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May 19, 2014

Mr. Darrell Nitschke  
Executive Director  
NORTH DAKOTA PUBLIC  
SERVICE COMMISSION  
600 E. Boulevard Avenue, Dept. 408  
Bismarck, ND 58505-0480



Dear Mr. Nitschke:

In re: Sunflower Wind Project, LLC  
Wind Energy Conversion Facility  
Stark and Morton Counties, North Dakota  
Case No. PU-14-105  
Our File No. 48-357-001

Enclosed please find for filing proposed Findings of Fact, Conclusions of Law and Order.

Please call should you have any questions.

Very truly yours,



BRIAN R. BJELLA

bw  
Enc.

**BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF NORTH DAKOTA**

Sunflower Wind Project, LLC  
Wind Energy Conversion Facility –  
Stark and Morton Siting Application

Case No. PU-14-105

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**FINDINGS OF FACT, CONCLUSIONS OF LAW  
AND ORDER  
DATED MAY \_\_\_\_\_, 2014**

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**Appearances**

Commissioners Brian P. Kalk, Randy Christmann and Julie Fedorchak.

Brian R. Bjella, Attorney at Law, Crowley Fleck, PLLP, 100 West Broadway, Suite 250, Bismarck, North Dakota 58501, on behalf of the Applicant, Sunflower Wind Project, LLC.

Ryan Norrell, Attorney at Law, Dwyer Law Office, PLLC, 1605 East Capitol Avenue, Bismarck, North Dakota 58502, Special Assistant Attorney General on behalf of the North Dakota Public Service Commission.

Wade C. Mann, Administrative Law Judge, Office of Administrative Hearings, 2911 North 14<sup>th</sup> Street, Suite 303, Bismarck, North Dakota 58503.

**Preliminary Statement**

On March 3, 2014, Sunflower Wind Project, LLC (“Sunflower”) filed an Application for a Certificate of Site Compatibility for a wind energy conversion project located in Morton and Stark Counties, North Dakota. On the same day, Sunflower filed an application fee of \$100,000.00.

On April 9, 2014, the Commission deemed the Application complete and issued a Notice of Filing and Notice of Hearing, scheduling a public hearing for May 12, 2014, at 10:00 a.m. CDT at the Hebron Community Center, 620 Washington Avenue, Hebron, North Dakota 58638. The Notice identified the following issues to be considered at the hearing:

1. Will the location, construction, and operation of the proposed facilities produce minimal adverse effects upon the environment and upon the welfare of the citizens of North Dakota?

2. Are the proposed facilities compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed facility locations minimize adverse human and environmental impacts while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On May 1, 2014, Sunflower filed with the Commission its revised Table 4 as found on page 5 of the Application.

On May 1, 2014, the North Dakota Department of Health filed its comments with respect to the project with the Commission.

On May 8, 2014, Sunflower filed with the Commission a Certificate of Good Standing for Sunflower Wind Project, LLC as issued by the North Dakota Secretary of State.

On May 19, 2014, Sunflower filed with the Commission its late filed Exhibit Nos. 2-6.

The public hearing was held as scheduled on May 12, 2014. Having allowed all interested persons an opportunity to be heard, and having heard, reviewed and considered all testimony and evidence presented, the Commission makes the following findings:

#### **Findings of Fact**

1. Sunflower Wind Project, LLC is a Delaware limited liability company headquartered in Santa Barbara, California, and is registered to do business in the State of North Dakota.
2. Sunflower proposes to construct a wind energy facility known as the Sunflower Wind Energy Project ("Project") as located in Stark and Morton Counties, North Dakota, being south of Hebron, west of Glen Ullin and east of Richardton. The Project area consists of approximately 12,700 acres. Wind turbines will be placed throughout the Project site.
3. Associated facilities to be constructed within the Project area include access roads, electrical collection systems and cabling, an operations and maintenance building, an electrical substation, and an interconnection yard.
4. The Project will consist of up to 59 wind turbine generators, which will be placed throughout the Project area.
5. North Dakota Century Code § 49-22-16 provides that no energy conversion facility site shall be designated if it violates any county or city land use, zoning,

building rules, regulations or ordinances. Both Morton County and Stark County require issuance of a conditional use permit for the Project.

### Project Design

6. The Project will have a name plate generating capacity up to 110 megawatts. The Project will consist of either up to 55 Vestas V-110 turbines or up to 59 General Electric 1.85-87 turbines, along with the associated facilities. The projected average annual output is estimated between 450,000 to 525,000 megawatt hours, depending upon which turbine model is ultimately selected. The Vestas turbines have a tower height of 262 feet, a rotor diameter of 361 feet, with a total height of 443 feet. The General Electric turbines have a tower height of 262 feet, a rotor diameter of 285 feet, with a total height of 405 feet. The Vestas turbines begin operation at 6.7 mph up to a maximum of 44 miles per hour. The General Electric turbines begin operation at 6.7 miles per hour up to a maximum of 56 miles per hour.
7. Each turbine is secured by a concrete foundation that can vary in design depending upon soil conditions. Turbine lighting will be installed as required by the Federal Aviation Administration. A control panel inside the base of each turbine tower houses communication and electronic circuitry. Each turbine is equipped with a wind speed and direction sensor that communicates with the turbines control system to signal when sufficient winds are present for operation. Electricity generated by each turbine is brought to a pad-mounted transformer where the electric voltage is stepped up to a power collection line voltage of 34.5 KV.
8. The underground collection line feeder system will deliver electricity to the Project substation. At the substation, the voltage will be stepped up to 230 KV for transmission.
9. At the substation, the Project will interconnect to the United States Department of Energy, Western Area Power Administration's Dickinson-Mandan 230 KV transmission line. The transmission line is located within the Project area.
10. The site for this wind energy Project was selected as optimal based upon three meteorological towers installed in 2009 to determine the wind characteristics within the Project area.
11. Construction of the Project is expected to take approximately six to nine months, at a total estimated cost of \$180,000,000.00.
12. Sunflower anticipates that construction will start in the spring of 2015.
13. All easements necessary to build and operate the Project have been obtained.

14. Sunflower has entered into a Power Purchase Agreement with Basin Electric Power Cooperative, dated November 6, 2013.
15. Zoning approvals in the form of conditional use permits for the Project have been obtained from both the Stark County Commission and the Morton County Commission.
16. An Engineering, Procurement and Construction (EPC) contractor will be retained for construction of the Project. The EPC contractor will use the services of local contractors, where possible, to assist in Project construction.
17. Safety factors will be incorporated into the wind turbines. Each turbine will be equipped with Supervisory Control and Data Acquisitions (SCADA) communication technology to control and monitor the turbines. In addition, each turbine is also equipped with a lightning protection system and is grounded and shielded to protect against lightning.
18. Construction and operation of the Sunflower Wind Energy Project will conform to the requirements of the National Electric Safety Code.

#### Siting Criteria

19. North Dakota Administrative Code Chapter 69-06-08 sets forth certain criteria to guide the Commission in evaluating the suitability of granting an application for the certificate of site compatibility. The criteria set forth in North Dakota Administrative Code § 69-06-08-01 are classified as Exclusion Areas, Avoidance Areas, Selection Criteria, and Policy Criteria. With the exception of prime and unique farm land, an energy conversion facility must not be sited within an Exclusion Area. The exception for prime and unique farm land is if the Commission finds that the prime and unique farm land that will be removed from use for the life of the facility is of such small acreage as to be of negligible impact on agricultural production, then such exclusion shall not apply. An energy conversion facility must not be sited within an Avoidance Area unless the applicant shows that under the circumstances there is no reasonable alternative. In determining whether an Avoidance Area should be designated for a facility, the Commission may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the efficient use of resources; and alternate sites. In accordance with the Commission's Selection Criteria, an energy conversion facility shall be approved only if it is demonstrated that no significant adverse impacts will result from the location, construction, and operation of the facility. In accordance with the Commission's Policy Criteria, preference may be given to an applicant demonstrating certain benefits of the energy conversion facility.
20. With the exception of prime farm land, no exclusion areas have been identified within the Project area. The Project area will contain only approximately 1% of

prime farmland. To the extent practicable, prime farmland will be avoided during the final design. The Commission finds that the prime farmland which may be disturbed by this energy conversion facility is of such small acreage as to be of negligible impact on agricultural production.

21. Approximately 55 acres of agricultural production would be impacted due to turbine placement, associated access roads, project substation, operation and maintenance building and the interconnection site. Wind turbine configuration will not result in significant impacts to agricultural production. No impacts on the agricultural quality of the croplands are anticipated. If compaction of soils occurs during construction, then Sunflower will work with landowners to alleviate compaction.
22. No economically recoverable coal reserves have been identified in the Project area.
23. With respect to grasslands and native prairie, approximately 24 acres of grasslands will be permanently impacted, and an additional 81 acres will be temporarily impacted.
24. Sunflower submitted evidence to demonstrate that the proposed energy conversion facility will not have a significant impact on the Selection Criteria set forth in North Dakota Administrative Code § 69-06-08-01(5).
25. Sunflower submitted evidence to demonstrate its commitment to maximize the benefits of the proposed energy conversion facility so far as possible so as to meet the Policy Criteria set forth in North Dakota Administrative Code § 69-06-08-01(6).
26. No significant adverse impact is foreseen on the ability of the affected areas to provide community services, such as housing, health care, schools, police and fire protection, water and sewer, solid waste management, transportation or public safety. The proposed Project is expected to be of economic benefit to the affected area.

#### Cultural Resources

27. The results of the Class III pedestrian survey conducted in September 2013 were that four unrecorded cultural resources and one previously recorded site were identified. The survey also indicated one Native American cultural material scatter, two Native American isolated finds, and two historic/architectural sites.
28. Class III pedestrian surveys have been completed and no sites eligible for the National Register of Historic Places were found. Sunflower will conduct additional Class III pedestrian field surveys this spring, and should any eligible sites be located, they will be avoided during construction. Sunflower will provide

its survey results to the North Dakota State Historic Preservation Office (SHPO). Sunflower will obtain a concurrence letter from the SHPO and file the same with the Commission indicating that no significant sites are affected, and that no historic properties are affected by this Project.

29. The Project has a federal nexus due to the interconnection with the Western Area Power Administration's transmission line. As a result, consultation has been implemented pursuant to Section 106 of the National Historic Preservation Act.
30. No significant impacts to cultural resources are anticipated by the construction of this Project. As the Project is finalized by Sunflower, the location of Project facilities will be adjusted as needed to avoid impacts to any cultural resource.

#### Wetlands and Wildlife

31. Sunflower has consulted with numerous local, state and federal agencies, which are identified in the Application. These agencies include the United States Fish and Wildlife Service and North Dakota Game and Fish Department. No agencies have objected to construction of the Project.
32. Sunflower has indicated it is committed to making any design changes needed to avoid any permanent impacts to wetlands. As a result, no impacts to jurisdictional wetlands are anticipated.
33. Sunflower completed a fixed point avian survey and raptor nest survey in 2013. No federally endangered, threatened or candidate species were recorded. No eagle nests were recorded within the study area or in the buffer zone to the study area.
34. Sunflower completed a study of bat activity in the Project area in the summer and fall of 2013. This included acoustic monitoring detectors. Compared with other wind projects in the surrounding region, the results of Sunflower's study recorded some of the lowest acoustic detections of bats. No species that potentially exist in the area are federally listed as threatened or endangered.
35. The Sprague's Pipit may be present in the Project area during spring and fall migration. Impacts are expected to be minimal as the species was not detected during avian surveys.
36. No whooping cranes were observed during spring and summer avian surveys. As the Project area has very limited wetlands, the area has extremely low risk with respect to whooping crane migration. In the event a whooping crane is spotted within one mile of the Project area, Sunflower is committed to temporarily shutting down the turbines until the whooping crane leaves the area.

37. Based upon the studies conducted and mitigation measures in place, no significant impacts to avian species are expected.

#### Noise and Shadow Flicker Studies

38. Sunflower conducted a screening level acoustic assessment to determine the feasibility of the Project to operate within acceptable noise criteria. Noise was modeled at a distance of 100 feet from each residential structure in accordance with the Commission's noise regulation found in North Dakota Administrative Code § 69-06-08-01(4). This regulation establishes that sound levels within 100 feet of inhabited residences or community buildings cannot exceed 50 dBA. Twelve residences that were identified within the Project area are within one mile. Of those twelve, seven are occupied, one is unoccupied and three are undetermined. The sound level range of any of these twelve identified sites will not exceed the Commission's 50 dBA threshold.
39. Sunflower completed a shadow flicker study for both of the two wind turbine models being considered for the Project. The analysis included both primary and alternate turbine locations. The maximum shadow flicker duration at any occupied residence receptor is 36 hours, 24 minutes per year, which is approximately 0.8% of potential available data hours. This location is owned by a participating land owner and the structure is not occupied full time. Based upon the analysis, shadow flicker impacts in the Project area are expected to be minor and well within acceptable ranges for avoidance of nuisance and/or health hazards.

#### Further Mitigative Measures

40. For purposes of this Project, Sunflower has adopted setbacks established by Stark and Morton Counties, as they are more restrictive than Commission regulations, with the exception of the Commission's road setbacks which are applicable to this Project.
41. The Stark County setbacks are 2000 feet from occupied dwellings, commercial buildings, public use structures or facilities; 200 feet from centerline of public roads and above ground communication and electrical lines; 2.5 times the rotor diameter or greater from the perimeter of the facilities; and a minimum of 125 feet from the center of county roads or from section lines for the project building.
42. The Morton County setbacks are 1.25 times the total height or 1,320 feet, whichever is greater from occupied residences, commercial buildings, or publicly used structures or facilities, or state or county parks; 250 feet or greater from the centerline of a roadway and above ground communication and electrical lines; 1 to 1.5 times the rotor diameter or greater for the perimeter of the facility; and a minimum of 60 feet from the center right of way of county roads and state or federal highways for project-related buildings.

43. The Commission's setbacks with respect to roads are one and one-tenth times the height of the turbine from interstate or state roadway right-of-way; and one and one-tenth times the height of the turbine plus seventy-five feet from the centerline of any county or maintained township roadway.
44. Sunflower will maintain groundwater protection and soil conservation practices to protect topsoil and adjacent resources, and to eliminate soil erosion during construction and operation of the Project. Best Management Practices (BMPS) for erosion and sediment control will be used to minimize wind and water erosion in the Project area during and after construction. Only land needed for the facility will be impacted. Temporarily disturbed areas will be restored and reseeded.
45. Sunflower completed a microwave beam path study. The study identified fifteen specific microwave pathways across the Project area, and the worst case Fresnel Zones for each beam path were calculated. These areas are to be avoided during micrositing of the Project.
46. Sunflower will participate in the North Dakota one-call excavation notice system.
47. Sunflower has a legal obligation to decommission the wind energy facilities.
48. Sunflower will coordinate with local authorities and first responders regarding emergency response measures as a part of the Project decommissioning activities.
49. Sunflower made certain representations and covenants as contained in the Certification Relating to Order Provisions-Wind Energy Conversion Facility Siting executed by Sunflower and filed with the Commission on May 19, 2014, which are incorporated into these Findings of Fact.

From the foregoing Findings of Fact, the Commission now makes its:

#### **Conclusions of Law**

1. The Commission has jurisdiction over this proceeding under North Dakota Century Code Chapter 49-22.
2. The energy conversion facility proposed by Sunflower is an energy conversion facility as defined in North Dakota Century Code § 49-22-03(5).
3. The application submitted by Sunflower meets the site evaluation criteria required by North Dakota Century Code Chapter 49-22.
4. The location, construction and operation of the proposed energy conversion facility will produce only minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.

5. The proposed energy conversion facility is compatible with environmental preservation and the efficient use of resources.
6. The proposed energy conversion facility will minimize adverse human and environmental impact while ensuring continuing system reliability and integrity, and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.
7. The Commission has jurisdiction to ensure compliance with National Electric Safety Code standards in the construction and operation of the energy conversion facility.
8. The proposed Project is of such design, location and purpose that will produce minimal adverse effects.

From the foregoing Findings of Fact and Conclusions of Law, the Commission now makes its:

### **Order**

The Commission orders:

1. Certificate of Site Compatibility for an Energy Conversion Facility No. \_\_\_\_\_, is issued to Sunflower for the construction, operation and maintenance of an energy conversion facility known as the Sunflower Wind Energy Project.
2. The site as proposed in the application is located in Morton County and Stark County, North Dakota, near the City of Hebron, North Dakota, and is designated as the site for construction of the wind energy facility.
3. Within the permitted area, Sunflower is authorized to site and construct up to 110 megawatts of wind turbines in proposed and alternate locations, along with electric collection and communication lines, a project substation, access roads, an operations and maintenance building and an interconnection yard, along with other associated facilities as identified in the application and at the hearing.
4. Sunflower shall file with the Commission a copy of the SHPO concurrence letter when received, along with a copy of the Environmental Assessment and Finding of No Significant Impact for this project to the Western Area Power Administration issued pursuant to the National Environmental Policy Act.
5. Prior to construction, Sunflower shall file with the Commission a final turbine layout identifying the turbine models utilized, along with the approved turbine locations it intends to utilize for this Project.

6. The Certification relating to Order Provisions-Wind Energy Conversion Facility Siting with attached Tree and Shrub Mitigation Specifications executed by Sunflower and filed with the Commission on May 19, 2014, are incorporated by reference and attached to this Order.

PUBLIC SERVICE COMMISSION

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Randy Christmann  
Commissioner

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Brian P. Kalk  
Chairman

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Julie Fedorchak  
Commissioner