wind plant. Other than within approximately two rotor diameters from the base of a turbine, 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. In addition, 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.

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. Evidence of flicker effects is hard to find, it is more of a nuisance issue. There are no published standards for shadow flicker and no examples of turbines causing photosensitivity related problems. In Germany, 30 hours of shadow flicker per year is acceptable. The 30 hour number is based on the premise that the sun is shining, the building affected is occupied, the occupants are awake and the turbine is operating. The proposed site permit does not specify shadow flicker limits in terms of minutes or hours per year. However, EcoHarmony will consider shadow flicker in its design layout. This is addressed as a special condition in the proposed site permit at III.M.3.

Mr. Huggenvik and other commenter’s in this proceeding had questions or concerns about sound or noise from the wind turbines and, the potential for health effects from exposure to low frequency noise. Similar concerns and questions have also been raised in several other Commission dockets in the past couple of years. By way of background, in late February 2009, OES requested a “white paper” from the Minnesota Department of Health (MDH) evaluating possible health effects associated with low frequency noise vibrations and sounds arising from large wind energy conversion system (LWECS). A commenter on another wind project, the Lakeswind Wind Power Plant, in Clay, Becker and Ottertail counties (Docket No. IP6603/WS-08-1449), also wrote to the Commissioner of MDH to ask for an evaluation of health issues related to exposure to low frequency sound energy generated by wind turbines. In March 2009, MDH agreed to evaluate health impacts from wind turbine noise and low frequency vibrations. The MDH released its “white paper” on the “Public Health Impacts of Wind Turbines on May 22, 2009, and it was included in the Environmental Report (Appendix D), and submitted for the Certificate of Need (CON) proceeding for the Bent Tree Wind Project (Docket No. T-6657/CN-07-1425).

In a letter (August 13, 2009) to a citizen who had follow up questions to the MDH white paper, MDH Commissioner, Sanne Magnan, M.D., Ph.D, responded to specific questions posed as follows:

Are current standards in Minnesota safe? Regulatory standards protect health and safety, but whether for air, water or noise, regulators do not set “bright line” standards without also considering cost, technical difficulties, possible benefit and alternatives. No regulatory standard offers absolute safety. The Minnesota Department of Health can evaluate health impacts, but it is the purview of regulatory agencies to weigh these impacts against alternative and possible benefits.

Are the proponents of wind turbine syndrome mistaken? As noted in the “White Paper,” the evidence for wind turbine syndrome, a constellation of symptoms postulated as mediated by the vestibular system, is scant. Further, as also noted, there is evidence that the symptoms do not occur in the absence of perceived noise and vibration. The reported symptoms may or may not be caused by “discordant” stimulation of the vestibular system.

Does more study of adverse effects need to be undertaken? More study may answer questions about the actual prevalence of unpleasant symptoms and adverse effect under various conditions such as distance to wind turbines and distribution of economic benefit. However, there is at present enough information to determine the need for better assessment of wind turbine noise, especially at low frequencies. Such assessments will likely be beneficial for minimizing impacts when projects are sited and designed. Also, even without further research, there is evidence that community acceptance of projects, including agreement about compensation of individuals within project areas, will result in fewer complaints. Therefore, more research would be useful, but the need will have to be balanced against other research needs.

EcoHarmony is considering and evaluating both noise and shadow flicker during the final planning stages of the EcoHarmony West Project to make informed decisions about turbine placement. The permit (III.E.3.) requires the Permittee to comply with noise standards established by the Minnesota Pollution Control Agency.

The proposed site permit (III.M.2 and III.M.3) requires the Permittee to submit a proposal to the Commission for the conduct of a noise study and an evaluation of shadow flicker.

Setbacks and Permit Conditions

Several commenter’s expressed the need for setbacks from homes and non-participating landowners of 1,500 feet or more to account for noise, shadow flicker, health concerns and other general concerns (visual, lower property values).

OES EFP Response: The LWECS site permit contains a number of mitigation measures, setback requirements, preconstruction survey requirements, site layout restrictions and other numerous requirements that provide for environmental protection and public health and safety. In addition to the site permit, the Permittee must obtain a number of other permits from federal, state and local units of governments after the site permit issues. Those permits are identified in the site permit application. Typically, the LWECS site permit does not specify individual turbine locations, because of numerous other details that must be planned and coordinated, including working with downstream permitting authorities and landowners. At the pre-construction meeting or prior to, the Permittee must demonstrate compliance with the conditions in the site permit for setbacks and site layout restrictions. The site permit also establishes the parameters for project design and implementation. If, for example, turbines or associated facilities are located in prairie, a native prairie mitigation plan is required. Environmental monitoring or studies may also be implemented or required if warranted, based on results of post-permit issuance detailed site evaluations of potential turbine locations. For example, a noise study, shadow flicker analysis and geotechnical investigation because of karst in the project boundary is being recommended for this Project.

The turbines and associated facilities will be placed on the properties of persons who have leased their wind and land rights to the EcoHarmony for the proposed EcoHarmony West Wind Project. Non-participants who have not leased land or wind rights to EcoHarmony will not have turbines or associated facilities on their properties. In addition, the wind turbines will be set back from the property lines of non-participating landowners by a minimum of 1,265 to 1,655 feet on the prevailing wind axis and 759 to 993 feet on the non-prevailing wind axis. See site permit at III.C.1. EcoHarmony has stipulated that all turbines will be 1,000 feet or more from homes. See permit condition III.M.1. Based on a preliminary turbine layout, the closest turbine to a non-participating landowner will be around 1,300 feet. EcoHarmony will also comply with Minnesota's noise standards.

With regard to various setbacks, there are numerous site permit requirements that protect natural resource features as well as public health and safety. Minnesota has close to 2,000 megawatts of operating wind energy facilities in place. Prior to July of 2005, those facilities were permitted by the Minnesota Environmental Quality Board. Since July 2005, LWECS have been permitted by the Minnesota Public Utilities Commission. Many of the permit conditions in this proposed site permit have been LWECS site permit conditions since 1995. In the past 14 years, wind farm participants in Minnesota have not filed any public health or safety concerns with the EQB or the Commission, the responsible governmental unit; nor have comprehensive avian and bat studies demonstrated significant fatality or mortality impacts.

Minnesota Department of Natural Resources Comment Letter

As noted in the ALJ's summary, the Minnesota Department of Natural Resources (DNR) expressed concern regarding the alteration of a historically significant view from the Forestville State Park, based a preliminary view shed analysis prepared by EcoHarmony and discussed with the DNR that indicated that 10 to 15 proposed turbine sites would be visible from the Forestville State Park outlook site. The Forestville State Park outlook site is a frequently visited overlook that represents a presettlement vista of the unique landscape of southeastern Minnesota. The DNR subsequently determined that turbines located north of County Route 44 and west of

Kodiac Road may alter the view shed and recommended avoiding the placement of turbines in the northwest corner of the Project area, or coordinating turbine placement with the DNR to avoid visual impacts. The DNR also suggested that, to the extent that fewer turbines are ultimately installed, installation of turbines for the Project be commenced in areas other than the northwest corner of the project area.

Avian and Wildlife Issues

With regard to avian and wildlife issues, DNR's comment letter submitted to the ALJ also discussed the bird and bat surveys conducted by EcoHarmony. The DNR recommended that EcoHarmony's final bird and bat survey reports, expected in early 2010, be considered when micrositing each turbine. The DNR further recommended that EcoHarmony's micrositing be coordinated with the DNR utilizing information from these reports to avoid impacting local and migratory bird and bat populations.

In conjunction with the discussion of avian issues and as noted the ALJ Summary of Testimony at Public Hearings, the potential impact of the Project on avian populations, particularly that of bald eagles, was raised by Christian Frank and Noel Frank, farm owners in Fillmore County. The Franks noted that an active bald eagle nesting site was located in the southwestern portion of section 1 in Bristol Township. The Franks also related observations of eagles using the valley encompassing their family farm for winter habitat. To protect this population, the Franks recommended adoption of a 1-mile setback requirement for all wind turbines from the areas used by bald eagles. The Franks expressed their belief that this setback requirement would affect five proposed wind turbine locations. The Franks also recommended that any micrositing be done in consultation with the DNR and a wildlife biology specialist from the U.S. Fish and Wildlife Service.

EcoHarmony Response: EcoHarmony responded to DNR's concerns regarding the Forestville State Park overlook and indicated that the nearest turbine will be approximately three miles away. At that distance, EcoHarmony estimates that "between ten and twenty of the wind turbines will be partially visible above the tree line from an observation deck facing the southeast." As to DNR's view shed, EcoHarmony responded as follows:

EcoHarmony has met with the DNR to discuss its concern and will continue to meet with the DNR during the micrositing process as the precise locations for turbines are selected. However, it is simply not going to be possible to avoid having some turbines be visible from certain locations in the Park. Significantly, the turbines will not be visible from most locations in the Park and not in directions other than southeast.

There are other countervailing factors that must be taken into account besides DNR's desire that its Park visitors no see wind turbines while looking over the parkland. Private landowners have the right to install wind turbines on their property. The DNR cannot deprive these landowner of their rights simply because Park visitors may be able to see them.

Further, the State and EcoHarmony are also interested in making efficient use of the wind resources. The law requires the Commission to not only consider environmental impacts but to site wind projects to make efficient use of the wind resource. Minn. Stat. section 216F.03. Elimination of locations to protect a view shed could make the project less efficient from an energy standpoint.

As to the potential impact on eagles, EcoHarmony's response indicated that its consultant, Natural Resources Consulting, Inc., currently studying avian and bat impact, will specifically address the eagle population in that study. EcoHarmony has committed to discussing the completed study with both the DNR and the U.S. Fish and Wildlife Service. As to setbacks from eagle roosts, EcoHarmony indicated that its initial turbine siting resulted in setbacks of over one mile from known eagle roosts.

OES EFP Response: The DNR does not have any view shed or scenic easements on lands outside of the Forestville State Park that provide for protection of the view on property outside of the park. As EcoHarmony observed, the nearest turbine will be more than three miles from the state park. A permit condition that requires a setback from the Forestville State Park is not warranted. The OES believes that EcoHarmony and DNR can continue to meet and discuss the view shed, as well as the results of the avian and bat survey during the micrositing process.

The OES EFP staff believes the record in this matter is sufficiently robust to allow the Commission to make a decision on the site permit application. OES EFP also believes the proposed site permit provides sufficient measures to provide necessary guidance regarding project design, construction, restoration, monitoring and operation of the proposed EcoHarmony West Wind Project.

Standard for Permit Issuance

The test for issuing a site permit for a Large Wind Energy Conversion System is to determine whether a project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minnesota Statutes Chapter 216F. The wind statutes incorporate certain portions of the Power Plant Siting Act, including the environmental considerations. Minnesota Rule 7850.4100. Also, the law allows the PUC to place conditions in LWECS permits. Minnesota Statutes 216F.04 (d).

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

In accordance with Minnesota Rule 7854.0500 Subp.2, the Commission may not issue a site permit for an LWECS, for which a certificate of need is required, until an applicant obtains such a certificate from the Commission. EcoHarmony has applied to the Commission for a certificate

of need for the EcoHarmony West Wind Project (CN-08-961). Accordingly, OES, EFP staff recommends adoption of findings of fact and conclusion of law for the EcoHarmony West Wind Project.

OES EFP staff has prepared for Commission consideration proposed Findings of Fact, Conclusions and Order, Exhibit List for the EcoHarmony West Wind Project, and a proposed Site Permit for the 280 MW EcoHarmony West Wind Project.

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

The proposed site permit also includes four special conditions (See site permit III.M. 1-4) which provides for a minimum 1,000 foot setback from all homes or residences, noise study, shadow flicker analysis and geotechnical investigation.

A number of issues were identified during the course of this proceeding and they were summarized above in "*Public Comments*" and the ALJ's "Summary of Testimony" submitted on December 21, 2009, and discussed in "*OES EFP Staff Comments and Analysis*."

Proposed Findings of Fact

The proposed Findings (see Attachment 3 in the Commissioner's packet) address the procedural aspects the process followed, describe the project, and address the environmental and other considerations of the project. The proposed Findings of Fact reflect some findings that were also made for other LWECS projects. The following outline identifies the categories of the Findings of Fact.

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Site Permit Conditions	100 – 101

Exhibit List

OES EFP staff has prepared an exhibit list of documents that are part of the record in this permit proceeding (See Attachment 4 in Commissioner's packet). The exhibit list provides a direct link to the exhibits identified. However, all of these are not included or identified as exhibits by the ALJ.

All ALJ Exhibits received prior to the close of the record on November 23, 2009, are on eDockets at 08-973 and identified as exhibits 1 through 16. The ALJ's "Summary of Testimony" (See Exhibit 11) also refers to those exhibits, and provides a direct link to them. The exhibit list provided by OES identifies some, but not all of the exhibits referred to by the ALJ's written summary.

Proposed Site Permit

The OES EFP Staff has prepared a site permit for the Commission's consideration. See Attachment 5 in the Commissioner's packet.

Commission Decision Options

A. EcoHarmony West Wind Project Findings of Fact and Conclusions

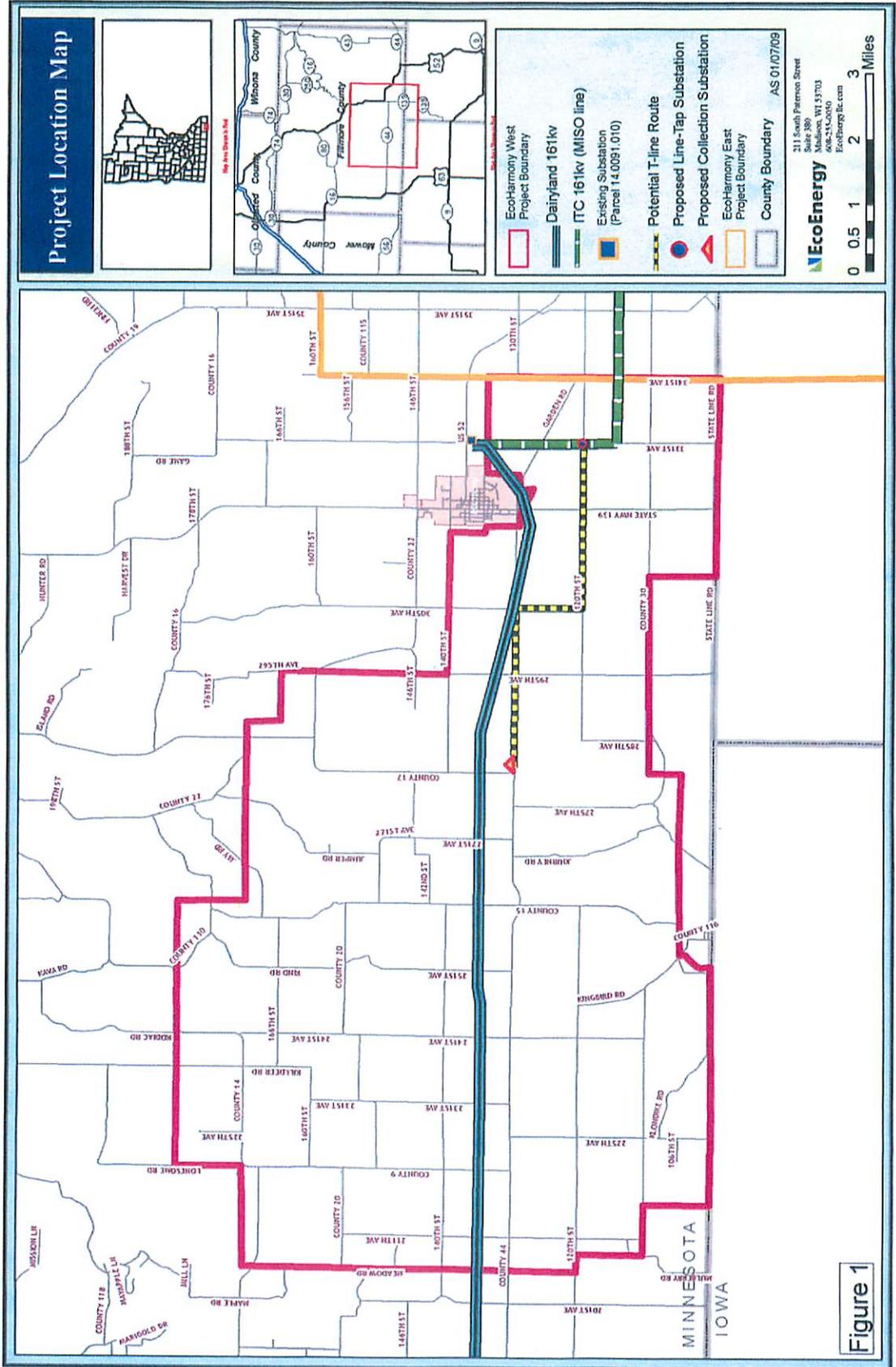
1. Adopt the attached Findings of Fact, Conclusions of Law and Order prepared for the 280 MW EcoHarmony West Project Phase in Fillmore County.
2. Amend the Findings of Fact and Conclusions of Law as deemed appropriate.
3. Make some other decision deemed more appropriate.

B. LWECS Site Permit for the 280 MW EcoHarmony West Wind Project

1. Issue the proposed LWECS Site Permit for the 280 MW EcoHarmony West Wind Project to EcoHarmony West Wind, LLC.
2. Amend the proposed LWECS Site Permit as deemed appropriate.
3. Deny the LWECS Site Permit.
4. Make some other decision deemed more appropriate.

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

ATTACHMENT 1: SITE PERMIT MAP



Office of Energy Security
 Energy Facility Permitting
 85 7th Place East, Suite 500
 St. Paul, MN 55155-2198
 Minnesota Department of Commerce

In the Matter of the Application of
 EcoHarmony West Wind, LLC,
 for a Site Permit for up to 280 MW
 of Wind Generation in Fillmore County

EXHIBIT LIST

PUC Docket No. IP-6688/WS-08-973

EXHIBIT NO.	DATE	DESCRIPTION	e-DOCKET LOCATION
1.	01-26-09	EcoHarmony West Wind, LLC, Site Permit Application for the EcoHarmony West Wind Project in Fillmore County	<u>5717595</u>
2.	02-19-09	DOC EFP Comments & Recommendations to the PUC on acceptance of the EcoHarmony application for a LWECs and issuance of a Draft Site Permit for the EcoHarmony West Wind Project	<u>5773770</u>
3.	02-27-09	PUC Order accepting EcoHarmony Site Permit Application and Issuing a Draft Site Permit for Review and Comment	<u>5790375</u>
4.	03-24-09	OES EFP Notice of Application Acceptance, Public Information and Scoping Meeting and Issuance of Draft Site Permit for Public Review and Comment	<u>5831089</u>
5.	03-24-09	Applicant's Affidavit for Landowners Receiving Site Permit Application, Draft Site Permit and Notice of Public Information and Scoping Meeting	<u>5831076</u>
6.	03-24-09	Applicant's Affidavit for EAW Distribution List Receiving Site Permit Application, Draft Site Permit and Notice of Public Information and Scoping Meeting	<u>5831077</u>
7.	03-24-09 03-30-09 04-02-09 04-06-09	Affidavits of Publication: Notice of PUC's acceptance of the LWECs application, Public Information Meeting appearing in <u>Fillmore County Journal, Republican Leader, News-Record and Bluff County Reader</u>	<u>20101-46185-01</u>
8.	04-06-09	Notice of Application Acceptance, Public Information Meeting Published in <u>EQB Monitor</u> , Volume 33, No. 7	<u>20101-45966-01</u>

EXHIBIT NO.	DATE	DESCRIPTION	e-DOCKET LOCATION
9.	09-11-09	Public comments submitted by close of comment period (May 20, 2009)	<u>20099-41733-01</u>
10.	10-30-09	Affidavit of Publication for Notice of Public Hearing	<u>200910-43394-01</u>
11	12-21-09	ALJ Summary of Public Testimony	<u>200912-45242-02</u>
12.	07-13-09	Letter from EcoHarmony requesting increase in project size	<u>20097-39568-01</u>
13.	11-20-09	Letter from Minnesota Department of Natural Resources (Public Exhibit 12)	<u>200911-44317-07</u>
14.	11-23-09	EcoHarmony Response letter to Public Hearing Comments and letters	<u>200911-44380-03</u>
15.	09/21/09	Letter from Commissioner of the Department of Health Sanne Magnan, M.D., Ph.D to Per Anderson	See eDockets 08-573 Doc. ID 20099-42029-01

**STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION**

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

Chair
Commissioner
Commissioner
Commissioner
Commissioner

In the Matter of the Application of
EcoHarmony West Wind, LLC,
for a Site Permit for a 280-Megawatt
Large Wind Energy Conversion
System and Associated Facilities in
Fillmore County

ISSUE DATE: February 3, 2010

DOCKET NO. IP-6688/WS-08-973

**FINDINGS OF FACT, CONCLUSIONS
OF LAW AND ORDER, ISSUING A
SITE PERMIT TO ECOHARMONY
WEST WIND, LLC, FOR THE
ECOHARMONY WEST WIND
PROJECT**

The above-entitled matter came before the Minnesota Public Utilities Commission (Commission) pursuant to an application submitted by EcoHarmony West Wind, LLC, (EcoHarmony) for a site permit to construct, operate, maintain and manage a 280-Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Freeborn County.

All of the proposed wind turbines and associated facilities will be located in Fillmore County. Associated facilities will include pad mounted step-up transformers for each wind turbine, access roads, an electrical collection and feeder system, project substation, and up to four permanent meteorological towers. The energy from the proposed 280 MW project will be delivered from the project substation to the electrical grid at a new Line-Tap (Switching) Substation located approximately one mile east of Harmony, Minnesota.

STATEMENT OF ISSUE

Should EcoHarmony West Wind, LLC, be granted a site permit under Minnesota Statutes section 216F.04 to construct a 280 MW Large Wind Energy Conversion System and associated facilities in Fillmore County?

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

FINDINGS OF FACT

Background and Procedure

1. On January 26, 2009, EcoHarmony filed a site application with the Public Utilities Commission for up to 200 megawatts of nameplate wind power generating capacity, identified as the Ecoharmony West Wind Project in Fillmore County. (Exhibit 1).
2. Office of Energy Security (OES) Energy Facility Permitting (EFP) staff reviewed and determined that the January 26, 2009, application complied with the application requirements of Minnesota Rules, part 7854.0500. In its comments and recommendations to the Commission, dated February 19, 2009, OES EFP staff recommended that the Commission accept the application and issue a draft site permit (Exhibit 2).
3. On February 27, 2009, a Commission Order accepted the application for the EcoHarmony West Wind Project and associated facilities and also issued a draft site permit for public review and comment (Exhibit 3).
4. On March 23, 2009, OES EFP staff issued a “Notice of Application Acceptance, Public Information and Scoping Meeting” to receive comments on the permit application, the draft site permit, and the scope of the environmental report for the certificate of need proceeding. (Exhibit 4).
5. On March 23 and 24, 2009, EcoHarmony distributed copies of the “Site Permit Application for the EcoHarmony West Wind Project and associated facilities, Draft Site Permit and Notice of Application Acceptance, Public Information and Scoping Meeting” to landowners within the project area and government units. (Exhibits 5 and 6)
6. Published notice of site permit application acceptance, the OES public information and scoping meeting and opportunity to comment on the permit application and the draft site permit appeared in the *Fillmore County Journal*, on March 30, 2009, *Republican-Leader* of Preston and Lanesboro on April 2, 2009, *News-Record* of Harmony and Mabel on April 2, 2009, and the *Bluff County Reader* on March 23 and April 6, 2009. (Exhibit 7). The published notice provided: a) location and date of the public information meeting(s); b) description of the proposed project; c) deadline for public comments on the application and draft site permit; d) description of the Commission site permit review process; and e) identification of the public advisor. The notice published meets the requirements of Minnesota Rules, Part 7854. 0900 subp2.
7. On April 6, 2009, OES EFP staff published in the *EQB Monitor* notice of the application acceptance, public information meeting, and opportunity to comment on the permit application and the draft site permit, Volume 33, No. 7, April 6, 2009. (Exhibit 8, pages

10-14). The published notice contained all of the information required by Minnesota Rules part 7854.0900 subp. 1. Notice also appeared on the Commission web site on eDockets on March 24, 2009 and on the OES web page on March 23, 2009.

8. The OES EFP staff held a public information meeting on April 15, 2009, (in Harmony at the Harmony Fire Department) to provide an overview of the Commission permitting process and to receive comments on the site permit application, draft site permit and scope of the environmental report. Approximately 75 people attended the meeting. OES EFP staff provided an overview of Certificate of Need (CON) and LWECs site permitting processes and responded to questions. OES EFP staff and EcoHarmony representatives responded to project specific questions and general questions about wind energy.
9. Questions were asked about the need for the project, transmission requirements, project timing, geology (karst), audible noise, low frequency noise, impacts on property values, shadow flickers, stray voltage, aerial spraying, property tax and public services required by turbines, setbacks from residences and homes, production taxes, avian impacts, decommissioning, liability for turbine accidents, emergency response situations, turbine lighting, use of local labor, television and phone reception, icing, and decommissioning. Following the public meeting OES staff did receive several calls from people who attended the meeting and had additional questions after reviewing some of the project related materials. The deadline for submitting comments on the site permit application, draft site permit and topics (scoping comments) to be included in the Environmental Report for the Certificate of Need proceeding was May 20, 2009.
10. Ten written comments were received by the close of the comment period. Five comment letters were from the public (Ty and Dacia Bester, Hilary and Kathy Bianchi, Brian Huggenvik, Donald and Margaret Schoepski, and Galyn Simon); four comment letters from state agencies (Minnesota Board of Water and Soil Resources (BWSR), Minnesota Department of Natural Resources (DNR), Minnesota Department of Transportation (MnDOT), and the Minnesota Pollution Control Agency (PCA); and a letter from a representative of EcoHarmony are summarized below. (See Exhibit 9).
 - a) Ty and Dacia Bester commented about noise, shadowing, visual impacts, property valuation, soil damage, and setbacks. Ty and Dacia Bester also stated: "Create a 2,000 -2,500' setback, depending on turbine size, from properties that choose not to participate with this current project. By creating this type of setback one can minimize or eliminate the noise, shadowing and visual issues at hand."
 - b) Hilary and Kathy Bianchi commented that the turbines will reduce the value of their home.
 - c) Brian Huggenvik commented that he believes there should be a larger setback for non-participating landowners, to mitigate noise, shadow flicker and visual impacts. In conclusion, Mr. Huggenvik stated "I think it is reasonable and responsible to seek an increase in the setbacks to protect the non-participating citizens of Fillmore County from some of the negative effects of industrial wind."

- d) Donald and Margaret Schoepski recommended “A minimum distance of 1/3 of a mile from property boundaries would give a much needed buffer for the people that receive the same good feelings about clean energy as any other person in the state, but are the only people in the state that have the negative impacts like decreased property values, increased noise levels and construction dangers.”
 - e) Galyn Simon comments expressed concern about locating turbines in areas characterized by karst topography and asked that due respect be given to non-participating landowners.
 - f) Steve Lawler, Minnesota Board of Water and Soil Resources, commented that wetland assessment, delineation and wetland conservation act (WCA) application activities should be coordinated with the Local Governing Unit for wetlands in Fillmore County.
 - g) Randall Doneen, Minnesota Department of Natural Resources, commented about view sheds from the Forestville State Parks, the Cherry Grove Wildlife Management Area and the Cherry Grove Blind Valley Scientific and Natural Area are also close to the project area and suggested preparation of a view shed analysis. DNR also commented about the applicant doing bat surveys.
 - h) Chris Moates from the Minnesota Department of Transportation (MnDOT) commented that “three miles of MN 139 are within the project area and may be affected by transmission and substation location proposals in the future.”
 - i) Jessica Ebertz, Minnesota Pollution Control Agency (PCA) commented that: “It is actually the Stormwater Pollution Prevention Plan (SWPPP), which is required as part of the application for the NPDES Permit and which site owners and their construction operators must jointly create, that lays out the specific BMPs, along with their locations and functions. Ms. Ebertz also commented that new impaired waters are regularly being identified, and that the list is updated every two years.
 - j) A representative of EcoHarmony also submitted a letter indicating that: 1) EcoHarmony is committed to analyzing the project’s view shed impacts and discussing these findings with the DNR; 2) the Applicant will keep the DNR advised of the work being done on the bat study; and 3) up to four met towers may be required for the project, rather than two as originally proposed.
11. On September 14, 2009, the OES issued the “Environmental Report Scoping Decision” document for the EcoHarmony West Wind Project.
 12. On October 22, 2009, OES provided “Notice of Availability of Environmental Report” for the EcoHarmony West Wind Project for the CN proceeding (Docket No. IP-6688/CN-09-961.

13. On October 26, 2009, the Commission issued Notice of the November 9, 2009, Public Hearing in Harmony. The notice was published in Fillmore County in *The Fillmore County Journal* on October 26, 2009. (Exhibit 10).
14. On November 9, 2009, a public hearing was held in Harmony, Minnesota, to receive public testimony on need and siting matters. Public comments and exhibits were recorded and entered into the record, with additional comments allowed to be submitted on or before November 23, 2009.
15. Administrative Law Judge (ALJ) Steve M. Mihalchick presided over the public hearing the evening on November 9, 2009. The ALJ's Summary of Public Testimony was submitted to the PUC on December 21, 2009. (Exhibit 11).

Permittee

16. EcoHarmony West Wind, LLC, a limited liability company, filed a site permit application for the EcoHarmony West Wind Project in Fillmore County. EcoHarmony West Wind, LLC, is a wholly-owned subsidiary of EcoEnergy Wind. EcoEnergy Wind is a wholly-owned subsidiary of The Morse Group, Inc., a national; commercial electrical, energy and construction firm. EcoEnergy Wind intends to develop the Project and manage its overall construction. During development, Eco Energy Wind will explore opportunities to joint venture with established renewable energy companies and/or utilities to secure turbine supply and finalize financing.

Project Description

17. The EcoHarmony West Wind Project as proposed was to have a nameplate capacity of 200 hundred megawatts, and then EcoHarmony amended its CN and site permit applications to increase nameplate capacity from 200 MW to 280 MW for the following reasons: a) the demand for renewable energy will support an investment in a larger project, b) the wind resource in Fillmore County are and within the existing footprint of the West Wind Project will allow for the operation of a larger project, and c) the MISO interconnect line planned for the EcoHarmony West Wind Project can handle the additional power. (Exhibit 12). A final decision on turbine selection and design has not been made, but the project will consist of turbine with a rated output between 1.5 and 3.0 MW in such number and combination as produce 280 MW. Turbines are typically placed on towers 80 meters (262 feet) in height. Rotor diameters vary from 77 to 101 meters (253 to 331 feet).
18. Some permit conditions for large wind energy conversion system (LWECS) are based on criteria that are dependent on turbine size. Turbines must be placed within the project boundary and meet all permit conditions. Accordingly, the final siting ("micro-siting") of wind turbines for the project will depend on, among other factors, the size of the turbines chosen for the project.

19. The project will also include an underground automated supervisory control and data acquisition system (SCADA) for communication purposes. Up to four permanent meteorological towers will be used as part of the communication system. Other components of the project include a concrete and steel foundation for each tower, pad-mounted step-up transformers, all weather class 5 roads of gravel or similar material, and an underground energy collection system and a project substation.
20. Each turbine is interconnected through an underground electrical collection system at 34.5 kV. The feeder lines from the project collection system feed the power to the independent breaker positions at the proposed project substation. The project substation steps up the voltage from the 34.5 kV collection systems to the 161 kV transmission system level. All of the proposed feeder lines would connect to the proposed project substation within the site permit boundaries.
21. Each tower will be secured by a concrete foundation that will vary in size depending on the soil conditions. A control panel that houses communication and electronic circuitry is placed in each tower. In addition, a step-up, pad-mounted transformer is necessary for each turbine to collect the power from the turbine and transfer it to a 34.5 kV collection system via underground cables.
22. The blades are typically made of fiberglass with a smooth layer of gel coat that provides ultraviolet protection. The blades will be either white or grey in color. The blades will be equipped with lightning protection. The entire turbine is also grounded and shielded to protect against lightning.
23. All turbines and up to four permanent meteorological towers will be interconnected with fiber optic communication cable that will be installed underground. The communication cables will run back to a central host computer which will be located either at the project substation or at the operations and maintenance facility where a supervisory control and data acquisition (SCADA) system will be located. Signals from the current and potential transformers at each of the delivery points will also be fed to the central SCADA host computer. The SCADA system will be able to give status indications of the individual wind turbines and the substation and allow for remote control of the wind turbines locally or from a remote computer. This computerized supervisory control and data acquisition network will provide detailed operating and performance information for each wind turbine. The Permittee will maintain a computer program and database for tracking each wind turbine's maintenance history and energy production.
24. A separate 161 kV transmission line approximately 8.5 miles in length will connect the Eco Harmony West Project substation to a new EcoHarmony switching station that will tie into a ITC owned 161 kV transmission line southeast of Harmony. The EcoHarmony 161 kV transmission line is being reviewed by the PUC (See PUC Docket No. IP-6688/TL-09-601).

Site Location and Characteristics

25. The 280 MW EcoHarmony West Wind Project, will be located in southeastern Minnesota, in the townships of Harmony, Bristol, York, Carimona, Forestville and Preston-all in Fillmore County. The project boundary encompasses approximately 50,000 acres. These townships are zoned agricultural. The topography within the site is comprised of rolling hills with long low ridges and intermittent drainage ways and minor streams. The site includes a number of broad ridges with elevations approximately 1,350 above mean sea level. Surrounding elevations are lower by as much as 150 to 200 feet. The primary ridge in the area lies in an easterly to westerly direction and is a prominent landscape feature. The project area includes karst-a landform shaped by the slow dissolution of limestone rock. The dominant land use is agricultural, comprised of corn and soybeans. There are also numerous woodlots and windbreaks within the proposed site boundaries. Average farm size in Fillmore County is approximately 280 acres; and the County has a population density of around 24 persons per square mile, which is considered low.
26. Construction of the turbines sites and access roads will involve temporarily disturbing at the most approximately five to ten acres of land per turbine or approximately 600 to 1,200 acres for the Project for contractor staging areas, foundation construction, underground power lines, and tower and turbine assembly. Permanent roads are expected to be about 16 feet wide. The permanent displacement for turbine access roads and for towers and transformers and areas around them is about 0.5 to 1 acre per turbine for the EcoHarmony West Wind Project. The project substation, operations and maintenance building will displace approximately 10 acres of land.
27. Wind turbines and road access will be sited to take into account the contours of the land, local permitting requirements, landowner concerns and prime farmland locations to minimize project impacts. The Project will be subject to the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Construction Stormwater Permit. An erosion and sediment control plan and Storm Water Pollution Prevention Plan (SWPPP) will also be prepared for the Project and the disturbed areas will be seeded after construction to stabilize the area.

Wind Resource Considerations

28. Information in the site permit application indicates that the 80 meter wind speeds in the Project Area average from 17.0 to 17.9 miles per hour (7.6 to 8.0 meters per second) (mean average annual). Typically the highest wind speeds occur in the colder winter months due to recurring storm systems and large temperature gradients. Regionally, the prevailing wind directions are generally south-southeast and northwest. Wind speeds are generally greater in the afternoon and late evening. The lowest wind speeds are in the mid-morning and in the early evening. Of the annual energy budget, a higher percentage results from southerly winds, which are most frequent in the warmer weather months.

29. For this project, turbines will be sited in “strings and clusters” along hilltops and ridgelines within the site boundaries. The wind turbines are sited so as to have good exposure to winds from all directions with emphasis on exposure to the prevailing southerly and northwesterly wind directions. The turbine spacing, according to EcoHarmony’s application, maximizes use of the available wind and minimizes wake and array losses within the topographical context of the site. The turbines are typically oriented west-southwest to east -northeast, which is roughly perpendicular to the prevailing southerly and northwest winds. Turbine placement, aside from other resource features where setbacks or wind access buffers are required, will be designed to provide sufficient spacing between the turbines to minimize internal wake losses. Given the prevalence for southerly and northerly winds, 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 and other factors dictate the spacing. This is addressed in the permit at III.E.5. Individual, isolated turbine sites may be necessary to minimize Project impacts. Sufficient spacing between turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines.
30. Assuming net capacity factor (NCF) of 38 percent, projected average annual output will vary based on the model and size of turbine selected the actual wind resource and the facility’s operating efficiency. The net annual energy output for the project, as modeled at 200 MW, is expected to be about 603 GWh/yr, at 280 MW the project would produce around 840 GWh/yr. The base energy calculation presented assumes a normal or average wind year. The maximum variation in energy is within +/- 15 percent. Based on the data, one would expect the annual variation in energy at the project site to be within 10 percent of the mean during most years.

Land Rights and Easement Agreements

31. In order to build a wind plant, a developer needs to secure site leases and easement option agreements to ensure access to the site for construction and operation of a proposed project. These lease or easement agreements also prohibit landowners from any activities that might interfere with the execution of the proposed project.
32. Within the project site boundary there are approximately 475 landowners and approximately 50,000 acres of land. EcoHarmony has obtained lease and easement option agreements and/or rights to such agreements with 118 different property owners of 327 parcels totaling approximately 24,750 acres of land within the project site boundary. Land and wind rights will need to encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access roads, meteorological towers, electrical collection system and electric lines located on or along public road rights-of-way.

Site Criteria

33. Minnesota Rules chapter 7854 applies to the siting of Large Wind Energy Conversion Systems. The rules require an applicant to provide a substantial amount of information to allow the PUC to determine the potential environmental and human impacts of the

proposed project and whether the project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Minn. Rules Parts 7854.0500 through 7854.0600. The following analysis addresses the relevant criteria that are to be applied to a LWECS project.

Human Settlement, Public Health and Safety

34. The site is in an area of relatively low population density, approximately 24 people per square mile, which characteristic of rural areas throughout southeastern Minnesota. EcoHarmony has established a minimum setback of 1,000 feet to any residence, whether that landowner is a participating or a non-participating landowner. EcoHarmony will also be required to set back its turbines a minimum of five rotor diameters (1,265 to 1,655 feet) on the prevailing wind axis from non-participating landowner's property lines and three rotor diameters on the non-prevailing wind axis (759 to 993 feet). EcoHarmony's proposed project design will be required to comply with the Minnesota Pollution Control Agency (PCA) noise standards. As a result, the impact of the proposed LWECS on human settlement, public health and safety will be minimal. The site permit, at part III.C and III.M.1 has conditions for setbacks from residences. The proposed wind turbine layout will meet or exceed those requirements. The proposed project is not expected to affect any water wells (used, unused or unsealed) or any rural water system that services the area.
35. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.
36. EcoHarmony will coordinate with the Federal Aviation Administration (FAA) to identify and address any potential air hazards that may be created by the Project. The project will comply with the Federal Aviation Administration requirements with respect to lighting. See site permit condition III.E.4. The only airport in the area is the Preston/Fillmore County airport, which is approximately 3.5 miles north of the project boundary and more than 4 miles from any potential turbine location. The Hammervold Landing Strip located in Section 34 of Harmony Township is a small and seldom used airstrip about 0.5 miles from the project boundary and approximately two miles from any potential turbine site.
37. The Permittee will provide security during construction and operation of the project, including fencing, warning signs, and locks on equipment and facilities. The Permittee will also provide landowners and interested persons with safety information about the project and its facilities. See site permit condition III.B.15.
38. In winter months ice may accumulate on the wind turbine blades when the turbines are stopped or operating very slowly. Furthermore, the turbine 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.

39. Each turbine will be clearly labeled to identify each unit and a map of the site with the labeling system will be provided to local authorities as part of the fire protection plan. See permit condition III.B.17.

Noise

40. Background noise levels in the Project Area are typical of those in a rural setting, where existing nighttime noise levels are commonly in the low to mid-30 dBA. The dBA scale represents A-weighted decibels based on the range of human hearing. Higher levels exist near roads and other areas of human activity. Wind conditions in the Project Area also tend to increase ambient noise levels when the wind is blowing.
41. Noise levels predicted by noise modeling program, such as Windfarmer, will be compared to the Minnesota Pollution Control Agency Daytime and Nighttime L10 and L50 Limits as stated in Minn. Rule 7030.0040. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conversation requirements for receivers within areas grouped according to land activities by the Noise Area Classification (NAC) system established in Minn. Rule. 7030.0050. The NAC-1 was chosen for receivers in the Project Area since this classification includes farm houses as household units. Daytime and nighttime limits for this classification are (1) L50 limit of 60 dBA and L10 limit of 65 dBA in daytime, and (2) L50 limit of 50 dBA and L10 limit of 55 dBA at nighttime. The nighttime L50 limit of 50 dBA is the most stringent limit.
42. Wind turbines blades, when in motion, do generate a perceptible sound or noise. The level of sound (noise) varies with the speed of the turbine and the distance of the listener or receptor from the turbine. On relatively wind days, the turbines create more noise; however, the ambient or natural wind noise levels tend to override the turbine noise as distance from the turbine increases.
43. During the initial public comment period which closed on May 20, 2009, and at the November 2009 hearing, members of the public expressed concerns about possible health effects of low frequency vibrations and sound from wind turbines. In late February 2009, OES requested a “white paper” from the Minnesota Department of Health (MDH) evaluating possible health effects associated with low frequency noise vibrations and sounds arising from large wind energy conversion system (LWECS). A commenter on another wind project, the Lakeswind Wind Power Plant, in Clay, Becker and Ottertail counties, also wrote to the Commissioner of MDH to ask for an evaluation of health issues related to exposure to low frequency sound energy generated by wind turbines. In March 2009, MDH agreed to evaluate health impacts from wind turbine noise and low frequency vibrations. The MDH released its “white paper” on the “Public Health Impacts of Wind Turbines on May 22, 2009. This report is available online at: <http://energyfacilities.puc.state.mn.us/documents/Public%20Health%20Impacts%20of%20Wind%20Turbines.%205.22.09%20Revised.pdf>.

44. In a letter to Mr. and Ms. Anderson, (See OES Exhibit 12 in Docket 08-573) dated August 13, 2009, MDH Commissioner, Sanne Magnan, M.D., Ph.D, responded to specific questions posed by Mr. Anderson as follows:

Are current standards in Minnesota safe? Regulatory standards protect health and safety, but whether for air, water or noise, regulators do not set “bright line” standards without also considering cost, technical difficulties, possible benefit and alternatives. No regulatory standard offers absolute safety. The Minnesota Department of Health can evaluate health impacts, but it is the purview of regulatory agencies to weigh these impacts against alternatives and possible benefits.

Are the proponents of wind turbine syndrome mistaken? As noted in the “White Paper,” the evidence for wind turbine syndrome, a constellation of symptoms postulated as mediated by the vestibular system, is scant. Further, as also noted, there is evidence that the symptoms do not occur in the absence of perceived noise and vibration. The reported symptoms may or may not be caused by “discordant” stimulation of the vestibular system.

Does more study of adverse effects need to be undertaken? More study may answer questions about the actual prevalence of unpleasant symptoms and adverse effect under various conditions such as distance to wind turbines and distribution of economic benefit. However, there is at present enough information to determine the need for better assessment of wind turbine noise, especially at low frequencies. Such assessments will likely be beneficial for minimizing impacts when projects are sited and designed. Also, even without further research, there is evidence that community acceptance of projects, including agreement about compensation of within project areas, will result in fewer complaints. Therefore, more research would be useful, but the need will have to be balanced against other research needs.

45. Cumulative noise impacts to nearby residents and other potentially affected parties will be factored into the turbine micro-siting process. EcoHarmony must ensure compliance with PCA noise standards. See permit condition III.E.3.
46. EcoHarmony has evaluated both noise and shadow flicker during the planning stages of the EcoHarmony West Wind Project to make informed decisions about turbine placement. However, to insure proper placement of the turbines with respect to residences the proposed site permit also requires EcoHarmony to submit a proposal to the Commission for the conduct of a noise study designed to determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. See permit condition III.M.2.

Shadow Flicker

47. During the public comment period and in the public hearing record concern about shadow flicker was also raised. Shadow flicker is described as “a moving shadow on the ground resulting in alternating changes in light intensity.” Shadow flicker computer models 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 model are useful in the design phase of a wind farm. Other than within approximately two rotor diameters from the base of a turbine, 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. In addition, 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. Evidence of flicker effects is hard to find, it is more of a nuisance issue. There are no published standards for shadow flicker and no examples of turbines causing photosensitivity related problems. In Germany, 30 hours of shadow flicker per year is acceptable. The 30 hour number is based on the premise that the sun is shining, the building affected is occupied, the occupants are awake and the turbine is operating. The proposed site permit does not specify shadow flicker limits. However, the setback requirement from residences takes into account shadow flicker disturbances.
49. The proposed site permit at condition III.M.3 requires the Permittee to provide data on shadow flicker impacts and to report on the results of modeling used (if any), assumptions made, and the anticipated levels of impact from wind turbine shadow flicker.

Visual Values

50. The placement of between 83 and 186 wind turbine generators for the EcoHarmony West Wind Project, will affect the appearance of the area. The wind turbines will be mounted on tubular towers that are approximately 262 feet tall. The rotor blades, depending on the turbine model selected will have a diameter of between 253 to 331 feet. The turbine towers and rotor blades will be prominent features on the landscape. There will be intermittent, expansive views of the turbines to passing motorists on highways state highway, county and township roads. Motorists and drivers on local township and county roads may travel within 300 feet of some turbines.

51. The visual impact of the wind turbines will be somewhat reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration. All site permits issued by the Commission require the use of tubular towers; therefore, the turbine towers will be uniform in appearance. Blades used in the proposed project will be white or grey. The wind turbines in this project, while prominent on the landscape, also blend in with the surrounding area. The project site will retain its rural character. The turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.
52. From one perspective, the proposed project might be perceived as a visual intrusion on the natural aesthetic value on the landscape, characterized by up to 187 tubular steel structures approximately 262 feet high, standing on formerly undisturbed high-ground, with 133 to 165 foot long blades blades, for an overall height of between 398 to 428 feet when one blade is in the vertical position. Wind plants have their own aesthetic quality, distinguishing them from other non-agricultural uses. Existing wind plants have altered the landscape elsewhere in Minnesota from agricultural to wind plant/agricultural. This project will modify the visual character of the area. Because wind generation development is likely to continue in Fillmore County, this visual presence will continue to increase as wind development occurs. To date, the presence of the wind turbines in other parts of Minnesota has been well accepted by the people who live and work in those areas.
53. As noted in the ALJ's summary, the Minnesota Department of Natural Resources (DNR) expressed concern regarding the alteration of a historically significant view from the Forestville State Park, based a preliminary view shed analysis prepared by EcoHarmony and discussed with the DNR that indicated that 10 to 15 proposed turbine sites would be visible from the Forestville State Park outlook site. The Forestville State Park outlook site is a frequently visited overlook that represents a presettlement vista of the unique landscape of southeastern Minnesota. The DNR subsequently determined that turbines located north of County Route 44 and west of Kodiak Road may alter the view shed and recommended avoiding the placement of turbines in the northwest corner of the Project area, or coordinating turbine placement with the DNR to avoid visual impacts. The DNR also suggested that, to the extent that fewer turbines are ultimately installed, installation of turbines for the Project be commenced in areas other than the northwest corner of the project area. (See Exhibit 13).
54. EcoHarmony responded to DNR's concerns regarding the Forestville State Park overlook and indicated that the nearest turbine will be approximately three miles away. At that distance, EcoHarmony estimates that "between ten and twenty of the wind turbines will be partially visible above the tree line from an observation deck facing the southeast." As to other proposals by the DNR, EcoHarmony responded as follows:
- EcoHarmony has met with the DNR to discuss its concern and will continue to meet with the DNR during the micrositing process as the precise locations for turbines are selected. However, it is simply not going to be possible to avoid having some turbines be

visible from certain locations in the Park. Significantly, the turbines will not be visible from most locations in the Park and not in directions other than southeast.

There are other countervailing factors that must be taken into account besides DNR's desire that its Park visitors no see wind turbines while looking over the parkland. Private landowners have the right to install wind turbines on their property. The DNR cannot deprive these landowner of their rights simply because Park visitors may be able to see them.

Further, the State and EcoHarmony are also interested in making efficient use of the wind resources. The law requires the Commission to not only consider environmental impacts but to site wind projects to make efficient use of the wind resource. Minn. Stat. section 216F.03. Elimination of locations to protect a view shed could make the project less efficient from an energy standpoint.

55. The DNR does not have any view shed or scenic easements on lands outside of the Forestville State Park that provide for protection of the view on property outside of the park. As EcoHarmony observed, the nearest turbine will be more than three miles from the state park. A permit condition that requires a setback from the Forestville State Park is not warranted. The OES believes that EcoHarmony and DNR can continue to meet and discuss this issue during the micrositing process.
56. Visually, the EcoHarmony West Wind Project will be similar to other LWECs projects located in Mower County or counties in southwestern Minnesota on Buffalo Ridge.

Recreational Resources

57. Recreational opportunities in Fillmore County include hiking, biking, canoeing, fishing, camping, swimming, horseback riding, skiing, hunting, and nature viewing. A DNR bike trail lies between the cities of Harmony and Preston. This trail alignment is located no closer than ½ mile from the Project's signed parcels and will not be physically affected the Project. (Exhibit 1, p.37)
58. The Cherry Grove Blind Valley Scientific and Natural area and its adjacent Cherry Grove Wildlife Management Area, are approximately four miles to the west of the Project's western boundary and will not physically be impacted by the Project. (Exhibit 1, p.37).
59. Neither turbine nor access roads will be sited in proximity to navigable waterways or trout streams; and those features will not be impacted by the Project. At least five rotor diameters (RD) on the prevailing wind axis and at least 3 RD on the non-prevailing wind from WMAs or local parks are required. See permit condition III.C.4. Turbine operations are not expected to directly affect the natural areas in any material way and no adverse impact on wildlife management areas or practices is expected.

Public Services and Infrastructure

60. The proposed project will have many miles of underground cables for the collector lines on private property within the wind farm. The underground cables will be installed in a trench that is at least 48 inches in depth. Most of the underground electric circuits will parallel existing turbine maintenance roads or public road rights-of-way. However, some of these underground circuits will cross private rights-of-way. EcoHarmony will locate the underground cable layout in a manner that meets affected landowner requirements, minimizes impact to the environment and achieves required economics. Above ground cable vaults measuring, approximately 48 inches by 60 inches, will be installed where underground cable circuits intersect. The vaults will be installed in a manner to minimize visual impact, avoid interference with intended land use, and ensure the public is protected. Where appropriate, posts will be installed adjacent to the underground cable vaults to minimize damage by farm equipment or vehicles. Cable circuits will be installed underneath public rights-of-way in compliance with road permits received from appropriate public authorities. Placement of collector and feeder lines is addressed in the site permit at III.E.7 and 8. The proposed wind farm is expected to have a minimal effect on the existing infrastructure. (Exhibit 1, p 34-36).
61. The project will require the use of public roads to deliver construction supplies and materials to the work site. Site permit condition III.B.8. addresses this topic. EcoHarmony has met with county and township road authorities to initiate discussion of the project's impact on their roads. EcoHarmony, in consultation with road authorities, will develop a formal Transportation Plan for the project's construction. This plan will identify the roads proposed for use in constructing the project, the number, size and weight of vehicles and loads proposed to access these roads, and the road improvements that are necessary both before and after the project construction is complete. The Transportation Plan will also include a schedule for the delivery of materials and equipment for the project and provide contact information for individuals involved with the overall logistics of the project's construction. The Transportation Plan will be reviewed with county, township and state road officials and revised as necessary in response to comments and concerns. EcoHarmony will work with all road officials to ensure that any impacts on the project on the road systems are addressed and resolved to satisfaction. (Exhibit 1, p 34-36).
62. Wear and tear on roads will occur as a result of the transport of heavy equipment and other materials. The site permit at III.B.8, addresses road damages. Construction of the project requires the addition of access roads that will be located on private property. The access roads will be routed along the wind turbine strings, fence lines, and field edges to minimize disturbance to agricultural activities. The typical access road will be 15 to 20 feet in width and covered in Class 5 gravel (or similar material). The access roads will be low profile roads to allow for the movement of agricultural equipment. The site permit at III.B. 8 (b) addresses this topic. During operation and maintenance of the wind plant, operation and maintenance crews, while inspecting and servicing the wind turbines, will use access roads. Periodic grading and maintenance activities will be used to maintain road integrity. The Permittee may do this work or contract it out.

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

Community Benefits

66. The EcoHarmony West Wind Project will pay a Wind Energy Production Tax to the county and townships of several hundred thousand dollars or more per year. Landowners with turbine(s) and/or wind easements on their property will also receive payments from the Permittee.
67. To the extent that local workers and local contractors are capable, qualified, and available, EcoHarmony will seek to hire them to construct the proposed project. The hiring of local people will expand employment opportunities in this area of the state and keep money in the local economy. Once constructed, the project will be staffed with several site technicians and a wind plant supervisor.

Effects on Land-Based Economies

68. The wind turbines and access roads will be located so that the most productive farmland will be left as intact as possible. However, on average each turbine and all associated access roads will permanently displace approximately 0.5 to 1.0 acre of agricultural land. The site permit at III.B. 2., 3., 4., 5., 6., 7., 8(c)., 9., and 10. addresses mitigation measures for agricultural lands. The proposed project does not adversely affect any sand or gravel operations.

Archaeological and Historical Resources

69. EcoHarmony engaged Pathfinder CRM of Spring Gove, Minnesota to prepare an archival report for the project area to include cultural and archaeological considerations. A listing of those identified resources is included in the full Site Permit Application as exhibit 2. (See exhibit 1). The report identified both historical land archaeological resources with in

the project boundary. As EcoHarmony stated in its application: “The final project layout and design will be set to avoid impact to these known resources. In addition, upon final siting of the individual wind turbines and related facilities Pathfinder will perform individual Phase I Archaeological Reviews to ensure that the construction does not compromise any known or unknown cultural or archaeological resources.” (Exhibit 1, p. 37).

70. An archaeology survey is recommended for all the proposed turbine locations, access roads, junction boxes and areas of construction impact for the transmission line to document any previously unrecorded archaeological sites within the project site. The site permit at III. D.2. requires the Permittee to conduct an archaeological reconnaissance survey (Phase I). A Phase I archaeology survey consists of the following tasks: consultation, documentation, and identification. A Phase I survey provides enough information to allow consideration of avoidance if a site is to be impacted by an undertaking and to gather enough information to allow for reasonable recommendations for more detailed work should it be necessary.
71. If any archaeological sites are found during the Phase I survey, their integrity and significance should be addressed in terms of the site’s potential eligibility for placement on the National Register of Historic Places (NRHP). If such sites are found to be eligible for the NRHP, appropriate mitigative measures will need to be developed in consultation with the Minnesota State Historic Preservation Officer (SHPO), the State Archaeologist, and consulting American Indian communities. The site permit (III.D.2.) also requires the Permittee to stop work and notify the Minnesota Historical Society and Commission if any unrecorded cultural resources are found during construction.
72. Comments made at the public hearing by Ms. Huggenvik noted that the Ravine House, listed on the National Register of Historic Places is in the Project Area. The Ravine House is also known as the Daniel Dayton House. This house was noted as being included in archival discussed in the above findings. EcoHarmony in its written response indicated that three turbines will be located south of the location of the Ravine House; the nearest turbine will be over 1800 feet away and the other two turbines are more than 2000 feet from the house. Consequently no impact to the Ravine House is anticipated.

Air and Water Emissions

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

Wildlife

74. The majority of the project area and surrounding landscape is used for agricultural purposes with crop land comprising a significant portion of the vegetative cover. Scattered patches of grasslands, forested hillsides and wetlands make up the remaining wildlife habitat with the project boundary. Base on the geographic range and the habitat available within the project boundary and surrounding area, there are numerous wildlife specie that will occupy this area on a seasonal or year round basis. (Exhibit 1, p. 50).

75. With proper planning neither construction nor operation of the Project is expected to have a significant impact on wildlife. Based on studies of existing wind power projects in the United States and Europe, the only impact of concern to wildlife would primarily be to avian and bat populations. The final report on avian monitoring studies at Buffalo Ridge, Minnesota "Final Report-Avian Monitoring Studies at the Buffalo Ridge, Minnesota Resource Area: Results of a 4-Year Study" (September 2000) identified the following impacts:
- a. Following construction of the wind turbines, there is a reduction in the use of the area within 100 meters of the turbines by seven of 22 species of grassland breeding birds. It was hypothesized that lower avian use may be associated with avoidance of turbine noise, maintenance activities, and less available habitat. The researchers stated "on a large scale basis, reduced use by birds associated with wind power development appears to be relatively minor and would not likely have any population consequences on a regional level." (p. 44)
 - b. Avian mortality appears to be low on Buffalo Ridge, compared to other wind facilities in the United States, and is primarily related to nocturnal migrants. Resident bird mortality is very low and involves common species. The researchers stated that "based on the estimated number of birds that migrate through Buffalo Ridge each year, the number of wind plant related avian fatalities at Buffalo Ridge is likely inconsequential from a population standpoint." (p. iv)
 - c. Bat mortality was also studied at Buffalo Ridge, instigated by bat collision victims found during the avian monitoring studies. The bat study was conducted in 2001 and 2002. ("Bat Interactions with Wind Turbines at the Buffalo Ridge, Minnesota Wind Resource Area," November 2003). The overall conclusion is that bat activity at turbines and the numbers of bat fatalities do not share a statistical relationship. Bat collisions were found to be very rare, given the amount of bat activity documented at the turbines. Most fatalities involved migrating or dispersing bats occur in the fall. Fatality estimates at Buffalo Ridge indicate that the population of bats susceptible to turbine collisions is large, and that the observed number of fatalities "is possibly not sufficient to cause significant, large-scale population declines." (p. 6-1)
76. Mitigation measures are prescribed in the site permit and include but are not limited to: a) a pre-construction inventory/survey of existing biological resources, native prairie, state listed and threatened species and wetlands in the project area (Site Permit III.D.1); b) turbines and associated facilities will not be constructed in wildlife management areas, recreation and state scientific and natural areas or parks (Site Permit III.C.4) and a 5 by 3 rotor diameter setback is provided (Site Permit III.C1). In its permit application EcoHarmony outlined practices it will take to implement and minimize impacts to federal and state-listed species and rare or sensitive habitat in the Project Area during micrositing of the turbines and access roads and the subsequent development and operation of the Project. (Exhibit 1, p 50-51 and exhibit 4 in the full application which is the Natural Resources Consulting, Inc. "NRC" Report on Wetlands, Waterways, Vegetation, and

Wildlife and exhibit 5, which is NRC's Avian Study Plan and Preliminary Results. The site permit has requirements to implement sound water and soil conservation practices during construction and operation of the project throughout the Project's life in order to protect topsoil and adjacent resources and to minimize soil erosion (Site Permit III.B.9). This also applies to any work in proximity to watercourses (Site Permit III.C.5).

77. The November 20, 2009, DNR comment letter submitted to the ALJ also discussed the bird and bat surveys conducted by EcoHarmony. The DNR recommended that EcoHarmony's final bird and bat survey reports, expected in early 2010, be considered when micrositing each turbine. The DNR further recommended that EcoHarmony's micrositing be coordinated with the DNR utilizing information from these reports to avoid impacting local and migratory bird and bat populations. (Exhibit 13).
78. In conjunction with the discussion of avian issues and as noted the ALJ Summary of Testimony at Public Hearings, the potential impact of the Project on avian populations, particularly that of bald eagles, was raised by Christian Frank and Noel Frank, farm owners in Fillmore County. The Franks noted that an active bald eagle nesting site was located in the southwestern portion of section 1 in Bristol Township. The Franks also related observations of eagles using the valley encompassing their family farm for winter habitat. To protect this population, the Franks recommended adoption of a 1-mile setback requirement for all wind turbines from the areas used by bald eagles. The Franks expressed their belief that this setback requirement would affect five proposed wind turbine locations. The Franks also recommended that any micrositing be done in consultation with the DNR and a wildlife biology specialist from the U.S. Fish and Wildlife Service. (Exhibit 11, p. 12-13).
79. EcoHarmony in its response letter stated: As to the potential impact on eagles, EcoHarmony indicated that its consultant, Natural Resources Consulting, Inc., currently studying avian and bat impact, will specifically address the eagle population in that study. EcoHarmony committed to discussing the completed study with both the DNR and the U.S. Fish and Wildlife Service. As to setbacks from eagle roosts, EcoHarmony indicated that its initial turbine siting resulted in setbacks of over one mile from known eagle roosts. (Exhibit 11, p. 15).

Vegetation

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

Soils

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

Geologic and Ground Water Resources

82. The geology of Fillmore County is defined as gently rolling or upland rolling plain. A significant feature of the regional geology is the existence of karstic limestone terrain. Karst landscapes develop where mildly acidic groundwater contacts soluble limestone bedrock. Over long periods of time, this water to bedrock contact can slowly dissolve susceptible faces of carbonate bedrock and create cavities and voids in the bedrock. Such cavities and voids can potentially develop into sinkholes. Comments at the information meeting, written comments, testimony at the public hearing and written comments submitted into the hearing record expressed concerns about locating wind turbines in an area known for karst and the numerous sinkholes that exist or can occur in the project area.
83. To address this concern, Eco Energy Wind contracted with a geotechnical consulting firm, American Engineering Testing, to analyze, evaluate, and plan mitigation for potential issues with the karst topography. AET developed a *Work Plan for Geotechnical Investigation*, which includes but is not limited to the following:

At each of the wind turbine sites, the geotechnical investigation will consist of three phases – (1) a geophysical investigation (electrical resistivity) to explore for voids in the bedrock; (2) followed by soil/bedrock borings to check the results of the electrical resistivity survey; (3) followed by a series of electric cone penetrometer (CPT) soundings if the potential for loose zones in the soil overburden are suspected.
84. AET also describes methods for ensuring that each wind turbine foundation is properly constructed depending on the soil conditions. As EcoHarmony stated in its application at page 45:

The evaluation process will eliminate the selection of potential turbine sites that may be susceptible to sinkhole formation. In addition to the site evaluation, a system to monitor potential ground subsidence at turbine sites will be incorporated into project construction.
85. The proposed site permit incorporates requirements of the *Work Plan for Geotechnical Investigation* as a special condition under part III.M, to insure that turbine placement also considers karst features.

Surface Water and Wetlands

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

Future Development and Expansion

87. Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. In the future, wind turbines used in Freeborn and surrounding counties will consist of several types and sizes supplied by different vendors and installed at different times.
88. While large-scale projects have occurred elsewhere (Texas, Iowa and California), little systematic study of the cumulative impact has occurred. Research on the total impact of many different projects in one area has not occurred. OES EFP staff will continue to monitor for impacts and issues related to wind energy development.
89. The Commission anticipates more site permit applications under Minnesota Statutes section 216F.04 (a). The Commission is responsible for siting of LWECs "in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources." Minnesota Statutes section 216F.03.
90. Minnesota Statutes section 216E.03, subd. 7 requires consideration of design options that might minimize adverse environmental impacts. By using larger turbines, fewer turbines are required, reducing siting needs for turbines and related facilities. Turbines must also be designed to minimize noise and aesthetic impacts. Buffers between strings of turbines are designed to protect the turbines' production potential. The site permit also provides for buffers between adjacent wind generation projects to protect production potential. See site permit at III.C.1.
91. The location and spacing of the turbines are critical to the issues of orderly development and the efficient use of wind resources. Turbines are likely to be located in the best winds, and the spacing dictates, among other factors, how much land area the project occupies. There is strong public support for orderly development.
92. One efficiency issue is the loss of wind in the wake of turbines. When wind is converted to rotational energy by the blades of a wind turbine, energy is extracted from the wind. Consequently, the wind flow behind the turbine is not as fast and is more turbulent than the free-flowing wind. This condition persists for some distance behind the turbine as normal wind flow is gradually restored. If a turbine is spaced too close downwind of another, it produces less energy and is less cost-effective. This is the wake loss effect. If the spacing is too far, wind resources are wasted and the projects' footprint on the land is unnecessarily large.
93. For this project, turbine spacing will try to maximize the use of the available wind resources and minimize wake and array losses within the topographical context of the site. Site topography, natural resource features, setback requirements and a host of other

factors are expected to result in a turbine design layout of turbines running parallel to each other and perpendicular to the prevailing wind. In some places, it is expected that the site will use shorter strings or clusters of and possibly isolated turbines locations within the site. The objective is to capture the most net energy possible from the best available wind resource. Allowing for setbacks from roads and residences and avoiding sensitive areas, EcoHarmony's nominal turbine spacing is expected to be 3 rotor diameters in the non-prevailing wind directions and five or more rotor diameters in the prevailing wind directions, northwest-southerly direction, with respect to the predominant energy production directions. Given the prevalence for southerly winds, the spacing between turbines will be greater in the prevailing winds in the northwest-southerly direction for the EcoHarmony West Wind Project Bent Tree Wind Project. EcoHarmony does not expect significant wake loss.

94. Other factors that lead to energy production discounts include turbine availability, blade soiling, icing, high wind hysteresis, cold weather shutdown, electrical efficiency and parasitic. Total losses typically range from 12 to 16 percent.

Maintenance

95. Maintenance of the turbines will be on a scheduled, rotating basis with one or more units normally off for maintenance each day, if necessary. Maintenance on the interconnection points will be scheduled for low wind periods. The EcoHarmony West Wind Project will be staffed with several wind technicians and a wind plant supervisor. An operations and maintenance facility will also be built near Harmony or in the project area. The operation and maintenance facility will be permitted by the local unit of government.

Decommissioning and Restoration

96. EcoHarmony expects that the life of the Project will be no less than 30 years. The land easement documents obtained provide for this 30-year life. Decommissioning and restoration are expected to be performed within 12 months of the end of the 30-year project life. EcoHarmony or the owner of the project may also re-apply for a LWECs site permit and continue operation of the Project. LWECs site permit renewal may be under a new long-term power purchase agreement (PPA), merchant operation of the Project, or replacement and re-powering of the Project.
97. Decommissioning activities will include (1) removal of all wind turbine components and towers; (2) removal of all pad mounted transformers; (3) removal of all above-ground distribution facilities; (4) removal of foundations; and (5) removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible. The Permit (III.G.1.) requires the Permittee to submit a Decommissioning Plan to the PUC prior to commercial operation. The Permit (III.G.2.) addresses site restoration and paragraph (III.G.3.) addresses turbines abandoned prior to termination of operation of the LWECs.

98. The cost of decommissioning will be the responsibility of the project owner. A decommissioning fund will be put in place starting in year seven with \$25,000 per turbine put aside, and every three years this amount will be adjusted for inflation. Decommissioning is required as part of the land easement agreements that will be recorded documents in Fillmore County. The owner of the project at the end of the 30 year life will have legal responsibility to decommission the project.

Site Permit Conditions

99. All of the above findings pertain to the Applicant's requested permit for a 280 megawatt wind project.
100. Most of the conditions contained in this site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Environmental Quality Board and the Public Utilities Commission. Comments received by the Commission have been considered in development of the site permit. Minor changes and special condition additions that provide for clarification or additional requirements have been made.
101. The site permit contains conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning and all other aspects of the Project.

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

CONCLUSIONS OF LAW

1. Any of the foregoing findings which more properly should be designated as conclusions are hereby adopted as such.
2. The Minnesota Public Utilities Commission has jurisdiction under Minnesota Statute 216F.04 over the site permit applied for by EcoHarmony West Wind, LLC, for the 280 megawatt EcoHarmony West Wind Project.
3. The EcoHarmony West Wind, LLC, application for a site permit was properly filed and noticed as required by Minnesota Statutes 216F.04 and Minnesota Rules 7854.0600 subp 2 and 7854.0900 subp 2.
4. The Minnesota Public Utilities Commission has afforded all interested persons an opportunity to participate in the development of the site permit and has complied with all applicable procedural requirements of Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 7854.

5. The Minnesota Public Utilities Commission is the agency directed to carry out the legislative mandate to site LWECS in an orderly manner compatible with environmental preservation, sustainable development and the efficient use of resources. The proposed 280 megawatt LWECS EcoHarmony West Wind Project will not create significant human or environmental impacts and is compatible with environmental preservation, sustainable development, and the efficient use of resources.
6. The Minnesota Public Utilities Commission has the authority under Minnesota Statutes section 216F.04 to establish conditions in site permits relating to site layout, construction and operation and maintenance of an LWECS. The conditions contained in the site permit issued to EcoHarmony West Wind, LLC, for the EcoHarmony West Wind Project are appropriate and necessary and within the Minnesota Public Utilities Commission's authority.
7. In accordance with Minnesota Rule 7854.0500 Subp.2., a site permit may not be issued until the certificate of need or other commitment requirement has been satisfied.

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

ORDER

A LWECS Site Permit is hereby issued to EcoHarmony West Wind, LLC, to construct and operate the 280 megawatt EcoHarmony West Wind Project in Fillmore County in accordance with the conditions contained in the site permit and in compliance with the requirements of Minnesota Statute 216F.04 and Minnesota Rules Chapter 7854 for PUC Docket No. IP-688/WS-08-973.

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

BY THE ORDER OF THE COMMISSION



Burl W. Haar
Executive Secretary

(S E A L)

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STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

LARGE WIND ENERGY CONVERSION SYSTEM

SITE PERMIT

FOR THE

ECOHARMONY WEST WIND PROJECT

IN

FILLMORE COUNTY

ISSUED TO

ECOHARMONY WEST WIND, LLC

DOCKET NO. IP-6688/WS-08-973

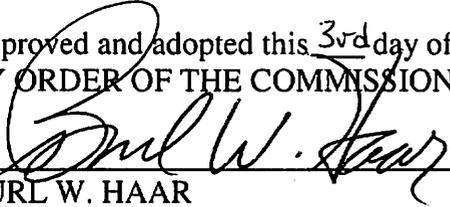
In accordance with Minnesota Statutes Section 216F.04, this Site Permit is hereby issued to:

EcoHarmony West Wind, LLC

The Permittee is authorized to construct and operate up to a 280 Megawatt Large Wind Energy Conversion System on the site identified in this Site Permit and in compliance with the conditions contained in this Permit.

This Permit shall expire on January 31, 2040.

Approved and adopted this 3rd day of Feb. 2010
BY ORDER OF THE COMMISSION


BURL W. HAAR
Executive Secretary

(S E A L)

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I. SITE PERMIT

This Site Permit for a Large Wind Energy Conversion System (LWECS) authorizes EcoHarmony West Wind, LLC, (hereinafter "Permittee") to construct the EcoHarmony West Wind Project, a 280 Megawatt (MW) nameplate capacity LWECS and associated facilities in Fillmore County, on a site of approximately 24,750 acres in accordance with the conditions contained in this Permit. The project boundary is shown on the map that is attached hereto as Attachment 1.

II. PROJECT DESCRIPTION

The up to 280 MW nameplate capacity LWECS authorized to be constructed in this Permit (EcoHarmony West Wind Project) will be developed and constructed by the Permittee. The Project will consist of between 93 to 187 wind turbine generators ranging in size from 1.5 to 3.0 MW having a combined nominal nameplate capacity of approximately 280 MW. Associated facilities will include wind turbine access roads, underground collection lines, SCADA wiring, feeder lines, pad mounted turbine transformers, and meteorological towers. Turbines are interconnected by communication and underground electrical power collection facilities within the wind farm that will deliver wind-generated power to the collection substation. Power will ultimately be delivered from the EcoHarmony West Project substation to a new EcoHarmony switching station that will tie into a ITC owned 161 kV transmission line southeast of Harmony.

III. CONDITIONS

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

A. GENERAL CONSTRUCTION CONDITIONS

1. SITE PLAN

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

Commission of any turbines that are to be relocated before the turbine is constructed on the new site and demonstrate compliance with the setbacks and site layout restrictions required by the permit.

2. FIELD REPRESENTATIVE

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

3. PRECONSTRUCTION MEETING

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

4. NOTICE OF PERMIT CONDITIONS

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

B. MITIGATION MEASURES

1. SITE CLEARANCE

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

2. TOPSOIL PROTECTION

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

3. SOIL COMPACTION

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

4. LIVESTOCK PROTECTION

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

5. FENCES

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

6. DRAINAGE TILES

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

7. EQUIPMENT STORAGE

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

8. ROADS

(a) Public Roads

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

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

(b) Turbine Access Roads

The Permittee shall construct the smallest number of turbine access roads it can. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class 5 gravel or similar material. Access roads shall not be constructed across streams and drainage ways without required permits and approvals from the Minnesota Department of Natural Resources (DNR), United States Fish and Wildlife Services (USFWS), and/or United States Army Corps of Engineers (USACOE). When access roads are constructed across streams and drainage ways, the access roads shall be designed in a manner so runoff from the upper

portions of the watershed can readily flow to the lower portion of the watershed. Access roads shall also be constructed in accordance with all necessary township, county or state road requirements and permits.

(c) Private Roads

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

9. SOIL EROSION AND SEDIMENT CONTROL

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

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

10. CLEANUP

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

11. TREE REMOVAL

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

12. RESTORATION

The Permittee shall, as soon as practical following construction of each turbine, considering the weather and preferences of the landowner, restore the area affected by any LWECS activities to the condition that existed immediately before construction began, to the extent possible. The time period may be no longer than twelve months after completion of construction of the turbine, unless otherwise negotiated with the landowner. Restoration shall be compatible with the safe operation, maintenance, and inspection of the LWECS.

13. HAZARDOUS WASTE

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

14. APPLICATION OF HERBICIDES

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

15. PUBLIC SAFETY

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

16. FIRE PROTECTION

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

17. TOWER IDENTIFICATION

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

C. SETBACKS

1. WIND ACCESS BUFFER

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

2. RESIDENCES

Wind turbine towers shall not be located closer than 500 feet from the nearest residence, or the distance required to comply with the noise standards for Noise Area Classification 1, established by the MPCA (paragraph III.E.3), whichever is greater.

3. ROADS

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

4. WILDLIFE MANAGEMENT AREAS

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in Waterfowl Production Areas, State Wildlife Management Areas or Scientific and Natural Areas or in county parks and shall also comply with the setbacks of III.C.1.

5. WETLANDS

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

6. NATIVE PRAIRIE

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

7. SAND AND GRAVEL OPERATIONS

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner with notice given to the owner of the sand and gravel operation.

D. PRECONSTRUCTION SURVEYS

1. BIOLOGICAL INVENTORY/SURVEY

The Permittee, in consultation with DNR and Commission, shall conduct a pre-construction inventory of existing, if any, native prairies, wetlands, Creek, CRP lands, publically owned (county, state and federal) conservation lands and any other biologically sensitive areas within the site and assess the presence of state- or federally-listed or threatened species. The results of the survey shall be submitted to the Commission and DNR prior to the commencement of construction.

2. ARCHAEOLOGICAL RESOURCES

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

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

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

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

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

3. INTERFERENCE

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

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

E. SITE LAYOUT RESTRICTIONS

1. WIND TURBINE TOWERS

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

2. METEOROLOGICAL TOWERS

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

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

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

3. NOISE

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

4. FEDERAL AVIATION ADMINISTRATION

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

5. TURBINE SPACING

The turbine towers shall be constructed within the site boundary as shown in Attachment 1. The turbine towers shall be spaced no closer than 3 RD in the non-prevailing wind directions and 5 RD on the prevailing wind directions. If required during final micro siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

6. FOOTPRINT MINIMIZATION

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

7. ELECTRICAL CABLES

The Permittee shall place electrical lines, known as collectors, and communication cables underground when located on private property. Collectors and cables shall also be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner. This paragraph does not apply to feeder lines.

8. FEEDER LINES

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

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

F. STUDIES

1. WAKE LOSS STUDIES

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

2. NOISE

On request of the Commission, the Permittee shall submit a proposal to the Commission for the conduct of a noise study. Upon the approval of the Commission, the Permittee shall carryout the study. The study shall be designed to determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds.

G. DECOMMISSIONING/RESTORATION/ABANDONMENT

1. DECOMMISSIONING PLAN

Prior to commercial operation, the Permittee shall submit to the Commission a Decommissioning Plan documenting the manner in which the Permittee anticipates decommissioning the Project in accordance with the requirements of Minnesota Rules part 7836.0500, subp.13. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its

requirements to properly decommission the Project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

2. SITE RESTORATION

Upon expiration of this Permit, or upon earlier termination of operation of the LWECS, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables, foundations, buildings and ancillary equipment to a depth of four feet. A LWECS shall be considered a discontinued use after one year without energy production, unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the LWECS to service. To the extent possible the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner requesting that one or more roads, or portions thereof, be retained. Any agreement for removal to a lesser depth or for no removal shall be recorded with the county and shall show the locations of all such foundations. All such agreements between the Permittee and the affected landowner shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months after expiration.

3. ABANDONED TURBINES

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

H. REPORTING

1. PROJECT ENERGY PRODUCTION

The Permittee shall submit a report no later than February 1st following each complete year of project operation. The report shall include: a) the rated nameplate capacity of the permitted LWECS project; b) the total monthly energy generated by the LWECS in Megawatt Hours; c) the monthly capacity factor; d) yearly energy production and capacity factor; e) the total energy curtailed in Megawatt Hours, if available; and f) any other information reasonably requested by the Commission. This information will be considered public and must be submitted electronically.

2. WIND RESOURCE USE

The Permittee shall upon the request of the Commission report to the Commission on the monthly energy production of the Project and the average monthly wind speed collected at one permanent meteorological tower selected by the Commission during the preceding year or partial year of operation. The Permittee shall report to the Commission the following average hourly data for each hour of commercial operation in printed format or electronic format capable of computerized analysis as specified by the Commission. That data entails:

(a) The power output of each turbine;

(b) The wind speed and direction measured at all monitored heights at any temporary and permanent meteorological towers, connected to the SCADA system, owned or operated by the Permittee, in or within three miles of the Project site boundary; and

(c) Temperature and any other meteorological parameters recorded at one permanent meteorological tower selected by the Commission.

The report shall include copies of any project production reports filed with the Midwest Renewable Energy Tracking System (M-RETS), Midwest Independent System Operator (MISO), Midwest Area Power Pool (MAPP), the Federal Energy Regulatory Commission (FERC), or any other public regulatory agency. The Permittee shall describe the operational status and availability of the Project and any major outages, major repairs, or turbine performance improvements occurring in the previous year.

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

3. EXTRAORDINARY EVENTS

Within 24 hours of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, collector or feeder line failure, injured LWECS worker or private person, kills of migratory, threatened or endangered species, or discovery of a large number dead birds or bats of any variety on site. In the event of avian mortality the DNR shall also be notified within 24 hours. The Permittee shall, within 30 days of the occurrence, submit a report to the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

4. COMPLAINTS

Prior to the start of construction, the Permittee shall submit to the Commission the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the Commission all complaints received concerning any part of the LWECS in accordance with the procedures provided in Attachments 2 and 3 of this Permit.

I. FINAL CONSTRUCTION

1. AS-BUILT PLANS AND SPECIFICATIONS

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

2. FINAL BOUNDARIES

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this Project. If done, this Permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this Permit.

3. EXPANSION OF SITE BOUNDARIES

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

J. AUTHORITY TO CONSTRUCT LWECS

1. WIND RIGHTS

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

2. OTHER PERMIT APPLICATIONS

Nothing in this Permit shall be construed to preclude any other person from seeking a site permit to construct a large wind energy conversion system in any area within the boundaries of the Project covered by this Permit if the Permittee does not hold exclusive wind rights for such areas.

3. PREEMPTION OF OTHER LAWS

Pursuant to Minnesota Statute 216F.07, this Site Permit shall be the only site approval required for the location of this Project, and this Permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments. Nothing in this Permit shall release the Permittee from any obligation imposed by law that is not superseded or preempted by law.

4. POWER PURCHASE AGREEMENT

This Permit does not authorize construction of the Project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project within two years of the issuance of this Permit, the Permittee must advise the PUC of the reason for not having such power purchase agreement or enforceable mechanism. In such event, the

PUC may determine whether this Permit should be amended or revoked. No amendment or revocation of this Permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Statute 216F.05 and Minnesota Rule 7836.1300.

K. MISCELLANEOUS

1. PERIODIC REVIEW

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

2. FAILURE TO COMMENCE CONSTRUCTION

If the Permittee has not completed the pre-construction surveys required in paragraph III.D and commenced construction of the LWECs within two years of the issuance of this Permit, the Permittee must advise the COMMISSION of the reason construction has not commenced. In such event, the Commission shall make a determination as whether this Permit should be amended or revoked. No revocation of this Permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Statute 216F.05 and Minnesota Rule 7854.1300.

3. MODIFICATION OF CONDITIONS

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

- (a) Violation of any condition in this Permit;
- (b) Endangerment of human health or the environment by operation of the facility; or
- (c) Existence of other grounds established by rule.

4. REVOCATION OR SUSPENSION OF THE PERMIT

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

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

In the event the Commission shall determine that it is appropriate to consider revocation or suspension of this Permit, the Commission shall proceed in accordance with the requirements of Minnesota Statute 216F.05 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having the Permit suspended or revoked.

5. PROPRIETARY INFORMATION

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

6. TRANSFER OF PERMIT

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

7. OTHER PERMITS

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

8. SITE MANAGER

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

9. NOTICE TO LOCAL RESIDENTS

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

10. RIGHT OF ENTRY

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

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

11. MORE STRINGENT RULES

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

12. PERMIT COMPLIANCE MEETING

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

L. EXPIRATION DATE

This Permit shall expire on January 31, 2040.

M. SPECIAL CONDITIONS

Special conditions shall take precedence over any of the other conditions of this Permit if there should be a conflict between the two.

1. SETBACK FROM RESIDENCES

The Permittee shall fulfill its commitment to provide a minimum setback of 1,000 feet for all turbine towers to any resident, irrespective of whether that landowner is a participating or non-participating landowner. Adoption of this special condition is based on facts associated with this docket and provides no precedent or prediction regarding the size of set back that the Commission may deem appropriate and reasonable to require in future dockets.

2. NOISE STUDY

The Permittee shall submit a proposal to the Commission for the conduct of a noise study. Upon the approval of the Commission, the Permittee shall carryout the study. The study shall be designed to determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. Adoption of this special condition is based on facts unique to this case and provides no precedent or prediction regarding the information to be requested on noise that the Commission may deem appropriate and reasonable to require in future dockets.

3. SHADOW FLICKER

The applicant shall provide data on shadow flicker impacts at the time it submits the final site plan and profile. Information should include, but not be limited to, the results of modeling used (if any), assumptions made, and the anticipated levels of impact from turbine shadow flicker. Adoption of this special condition is based on facts unique to this case and provides no precedent or prediction regarding the information to be requested on shadow flicker that the Commission may deem appropriate and reasonable to require in future dockets.

4. GEOTECHNICAL INVESTIGATION

In order to minimize and avoid project impacts on karst within the project area the Permittee shall perform a geotechnical investigation at each of the wind turbine sites which will consist of a minimum of three phases that shall include, but not be limited to: (1) a geophysical investigation (electrical resistivity) to explore for voids in the bedrock; (2) followed by soil/bedrock borings to check the results of the electrical resistivity survey; (3) followed by a series of electric cone penetrometer (CPT) soundings if the potential for loose zones in the soil overburdens are suspected.

The evaluation process will be designed to eliminate the selection of potential turbine sites that may be susceptible to sinkhole formation. In addition to the site evaluation, a system to monitor potential ground subsidence at turbine sites shall be incorporated into project construction plans.

The results of the geotechnical investigation shall be submitted to the Commission 21 days prior to any pre-construction meeting.

Adoption of this special condition is based on facts associated with this docket and provides no precedent or prediction regarding information to be requested on geotechnical information that the Commission may deem appropriate and reasonable to require in future dockets.

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

A. Purpose:

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

B. Scope:

This document describes Complaint reporting procedures and frequency.

C. Applicability:

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

D. Definitions:

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

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

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

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

E. Complaint Documentation and Processing:

1. The Permittee shall document all Complaints by maintaining a record of all applicable information concerning the Complaint, including the following:

- a. Name of complainant, address, phone number, and e-mail address.
 - b. Precise property description or parcel number.
 - c. Name of Permittee representative receiving Complaint and date of receipt.
 - d. Nature of Complaint and the applicable Site Permit conditions(s).
 - e. Activities undertaken to resolve the Complaint.
 - f. Final disposition of the Complaint.
2. The Permittee shall designate an individual to summarize Complaints for substantial to the Commission. This person's name, phone number and e-mail address shall accompany all complaint submittals.
 3. A Person presenting the Complaint should to the extent possible, include the following information in their communications:
 - a. Name, address, phone number, and e-mail address.
 - b. Date
 - c. Tract or parcel
 - d. Whether the complaint relates to (1) a Site Permit matter, (2) a LWECS and associated facility issue, or (3) a compliance issue.

F. Reporting Requirements:

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

Immediate Reports: All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to Wind Permit Compliance, 1-800-657-3794, or by e-mail to: DOC.energypermitcompliance@state.mn.us, or. Voice messages are acceptable.

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

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

G. Complaints Received by the Commission or OES:

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

H. Commission Process for Unresolved Complaints:

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

I. Permittee Contacts for Complaints:

Mailing Address: Complaints filed by mail shall be sent to one of the addresses below:

<p>EcoEnergy P.O. Box 95 725 Main Avenue North Harmony, MN 55939</p> <p>Tel: 507-886-6570</p> <p>Email Address: dmiller@ecoenergyllc.com</p>	<p>EcoEnergy 2511 Technology Dr., Suite 110 Elgin, IL 60124</p> <p>Tel: 815-266-4200</p> <p>Email Address:</p>
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**MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLIANCE FILING PROCEDURE
FOR PERMITTED ENERGY FACILITIES**

1. Purpose

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

2. Scope and Applicability

This procedure encompasses all compliance filings required by permit.

3. Definitions

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

4. Responsibilities

A) The permittee shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, Public Utilities Commission, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website:
<https://www.edockets.state.mn.us/EFiling/home.jsp>

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

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

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

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

PERMIT COMPLIANCE FILINGS¹

PERMITTEE: EcoHarmony West Wind, LLC
PERMIT TYPE: LWECS Site Permit
PROJECT LOCATION: Fillmore County
COMMISSION DOCKET NUMBER: IP-6688/WS08-973

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

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

Filing Number	Condition	Description	Due Date	Notes
11	F.1	Wake Loss	Include with site plan or operation studies if performed	
12	F.2	Noise Study	Upon Request	
13	G.1.	Decommissioning Study	Prior to commercial operation	
14	H.1	Project Energy Production	Due 7/15 each year or quarterly	
15	H.2	Wind Resource Use	Within 3 months after Operation or SCADA Access	
16	I.1.	As Builts	Within 60 days of Completions of Construction	
17	J.1.	Wind Rights	Within 30 days of Acquiring. Upon Request.	
18	K.2.	Failure to Start Construction	Within 2 years of Permit Issuance	
19	K.8	Site Manager	Prior to Operation	
20	Complaints	Report	Due Each Month or within 24 hours	
21	M.1	Map and Text	Illustrating Setbacks from Residences and Roads Pre-construction Meeting	
22	M.2	Noise Study Results	Within 18 months of Commercial Operation	
23	M.3	Shadow Flicker	Pre-construction Meeting	
24	M.4	Geotechnical Investigation	21 days prior to Pre-construction Meeting	

STATE OF MINNESOTA)
)SS
COUNTY OF RAMSEY)

AFFIDAVIT OF SERVICE

I, Robin Benson, being first duly sworn, deposes and says:

That on the 3rd day of February, 2010 she served the attached
ORDER.

MNPUC Docket Number: IP-6688/WS-08-973

- XX By depositing in the United States Mail at the City of St. Paul, a true and correct copy thereof, properly enveloped with postage prepaid
- XX By personal service
- XX By inter-office mail

to all persons at the addresses indicated below or on the attached list:

Tricia DeBleeckere
Docketing -
Julia Anderson - OAG
John Lindell- OAG

Robin Benson

Subscribed and sworn to before me,
a notary public, this 3rd day of
February, 2010

Margie DeLahunt
Notary Public



Eco Harmony

08-973

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