

STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION



PPM Energy, Inc.
Rugby Wind Farm
Pierce County Siting
Application

Case No. PU-05-47

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

_____, 2005

Appearances

Commissioners Tony Clark, Susan E. Wefald and Kevin Kramer.

Lawrence Bender, Attorney at Law, Pearce & Durick 314 East Thayer Avenue, Bismarck, North Dakota 58501, on behalf of the Applicant, PPM Energy, Inc.

William W. Binek, Chief Counsel, Public Service Commission, Capitol, Bismarck, North Dakota 58505, on behalf of the Public Service Commission.

Allen C. Hoberg, Administrative Law Judge and Director, Office of Administrative Hearings, 1701 N. 9 Street, Bismarck, ND 58501-1882, as Procedural Hearing Officer.

Preliminary Statement

On January 26, 2005, PPM Energy (PPM) filed a Letter of Intent (LOI) to submit an application for a Certificate of Site Compatibility to develop a wind energy facility, referred to by PPM as the Rugby Wind Farm, in Pierce County, North Dakota (Application).

On February 9, 2005, PPM filed a supplement to its LOI requesting a shortening of the prescribed one year notice period between when the LOI is filed and when the application for a Certificate of Site Compatibility is filed.

On March 1, 2005, the Commission shortened the one year notice period to one day.

On June 16, 2005, PPM filed the Application.

On June 29, 2005, the Commission deemed the Application complete and issued a

Notice of Filing and Notice of Hearing, scheduling a public hearing for July 29, 2005 at 9 a.m. CDT at the Pierce County Courthouse, 240 2nd Street SE, Rugby, North Dakota. The notice identified the following issues to be considered:

1. Will the location, construction, and operation of the proposed wind farm produce minimal adverse effects on the environment, natural resources, and upon the welfare of the citizens of North Dakota?
2. Is the proposed wind farm compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed wind farm 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?
4. What minimum intervals between turbines and minimum setbacks from environmentally sensitive areas, roads, residences, property lines or other setbacks for turbines or other structure locations should be required?
5. Is it appropriate for the Commission to waive the procedures as requested in the application including the request for a single consolidated application for Corridor Certificate and Route Permit?

A public hearing on PPM's Application was held as scheduled on July 29, 2005 in Rugby, North Dakota. Upon commencement of the hearing, PPM moved (for the purpose of expediting the hearing process) that this case be combined and consolidated with Case No. PU-05-305; a companion case filed by PPM for siting of a 9.5 mile transmission line from the site of the proposed wind energy facility sought to be sited in this Application to the transmission grid. PPM's request to combine and consolidate Case No. PU-05-305 with this case was granted. Following the hearing, the Commission received certain late filed exhibits as ordered at the hearing.

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 of Fact

1. PPM proposes to construct and operate a wind energy facility (the Rugby Wind Farm) to be located in Pierce County, North Dakota approximately 4 miles north of

the city of Rugby. The proposed capacity of the wind energy facility would be 150 megawatts (MW) comprised of up to 100 turbines, each with a capacity of 1.5 to 3.0 MW.

2. Construction of the proposed Rugby Wind Farm is expected to take 6 to 8 months. PPM estimates that between 150 to 200 people will be employed during construction. Most construction workers would be employees of construction and equipment manufacturing subcontractors. Construction workers and subcontractors would be a combination of local companies and workers as well as subcontractors based outside the state. PPM estimates that between 8 to 10 full time permanent jobs will be created for operation and maintenance of the Rugby Wind Farm after construction is completed and the facility is fully operational. Based on experience at its other projects, PPM stated that it is likely that several (and perhaps a majority) of the 8 to 10 full-time permanent jobs will be filled locally.

3. The total estimated cost for construction of the PPM proposed Rugby Wind Farm is approximately \$170 million.

4. Section 49-22-16(3), N.D.C.C., provides that an applicant for a certificate of site compatibility from the Commission shall obtain all permits that may be required to construct and operate the energy conversion facility.

5. The state and federal departments and agencies which have permit or regulatory approval authority relating to the construction and operation of the proposed Rugby Wind Farm are as follows:

- a. state and local agencies
 - (1) North Dakota Public Service Commission
 - (2) North Dakota Department of Health
 - (3) North Dakota State Historical Society, State Historical Preservation Office
 - (4) North Dakota Highway Patrol
 - (5) Pierce County
- b. federal
 - (1) U.S. Fish and Wildlife Service
 - (2) Federal Aviation Administration

Hearing Exhibit 8 contains a complete listing of all the permits and approvals that must be obtained for the Rugby Wind Farm and the status of each of those permits or approvals.

6. Section 49-22-16(2), N.D.C.C., 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. All necessary rezoning and conditional use permits for the proposed Rugby Wind Farm and its associated facilities have been obtained from the

Pierce County Board of County Commissioners. Hearing Exhibit 5 is a copy of the Pierce County Conditional Use Permit, dated July 12, 2005, for the Rugby Wind Farm.

7. Chapter 69-06-08, N.D. Admin. Code, sets forth certain criteria to guide the Commission in evaluating the suitability of granting an application for a certificate of site compatibility. The criteria as set forth in Section 69-06-08-01, N.D. Admin. Code are classified as Exclusion Areas, Avoidance Areas, Selection Criteria and Policy Criteria. An energy conversion facility shall not be sited within an Exclusion Area. An energy conversion facility shall not be sited within an Avoidance Area unless the applicant shows under the circumstances there are no reasonable alternatives. 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 effective use of resources; and alternative sites. In accordance with the Commission's Section Criteria, a site shall be approved if it is demonstrated that no significant adverse impacts will result from the location, construction and operation of the energy conversion facility. In accordance with the Commission's Policy Criteria, preference may be given to an applicant demonstrating certain benefits of the proposed energy conversion facility.

8. The area designated by PPM for its proposed facility does not include any geographical area listed as an Exclusion Area; with one exception, portions of the project will be located on Prime Farmland. However, prime farmland has been avoided to the maximum extent practicable and impacts to prime farmland are expected to affect less than 0.1% of the yearly production for the top five commodities in Pierce County. In addition, the wind project will be located within the general vicinities of Waterfowl Production Areas (WPAs) managed by the U.S. Fish and Wildlife Service (USFWS), but no project facilities will be located closer than 0.25 miles from such areas. There is one parcel of irrigated land within the project area, but no project facilities will be located in that section.

9. The area designated by PPM for its proposed facility, as shown on the attached map, does not include any geographical area listed as an Avoidance Area, except as follows:

- a. PPM has conducted a Class I Cultural Resources Inventory (CRI) for historic, cultural and archaeological resources in the area of the proposed facility. Three resource areas were identified in the Class I CRI and, in consultation with the North Dakota State Historic Preservation Office (SHPO), as areas to avoid. Once final locations of turbines, roads, electrical collection system, and associated facilities are determined, and before construction commences, a Class III CRI will be conducted to further ensure against disturbance of any areas of historic, cultural, or archaeological interest. A Class III CRI is a pedestrian survey for cultural resources within the vicinity of

the construction zone. PPM will submit the report to the SHPO for review and comment prior to construction. PPM will also provide a copy of the report to the Commission. If cultural resources or grave sites are discovered in the course of construction of the facility, earth disturbing activities in the immediate vicinity of the discovery would be halted. The resources will be marked, preserved and protected from further disturbance until a professional examination can be made in consultation with the ND SHPO and clearance to proceed is given by SHPO. A report of such examination will be filed with the SHPO and Commission.

- b. Woodlands and wetlands are present in the general vicinity of the wind project. Woodland impacts are not expected, but if final micro-siting requires impacts to woodlands, individual trees or woody vegetation will be replaced at a 2 to 1 ratio. PPM will maintain a 500-foot buffer between all project facilities and the large (lacustrine) wetland complexes (greater than 50 acres); it will also avoid all other wetland areas to the extent practicable. USFWS permits are required for impacts to wetlands on conservation easements that cannot be avoided. No U.S. Army Corps of Engineers (USACE) jurisdictional waters are present within the wind farm and no permits are required.

10. PPM submitted substantial evidence to demonstrate that the proposed energy conversion facility would not have any significant impact on the Selection Criteria set forth in Section 69-06-08-01(3), N.D. Admin. Code.

11. PPM submitted substantial evidence to demonstrate its commitment to maximize the benefits of the proposed energy conversion facility as far as is possible to meet the Policy Criteria set forth in Section 69-06-08-01(4), N.D. Admin. Code.

12. PPM proposes to locate the Rugby Wind Farm on an area of land comprised of approximately 46,000 acres of privately owned and state land in Pierce County, North Dakota. PPM has acquired wind energy leases from landowners in the area which allows PPM to construct and operate the wind generator facilities in exchange for financial compensation to the landowners. Landowners can continue their farming operations in and around the wind turbines and other wind generator facilities.

13. The proposed Rugby Wind Farm and its related supporting facilities would occupy and disturb approximately 50 to 70 acres of land during the life of the plant. The proposed Rugby Wind Farm is located in an area that is zoned exclusively for agricultural use, most of which is planted with small grains, grasses under the United States Department of Agriculture Conservation Reserve Program (CRP), or pasture with native grasses. The facility would have little or no impact on farm operations. During construction, the project might cause temporary off-site impacts to farming due to an

increase in construction-related traffic. Once operational, however, the facility would generate little traffic. The location of facility structures might require changes to farming patterns in the immediate vicinity of the turbine towers and other above ground facilities, but the facility operation would not cause off-site impact on adjacent lands that would significantly interfere with or increase the cost of farm practices in the area of the proposed project.

14. Wind turbines consist of two main components: the turbine tower and the nacelle. The nacelle is the portion of the wind turbine mounted at the top of the tower that houses the wind turbine itself, the rotor and blades, hub and gear box. Turbine towers would be anywhere from 262 feet to 345 feet tall at the turbine hub, dependant upon the size of the turbines which are ultimately utilized—ranging from 1.5 MW to 3.0 MW. The towers would be smooth, hollow steel structures.

15. PPM expects construction of its proposed Rugby Wind Farm to take approximately 6 to 8 months. Construction activities would be compatible with farm use and should not affect resource use of the remainder of the parcel or adjacent lands.

16. Landowners would be able to conduct grazing and farming operations up to the turbines and between the turbines strings. Landowners may need to modify planting and harvesting patterns in the immediate vicinity of the turbine pads and roads; however, the spacing of the towers, height of the turbine blades and the depth of the underground cables are such that the facility would otherwise be compatible with farm uses. In addition, PPM's lease payments to farmers participating in the project will provide a steady source of income to supplement the unpredictable revenues from farming, which are subject to the fluctuations of weather and farm prices. Thus, the wind project will help assure the continued viability of farming in the project area. Operation of the facility would not have any effect on resource use of the remainder of the affected parcels or on adjacent lands. When the facility is retired, structures would be removed and the area restored to as near as original condition as is practical.

17. Lighting would be limited to warning lights required by the Federal Aviation Administration (FAA) and security lights at the project substation and the operation and maintenance building.

18. The local economy would benefit through the employment opportunities offered by the project, primarily during construction, and the property taxes paid to Pierce County. As noted above, compensation paid to landowners who lease space for roads, turbines and other facilities would provide revenue to supplement income earned from agricultural operations.

19. The proposed facility would not have significant adverse economic and social consequences. It would not cause any significant adverse impact on the ability of the

affected area to provide community service, such as housing, health care, schools, police and fire protection, water and sewer, solid waste management, transportation and traffic safety.

20. Stormwater drainage impacts could occur during construction of new roads, staging areas and turbine foundations. PPM would prevent adverse impacts by use of erosion control measures required under National Pollution Discharge Elimination System (NPDES) permit and associated Storm Water Pollution Prevention Plan. Construction of the facility would not have a significant adverse impact on the water quality of any receiving water.

21. The proposed facility would be located primarily on private property, limiting access by the public. Turbines would not be located closer than 1,000 feet from an inhabited dwelling or closer than 400 feet or the fall zone of the wind turbine, whichever is greater, to any developed road. The turbine towers would have locked access doors and turbine design would preclude climbing. Pad-mounted transformers located at each turbine would be located inside locked metal cabinets.

22. Electromagnetic fields are present around any electrical device. The electromagnetic fields which will be generated by the proposed facility are not anticipated to result in any human health effects, because of their low level and because of the minimum distance of 1,000 feet from any inhabited dwelling and 400 feet or the fall zone of the wind turbine, whichever is greater, from any developed road.

23. Wind turbines produce noise from the rotation of the turbine blades. Generally, turbine noise increases with wind speed. The noise standard adopted by the Pierce County Board of County Commissioners provides for levels not greater than 50 dBA at the nearest occupied residence. Based on modeling, PPM has calculated that the 50 dBA standard is exceeded at distances of less than 190 meters (623 feet) for 1.5 MW turbines and 240 meters (788 feet) for 3.0 MW turbines. PPM has proposed a set back of 1,000 feet from residences. At that distance, the 50 dBA noise standard adopted by the Pierce County Board of County Commissioners will not be exceeded.

24. Within the site area land is for the most part privately owned and there are no county or state recreational facilities. Federal recreational areas within the site area include five USFWS WPAs. The WPAs will be avoided and no facilities will be placed within 0.25 miles of the WPAs. Recreational opportunities in Pierce County include camping, hiking, biking, swimming, golfing, hunting, fishing and nature observation. While the wind turbines within the site area will be visible, they are not likely to cause any significant adverse impact to any recreational opportunities.

25. Numerous wetlands are identified within the site area. Wetlands range in size from isolated basins less than a few hundred square feet in size to large wetland

complexes covering 200 acres. Wind turbines will be constructed on upland areas and thereby avoid wetlands on the lower areas of the landscape. Access roads and supporting facilities will be designed to minimize impacts on wetlands. PPM has proposed a 500-foot setback around large (lacustrine) wetland complexes (greater than 50 acres) and 0.25 mile set back around WPAs within the site area to minimize any potential impacts to important wildlife habitat. Exhibit 4 confirms U.S. Fish and Wildlife Service acceptance of this setback as sufficient to protect these areas.

26. Wildlife within the site area consists of birds, mammals, fish, reptiles, amphibians and insects associated with agricultural fields, pasture grasslands, and wetland areas. PPM has conducted, and will conduct, environmental studies of the project site to aid in detailed placement of turbines, roads, and associated facilities to avoid or minimize potential impacts to wildlife and habitat. Construction and operation of the proposed facility is expected to produce minimal impact to the wildlife within the site area.

27. PPM contacted the USFWS and the North Dakota Parks and Recreation Department to review the site area for threatened or endangered species and unique habitats. In response to this contact, USFWS identified several federally listed threatened and endangered species potentially present in Pierce County. No impacts are anticipated to the species identified.

28. PPM is still evaluating the project area (comprised of approximately 46,000 acres) to determine the best locations for up to 100 wind turbines. As criteria for the specific location of each wind turbine, PPM recommended the following:

- a. No wind turbine would be placed within 0.25 miles of any USFWS WPAs.
 - b. No wind turbine would be placed within 500 feet of any large (lacustrine) wetland complex (greater than 50 acres).
 - c. No wind turbine would be placed within 1,000 feet of any occupied residence.
 - d. No wind turbine would be placed within 400 feet (or the height of the wind turbine, whichever is greater) from any developed road, transmission line or adjacent property not under lease by PPM.
 - e. No wind turbine would be placed on the one parcel of land (located in Section 24, Township 158 North, Range 72 West) within the project area which is covered by an irrigation permit.
29. Wind farms are typically developed on prominent features such as hills and ridgelines. PPM demonstrated that arbitrarily requiring wind farms to maintain a particular setback along the perimeter of the project area may result in eliminating some tracts of land from development. PPM,

therefore, recommends no minimum setback other than those set forth in paragraph 28 above, and approved by Pierce County.

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

Conclusions of Law

1. The Commission has jurisdiction over this proceeding under Chapter 49-22, N.D.C.C.
2. The wind energy facility proposed by PPM is an energy conversion facility as defined in Section 49-22-03(11), N.D.C.C.
3. The proposed project is of such design, location and purpose that it will produce minimal adverse effects, as defined under Section 49-22-05.2, N.D.C.C.
4. The Application submitted by PPM meets the site evaluation criteria required by Chapter 49-22, N.D.C.C.
5. The location, construction, and operation of the proposed energy conversion facility will produce only minimal adverse effects of the environment and upon the welfare of the citizens of North Dakota.
6. The proposed energy conversion facility is compatible with the 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.
8. The proposed energy conversion facility is of such design, location and purpose that it 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 No. _____ for an Energy Conversion Facility is issued to PPM for the construction, operation and maintenance of a wind energy facility known as the Rugby Wind Farm.

2. That the site described in the Application is located approximately 4 miles north of Rugby, North Dakota, is designated as the site for construction of the energy conversion facility.

3. The site designated for the Rugby Wind Farm is as follows:

Township 157 North, Range 71 West
Sections 5, 6, 7 and 8

Township 157 North, Range 72 West
Sections 1-12

Township 157 North, Range 73 West
Sections 1 and 12

Township 158 North, Range 71 West
Sections 5, 6, 7, 8, 17, 18, 19, 20, 29, 30, 31 and 32

Township 158 North, Range 72 West
Sections 1-36

Township 158 North, Range 73 West
Sections 1, 12, 13, 24, 25 and 36

comprised of 46,080 acres, more or less.

4. Within the permitted area, PPM is authorized to site and construct up to 150 MW of wind turbines (ranging in size from 1.5 to 3.0 MW), electrical collection and communication lines, access roads, an operation and maintenance building, meteorological towers, and associated facilities identified in the Application for the Rugby Wind Farm.

5. PPM would be allowed to locate the turbines anywhere within the area designated as the site area of the Rugby Wind Farm subject to the following setback requirements:

- a. No wind turbine would be placed within 0.25 miles of any USFWS WPA.
- b. No wind turbine would be placed within 500 feet of any large (lacustrine) wetland complex (greater than 50 acres).
- c. No wind turbine would be placed within 1,000 feet of any occupied residence.

- d. No wind turbine would be placed within 400 feet (or the height of the wind turbine, whichever is greater) from any developed road, transmission line or adjacent property not under lease by PPM.
 - e. No wind turbine would be placed on the one parcel of land (located in Section 24, Township 158 North, Range 72 West) within the permit area which is covered by an irrigation permit.
6. For purposes of confirming that the site plan complies with the provisions of this order, PPM shall schedule a preconstruction meeting with PSC staff and submit a finalized site plan 30 days prior to the scheduled meeting.
7. PPM shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the proposed energy conversion facility and shall obtain all other necessary approvals and permits, and shall provide copies of all approvals and permits to the Commission prior to the construction of the energy conversion facility.
8. PPM shall inform the Commission of its intent to start construction on the energy conversion facility prior to the commencement of construction, and, once construction has started, PPM shall keep the Commission updated of construction activities on a monthly basis.
9. PPM shall construct and operate the energy conversion facility substantially in the manner described in its Application and at the hearing, and in accordance with all applicable safety requirements.
10. PPM shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species, or of bald or golden eagles that PPM becomes aware of and that were not previously reported to the Commission.
11. If any cultural resources or grave sites are discovered during construction of the facility, earth disturbing activities in the immediate vicinity of the discovery would be halted. The resources will be marked, preserved and protected from any further disturbance until a professional examination can be made in consultation with the ND SHPO and clearance to proceed is given by SHPO. A report of such examination will be filed with the SHPO and Commission.
12. 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.

13. 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.

14. Reclamation, fertilization and reseeded is to be done by PPM according to the Natural Resource Conservation Service and USFWS recommendations for CRP, native prairie and other non-cropped lands unless otherwise specified by the landowner and approved by the Commission.

15. PPM's obligation for reclamation and maintenance of the site shall continue throughout the life of the energy conversion facility.

16. Trees or 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 off the right-of-way on the landowner's property or waiving that requirement in writing and allowing PPM to plant the replacement trees/shrubs elsewhere. PPM shall inspect tree replacements once a year for three years and send a report on or shortly before December 31st 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. PPM shall repair or replace all fences and gates removed or damaged during all phases construction and operation of the proposed energy conversion facility.

18. PPM shall repair or replace all drainage tile, broken or damaged, during all phases of construction and operation of the proposed energy conversion facility.

19. PPM 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.

20. PPM shall, as soon as practicable 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 beginning of construction.

21. PPM shall provide, if requested, educational material for landowners within the site boundaries about the proposed energy conversion facility and any restriction or danger concerning the proposed energy conversion facility.

22. PPM shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversion facility.

23. PPM shall advise the Commission of any extraordinary events which take place at the site of the energy conversion facility, such as a 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.

24. PPM will implement a procedure for how complaints concerning the proposed energy conversion facility will be handled by PPM.

25. PPM shall work with landowners and residents to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.

26. PPM shall obtain approval from the Commission or from Commission staff prior to any material changes in structure locations.

27. PPM shall provide the Commission with as built drawings post-construction.

28. The authorization granted by the Certificate of Site Compatibility shall be effective for the life of the project but is subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

29. The Certificate of Site Compatibility No. ____ shall not be transferred without the approval of the Commission, but approval shall not be unreasonably withheld.

PUBLIC SERVICE COMMISSION

**Susan E. Wefald
Commissioner**

**Tony Clark
President**

**Kevin Kramer
Commissioner**