

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION

Basin Electric Power Cooperative
115.5 MW Wind Farm – Ward County
Siting Application

Case No. PU-08-75

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

_____, 2009

Appearances:

Commissioners Kevin Cramer, Tony Clark and Brian Kalk

Deborah Levchak, Office of General Counsel, Basin Electric Power Cooperative, 1717 East Interstate Avenue, Bismarck, North Dakota 58503; on behalf of the Application, Basin Electric Power Cooperative.

Annette Bendish, Legal Counsel, Public Service Commission, State Capitol, Bismarck, North Dakota 58505, on behalf of the Public Service Commission.

Al Wahl, Administrative Law Judge and Director, Office of Administrative Hearings, 1701 North Ninth Street, Bismarck, North Dakota 58501-1882, as Procedural Hearing Officer.

Preliminary Statement

On February 19, 2008, PrairieWinds ND1, Inc., a wholly owned subsidiary of Basin Electric Power Cooperative (**Basin Electric**) submitted to the Public Service Commission a letter notifying the Commission of its Intent to Construct a 115.5 megawatt (MW) wind project in north central North Dakota. Basin Electric also requested the Commission shorten the one year waiting period between filing a Letter of Intent and the filing of an Application for a Certificate of Site Compatibility.

By a Motion dated March 12, 2008, the Commission acknowledged the Letter of Intent, shortened the one year waiting period between filing a Letter of Intent and a Siting Application to one day, assessed a filing fee of \$100,000.00, and assigned the Project Case No. PU-08-75.

On March 6, 2009, Basin Electric submitted an Application for a Certificate of Site Compatibility for the PrairieWinds ND1 Project, Ward County, North Dakota.

On April 22, 2009, the Public Service Commission issued a Notice of Filing and Notice of Hearing on Basin Electric's Application and found the Application to be complete conditioned on Basin Electric filing a map detailing the proposed final proposed locations for turbines and related facilities on or before May 19, 2009. The public hearing was scheduled to begin May 26, 2009 at 11:00 a.m. CDT in the Minot Municipal Auditorium, 420 3rd Avenue SW, Room 201, Minot, North Dakota 58701. The Notice identified the following issues to be considered:

1. Will the location, construction and operation of the proposed facilities produce minimal adverse effects on 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 12, 2009, Basin Electric filed with the Commission a Certification Relating to Order Provisions – Wind Energy Conversation Siting, regarding certain conditions to which Basin Electric has agreed.

On May 19, 2009, Basin Electric delivered to the Commission a map detailing the proposed final locations for turbines and related facilities.

On May 26, 2009, a public hearing was held as scheduled.

By letter dated June 9, 2009, Basin Electric submitted three Late Filed Exhibits as ordered at the hearing. The Late Filed Exhibits were as follows:

1. Exhibit #2, Minot Air Force Base: e-mail communications among Basin Electric, Air Force personnel, Verendrye Electric Cooperative and various contractors reflecting coordination with the U.S. Air Force;
2. Exhibit #5, Land Owner Consent: Executed landowner Consent to locate a turbine within 1,400 feet of an occupied residence;
3. Exhibit #9, Set Back Distances: information regarding three turbines proposed to be located within 400 feet of a public right-of-way.

By letter dated July 8, 2009, Basin Electric submitted a supplement to Late Filed Exhibit #2.

Having allowed all interested persons an opportunity to be heard at the May 26, 2009 hearing, and having heard, reviewed and considered all the testimony and evidence presented, the Commission makes the following:

Findings of Fact

1. Basin Electric is a regional wholesale electric generation and transmission cooperative, organized under the laws of the State of North Dakota, and headquartered in Bismarck, North Dakota.
2. Basin Electric proposes to construct, own and operate a wind energy facility (PrairieWinds ND1) to be located in Ward County, North Dakota, south of the City of Minot. The proposed capacity of the wind energy facility is 115.5 megawatts, comprised of 77 turbines.
3. The selection of the project area included analyzing wind resource maps from the National Renewable Energy Laboratory. Data from temporary meteorological towers were collected for over one year. The data collected showed the project area to be an

excellent wind resource.

4. Construction of the PrairieWinds ND1 project is expected to take approximately six months, weather dependent, at an estimated cost of \$240 million. Basin Electric intends to commence construction in the summer of 2009 with completion by the end of 2009 or spring 2010.
5. The project area is approximately 30,000 acres. The wind turbines will be placed throughout the project area; however, the approximate area of direct land use for the turbines and associated facilities will be about 100 acres.
6. Associated facilities to be constructed within the project area include the project collection substation, access roads, wind measuring equipment, an operations and maintenance building, along with underground collection and communication lines.
7. Basin Electric plans to use General Electric 1.5 MW utility-grade wind turbines. Each turbine will have an 80 meter (262 feet) hub height and rotor diameter of 77 meters (252 feet). The 1.5 MW turbine begins operation at wind speeds of 3.5 meters per second (7.8 miles per hour) and reaches its rated capacity of 1.5 MW at a wind speed of 14.5 meters per second (32.5 miles per hour). Each turbine is designed to operate at wind speeds of up to 25 meters per second (56 miles per hour), and can withstand short wind gusts of over 45 meters per second (100 miles per hour).
8. Each tower is secured by a concrete foundation which will be approximately eight (8) feet deep. 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 turbine's 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 voltage is stepped up to the collector system voltage of 34.5 kV. This electricity is transported by sets of underground power collection lines (collector system) buried a minimum of four (4) feet deep.
9. The collector system delivers the electricity to the project collector substation. At the project collector substation the power will be transformed to 115 kV for transmission to a 115 kV transmission line owned by the Western Area Power Administration (**Western**).
10. Each turbine will be equipped with a Supervisory Control and Data Acquisitions (**SCADA**) communication technology to control and monitor the turbine. In addition, each turbine is also equipped with a lightning protection system.
11. Basin Electric will construct the PrairieWinds ND1 project in compliance with the National Electrical Safety Code.
12. The electricity to be produced from the PrairieWinds ND1 project will be used by Basin Electric Power Cooperative.
13. The proposed PrairieWinds ND1 project will be built with financial assistance from the Rural Utilities Service (**RUS**). The project will also interconnect with a Western transmission line. These actions by RUS and Western are considered major federal actions subject to the National Environmental Policy Act (**NEPA**). RUS is the lead federal agency for the NEPA process. Western and the United States Fish and Wildlife

Service (**USF&WS**) are cooperating agencies. USF&WS has special interest and expertise related to the endangered whooping crane and other wildlife issues. RUS rules implementing NEPA require an Environmental Assessment (**EA**) be completed for the project.

14. The federal Endangered Species Act (**ESA**) provides that if a federal agency is considering an action that may affect a listed species under the ESA that federal agency must consult the USF&WS. RUS is engaged in an ESA, Section 7 consultation with the USF&WS for this project.
15. There are four ESA species of concern: the whooping crane, the gray wolf, the piping plover; and the Dakota skipper. The whooping crane is a federally endangered species that may use the project area during their spring and fall migration. Impacts are thought to occur primarily from the loss of stopover habitat as the project occurs within the migration corridor. The endangered gray wolf is not known to occur in the project area, but may be found throughout North Dakota in extremely low numbers. The threatened piping plover nesting and foraging habitat is not known to occur within the project area; however, the species may transit the project area during migration. Designated critical habit for the piping plover is found near the project area. A candidate species for “threatened” listing, the Dakota skipper butterfly, has the potential to be found in the project area.
16. Basin Electric has committed to substantial avoidance, minimization and monitoring measures to protect ESA species or habitat during construction and operation of the PrairieWinds ND1 project. In addition, Basin Electric has proposed, as a voluntary conservation measure, to fund acquisition of suitable stopover habitat for migratory avian species, in particular the whooping crane.
17. Mr. Terry Ellsworth, a fish and wildlife biologist with the USF&WS, Ecological Services Division, Bismarck, North Dakota, testified that the USF&WS has been working cooperatively with Basin Electric, RUS and Western for over a year to provide technical assistance to avoid, reduce and mitigate potential impacts to fish and wildlife resources that may be adversely affected by the proposed wind development project. The USF&WS has also been in consultation with Basin Electric and RUS to develop conservation measures that can be incorporated into the proposed project to reduce and offset potential impacts to the whooping crane and other threatened and endangered species from construction and operation of the PrairieWinds ND1 project. Mr. Ellsworth commended Basin Electric for their cooperation with the USF&WS in seeking ways to proceed with the PrairieWinds ND1 project in an environmentally responsible way.
18. A United States Air Force Base is located approximately 13 miles north of the City of Minot, North Dakota. The proposed PrairieWinds ND1 project is located approximately fifteen (15) miles south of the City of Minot. The Air Force Base has one missile site within the project area. Basin Electric began communications with the Air Force regarding the PrairieWinds ND1 project in the spring of 2007 through its local member cooperative, Verendrye Electric Cooperative. The Air Force Base receives its electrical power from Verendrye Electric Cooperative. Basin Electric submitted substantial evidence that Basin Electric has been in frequent communication with the Air Force and had coordinated engineering issues, such as turbine locations, clearances, cable crossings, tower lighting and microwave communications issues with Air Force personnel.

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 farm 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. The proposed PrairieWinds ND1 project is located in Ward County, about 15 miles south of the City of Minot on the Missouri Coteau. The project area is a primarily rural agricultural area located east and west of the U.S. Highway 83 and north and south of the North Dakota Highway 23. The Missouri Coteau is characterized by a hummocky, glaciated landscape with poorly integrated stream drainage and numerous prairie pothole wetlands between mounds of glacial till. The project area is comprised of approximately 53% cropland, 15% tame grassland, and about 30% native cover types, including wetland areas.
21. Basin Electric, as part of the siting process, received data and input from public agencies, representative officials, private industry, and the general public. The list of officials and agencies contacted are presented in Appendix D of the Application. In total, 35 agencies, organizations or officials were contacted for early input for the project. Ten Native American tribes were also contacted to solicit their input on the project. RUS also conducted a public scoping meeting in Minot in early April 2008 in compliance with the scoping provisions of the RUS NEPA implementing regulations. The purpose of the meeting was to aid in the federal decision making process and to assist in the formulation of issues to be addressed by the RUS Environmental Assessment for the proposed project.
22. The PrairieWinds ND1 project area includes a USF&WS Waterfowl Production Area (**WPA**) located in the NW corner of the project boundary. Basin Electric has used a 0.25 mile setback from any turbine to the WPA boundary.
23. The PrairieWinds ND1 project area includes approximately 1986 (< 7 percent) of prime farmland and 541 acres (< 2 percent) of prime farmland if drained; no unique farmland was identified. No turbines will be located in prime farmland. The Commission finds that unique and prime farmland to be disturbed by this energy conversion facility is of such small acreage as to be a negligible impact on agriculture production.

24. The PrairieWinds ND1 project area does not include any area where animal or plant species that are unique or rare to North Dakota would be irreversibly damaged. However, an area containing North Dakota Natural Heritage Inventory species/communities is present. The observations are located in NW/4, NW/4, Section 21, Township 152N, Range 83W. The inventory indicates “bulrush freshwater marsh” and “western porcupine grass hillside” area present. The buried collector system line clips the extreme southeastern portion of the parcel; however, impacts to vegetation would be minimal and would occur only in one growing season.
25. A Class III cultural resource survey (or pedestrian survey) was conducted in areas that would be subject to ground disturbing activities. The survey area consisted of a 100 ft. wide corridor centered on the proposed access roads and collector system centerlines, a 600 foot diameter area centered at each tower location, and at the proposed collector substation and Operations & Maintenance building site. No paleontological resources have been identified in the project area. Any areas containing cultural resources will not be disturbed by project activities.
26. The PrairieWinds ND1 project area does not include any cities. There is a United States Air Force missile site located within the project area. No PrairieWinds ND1 project facilities will be located within that site.
27. Small patches of shrubs and occasional small trees occur in the project area. A small number of trees and shrubs will need to be removed to allow for construction and operation of the project. As a mitigation measure, Basin Electric will replant two trees or shrubs for every tree or shrub removed during the construction of the project.
28. There are numerous wetlands within the project area; because project facilities will not be placed in wetland areas, no permanent impacts to wetlands are anticipated as a result of project construction. Wetlands greater than 50 acres will have a 500-foot buffer for turbine placement. Basin Electric will also implement mitigation measures to minimize indirect impacts to surface water and wetland resources, such as erosion and sedimentation control Best Management Practices. Basin Electric will require its contractor to secure required storm water permits for the Project from the North Dakota Department of Health.
29. Basin Electric submitted substantial evidence to demonstrate that the proposed energy conversion facility would not have any significant adverse impact on the Selection Criteria set forth in North Dakota Administrative Code § 69-06-08-01(3).
30. Basin Electric submitted substantial evidence to demonstrate its commitment to maximize the benefits of the proposed energy conversion facility as far as is possible so as to meet the Policy Criteria set forth in North Dakota Administrative Code § 69-06-08-01(4).
31. Seventy-six (76) of the seventy-seven (77) turbines will be placed outside 1,400 feet of an occupied residence. One (1) turbine E-71 will be located within 1,400 feet, but outside 1,000 feet of an occupied residence. The owner and resident of the residence, on whose land the turbine is located, has consented to the location (Late Filed Exhibit #5). The wind efficiency of the particular area drops off rapidly with movement away

from the residence. In addition, another turbine with 900' of E-71 would also be impacted by a move.

32. Basin Electric has provided setbacks of 400 feet from existing transmission lines, roads and railroads for 74 of the 77 proposed turbine sites. Three of the 77 proposed turbine sites are closer than 400' from a road or section line. The three sites are as follows:
- A-16, located in Section 13 of Gasman Township is 145' from the road right-of-way.
 - E-74, located in Section 14 of Rushville Township, is 240' from the road right-of-way
 - B-19, located in Section 22 of Gasman Township, is 220' from the road right-of-way

In all three cases only very lightly traveled section lines or trails are near the turbine sites (Late Filed Exhibit #9). Ward County's Zoning Ordinance required Basin Electric to apply for variances for these three turbines. Ward County granted those variances on April 7, 2009.

33. North Dakota Century Code § 49-22-16(3) provides that no energy conversion facility site shall be designated that violates any county or city land use, zoning or building rules, regulations or ordinances. Basin Electric has obtained the necessary approvals from Ward County, Newman Township and Gasman Township.

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 conversation facility proposed by Basin Electric Power Cooperative is an energy conversation facility as defined in North Dakota Century Code §49-22-03(11).
3. The proposed project is of such design, location and purpose that it will produce minimal adverse effects, as defined in North Dakota Century Code §49-22-05.2.
4. The Application submitted by Basin Electric Power Cooperative meets the site evaluation criteria required by North Dakota Century Code Chapter 49-22.
5. The location, construction and operation of the proposed energy conversation facility will produce only minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.
6. The proposed energy conversation facility is compatible with environmental preservation and the efficient use of resources.

7. 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.

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

Order

The Commission orders:

1. Certificate of Site Compatibility No. _____ for an energy conversion facility is issued to Basin Electric for the construction, operation, and maintenance of a wind energy facility known as the PrairieWinds ND1 project.
2. The site described in the application consists of approximately 30,000 acres in Ward County, North Dakota, south of the City of Minot, North Dakota, and is designated as the site for construction of the energy conversion facility.
3. Within the permitted area, Basin Electric is authorized to site and construct up to 115.5 MW of wind turbines in the proposed and alternate locations along with electrical collection and communication lines, access roads, an operations and maintenance building, a collector substation and other associated facilities as identified in the Application.
4. Basin Electric shall comply with all the rules and regulations of all other agencies having jurisdiction over any phase of the proposed project. Prior to commencing construction of the proposed project, Basin Electric shall obtain all other necessary approvals and permits for construction and provide copies to the Commission prior to construction.
5. Basin Electric shall conduct a pre-construction conference prior to the commencement of any construction, and must include a Basin Electric representative, its construction supervisor, and a representative of the Commission staff to ensure that Basin Electric fully understands the conditions set forth in this Order.
6. Basin Electric shall inform the Commission of its intent to start construction on the energy conversion facility prior to the commencement of construction, and while construction is underway, Basin Electric shall keep the Commission updated of construction activities on a weekly basis.
7. Basin Electric shall construct and operate the energy conversion facility in the manner described in its application and at the hearing, and in accordance with all applicable safety requirements.
8. Basin Electric shall construct the energy conversion facility in compliance with the National Electrical Safety Code.
9. Basin Electric shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species that Basin Electric becomes aware of and that were not previously reported to the Commission.
10. If any cultural resource, paleontological resource, archeological site, historical resource, or gravesite is discovered during construction of the facility, earth disturbing activities in

the immediate vicinity of the discovery must be halted. The resource must be marked, preserved, and protected from any further disturbance until a professional examination can be made in consultation with the ND SHPO. A report of such examination must be filed with the Commission, and clearance to proceed must be given by the SHPO and the Commission.

11. All pre-existing roads and lanes used during construction must be restored to a condition that will accommodate their previous use, and areas used as temporary roads during construction must be restored to their original condition.
12. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.
13. Reclamation, fertilization, and reseeding is to be done by Basin Electric according to the Natural Resource Conservation Service recommendations for CRP, native prairie, and other non-cropped lands unless otherwise specified by the landowner and approved by the Commission.
14. Basin Electric's obligation for reclamation and maintenance of the site shall continue throughout the life of the energy conversation facility.
15. When the energy conversation facility is retired, structures and other facilities will be removed to a depth of at least three feet, or in accordance with applicable rules, and the area restored to as near as original condition as is practicable.
16. Trees and other woody vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed. Landowners shall be given the option of having replacement trees/shrubs planted on the landowners' property or waiving the requirement in writing, and allowing Basin Electric to plant replacement trees/shrubs elsewhere. Basin Electric shall inspect any tree replacements once a year for three years and send a report on or before October 1 of each year to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75%.
17. Basin Electric shall repair or replace all fences and gates removed or damaged during all phases of construction and operation of the proposed energy conversation facility.
18. Basin Electric shall repair or replace all drainage tile, broken or damaged, during all phases of construction and operation of the proposed energy conversation facility.
19. Staging areas or equipment shall not be located on cultivated land unless otherwise negotiated with landowners.
20. Basin Electric shall remove all waste that is a product of construction and operation, restoration and maintenance of the site, and properly dispose of it on a regular basis.
21. Basin Electric, shall, as soon as possible, upon the completion of the construction of each wind turbine, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.

22. Basin Electric shall provide, if requested, educational materials for landowners within the site boundaries about the proposed energy conversation facility, and any restriction or possible danger concerning the proposed energy conversation facility.
23. Basin Electric shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversation facility.
24. Basin Electric shall advise the Commission of any extraordinary events which take place at the site of the energy conversation facility, such as tower collapse, turbine failure, injured worker or private individual, the death of any threatened or endangered species or the discovery of a large number of dead birds or bats on the site within five business days of such event.
25. Basin Electric shall implement a procedure for how complaints concerning the proposed energy conversation facility will be handled by Basin Electric.
26. All underground electric line crossings of graded roads must be bored unless the responsible governing agency permits Basin Electric to open cut the road.
27. Where available, at least 12 inches of topsoil over and along open cut areas, roadways, tower locations, and locations of associated facilities must be stripped and segregated from the subsoil and be replaced only after the subsoil is replaced.
28. Basin Electric shall bury all underground collection and communication lines to a depth of at least 48 inches.
29. Basin Electric shall work with landowners and residents in the area to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.
30. Basin Electric shall provide the Commission with engineering design drawings showing surveyed structure and collection substation locations prior to construction and then shall obtain approval from the Commission or from the Commission staff prior to any changes in those surveyed locations.
31. Basin Electric shall provide the Commission with as-built drawings within 90 days after construction is complete.
32. The Certificate of Site Compatibility is subject to suspension or revocation and may, in an appropriate and proper case, be suspended or revoked for failure to comply with the Commission's Order, the conditions and criteria of the certificate or subsequent modification, or failure to comply with the applicable statutes, rules, regulations, standards and permits of other state or federal agencies.
33. Basin Electric shall maintain records which will demonstrate that it has complied with the requirements of this Order and the Certificate of Site Compatibility, and that it will preserve these records for Commission inspection at any reasonable time upon reasonable notice.

PUBLIC SERVICE COMMISSION

Tony Cramer

Brian Kalk

Kevin Cramer

Commissioner

Commissioner

President