

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

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

Chair  
Commissioner  
Commissioner  
Commissioner  
Commissioner

Matthias Weigel  
Project Resources Corporation  
625 8th Ave. SE  
Minneapolis, MN 55414

SERVICE DATE: September 18, 2009

DOCKET NO. IP6603/WS-08-1449

In the Matter of the Lakeswind Power Partners, LLC Application for a Large Wind Energy Conversion System (LWECS) Site Permit for the Lakeswind Wind Power Plant in Becker, Clay and Ottertail Counties

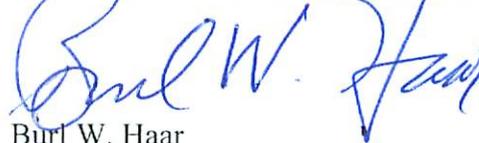
The above entitled matter has been considered by the Commission and the following disposition made:

**Denied the request for a contested case hearing.**

**Adopted the attached Findings of Fact, Conclusions of Law and Order and issued the attached site permit to Lakeswind Power Partners, LLC, for the 60 MW Lakeswind Wind Power Plant in Becker, Clay and Otter Tail Counties.**

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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**STATE OF MINNESOTA  
PUBLIC UTILITIES COMMISSION**

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In the Matter of the Application of  
Lakeswind Power Partners, LLC,  
for a Site Permit for a 60-Megawatt  
Large Wind Energy Conversion  
System and Associated Facilities in  
Becker, Clay and Otter Tail counties

ISSUE DATE: September 18, 2009

DOCKET NO. IP6603/WS-08-1449

FINDINGS OF FACT, CONCLUSIONS  
OF LAW AND ORDER, ISSUING A  
SITE PERMIT TO LAKESWIND  
POWER PARTNERS, LLC, FOR THE  
LAKESWIND WIND POWER PLANT

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The above-entitled matter came before the Minnesota Public Utilities Commission (Commission), pursuant to an application submitted by Project Resources Corporation (PRC) on behalf of Lakeswind Power Partners, LLC, for a site permit to construct, operate, maintain and manage a 60-Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS) and associated facilities in Becker, Clay and Otter Tail counties. PRC applied for the permit on behalf of Lakeswind Power Partners, LLC.

All of the proposed wind turbines and associated facilities will be located in Becker, Clay and Otter Tail counties. Other 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 two permanent meteorological towers. The energy from the proposed 60 MW project will be delivered from the project substation to the Tamarac Substation owned by Great River Energy and located in the northeast corner of section 28 in Scrambler Township in Ottertail County.

**STATEMENT OF ISSUE**

Should Lakeswind Power Partners, LLC, be granted a site permit under Minnesota Statutes section 216F.04 to construct a 60 MW Large Wind Energy Conversion System in Becker, Clay and Otter Tail counties?

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

## FINDINGS OF FACT

### Background and Procedure

1. On January 21, 2009, PRC on behalf of Lakeswind Power Partners, LLC, filed a complete application with the Public Utilities Commission for up to 60 megawatts of nameplate wind power generating capacity identified as the Lakeswind Wind Power Plant in Becker, Clay and Otter Tail counties. (Exhibit 1).
2. OES EFP staff reviewed and determined that the January 21, 2009, application complied with the application requirements of Minnesota Rules, part 7836.0500. In its comments and recommendations to the PUC, dated February 4, 2009, OES EFP staff recommended that the PUC accept the application and issue a draft site permit (Exhibit 2).
3. On February 17, 2009, a PUC Order accepted the application for the Lakeswind Wind Power Plant and associated facilities. On February 17, 2009, the PUC also issued a draft site permit for review and comment (Exhibit 3).
4. OES EFP staff prepared a notice of “Application Acceptance and Public Information Meeting and Draft Site Permit Availability” to receive comments on the permit application and the draft site permit (PUC Docket # IP6603/WS-08-1449) (Exhibit 4).
5. On March 16, 2009, PRC’s site permit application, draft site permit and notice of application acceptance and public information was distributed to the appropriate federal and state agencies, the Minnesota Historical Society, the auditor of Becker, Clay and Otter Tail counties, County Commissioners and township clerks. Each landowner potentially affected by the proposed project also received a copy of the application, notice of application acceptance and public information meeting, and a copy of the draft site permit (Exhibit 8).
6. The OES published notice of the site permit application, the OES public information meeting and opportunity to comment on the permit application and the draft site permit in Clay County in *THE FORUM*, and *The Hawley Herald, Inc.*, on March 23, 2009 and in Becker County in the *Becker County Record*, on March 18, 2009 (Exhibit 5). The published notice provided: a) location and date of the public information meeting; b) description of the proposed project; c) deadline for public comments on the application and draft site permit; d) description of the PUC site permit review process; and e) identification of the public advisor. The notice published meets the requirements of Minnesota Rules part 7836. 0900 subp2.
7. On March 23, 2009, the OES EFP staff published in the *EQB Monitor* notice of the March 31, 2009, public information meeting, and opportunity to comment on the permit application and the draft site permit, Volume 33, No. 6, March 23, 2009, pages 12-15

- (Exhibit 7). The published notice contained all of the information required by Minnesota Rules part 7836.0900 subp. 1. Notice also appeared on the PUC web site on March 11, 2009, and on eDockets on March 23, 2009.
8. Due to inclement weather and flooding in the Fargo area, the scheduled March 31, 2009, Information Meeting was cancelled and re-scheduled for April 29, 2009.
  9. On April 20, 2009, PRC filed an amendment to their site permit application to enlarge the project boundary (Exhibit7).
  10. On April 7, 2009, a revised Notice of the Public Information Meeting, Application Acceptance and Draft Site permit Availability was re-issued and posted on the PUC web site on April 13, 2009, and published in the *EQB Monitor*, Volume 33, No. 8 on April 20, 2009 (Exhibit 11). The revised notice provided a map with the amended site permit boundary (Exhibit 9).
  11. The revised notice was also published in Clay County in *The Hawley Herald, Inc.* on April 13, 2009, and in *THE FORUM* on April 20, 2009, and in Becker County in the *Becker County Record* on April 22, 2009 (Exhibit 10). These published notices included the amended site permit map.
  12. The OES EFP staff held a public information meeting on April 29, 2009, in Barnesville, to receive comments on the site permit application, and draft site permit. Approximately 140 people attended the meeting. Representatives from PRC were also present. OES EFP staff provided an overview of permitting process and responded to questions about the wind permitting process. OES EFP staff and PRC responded to project specific questions and general questions about wind energy. Questions were asked about access roads, project timing, easement agreements and conditions, location of distribution and feeder lines, and project decommissioning, setbacks from homes, impacts on natural resources, United States Fish and Wildlife recommendations, noise related issues, and production taxes. No significant issues or concerns were raised about the permitting process, the proposed project, or conditions in the draft site permit at the public meeting. The public comment period on the project closed on May 20, 2009.

#### **Written Comments and Letters Received by May 20, 2009**

13. Approximately 27 written comments, some with attachments, were received by the close of the comment period on May 20, 2009. Comments were received from individuals, two state agencies and the applicant. See Exhibit 13 and 14.
  - 13a. Per Anderson, Moorhead, Minnesota, sent a letter dated May 4, 2009, accompanied by several attachments, to the Commission requesting a contested case hearing and a project moratorium. In addition, Mr. Anderson requested a hearing “where citizens ask questions and receive information from representatives of Project Resources Corporation (PRC), the Minnesota Department of Natural Resources (MnDNR) and the U.S Fish and Wildlife Service (USFS) regarding the site permit

application presented to the PUC...” Mr. Anderson asked that PRC provide “a revised turbine siting plan with an opportunity to submit written comment to the PUC.” Mr. Anderson also requested further investigation of health issues associated with wind turbines. See Exhibit 13.

- 13b. Valerie LeClair, on May 20, 2009, expressed concerns about the Lakeswind Wind Power Plant because of the potential for decreased property values, noise, effectiveness, impact on wildlife and quality of life issues. See Exhibit 14.
- 13c. Dwight Mickelson, on May 20, 2009, commented that the “Lakes Wind Project is entirely inappropriate for this part of Clay. If you were looking for one of the most environmentally diverse and picturesque parts of Clay County...this is it.” Mr. Mickelson also commented that growing families, retired people, and hobby farmers, especially in the region of Parke Township to the north of the Lakeswind Project will not receive compensation and that the open flats of Clay County would be more appropriate. See Exhibit 14.
- 13d. Kari Miles (March 28 and 30, 2009), commented about the potential impact of health effects on farmers and that farmers weren’t told of the potential impacts, liability issues, noise, flashing lights, ice throws, property values and quality of life issues. Ms. Miles also commented that putting them in an industrial site is more appropriate. See Exhibit 14.
- 13e. Paul and Kay Ornberg submitted two sets of comments (March 30 and May 19, 2009), and raised several general questions about the project, wind rights, placement of overhead electric lines associated with the project, placement of additional communication towers, lease restrictions, and payment of taxes. Mr. Ornberg also expressed concerns about not knowing the location of the turbines, access roads, size of the turbines, visual and shadow flicker impacts, costs, liability issues, fire, how the review process works and health related issues. See Exhibit 14.
- 13f. Several individuals submitted comments in support of the Lakeswind Project prior to May 20, 2009. Persons indicating support for the project include: Cliff and Linda Bang, John Bergseid (two comments), Wendell and Marine Blatchford, Larry and Diane Blomster, Linda and Ron Ekre, Lisa Gibb, Barb Grunewald, David and Doris Hanson, Marvin Hanson, Lindley Jacobson, Armand and Nonie Swenson, Rod Schultz, Eldon and Margie Raknerud, Raymond Lottie, Jay Roste, and Roger Minch. See Exhibit 13 and 14.
- 13g. The Minnesota Department of Natural Resources (MnDNR), on May 15, 2009, commented with concerns about possible impacts to publicly-owned and privately-owned areas within the project boundary containing high quality plant and animal communities. The MnDNR recommended a site visit with the applicant to develop final turbine siting for the project and methodologies for biological surveys and management plans. See Exhibits 14. PRC continues to correspond with the MnDNR and United States Fish and Wildlife Service (USFWS). See Exhibit 15 and 16.

## **The Permittee**

14. PRC, on behalf of Lakeswind Power Partners, LLC, has been in the process of developing the Lakeswind Wind Power Plant site since 2007. The Lakeswind Power Partners, LLC, Site Permit Application is for a 60 Megawatt LWECs project. The energy produced by the Project will be delivered to the Tamarac Substation located in the northeast corner of the northwest ¼ of the northeast ¼ of Section 28 in Scrambler Township in Otter Tail County. The applicant is in discussions with Minnesota electric utilities for sale of the power. See site permit III.J.4.

## **Project Description**

15. As proposed, the 60-megawatt Lakeswind Wind Power Plant will consist of up to 40 General Electric 1.5-megawatt wind turbine generators or similar turbine mounted on freestanding tubular towers. If wind turbines with a larger nameplate rating are used, which could range from 1.65 to 3.0 MWs, fewer turbines will be needed because the project output will be no more than 60 MW. The proposed turbine model and specifications may change because of turbine availability issues and because the project is now proposed to be built in 2010, rather than 2009.
16. The towers will be 80-meters (262 feet) in height. The blades on the GE wind turbine are 38.5-meters (126 feet) long. Turbine rotor diameter will be 77 meters (253 feet) across. The overall height of the tower, nacelle and blade will be approximately 118.5 meters (389 feet) when one blade is in the vertical position. The project will also include an underground automated supervisory control and data acquisition system (SCADA) for communication purposes. Up to two 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 and overhead electric energy collection system and a project substation. A separate transmission line of an undetermined voltage, ranging from 41.6 kV to 115 kV will be built that connects the project substation to the Tamarac Substation; it is not covered in this docket.
17. The GE Wind 1.5 MW wind turbine is a three bladed, upwind, active yaw, and active aerodynamic control regulated wind turbine with power/torque control capabilities. The rotor utilizes blade pitch regulation and variable speed operation to achieve optimum power output at all wind speeds. The variable speed operation minimizes power and torque spike delivered from the rotor to the drive train resulting in improved long-term reliability. Each turbine is equipped with a wind direction sensor. The wind direction sensor communicates with the computer system, which evaluates the measured wind parameters, and within a specified time interval, activates the yaw drives to align the nacelle to the wind direction.
18. 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 transmission system level.

The applicant is proposing to place the feeder lines on public road rights-of-way where possible. Depending on conditions the feeder lines may be either overhead or underground. All of the proposed feeder lines would connect to the proposed project substation within the site permit boundaries.

19. The blades are 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.
20. 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.
21. All turbines and up to 2 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.
22. Housed inside the fiberglass nacelle that sits on the top of the tower are the generator, brake system, yaw drive system and other miscellaneous components.

### **Site Location and Characteristics**

23. The 60 MW Lakeswind Wind Power Plant site as amended on April 20, 2009, will be located in southwest Becker County, southeastern Clay County, and northwest Otter Tail County (Exhibit 9). The Project site includes portions of four townships. In Becker County, the site includes Sections 19, 29, 30, 31 and 32 of Cormorant Township. In Clay County, the site boundary includes Sections 19, 20, 24, 25, 26, 29, 30 and 32 through 36 of Parke Township and Sections 1 through 5 and 8 through 30 in Tansem Township. In Otter Tail County, the site includes portions of Sections 5, 6 and 19 through 21 in Scrambler Township. The Project boundary encompasses approximately 22,500 acres. As of the date of its application and site permit amendment, the Applicant had obtained lease and easement agreements with most of the landowners within the site.

24. Land use in the project area is mixed and comprised of agriculture/farming, forestry and mining, communication and micro-wave towers and a variety of natural resource features (Blanket Flower Prairie State Scientific and Natural Area, waterfowl production areas, wildlife management area, woodlots, native prairie, lakes and wetlands).
25. Considerable portions of land within the project site is actively farmed for crops and used for pasture. Crops include wheat, barley, oats, sugar beets, sunflowers, soybeans, hay and pasture crops and corn for feeding livestock. According to the MnDNR Division of Lands and Mineral Aggregate Maps, the eastern part of the Clay County site is inferred to contain potentially significant aggregate deposits based on geologic units.
26. Construction of the turbines sites and access roads will involve temporarily disturbing at the most approximately three acres of land per turbine or approximately 120 acres total 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 is approximately 17 acres and for towers and transformers and areas around them about two acres.
27. Wind turbine and road access will be sited to take into account the contours of the land and prime farmland locations to minimize impact. An erosion and sediment control plan and Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the Project and the disturbed areas will be seeded after construction to stabilize the area. The Project will also be subject to the requirements of the NPDES Construction Permit.
28. According to PRC's application the highest elevations in Clay County are on the glacial hills near Rollag, about 1,515 feet above sea level. The eastern third of the county is a complex upland area consisting of short, uneven slopes and many depressions and natural draws. Slopes in this area commonly range from nearly level to steep.

### **Wind Resource Considerations**

29. The wind resource in the counties of Becker, Clay and Otter Tail averages between 7 and 9 meters per second (15.7 to 17.9 miles per hour) in the project area. This is also documented by the Wind Resource Analysis Program (WRAP) Report (2002) prepared by the Minnesota Department of Commerce. The WRAP Report presents wind analysis data from monitoring stations across the state of Minnesota. Regionally, the prevailing wind directions are generally southeast and northwest. Of the annual energy budget, a high percentage results from southerly winds, which are most frequent in the warmer weather months. The north and northwest winds typically occur in winter.
30. For this project the wind turbines will be sited in small 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 PRC'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 north-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, the spacing is widest in the north-south direction. Greater or lesser spacing between the turbines or turbine strings may be used in areas where the terrain dictates the spacing. This is addressed in the permit at III.E.5. Individual, isolated turbine sites may be necessary to minimize Project impacts. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines.

31. The gross annual energy output per turbine is estimated to be approximately 5,244 MWh (megawatt hours) per year. Assuming an efficiency of approximately 85.1 percent when the wind is blowing, the net annual energy output per turbine is expected to be 4,463 MWh. If 40 turbines are used, the project will produce approximately 178,000 MWh per year. 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**

32. 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.
33. PRC has obtained lease and easement option agreements and/or rights to such agreements with landowners for land within the project site boundary necessary for installation of the components of the wind farm. These rights and easements will be used to site the turbines and all associated facilities and provide the necessary wind access buffers and setbacks.

### **Site Criteria**

34. Minnesota Rules chapter 7836 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 7836.0500 through 7836.0600. The following analysis addresses the relevant criteria that are to be applied to a LWECs project.

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

35. The site is in an area of low population density, with little residential, commercial development on the site. There are approximately 110 homes within or adjacent to amended site permit boundary. PRC estimates that the average distance from turbines to

the nearest homes will be between 1,600 to 1,800 feet for project participants and non-participants will be further away. Rollag, a small community, is located approximately one-half north of the site permit boundary. Active gravel pits constitute the major industrial use in the project area and are located on the eastern portion of the proposed site. The foot-print of the gravel operations are expected to expand over the next 30 years. As a result, the impact of the proposed LWECs on human settlement, public health and safety will be minimal. The site permit, at part III.C has conditions for setbacks from residences and roads. The proposed wind turbine layout will meet or exceed those requirements. The proposed project is not expected to affect any water wells (used, unused or unsealed) or any rural water system that services the area.

36. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.
37. PRC has indicated that they will not locate wind turbines within one-half mile of property owned by Per and Sandra Anderson, Dwight Mickelson, Valerie LeClaire, Paul Ornberg and Kari Miles. See permit condition III.M.2.
38. The project will comply with the Federal Aviation Administration requirements with respect to lighting. See site permit condition III.E.4.
39. 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.
40. In winter months ice may accumulate on the wind turbine blades when the turbines are stopped or operating very slowly. Furthermore, the anemometer may ice up at the same time, causing the turbine to shut down during any icing event. As weather conditions change, any ice will normally drop off the blades in relatively small pieces before the turbines resume operation. This is due to flexing of the blades and the blades' smooth surface. Although turbine icing is an infrequent event, it remains important that the turbines are not sited in areas where regular human activity is expected below the turbines or in the immediate proximity during the winter months.
41. 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.
42. Lakeswind Power Partners, LLC, will maintain liability insurance coverage on the project. See PRC response letter (June 2, 2009) in Exhibit 14.

### **Noise**

43. Wind turbines do generate noise. GE Wind and noise consultants suggest a maximum noise threshold of 45 dBA at occupied homes. According to Project Resources sound pressure levels will be well below the Pollution Control Agency noise standard of 50

dBA measured at the closest residence. See Minn. Rules part 7030.0040. See permit condition III.E.3.

### **Visual Values**

44. The placement of up to 40 turbines will affect the appearance of the area. The wind turbines will be mounted on tubular towers that are between 265 to 328 feet tall. The rotor blades will have a diameter of between 254 to 338 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 32 and 34, and local roads. Motorists and drivers on local township and county roads may travel within 300 feet of some turbines.
45. The visual impact of the wind turbines will be reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration. All site permits issued by the PUC require the use of tubular towers; therefore, the turbine towers will be uniform in appearance. See permit condition III.E.1. The turbine towers will be similar in appearance, but larger than, those used in Moorhead on the north east side of town. 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 consistent with existing land use and agricultural practices.
46. 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 40 tubular steel structures approximately 265 feet high or taller, standing on formerly undisturbed ridgelines or high-ground, with 126 foot or longer blades, for an overall height of 389 feet or more 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 add to visual impact of the area. Because wind generation development is likely to continue in Becker, Clay and Otter Tail counties, 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.
47. Several other measures will also be taken to minimize visual intrusion such as: use of low profile access roads, project access roads will avoid cuts and fill, the areas affected by construction will be restored after construction is completed, turbines will not be illuminated unless required by FAA regulations, and the turbine rotor size will require sufficient turbine spacing to minimize wake loss. The visual scale will be similar to the other projects in Minnesota.

## **Recreational Resources**

48. Recreational opportunities in Becker, Clay and Otter Tail counties include hunting, fishing, and snowmobiling, camping, and hiking. There are four wildlife management areas (WMAs) in the vicinity of the Project site. Hunting is permitted in designated Minnesota Department of Natural Resources WMAs, unless otherwise posted. WMAs are also managed to provide wildlife habitat and improve wildlife production. These MnDNR lands were acquired and developed primarily with hunting license fees. WMAs are closed to all-terrain vehicles and horses because of detrimental effects on wildlife habitat.
49. Barnesville WMA is located adjacent to the west of the Project site, Hay Creek WMA is located near the northwest corner of the Project site in Skree Township and the Scrambler WMA is located near the northeast corner of the Project site.
50. The turbines will be noticeable to persons using the WMAs. Turbines will be 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. 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.
51. The Blanket Flower Prairie Scientific and Natural Area is within the site permit boundary and is located in portions of section 11 and 14 in Tansem Township on the east side of the site. Turbines will be at least five rotor diameters from this MnDNR owned land on the prevailing wind axis and three diameters on the non-prevailing wind axis. See site permit III.C.4.
52. Waterfowl Production Areas (WPAs) provide habitat for a vast variety of waterfowl shorebirds, grassland birds, plant, insects and wildlife. WPAs owned by the U.S. Fish and Wildlife Service also provide opportunities for public access and wildlife-dependent recreation such as hunting, wild life watching and photography. These WPAs are either acquired as public land, or protected through perpetual easement, as part of the U.S. Fish and Wildlife Service's National Wildlife Refuge System. There are four WPAs located within the Project site boundary. Turbines will be required to comply with a five by three rotor diameter setback from WPAs. See site permit III.C.4.

## **Infrastructure**

53. The proposed wind farm is expected to have a minimal effect on the existing infrastructure. The proposed project will use underground cables for the collector lines on private property within the wind farm. Feeder lines associated with the project may be overhead or underground. Any aboveground feeder lines, if used, may be wood-pole, typical of wind project feeder lines used elsewhere in Minnesota. Placement of collector and feeder lines is addressed in the site permit at III.E.7. and 8. If a higher voltage line is required (41.6 to 115 kV) to deliver the energy from the wind farm project substation to the Tamarac Substation, several other electrical design options will be evaluated and a separate permit (local or state) may be required for those facilities.

54. 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. Construction of the project requires the addition of several miles 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 or and maintenance activities will be used to maintain road integrity. The Permittee may do this work or contract it out.
55. If access roads must be 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.
56. 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 the project construction to document and mitigate any television reception impacts that might occur. This is addressed in the site permit at III.D.3.
57. 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**

58. The project will provide local tax revenues (approximately 150 – 200 thousand dollars annually) from a production tax on the wind turbines. No significant adverse impact on public services is expected. 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. Landowners with turbine(s) on their property will also receive payments from the Permittee for energy generated by the turbine(s).
59. To the extent that local workers and local contractors are capable, qualified, and available, Lakeswind Power Partners, LLC, 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**

60. The wind turbines and access roads will be located so that the most productive farmland will be left as intact as possible. However, the project will displace approximately 20 acres 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 and Aggregate Industries is a project participant.

### **Archaeological and Historical Resources**

61. A review of the Minnesota State Historic Preservation Office (SHPO) computer database indicates that two recorded archaeological sites are within the project site. Eight historical structures were listed within the Project site.
62. A Phase I 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. A Phase I archaeology survey consists of the following tasks: consultation, documentation, and identification.
63. 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 also requires the Permittee to stop work and notify the Minnesota Historical Society and PUC if any unrecorded cultural resources are found during construction.

### **Air and Water Emissions**

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

### **Animals and Wildlife**

65. 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:

- 65a. 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)
- 65b. 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)
- 65c. 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)
66. Mitigation measures are also prescribed in the site permit and include but are not limited to: a) a pre-construction inventory of existing biological resources, native prairie, state listed and threatened species and wetlands in the project area (Site Permit III.D.1); 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); c) trees and shrubs that are important to the wildlife present in the area will not be disturbed (III.B.11 and III.C.60. In its permit application (Exhibit 1, Section F.18.c. p.41) PRC indicated that it will: implement “best management practices in order to minimize indirect impacts such as the introduction or spread of invasive plant species and during construction to control erosion at the Project site; avoid disturbance of wetlands, streams, native prairie remnants and calcareous fens and nesting bald eagles. 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).

67. PRC recognizes the potential value of ongoing studies after construction of the project to improve scientific knowledge and understanding of avian and wildlife interactions with wind turbines. OES EFP staff, MnDNR and PRC will coordinate activities with respect to any studies that are implemented.

### **Vegetation**

68. No public waters, wetlands or forested land are expected to be 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**

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

### **Surface Water and Wetlands**

70. No towers, access roads or utility lines will 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**

71. Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. In the future, turbines used in Becker, Clay and Otter Tail counties likely will consist of several types and sizes supplied by different vendors and installed at different times.
72. While large-scale projects have occurred elsewhere (California, Texas and Iowa), 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.
73. The PUC anticipates more site permit applications under Minnesota Statutes section 216F.04 (a). The PUC 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.
74. 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.

75. 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.
76. 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.
77. For this project, turbine spacing maximizes use of the available wind resources and minimizes wake and array losses within the topographical context of the site. Site topography, natural resource features and wind resources did not lead to a layout involving long strips of turbines running parallel to each other and perpendicular to the prevailing wind. Instead, 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 setback from roads and residences and avoiding sensitive areas, Project Resources Corporation arrived at a nominal turbine spacing of 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 Lakeswind Project. PRC's wake investigation shows that the estimated wake losses for the proposed Lakeswind Wind Power Plant will be around 4 percent.
78. Other factors that lead to discounts were assumed to be identical for all arrays and include turbine availability (5%); blade soiling (1%), icing (2%), high wind hysteresis (0.01), cold weather shutdown (0.025 %), electrical efficiency (2%), parasitic (1%). Total losses are calculated at 14 to 15 percent.

### **Maintenance**

79. 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 and coordinated with entity purchasing the power. The Lakeswind Wind Power Plant will be staffed with two to three technicians and a wind plant supervisor. An operations and maintenance facility will also be built, but not necessarily on the project site.

## **Decommissioning and Restoration**

80. The estimated decommissioning cost for the Lakeswind Wind Power Plant is \$250,000 in 2008 decommissioning dollars. Decommissioning activities will include (1) removal of all turbines and towers; (2) removal of all pad mounted transformers; (3) removal of all above-ground distribution facilities; (4) removal of foundations to a depth of three feet below grade; and (5) removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible. The Permit requires the Permittee to submit a Decommissioning Plan to the PUC that describes how the Permittee will ensure that the resources are available to pay for decommissioning the project at the appropriate time. Decommissioning funds will be set aside as specific budget item. A set-aside guarantee will be executed on behalf of the project owner with an independent administrator for the funds. See Exhibit 1, page 21.

## **Site Permit Conditions**

81. All of the above findings pertain to the Applicant's requested permit for a 60 megawatt wind project.
82. 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 that provide for clarifications of the draft site permit conditions have been made.
83. 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 Lakeswind Power Partners, LLC, for the 60-megawatt Lakeswind Wind Power Plant.
3. The Lakeswind Power Partners, LLC, application for a site permit was properly filed and noticed as required by Minnesota Statutes 216F.04 and Minnesota Rules 7836.0600 subp 2 and 7836.0900 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 7836.
5. A request for a contested case hearing was filed prior to the close of the comment period. The request for a contested case has been addressed by the Commission in a separate action from the site permit decision.
6. 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 60-megawatt LWECS Lakeswind Wind Power Plant, will not create significant human or environmental impacts and is compatible with environmental preservation, sustainable development, and the efficient use of resources.
7. The Minnesota Public Utilities Commission has the authority under Minnesota Statutes section 216F.04 to establish conditions in site permits relating to site layout and construction and operation and maintenance of an LWECS. The conditions contained in the site permit issued to Lakeswind Power Partners, LLC, for the Lakeswind Wind Power Plant are appropriate and necessary and within the Minnesota Public Utilities Commission's authority.

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

### ORDER

A LWECS Site Permit is hereby issued to Lakeswind Power Partners, LLC, to construct and operate the 60-megawatt LWECS Lakeswind Wind Power Plant in Becker, Clay and Otter Tail counties in accordance with the conditions contained in the site permit and in compliance with the requirements of Minnesota Statute 216F.04 and Minnesota Rules Chapter 7836 for PUC Docket No. IP6603/WS-08-1449.

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 )

This document can be made available in alternative formats (i.e., large print or audio tape) by calling 651.297.4596 (Voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1.800.627.3529 or by dialing 711.

**LARGE WIND ENERGY CONVERSION SYSTEM  
SITE PERMIT  
FOR THE  
LAKESWIND WIND POWER PLANT  
IN  
BECKER, CLAY AND OTTER TAIL COUNTIES  
PUC DOCKET NO. IP-6603/WS-08-1449**

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

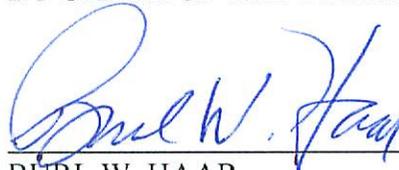
**LAKESWIND POWER PARTNERS, LLC**

Lakeswind Power Partners, LLC, is authorized to construct and operate up to a 60 Megawatt Large Wind Energy Conversion System on the site identified in this Site Permit and in compliance with the conditions contained in this Permit.

This Permit shall expire on December 31, 2039.

Dated: Sept. 18, 2009

BY ORDER OF THE COMMISSION



BURL W. HAAR  
Executive Secretary

(S E A L)

This document can be made available in alternative formats (i.e., large print or audio tape) by calling 651-201-2202 (Voice), 651-297-1200 (TTY). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1.800.627.3529 or by dialing 711.

[www.puc.state.mn.us](http://www.puc.state.mn.us)

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## **I. SITE PERMIT**

This Site Permit for a Large Wind Energy Conversion System (LWECS) authorizes Lakeswind Wind Power Partners, LLC, (hereinafter "Permittee") to construct up to a 60 Megawatt (MW) LWECS and associated facilities in Becker, Clay and Otter Tail Counties, on a site of approximately 22,500 acres in accordance with the conditions contained in this Permit. The site boundary is shown on the map that is attached hereto as Attachment 1.

## **II. PROJECT DESCRIPTION**

The up to 60 MW LWECS authorized to be constructed in this Permit will be owned and operated by Lakeswind Wind Power Partners, LLC. The Project will consist of up to 40 wind turbine generators (or similar utility grade turbines) each with a 1.5 MW capacity and having a combined nominal nameplate capacity of no more than 60 MW. Other turbine models for use include the Siemens 2.3 MW, GE 2.5 MW, and Vestas 3.0 MW or similar turbine. Associated facilities will include wind turbine access roads, underground collection lines, SCADA wiring, feeder lines, pad mounted turbine transformers, and up to two permanent 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 project substation. Power will ultimately be delivered from the Project substation to the Tamarac substation located in Otter Tail County under separate permitting authority.

## **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 PUC 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 PUC 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 PUC of any turbines that are to be relocated before the turbine is constructed on the new site.

## **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 PUC, 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 PUC.

## **3. PRECONSTRUCTION MEETING**

Prior to the start of any construction, the Permittee shall conduct a preconstruction meeting with the person designated by the PUC 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 PUC 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 PUC of such arrangements upon request of the PUC.

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

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

(c) Private Roads

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

**9. SOIL EROSION AND SEDIMENT CONTROL**

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

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

**10. CLEANUP**

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

**11. TREE REMOVAL**

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

**12. RESTORATION**

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

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

### **13. HAZARDOUS WASTE**

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

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

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

### **15. PUBLIC SAFETY**

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

### **16. FIRE PROTECTION**

The Permittee shall prepare a fire protection and medical emergency plan in consultation with the fire department having jurisdiction over the area prior to LWECS construction. The Permittee shall submit a copy of the plan to the PUC 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 PUC.

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

## **7. SAND AND GRAVEL OPERATIONS**

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

### **D. PRECONSTRUCTION SURVEYS**

#### **1. BIOLOGICAL PRESERVATION SURVEY**

The Permittee, in consultation with DNR and other interested parties, shall conduct a pre-construction inventory of existing wildlife management areas, scientific and natural areas, recreation areas, native prairies and forests, wetlands, and any other biologically sensitive areas within the site and assess the presence of state- or federally-listed or threatened species. The results of the survey shall be submitted to the PUC 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 Phase I Archaeology survey for all proposed turbine locations, access roads, junction boxes and other areas of project construction impact to determine whether an archaeological survey is recommended for any part of the proposed Project. The Permittee will contract with a qualified archaeologist to complete such surveys, and will submit the results to the PUC, 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 PUC 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 PUC of such discovery. The Permittee shall not excavate at such locations until so authorized by the PUC 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 PUC and the MHS about the discovery. The PUC and the MHS shall have three working days from the time the agency is notified to conduct an inspection of the site if either agency shall choose to do so. On the fourth day after notification, the Permittee may begin work on the site unless the MHS has directed that work shall cease. In such event, work shall not continue until the MHS determines that construction can proceed.

### **3. ELECTROMAGNETIC INTERFERENCE**

Prior to beginning construction, the Permittee shall submit a plan to the PUC 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 100 meters (328 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.

Up to two permanent meteorological towers are authorized to be constructed for the Project by this Permit. New temporary and permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the

Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on lands the Permittee holds the wind or other development rights.

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

### **3. NOISE**

The wind turbine towers shall be placed such that the Permittee shall comply with noise standards established as of the date of this Permit by the Minnesota Pollution Control Agency at all times at all appropriate locations. The noise standards are found in Minnesota Rules Chapter 7030. 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 PUC, the Permittee shall report to the PUC on compliance with these standards.

## **F. STUDIES**

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

The Permittee shall provide to the PUC 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 PUC any operational wake loss studies conducted on this Project.

### **2. NOISE**

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

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

### **1. DECOMMISSIONING PLAN**

Prior to commercial operation, the Permittee shall submit to the PUC 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 PUC may at any time request the Permittee to file a report with the PUC 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. 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 PUC 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 PUC of any turbines that are abandoned prior to termination of operation of the LWECS. The PUC may require the Permittee to decommission any abandoned turbine.

## **H. REPORTING**

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

The Permittee shall, by July 15 of each year, report to the PUC on the monthly energy production of the Project and the average monthly wind speed collected at one permanent meteorological tower selected by the PUC during the preceding year or partial year of operation. The report shall include copies of any project production reports filed with the 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.

## **2. WIND RESOURCE USE**

Beginning the first full quarter following the commercial operation of the wind farm, the Permittee shall file a quarterly report (due January 15, April 15, July 15, and October 15) with the PUC with 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 PUC. 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 PUC.

After two years of commercial operation, the PUC may reduce or eliminate the requirements of this condition. The provisions of paragraph III.K.5 shall apply to the PUC's review of this data.

## **3. EXTRAORDINARY EVENTS**

Within 24 hours of an occurrence, the Permittee shall notify the PUC 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 PUC 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 PUC the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the PUC 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 PUC 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 PUC 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 PUC 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 PUC. The Permittee may submit to the PUC a request for a change in the boundaries of the site for the LWECS. The PUC 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 PUC 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 PUC.

### **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 with a Minnesota Utility for the sale of the electricity to be generated by the Project to assist said utility in meeting its renewable energy objective under section 216B.1691 or addressing its resource need identified in a current commission-approved or

commission-reviewed resource plan under section 216B.2422. In the event the Permittee does not obtain a power purchase agreement for the 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. 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 PUC 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 PUC, 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 PUC of the reason construction has not commenced. In such event, the PUC may determine whether this Permit should be amended or revoked. No revocation of this Permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Statute 216F.05 and Minnesota Rule 7836.1300.

### **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 PUC 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 PUC'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 PUC.

In the event the PUC shall determine that it is appropriate to consider revocation or suspension of this Permit, the PUC 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 PUC 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 PUC 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 PUC. 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 PUC. If the Permittee desires to transfer this Permit, the holder shall advise the PUC in writing of such desire. The Permittee shall provide the PUC with such information about the transfer as the PUC requires to reach a decision. The PUC 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 PUC upon request.

## **8. SITE MANAGER**

The Permittee shall designate a site manager who shall be the contact person for the PUC to contact with questions about the LWECs. The Permittee shall provide the PUC 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 PUC 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 PUC 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 PUC's issuance of this Site Permit does not prevent the future adoption by the PUC 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 PUC to coordinate permit compliance activities.

#### **L. EXPIRATION DATE**

This Permit shall expire on December 31, 2039.

#### **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. MINIMUM MAINTENANCE PUBLIC AND PRIVATE ROAD RIGHTS-OF-WAY**

Wind turbines may be located closer than 250 feet to public or private road rights-of-way, when authorized by the responsible governmental unit or the entity that owns and maintains the private road.

**2. SETBACKS SPECIFIC PROPERTIES**

Wind turbines shall not be located within one-half mile of property owned by Per and Sandra Anderson, Dwight Mickelson, Valerie LeClaire, Paul Ornberg and Kari Miles on the date of permit issuance and as described:

**Per and Sandra Anderson**

Clay County, Tansem Township .....PIN 28.007.4100  
NE ¼ SE ¼ + 1.4 acre strip alongside.....42.59 acres

Clay County, City of Moorhead .....PIN 58.812.2000  
2727 29<sup>th</sup> Ave S, Moorhead, MN 56560

**Paul and Kay Ornberg**

Clay County, Parke Township.....PIN 24.027.4100  
Govt. Lot 6..... 19.9 acres

**Valerie LeClair**

Clay County, Tansem Township .....PIN 28.027.2200  
NW ¼ NW ¼ + N 4.58 acres of SW ¼ NW ¼.....44.85 acres

**Dwight Mickelson**

Clay County, Parke Township.....PIN 24.010.4470  
S ½ SE ¼ SE ¼.....20 acres

Clay County, Parke Township.....PIN 24.016.2400  
SE ¼ NW ¼.....40 acres

Clay County, Parke Township.....PIN 24.016.3200  
NW ¼ SW ¼ + SW ¼ NW ¼.....78.26 acres

Clay County, Parke Township .....PIN 24.016.4200  
NW ¼ SE ¼ + Lot 3 .....79.1 acres

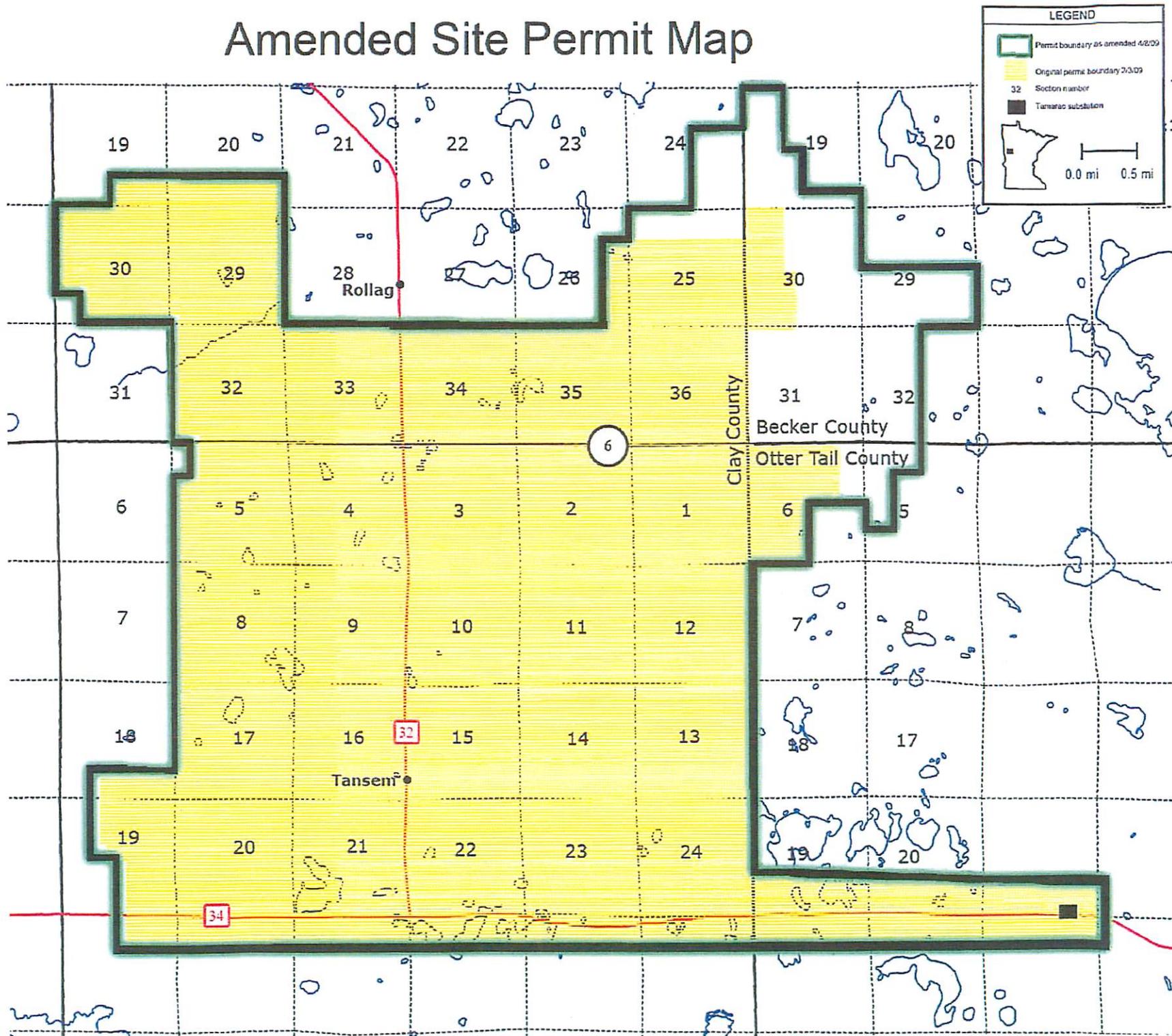
Clay County, Parke Township.....PIN 24.016.3100  
NE ¼ SW ¼ .....40 acres

Clay County, Parke Township.....PIN 58.296.0270  
402 9<sup>th</sup> Street S, Moorhead, MN 56560

**Kari Miles**

Clay County, Parke Township.....PIN 24.016.3100  
NE ¼ SW ¼ .....40 acres

# Amended Site Permit Map



ATTACHMENT 1: SITE PERMIT MAP

**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 (Lakeswind Wind Power Partners, LLC) 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 PUC. 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 LW ECS and associated facility issue, or (3) a compliance issue.

**F. Reporting Requirements:**

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

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

**Monthly Reports:** By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be Filed to Dr. Burl W. Haar, Executive Secretary, PUC 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 PUC or OES:**

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

**H. PUC 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:

ATTN: Lakewind Wind Power Partners, LLC  
625 8<sup>th</sup> Avenue, SE  
Minneapolis, MN 55414  
612-331-1486

**Tel:** 612-331-1486

**Email Address:** paul@projectresources.net

**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 PUC 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 PUC, where the information is required by a PUC site or route permit.

**4. Responsibilities**

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

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

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

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

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

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

**PERMITTEE:** Lakeswind Wind Power Partners, LLC  
**PERMIT TYPE:** LWECS Site Permit  
**PROJECT LOCATION:** Becker, Clay and Otter Tail County  
**PUC DOCKET NUMBER:** IP6603/WS-08-1449

<b>Filing Number</b>	<b>Condition</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>
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	

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

<b>Filing Number</b>	<b>Condition</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>
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	
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 Built	Within 60 days of Completions of Construction	
17	J.1.	Wind Rights	Within 30 days of Acquiring. Upon Request.	

<b>Filing Number</b>	<b>Condition</b>	<b>Description</b>	<b>Due Date</b>	<b>Notes</b>
<b>18</b>	K.2.	Failure to Start Construction	Within 2 years of Permit Issuance	
<b>19</b>	K.8	Site Manager	Prior to Operation	
<b>20</b>	Complaints	Report	Due Each Month or within 24 hours	

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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. IP6603/WS-08-1449**

Meeting Date: September 2, 2009.....Agenda Item # \_\_\_\_\_

Company: Lakeswind Power Partners, LLC/Project Resources Corporation

Docket No. **PUC Docket Number: IP 6603/WS-08-1449**

**In the Matter of the Lakeswind Power Partners, LLC Application for a Large Wind Energy Conversion System (LWECS) Site Permit for the Lakeswind Wind Power Plant in Becker, Clay and Ottertail Counties.**

Issue(s): Should the Commission grant the request for a contested case hearing on the Lakeswind Wind Power Plant Project?

Should Lakeswind Power Partners, LLC, be granted a site permit to construct a Large Wind Energy Conversion System and Associated Facilities in Becker, Clay and Otter Tail counties?

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

**Relevant Documents**

Site Permit Application for Lakeswind Wind Power Plant..... January 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. Lakeswind Wind Power Plant Site Map
2. Wind Schematic
3. Proposed Findings of Fact and Conclusions
4. OES EFP Staff Exhibit List
5. Proposed Site Permit

(Note: see eDockets (08-1449) or the PUC Facilities Permitting website for additional documents: <http://energyfacilities.puc.state.mn.us/Docket.html?Id=19892>.

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**Statement of the Issue**

Should the Public Utilities Commission (Commission):

- A. Grant the request for a contested case hearing on the Lakeswind Wind Power Plant Project?
- B. Grant a site permit to construct a 60 MW Large Wind Energy Conversion System and Associated Facilities in Becker, Clay and Otter Tail counties?

**Introduction and Background**

Project Resources Corporation acting on behalf of Lakeswind Power Partners, LLC, applied for a site permit to the Commission on January 21, 2009, to develop the proposed 60-Megawatt Lakeswind Wind Power Plant located in Becker, Clay and Otter Tail counties. The Lakeswind Wind Power Plant project is scheduled for construction in 2010 with an expected in-service date of December 31, 2010.

***Project Location***

The proposed Lakeswind Wind Power Plant site is located in southwestern Becker County, southeastern Clay County and northwestern Otter Tail County as shown on the accompanying map. See Attachment 1. The Project Site as now proposed is located in four townships: Parke: Sections 19, 20, 24, 25, 26, 29, 30 and 32 through 36; Tansem: Sections 1 through 5 and 8 through 30 all in Clay County; Cormorant: Sections 19, 29, 30, 31 and 32 in Becker County; and Scrambler: Sections 5,6 and 19 through 21 in Otter Tail County. The Project boundary originally encompassed approximately 22,000 acres. As of the date of its application, the Applicant indicated that it had obtained lease and easement agreements with most of the landowners within the site.

On April 20, PRC submitted a letter amending its proposed site permit boundary to include approximately another 2,500 acres of land on the east and north side of the proposed site as shown on the accompanying map, which now includes a portion of section 24 in Parke Township in Clay County; portions of sections 19, 29, 30, 31 and 32 in Cormorant Township in Becker County and a portion of section 5 in Scrambler Township in Otter Tail County. Nearly all of the land added to the amended site boundary is land owned by Aggregate Industries.

The proposed site, now approximately 22,500 acres in size, is comprised primarily of agricultural lands (crops and pasture), gravel operations, wetlands, lakes and scattered woodlots, wildlife management areas, waterfowl production areas, and a state scientific and natural area.

Site terrain is undulating to rolling in nature and is without long vistas due to the nature of the topography. The Lakeswind Wind Project will temporarily disrupt up to 120 acres of agricultural lands for roads and turbines during the construction phase. The Project will permanently displace up to 20 acres of agricultural land within the site. The Applicant has easements or options on the land necessary within the site to build the project. Land rights will encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access roads, electrical collection system, project substation and feeder lines.

### ***Lakeswind Wind Power Plant Description***

The Lakeswind Wind Power Plant Project as proposed may use up to 40 GE 1.5 megawatt wind turbines or similar model. The turbines will be mounted on 80-meter (262 feet) high freestanding tubular steel towers. The blades on the wind turbines are 38.5 meters (126 feet) long. The rotor diameter is 77 meters (253 feet). The electrical collector system will consist of underground 34.5 kV collection and feeder lines. The electrical system and feeder lines will be located along public roads when possible. Turbine selection has not been finalized. Other turbine models under consideration include Siemens 2.3MW, GE 2.5MW and Vestas 3.0MW, among others. If that is the case the rotor diameter may be up to 90 feet larger, with towers up to 100 meters (328 feet). If for example a 3.0 MW turbine were to be used, there would be 20 turbines rather than 40 because the Project is designed for 60 Megawatts, not more.

Other project components include: all-weather class 5 access roads of gravel or similar materials, pad-mounted step-up transformers, concrete and steel tower foundations, an underground supervisory control and data acquisition system, up to two permanent reference meteorological towers, and a project substation (location undetermined within the site). The Project may also include an operations and maintenance building, but not necessarily on-site. The O&M building will be permitted by the appropriate governmental unit.

Power from the Project substation will be delivered to the Tamarac Substation owned by Great River Energy and located in the northeast portion of section 28 in Scrambler Township in Otter Tail County. The voltage of the transmission line between the Project substation and the Tamarac Substation (41.6 to 115 kV) remains undetermined, depending on factors not associated with the Commission's site permit review requirements. The transmission line between the Project substation and the Tamarac Substation may be permitted by the local unit of government, depending on voltage.

### **Regulatory Process and Procedures**

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. This requirement became law in 1995 Minnesota Statute Chapter 216F. The rules to implement the permitting requirement for LWECS are in Minnesota Rules Chapter 7836. In accordance with Minnesota Rule 7836.0500 Subp.2., a site permit may not be issued until the certificate of need or other commitment requirement has been satisfied.

When Lakeswind Power Partners, LLC, submitted its site permit application (January 21, 2009), it indicated that it was exempt from the Certificate of Need (CON) requirement of Minnesota Statutes 216B.243 because it is a C-BED wind project. Lakeswind believed that at the time its application was filed, it qualified for the exemption allowed under Minnesota Statute Section 216B.243, subd. 8 (7) because the project was:

“...a large energy facility that (i) generates electricity from wind energy conversion systems, (ii) will serve retail customers in Minnesota, (iii) is specifically intended to be used to meet the renewable energy objective under section 216B.1691 or addresses a resource need identified in a current commission-approved or commission-reviewed resource plan under section 216B.2422, and (iv) derives at least ten percent of the total nameplate capacity of the proposed project from one or more C-BED projects...”

The Minnesota Office of Energy Security issued C-BED approval for Lakeswind on November 21, 2008. The project received the resolution of support from Clay County on July 21, 2009, and from Becker and Otter Tail counties on November 25, 2008. Lakeswind is exclusively negotiating with Minnesota utilities and intends to sell the power to Minnesota utilities to assist them in meeting their renewable obligations under the renewable energy objective. (note: Proposed Site Permit language in III. J. 4. specifically recognizes this intention.)

The Subd. 8 (7) of Minnesota Statutes 216B.243 was eliminated during the 2009 legislative session and the new law took effect on May 19, 2009. However, Lakeswind believes that the project was in compliance with the statutory requirements that were in force at that time the site permit application was filed and that its exemption from the CON requirement is still applicable.

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

On January 21, 2009, the PUC received the site permit application submitted by Project Resources Corporation (PRC), on behalf of Lakeswind Power Partners, LLC, for the Lakeswind Wind Power Plant. On February 12, 2009, the PUC considered acceptance of the Site Permit application and made a preliminary determination to issue a draft site permit. On February 17, 2009, an Order accepted the application and issued a draft site permit. Upon acceptance of the application OES EFP staff initiated the review and notice requirements of Minnesota Rules Chapter 7836.

#### ***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. The OES EFP staff held a public information meeting in Barnesville on April 29, 2009, to provide the public with an overview of the permitting process for LWECS and the draft site permit, and to receive comments on the site permit application and the draft site permit. The meeting also provided the public with an opportunity to provide EFP staff and the applicant with comments about the permitting process and permit issues. About 125 to 140 people attended the public meeting.

OES staff provided an overview of the requirements of the permitting process and the conditions in the draft site permit and responded to questions about the permitting process and conditions in the draft site permit. Representatives of the applicant were available to describe the project and

answer questions. Numerous comments and questions were asked covering a broad spectrum of topics relating to wind energy. These included many positions, statements and comments in support of the project, and two or three persons expressing concerns or issues that they felt remained unanswered or wanted more information on, including health related issues, noise, property values, impacts on natural resource features, taxes, visual impacts, stray-voltage, setbacks and impacts on wildlife.

### ***Public Comments***

Approximately 28 written comments, some with attachments were received by the close of the comment period on May 20, 2009. All of the written comments received, written responses to some of the comments by PRC on June 2, 2009, and other relevant documents have been eFiled (08-1449). Comments were received from individuals, two state agencies and the applicant.

Comments included a request for a contested case hearing and a moratorium on wind development, and expressions of concern about health impacts and natural resource impacts as they relate to habitat, prairie chicken leks, wildlife surveys and biodiversity issues. Four citizens submitted multiple comments. Several categories of comments were evident:

- Approximately 18 of the written comments were in support of the project
- Three of the written comments suggested wind power was too expensive
- Five comments thought turbines negatively altered the landscape and one's ability to enjoy nature
- Three comments thought turbines had an impact on property values.

Per Anderson, Moorhead, Minnesota, sent a letter dated May 4, 2009, accompanied by several attachments, to the Commission requesting both a contested case hearing and a moratorium "where citizens ask questions and receive information from representatives of Project Resources Corporation (PRC), the Minnesota Department of Natural Resources (MnDNR) and the U.S Fish and Wildlife Service (USFS) regarding the site permit application presented to the PUC..." Mr. Anderson also requested that PRC provide "a revised turbine siting plan with an opportunity to submit written comment to the PUC." See Exhibit 13.

Mr. Anderson's stated "purpose of the hearing would be consideration of information relevant to a final approval of the draft site permit, including relevant information omitted from the application submitted to the PUC..." Mr. Anderson questioned whether the PUC acted upon a recommendation from OES EFP staff that he believes "omitted information relevant to state norms for LWECs silting."

Mr. Anderson's letter of May 4, 2009, also posed several questions and they are as follows:

- Does the PUC continue to regulate and act upon LWECs applications using Minnesota Noise Standards?
- Does the PUC declare a moratorium on approval of site permits until health questions have been answered decisively?
- Does the PUC interim, stringent and precautionary noise standards to ensure that endangerment of human health is avoided or greatly diminished while research seeks definitive answers to current questions?

Mr. Anderson's May 4, 2009, letter in closing stated: "This request for moratorium, notice and public hearing under conditions outlined above is a request for responsible public deliberation about new and consequential matters regarding state approval of LWECS and the protection of public health in Minnesota."

Mr. Anderson's letter was accompanied by six attachments. These attachments also expressed his concern about: 1) PRC's amendment of the site permit application without providing additional information on turbine locations; 2) whether the project is buildable as proposed; 3) the need for additional information from MnDNR and USFWS; 4) MnDNR's recommendation to consider project alternatives that would avoid direct impacts to ecologically significant areas, impacts on prairie remnants by a one-half mile avoidance, wetlands and grassland easements, and prairie chicken leks.

Mr. Anderson also requested that the Minnesota Department of Health investigate health issues associated with wind turbines.

In an electronically filed comment Valerie LeClair, on May 20, 2009, expressed concerns about the Lakeswind Wind Power Plant because of the potential for decreased property values, noise, effectiveness, impact on wildlife and quality of life issues. See Exhibit 14.

Dwight Mickelson, on May 20, 2009, commented that the "Lakes Wind Project is entirely inappropriate for this part of Clay. If you were looking for one of the most environmentally diverse and picturesque parts of Clay County...this is it." Mr. Mickelson also commented that growing families, retired people and hobby farmers, especially in the region of Parke Township to the north of the Lakeswind Project will not receive compensation and that the open flats of Clay County would be more appropriate. See Exhibit 14.

Kari Miles (March 28 and 30, 2009), commented about the potential impact of health effects on farmers and that farmers weren't told of the potential impacts, liability issues, noise, flashing lights, ice throws, property values and quality of life issues. Ms. Miles also commented that putting them in an industrial site is more appropriate. See Exhibit 14.

Mr. Paul and Kay Ornberg submitted two sets of comments (March 30 and May 19, 2009), and raised several general questions about the project, wind rights, placement of overhead electric lines associated with the project, placement of additional communication towers, lease restrictions, and payment of taxes. Mr. Ornberg also expressed concerns about not knowing the location of the turbines, access roads, size of the turbines, visual and shadow flicker impacts, costs, liability issues, fire, how the review process works and health related issues. See Exhibit 14.

Numerous individuals submitted comments in support of the Lakeswind Project prior to May 20, 2009. Persons indicating support for the project include: Cliff and Linda Bang, John Bergseid (two comments), Wendell and Marine Blatchford, Larry and Diane Blomster, Linda and Ron Ekre, Lisa Gibb, Barb Grunewald, David and Doris Hanson, Marvin Hanson, Lindley Jacobson, Armand and Nonie Swenson, Rod Schultz, Eldon and Margie Raknerud, Raymond Lottie, Jay Roste, and Roger Minch. See Exhibit 13 and 14. A representative sample of the comments in support of the Lakeswind Project is provided below:

- I feel the towers are aesthetically pleasing to look at and in no way devalue the lands. Most of the people I have talked to feel the same way and we should not let a single person or small minority dictate what goes on in the county.
- We are one hundred percent in favor of this project. As a nation we are past due at pursuing alternate forms of energy. We are concerned about our dependency on foreign sources of energy, not only for ourselves, but for our children and grandchildren. We view this project as a progressive step to safeguard energy sources for future generations.
- We wish to go on record approving this project for Clay County. We are landowners in the project area and feel it is time to pursue alternative forms of energy for our community. We feel Project Resources has presented a project worth of our consideration and fully support them in this endeavor.
- Why wouldn't anybody want wind power? If they don't want to see the wind turbines they should stay in town & fight the water.
- We have read and heard both sides of this issues and think this is a wonderful opportunity for this area to help in the issues of energy and fuel in our country. Our land was cut out of the project permit due to NIMBY activities.... Though we are very disappointed by our own loss, we very much support any neighbors that can be blessed after spending all of their lives on the land.
- There is no credible evidence that wind turbines cause any health issues. 99% of the people in the project area want it to go through. Minnesota has always been at the forefront in renewable energy and clean energy. This project is needed to displace carbon emissions that coal power plant emit. I can't think of one thing that should hold the project from moving forward. This project would create taxes for state and local government.
- Some of my Clay County neighbors have raised objections to this project, claiming among other things, the ruination of lovely vistas, potential health issues and noise pollution. While respecting the views of my neighbors, I would make the following points: 1. There is no doubt that wind towers alter the landscape within the project area. 400-foot towers are certain to be noticed. But I have always felt that I own the land to which I have title and not the view around it. If I want to control my view, I had better build in the woods or buy more land. 2. I don't know for sure if the so-called windmill "flicker" will impact human health, but I am skeptical. Even so, a windmill's shadow will move with the sun, so it would seem to me that it would a transitory phenomenon for any particular resident and visible only on sunny days. 3. My residence is just a quarter mile from Clay County Highway 10, and everyday I must contend with the noise of gravel trucks going to and from pits that lie to my east. I would rather these trucks did not bother my country peace, but I understand they represent commerce in my county, and they are allowing fellow landowners to make returns on their land. Commerce and investment returns are still good things in my book. Windmills are like gravel trucks to me. They will make some noise when turning, but at much lower decibel levels than those trucks. And they will allow me and my fellow landowners to make returns from our land. ...I wish we could all just plant more current bushes to satisfy our power needs. But realistically we have to find alternatives that satisfy the requirements of today's laws. Production of energy from wind just makes a lot of sense for this breezy part of our state at this particular time."
- Here we have an opportunity to not only harness a valuable power source, but an economic development opportunity that comes to us with no expenditure of time, effort, economic development resources or tax incentives. Just the reverse. The project

will bring jobs, tax revenue and make us proud we are blessed with a way to assist providing our country with secure energy needs. The tradition in Clay Co. has been to let landowners use their land for productive and legal developments. Wind turbines are much less disruptive, than say, gravel mining and hauling activities. And, the citizens of this area have shown strong support for wind turbines. The City of Moorhead has constructed two of them on the NE edge of the city. I have not heard one complaint about those turbines, built practically within the city. Most people I mention them to do not even know they are there. PRC is not relying on eminent domain to complete it project, instead using voluntary contracts with landowners who should be given credit to know what is best for their own land, given the fact that but for visual impacts, it is they who will endure all of the burdens of the project. Minnesota, like its neighbors, North Dakota and Iowa have gone far down the road to embrace large-scale wind energy projects. This is the right path, and given the scale of the projects in Pipestone and Lincoln Counties, any serious problems with these developments would be well known and addressed already. So I urge the MN. PUC to approve the application of PRC for the Lakeswind project without a contested case hearing or further delay. This is not the time to reargue settled issues of tax and public policy.”

### ***State Agency Comments***

The Minnesota Department of Transportation, District 4 Detroit Lakes/Morris office in a comment letter dated May 19, 2009, noted that there are no scheduled projects in the immediate area but may plan an expedited project due to hydraulic concerns. Mn/DOT commented that if work is required within Mn/DOT right-of-way for the placement of structures, materials, or access to adjacent properties that this should be coordinated through its Property Management/Right of Way permits office.

The Minnesota Department of Natural Resources in a May 15, 2009, letter commented that: 1) The proposed project area contains an abundance of rare and significant natural resource features; and 2) DNR is concerned with potential impacts created by the proposed project on rare and high-quality plant and animal communities, as well as effects on publicly-owned recreational lands within and adjacent to the project site.

DNR recommended a site visit between the applicant and DNR to identify the location of these resources, identify proper locations for turbine placement, and develop appropriate methodology for a pre-construction biological survey and a prairie management plan. The resources identified include features identified in the associated Minnesota County Biological Survey (MCBS) Sites of Biodiversity and Native Plant Communities. Other features identified include the Blanket Flower Prairie Scientific and Natural Area and native prairie remnants.

The DNR letter also expressed concern with potential impacts to the grassland birds that depend on prairie habitat, and noted that grassland birds, including greater prairie-chickens, are deterred from nesting in otherwise appropriate habitat by the presence of tall structures in the vicinity and recommended a minimum of five rotor diameter setback from prairie remnants to minimize this potential effect. The DNR also suggested that no turbine be located in the NE1/4 of Sect. 17 of Tansem Township, between two waterbodies because it may impact waterbirds moving between those water bodies.

## OES EFP Staff Comments and Analysis

EFP staff has reviewed all of the written comments and other information introduced into the record of this proceeding. The public comments received are summarized above. The following EFP staff comments and analysis address: 1) the request to the Commission for a contested case hearing; and 2) other concerns or comments.

### *Request for Contested Case*

The first item addressed is Mr. Anderson's request for a contested case hearing. See comments provided by Mr. Anderson, as summarized above (*Public Comments*). Also, see Exhibit 13. Minnesota Rule 7836.0900, Subp. 5. (B) states "The Commission shall order a contested case hearing if the commission finds that the person requesting the contested case hearing has raised a material issue of fact and that holding a hearing would aid the PUC in making a final determination on the permit application."

Thus, two issues the Commission must consider are: 1) have the person's who submitted the written comments "raised a material issue of fact" and; 2) would a contested hearing aid the PUC in making a final determination on the permit application?

In support of his position, Mr. Anderson states that the request for a contested case hearing is necessary for:

- A) "responsible public deliberation about new and consequential matters regarding state approval of LWECS and the protection of public health in Minnesota."
- B) the purpose of providing an opportunity "where citizens ask questions and receive information from representatives of Project Resources Corporation, the MNDNR and the U.S. Fish and Wildlife Service regarding the site permit application presented to the PUC."
- C) "Considerations of information relevant to a final approval of the draft site permit, including relevant information omitted from the application submitted to the PUC..."

OES staff, after careful review of Mr. Anderson's request, has concluded that no material issue of fact has been raised by Mr. Anderson. Therefore, there is no need for a contested case hearing.

Mr. Anderson's, first item (A) regarding "responsible public deliberation about new and consequential matters regarding state approval of LWECS and the protection of public health in Minnesota," fails to raise a material issue of fact based on the following analysis.

In February 2009, the Minnesota Department of Health (MDH) received a request from OES for a "white paper" evaluating possible health effects associated with low frequency vibrations and sound arising from large wind energy conversion systems. The OES noted that there was a request for a contested case hearing before the Minnesota Public Utilities Commission on the proposed Bent Tree Wind Project in Freeborn County in southeastern Minnesota. The Commission denied that request for a contested case hearing, in part because an informal hearing

was going to be held on the certificate of need required for that project, and the hearing would afford interested citizens an opportunity to enter additional information into the record regarding possible health effects associated with low frequency noise.

Mr. Anderson also wrote to the MDH Commissioner to ask for an evaluation of health issues related to exposure to low frequency sound energy generated by wind turbines. In requesting the "white paper," the OES stated that a white paper would have more general application and usefulness in guiding decision-making for future wind projects than a contested case hearing on a particular project. The OES EFP staff position on that has remains the same. In March 2009, the MDH agreed to evaluate health impacts from wind turbine noise and low frequency vibrations. The Commissioner replied to Mr. Anderson, affirming that MDH would perform the requested review.

On May 22, 2009, the MDH released a white paper titled "Public Health Impacts of Wind Turbines." This report was posted on the PUC's web site at:  
<http://energyfacilities.puc.state.mn.us/documents/Public%20Health%20Impacts%20of%20Wind%20Turbines,%205.22.09%20Revised.pdf>

Subsequent to release of the MDH "white paper" Mr. Anderson posed several questions to the MDH.

In a letter to Mr. and Ms. Anderson, (See Exhibit 17) 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 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 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.

*Are there grounds to change the state's siting standards immediately for the sake of precaution?* Minnesota requires that large energy facilities, such as the one in Clay County, be permitted by the Public Utilities Commission (PUC). Before permitting, the PUC must determine whether the project is needed and must consider alternatives. There must be an environmental study. The process is public and there is opportunity for comment at each stage. These requirements ensure accountability and public health protection.

Mr. Anderson's second and third items (A and B), and supporting comments, do not identify any "materials issues of fact." Mr. Anderson's comments merely focus on process issues to get additional facts or opinions from federal and state agencies and the applicant, in the belief that this additional information is necessary for the Commission to make a decision on the site permit.

By way of background information, Minnesota Rules, Chapter 7836 provide a review process for large wind energy conversion system (LWECS). See Attachment 2. To briefly summarize this process, an applicant submits a LWECS site application, which OES EFP staff reviews for completeness. If the application does not contain the necessary information required by rule, the applicant is asked to provide the additional information. Assuming the application contains the required information; OES EFP staff will prepare comments and recommendations for Commission consideration, which address application acceptance and whether a draft site permit may be issued.

Commission acceptance of an application and issuance of a draft site permit allow EFP staff to initiate the LWECS review process, which includes:

- 1) published notice in local newspapers and the EQB Monitor;
- 2) distribution of the accepted application and draft site permit, and opportunity for federal, state and local units of government, as well as affected landowners, to comment on the application and draft site permit in writing or at a public information meeting;
- 3) a public information meeting in the area to provide an overview of the permitting process and an opportunity for the applicant to explain its proposed project and opportunity for the public to ask questions of the EFP staff or the applicant;
- 4) a deadline for submitting comments is included in the notice, which includes the option of requesting contested case hearing;
- 5) EFP staff review of the record, then preparation of documents for Commission consideration in acting on the site permit application; and

- 6) issuance of a site permit is issued by the Commission that identifies site permit boundaries in which the turbines and associated facilities will be located and conditions for turbine placement to mitigate impacts.

The LWECS site permit contains a number 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 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.

In summary, there are numerous site permit requirements that protect natural resource features as well as public health and safety. Minnesota has close to two thousand 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 PUC, the responsible governmental unit; nor have comprehensive avian and bat studies demonstrated significant fatality or mortality impacts.

Therefore, based on information in the record, OES does not believe that a material issue of fact has been raised by Mr. Anderson and does not believe that a contested case hearing would aid the Commission in making a final determination in this matter.

#### ***Other Concerns and Comments***

Other public comments or concerns expressed by the Andersons, Dwight Mickelson, Kari Miles and the Ornbergs are addressed by specific setbacks from the property they own (See Site Permit (III.M.2) and elsewhere throughout the site permit. Some of their concerns, such as FAA lighting requirements, are set by the federal government. With respect to one of Mr. Ornberg's concern, PRC will carry liability insurance. Concerns were also expressed about not knowing where the turbines will be located. Simply put, the turbines and associated facilities will be placed on the properties of persons who have leased their wind rights to the PRC for the proposed Lakeswind Wind Power Plant. Additionally, the proposed site permit, as have other site permits, imposes numerous, but reasonable standards and requirements on the Permittee.

Many of MnDNR's concerns are addressed in the proposed findings and through site permit conditions and setback requirements. See Findings 48 through 52, 65, 66 and site permit conditions III.B.9, III.C.1, C.4, C.5, C.6 and III.D.1.

Federal and state agencies are provided copies of applications for a variety of projects and asked by responsible governmental units to comment on them within a specific time frame. In the case of LWECS site permit applications, reviewing agencies also receive the “draft site permit,” containing numerous permit conditions, setback requirements and other requirements a permittee is obligated to comply with. These agencies often take the time and opportunity to submit written comments that identify issues or conditions that are of concern to them that are entered into the record, along with remedial actions or steps designed to lessen the impact of the project.

It is the opinion of OES EFP staff that there are some unresolved issues between PRC, MNDNR and USFWS; however, those issues can be best resolved by the applicant and the permitting agencies with respect to their jurisdiction in this matter. Site design is an iterative process. A continuing dialogue between the applicant/permittee and the permitting agencies typically resolves those issues and those results can be reflected in the permits issued by those agencies within the context of their jurisdictional authority.

When a “permit” is obtained from the PUC, a permittee in nearly all circumstances must obtain permits from other federal, state and local units of government, who also have their own permit requirements, prior to initiating project construction. This is the case for the Lakeswind Project.

Energy facility project design is an iterative process and not finalized until all factors have been considered. As PRC stated in its application “It is important to emphasize that the depicted locations of these facilities, including but not limited to the wind turbines and access roads, are likely to change subsequent to further site study and planning activities by the applicant.” Exhibit 1, page 1. This practice is common, and certainly not out of the ordinary, with respect to large infrastructure projects.

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

## **Standard for Permit Issuance**

Essentially 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 7849.5900. 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 Lakeswind Wind Power Plant 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 7836 (Wind Siting Rules).

OES EFP staff has prepared for Commission consideration proposed Findings of Fact, Conclusions and Order, an Exhibit List and a proposed Site Permit for the 60-Megawatt Lakeswind Wind Power Plant. The site criteria addressed in the Findings of Fact (such as human

settlement, noise, community benefits, 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 those conditions included in other LWECS site permits issued by the Environmental Quality Board and the Commission. See Attachment 5 in the Commissioner’s packet.

A number of issues were identified during the course of this proceeding and they were summarized above in “*Public Comments*” 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.

<b><u>Category</u></b>	<b><u>Findings</u></b>
Background and Procedure	1 – 12
Written Comments	13
The Permittee	14
Project Description	15 – 22
Site Location and Characteristics	23 – 28
Wind Resource Considerations	29 – 31
Land Rights and Easement Agreements	32 – 33
Site Criteria	34 – 79
Site Permit Conditions	81 – 83

***Exhibit List***

OES EFP staff has prepared an exhibit list of the written comments and other documents that are part of the record in this permit proceeding; it is included as Attachment 4 in Commissioner’s packet. OES EFP staff will provide copies on request and copies will be available for review at the PUC meeting.

***Proposed Site Permit***

The OES EFP Staff has prepared a site permit for the Commission’s consideration. Staff has made administrative changes to the draft site permit. See Attachment 5 in the Commissioner’s packet.

**Commission Decision Options**

**A. Contested Case Hearing Request**

1. Deny the request for a contested case hearing.
2. Grant the request for a contested case hearing; if the request is granted the Commission must determine the scope of the contested case proceeding or have an Administrative Law Judge from the Office of Administrative Hearings determine the scope of the proceeding.
3. Make some other decision deemed more appropriate.

**B. Lakeswind Wind Power Plant Findings of Fact and Conclusions**

1. Adopt the attached Findings of Fact, Conclusions of Law and Order and issue the attached site permit to Lakeswind Power Partners, LLC, for the 60 MW Lakeswind Wind Power Plant in Becker, Clay and Otter Tail Counties. The site permit issued by the PUC authorizes Lakeswind Power Partners, LLC, to construct and operate the large wind energy conversion system and associated facilities in accordance with the conditions contained in the site permit, in compliance with Minnesota Statute 216F.04 and with Minnesota Rules Chapter 7836.
2. Amend the Findings of Fact and Conclusions of Law and the site permit as deemed appropriate.
3. Deny the site permit.
4. Make some other decision deemed more appropriate.

**DOC EFP Staff Recommendation:** The staff recommends Options A.1. and B.1.

STATE OF MINNESOTA)  
  )SS  
COUNTY OF RAMSEY )

AFFIDAVIT OF SERVICE

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

That on the 18th day of September, 2009 she served the attached  
ORDER.

MNPUC Docket Number: IP6603/WS-08-1449

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 - OES  
Julia Anderson - OAG  
John Lindell- OAG

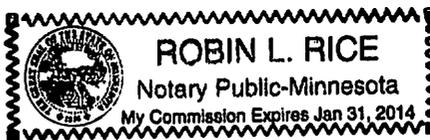
Robin Benson

Subscribed and sworn to before me,

a notary public, this 18th day of

September, 2009

Robin L. Rice  
Notary Public



Service List Name	First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret
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OFF_SL_8-1449_1	John	Lindell	agorud.ecf@state.mn.us	OAG-RUD	900 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No
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OFF_SL_8-1449_1	Sharon	Ferguson	sharon.ferguson@state.mn.us	MN Department Of Commerce	85 7th Place E Ste 500 Saint Paul, MN 551012198	Electronic Service	No

2 sets

LAKESWIND

08-1449

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