STATE OF NORTH DAKOTA

PUBLIC SERVICE COMMISSION

Aurora Wind Project, LLC
Aurora Wind Project – Williams County **Case No. PU-18-352**
Siting Application

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

_____, 2019

Appearances

Commissioners Brian Kroshus, Julie Fedorchak, and Randy Christmann.

Mollie M. Smith, Fredrikson & Byron, P.A., 200 South 6th Street, Suite 4000, Minneapolis, MN 55402, on behalf of the Applicant, Aurora Wind Project, LLC.

Zachary Pelham, Special Assistant Attorney General, North Dakota Public Service Commission.

Timothy J. Dawson, Administrative Law Judge, Office of Administrative Hearings, 2911 North 14th Street – Suite 303, Bismarck, ND 58503, as Procedural Hearing Officer.

Preliminary Statement

On September 28, 2018, Aurora Wind Project, LLC (Aurora Wind) filed an Application for a Certificate of Site Compatibility for a wind energy conversion facility (Wind Application) known as the Aurora Wind Farm Project (Wind Project or Project) to be located in Williams County, North Dakota. On the same date, Aurora Wind also filed combined applications for a Corridor Certificate and Route Permit (Transmission Line Application) to construct a 345 kV electric transmission line from the proposed Wind Project in Williams County to Basin Electric's Tande Substation in Mountrail County, North Dakota (Transmission Line Project).

On January 9, 2019, the North Dakota Public Service Commission (Commission) consolidated the Wind Project and Transmission Line Applications for hearing; deemed both Applications complete conditioned upon receipt within 30 days of the hearing of (1) Maps showing final site plan with turbines, access roads, collector lines, transmission line structures, and all residential receptor points labeled; (2) Class III cultural resource survey reports or summaries showing areas surveyed and State Historical Society of North Dakota (SHSND) cultural site numbers recommended for avoidance; and (3)

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Wetland delineation reports; and issued a Notice of Filings and Notice of Consolidated Hearing, scheduling a public hearing for February 25, 2019, at 9:00 a.m. at Neset Consulting Service, 6844 State Hwy 40, Tioga, ND 58852. The Notice identified the following issues to be considered:

> 1. Will the location 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 impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On January 24 and 25, 2019, Aurora Wind filed (1) a residence setback waiver; (2) Mountrail County Conditional Use Permit (Transmission Line); (3) Sound and Shadow Flicker Summary (with updated receptor maps); (4) Archaeological Summary Report; (5) Letter to SHSND; (6) Unanticipated Discovery Plan; (7) Historic-Age Non-Archaeological Resource Summary Report; (8) Wetlands and Waterbodies Technical Memorandum; (9) Avian Use Study Report: August 2017 – July 2018; (10) 2018 Acoustic Bat Monitoring Survey Summary; (11) Dakota Skipper Habitat Evaluation Report; (12) Correspondence with U.S. Fish and Wildlife Service (USFWS); (13) updated Table 4-1 – Representative Turbine Type Characteristics; and (14) Shadow Flicker Acknowledgement.

On February 22, 2019, Aurora Wind filed (1) Signed Certification Relating to Order Provisions – Wind Energy Conversion Facility Siting, with accompanying Tree and Shrub Mitigation Specifications; (2) additional SHSND correspondence; (3) additional North Dakota Game, Fish, and Parks Department (NDGFP) correspondence and meeting notes; (4) North Dakota Department of Trust Lands (NDDTL) correspondence; (5) correspondence from Senator Rust; and (6) a sound analysis report.

On February 25, 2019, the public hearing was held.

On March 1, 2019, the Commission filed late-filed Exhibit 33, a letter report by David Hessler regarding his review of Aurora Wind's sound analysis report and Epsilon Associates' external review.

On March 15, 2019, Aurora Wind filed late-filed Exhibit 32, a map showing occupancy status of residences in and around the Project Area.

Having allowed all interested persons an opportunity to be heard and having heard, reviewed, and considered all testimony and evidence presented, the Commission makes its:

Findings of Fact

1. Aurora Wind is a Delaware limited liability company and is wholly-owned by Tradewind Energy, Inc. (Tradewind).

2. Aurora Wind is authorized to do business in the State of North Dakota, as evidenced by the Certificate of Good Standing issued by the North Dakota Secretary of State on October 1, 2018 (Case No. PU-18-354).

3. The Project will be owned and operated by Aurora Wind.

Size, Type, and Preferred Location of Facility

4. Aurora Wind proposes to construct the Wind Project within approximately 44,000 acres of land in Williams County, North Dakota, approximately five miles northwest of the City of Tioga (Wind Project Area). Aurora Wind requests that the Wind Project Area, as depicted in Hearing Exhibit No. 3, be designated as the site for the Wind Project. The Project will consist of up to 121 wind turbines and have a nameplate capacity of up to 300 megawatts (MW).

5. Aurora Wind has not yet selected a specific turbine model for the Project. Hearing Exhibit No. 5 describes the characteristics of modern turbine types that are typical of those under consideration. The turbine output possibilities range from 2.0 MW to 4.2 MW. The planned Project layout is designed to accommodate any of the turbine models under consideration.

6. In addition to turbines, associated Wind Project facilities constructed within the Wind Project Area will include access roads and improvements to existing roads, underground electrical collection and communication lines with above ground junction boxes, up to six permanent meteorological towers, aircraft detection lightening system (ADLS) components, an operations and maintenance (O&M) building, and a substation. Other temporary facilities required for the Wind Project's construction phase include a concrete batch plant, laydown areas for an equipment and construction management facility, intersection improvements, crane pads and working pads, and staging areas.

7. Foundation size and design will be finalized based on the results of the geotechnical analyses conducted once the turbine model(s) is selected.

8. Each turbine will communicate directly with the Supervisory Control and Data Acquisition (SCADA) system for remote performance monitoring, energy reporting, and troubleshooting.

9. Construction of the Wind Project is anticipated to begin as early as the Second Quarter of 2019. Commercial testing is anticipated to take place after construction is complete, with commercial operations beginning no later than the end of 2020.

10. The estimated cost for construction of the Project (including the Transmission Line) is approximately $400 million.

Study of Preferred Location

11. Aurora Wind performed a desktop evaluation of the Project Area for soils, land use, wetlands and waterbodies, trees and shrubs, protected species, and critical habitats.

12. Woodlands comprise less than one percent of the total Project Area. If trees or shrubs are impacted by the Project, Aurora Wind will comply with the Commission's tree and shrub mitigation specifications.

13. A wetland delineation was completed for the Wind Project. In the event the Project layout changes, Aurora Wind will complete a wetland delineation of any previously unsurveyed areas, as necessary. Aurora Wind has designed the Project to avoid wetland impacts to the extent possible, and has avoided all USFWS wetland easement basins. Wetland impacts are anticipated to fall under the threshold for a United States Department of the Army Corps of Engineers (USACE) Nationwide Permit.

14. The Wind Project will avoid permanent impacts to USFWS wetland easement basins.

15. Aurora Wind conducted environmental studies of the Wind Project Area, and impacts to wildlife are anticipated to be minimal. Among the studies conducted were:

A. A two-year raptor nest field survey of the Wind Project Area, as well as a Stage I Eagle Assessment. No bald or golden eagle nests were identified within ten miles of the Wind Project Area.

B. A Whooping Crane Habitat Analysis. The analysis found potential whooping crane habitat and migration areas within the Project Area, although the habitat is not unique compared to adjacent areas.

C. A Sharp-Tailed Grouse Lek Survey. In the final Project design, all turbines are placed at least one mile from confirmed leks.

D. Two years of Acoustic Bat Monitoring. The monitoring found that bat activity in the Wind Project Area is lower than expected in the Great Plains region.

16. Aurora Wind will prepare a Bird and Bat Conservation Strategy prior to operation of the Project, which will outline specific conservation and minimization measures.

17. Aurora Wind completed a Class I literature search for the Study Area, as well as a Class III intensive cultural resources pedestrian survey of all previously un-surveyed areas that might be directly impacted by the Project. Two sites that remain unevaluated for inclusion in the National Register of Historic Places were identified; Wind Project facilities will avoid these sites, with a 50-foot buffer. SHSND has concurred in the results of the Class III report.

18. Aurora Wind completed a Class II architectural history reconnaissance survey for structures 50 years of age or older within a two-mile visual of the Wind Project's proposed turbine array. SHSND provided a letter on February 5, 2019, indicating that they reached a determination of "Significant Sites Affected" for nine resources within the APE for Aurora Wind. In that letter, SHSND proposed a journal-length article as mitigation for visual impacts to certain identified resources. In further communications, SHSND indicated that they would be open to any viable and well-articulated proposal from Aurora Wind, would be willing to review the proposal and coordinate with Aurora Wind to develop an appropriate scope, and that the proposed mitigation need not be completed prior to Project construction. Aurora Wind has committed to notifying the Commission when a final mitigation proposal is developed and when such mitigation is complete.

19. In the event that the Wind Project layout changes from the layout provided in Hearing Exhibit No. 3, Aurora Wind will complete Class III cultural resource survey work for any previously unsurveyed areas, per SHSND's guidance; will submit the findings to SHSND for review; and will obtain and file with the Commission a copy of SHSND's response prior to beginning construction in those areas.

20. Wind Project facilities will avoid identified cultural resource sites; thus, cultural resources are not expected to be impacted by the Project.

21. Section 49-22-16(4) of the North Dakota Century Code provides that a site shall not be designated that violates the rules of any state agency, and that compliance with an agency's rules shall be presumed if the agency fails to present its position with respect to the proposed facility at the public hearing. The federal, state and local departments, agencies and entities that were consulted and provided comment are as follows:

a. Federal – United States Department of the Air Force – Minot Air Force Base North Dakota; USACE, North Dakota Regulatory Office; Federal Aviation Administration (FAA); United States Department of Commerce – National Telecommunications and Information Administration; USFWS.

b. State – North Dakota Aeronautics Commission (NDAC); North Dakota Department of Health; North Dakota Department of Trust Lands (NDDTL); NDGFP; North Dakota State Water Commission; North Dakota Industrial Commission – Oil and Gas Division; North Dakota Department of Transportation; North Dakota Geological Survey; SHSND; and

c. Local – Mountrail County; Williams County; City of Tioga, North Dakota.

22. The FAA issued Determinations of No Hazard for all the turbine locations included in the Project.

23. Agency consultations and comments are noted in Appendix D of the Wind Application and in the exhibits and the testimony presented at the public hearing. No objections to the proposed Project were raised by any state or federal agencies or local governmental entities.

24. Section 49-22-16(2) of the North Dakota Century Code provides that no energy conversion facility site shall be designated that violates any local land use, zoning or building rules, regulations or ordinances. Aurora Wind has obtained a conditional use permit for the Wind Project and Transmission Line from Williams County, and a conditional use permit for the Transmission Line from Mountrail County. Aurora Wind will comply with applicable county zoning ordinance requirements.

25. Aurora Wind currently holds wind energy lease and easement agreements with all but three landowners within the proposed Wind Project Area. Two of the three landowners have executed Authorized Agent forms, authorizing inclusion of their lands in permit applications while the terms of the wind energy lease and easement agreements are finalized. Aurora Wind has also submitted an application to NDDTL for wind energy lease and easement agreements. NDDTL has authorized inclusion of the school trust lands within permitting applications, but will wait to process Aurora Wind's application until the Certificate of Site Compatibility is issued.

26. The Project has been selected for Power Purchase Agreements for its entire output. As of the date of the hearing, finalizing the terms of the agreements was still in process and the identity of the offtakers is confidential.

27. The Project will be constructed pursuant to National Electric Safety Code (NESC) requirements.

Siting Criteria

28. 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 a certificate of site compatibility. The criteria, as set forth in North Dakota Administrative Code Sections 69-06-08-01 are classified as Exclusion Areas, Avoidance Areas, Selection Criteria and Policy Criteria.

29. With the exception of prime farmland and unique farmland, an energy conversion facility shall not be sited within an Exclusion Area. If the Commission finds the prime and unique farm land that will be removed from use is of such small acreage as to be of negligible impact on agricultural production, then such exclusion shall not apply.

30. There are areas of prime farmland and farmland of statewide importance within the Project Area. Less than one percent of the prime farmland or farmland of statewide importance within the Project Area will be impacted during the life of the Project. 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.

31. Four Exclusion Areas specific to wind energy conversion facilities are present within the Wind Project Area: (a) areas less than 1.1 times the height of the turbine from interstate or state roadway right-of-way; (b) areas less than 1.1 times the height of the turbine plus 75 feet from the centerline of any county or maintained township road; (c) areas less than 1.1 times the turbine height from a 115 kV or higher transmission line; and (d) areas less than 1.1 times the turbine height from the property line of a non-participating landowner. Although present within the Wind Project Area, the turbines have been sited to avoid these areas.

32. All setbacks are met when measured from the closest edge of the base of the turbine to the closest part of the applicable feature.

33. 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 alternative sites.

34. With respect to Avoidance Areas, cultural resources are present within the Wind Project Area, but the Wind Project will be sited to avoid cultural resource sites. An Unanticipated Discovery Plan has also been developed and approved by SHSND.

35. Wetlands are also present within the Project Area, but the Wind Project will be sited to avoid wetlands except where there is no reasonable alternative and then to minimize permanent impacts to the extent practicable. Minimal trees and shrubs are located within the Project Area, and the Wind Project has been sited to avoid shelterbelts and other areas where trees are located. Any tree and shrub removal and replacement will be conducted in accordance with the Commission's tree and shrub mitigation specifications.

36. In accordance with the Commission's Selection Criteria, a site shall be approved if it is demonstrated that any significant adverse effects resulting from the location, construction, and operation of the energy conversion facility will be at an acceptable minimum or that the effects will be managed and maintained at an acceptable minimum. In accordance with the Commission's Policy Criteria, preference may be given to an applicant demonstrating certain benefits of the proposed energy conversion facility in accordance with N.D. Admin. Code § 69-06-08-01(6).

37. The Project will not have a significant adverse impact on the Selection Criteria set forth in North Dakota Administrative Code § 69-06-08-01(5). Aurora Wind submitted 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(6) of the North Dakota Administrative Code.

38. The Wind Project is anticipated to permanently occupy and disturb up to approximately 99 acres of land, or up to approximately 0.002% percent of the total Wind Project Area, during the life of the Project. Aurora Wind will continue to work with landowners to minimize land use disruptions from the siting of the facilities. No impacts to irrigation or the quality of the agricultural land are anticipated.

39. Aurora Wind submitted evidence to demonstrate that any significant adverse effects resulting from the location, construction, and operation of the Wind Project as they relate to the Selection Criteria set forth in Sections 69-06-08-01(5) of the North Dakota Administrative Code will be at an acceptable minimum or managed and maintained at an acceptable minimum.

40. During construction, the Wind Project will likely result in a temporary increase in traffic on county and township roads. The increase in traffic during construction is not expected to be at a volume that will disrupt residents or travel in the Project Area. Haul road permits and road use and maintenance agreements will be negotiated with Williams County and applicable Townships, if needed. County and Township roads will be restored in accordance with the Certification Relating to Order Provisions – Wind Energy Conversion Facility Siting (dated February 19, 2019). During operation, no adverse effects to transportation facilities or networks are anticipated.

41. The proposed Wind Project is not anticipated to have significant adverse impacts on the ability of the affected area to provide community services, such as

housing, health care, educational services, police and fire protection, water and sewer, or solid waste management.

42. The Wind Project is anticipated to benefit the local economy through the creation of construction and operation and maintenance jobs; easement payments to landowners; state and local tax revenue; and local expenditures for equipment, fuel, operating supplies, products and services.

43. Aurora Wind will continue to coordinate with USFWS and NDGFP) with respect to the Project and potential mitigation measures. Aurora Wind will prepare a Bird and Bat Conservation Strategy prior to the operation of the Project.

44. A sound analysis was conducted for the Wind Project. The analysis demonstrates that sound levels for the Wind Project will comply with the Commission's Avoidance Area requirement that sound levels within 100 feet of an inhabited residence or community building not exceed 50 dBA unless a waiver is obtained.

45. A detailed shadow flicker analysis was conducted for the Wind Project, using realistic modeling assumptions. Based on the shadow flicker analysis, potential shadow flicker levels will be below 30 hours per year at all but two residences – one participating and one non-participating. Aurora Wind will conduct additional shadow flicker modeling when a final turbine model(s) is selected for the Project. In the event results still show levels above 30 hours per year, Aurora has obtained a shadow flicker acknowledgment from the participating residence owner, and will take steps to ensure the shadow flicker level does not exceed 30 hours per year at the residence owned by a non-participating landowner.

Measures to Minimize Impacts

46. Aurora Wind has agreed to the measures to mitigate potential Wind Project and Transmission Line Project impacts, as indicated by the attached Certification Relating to Order Provisions – Energy Conversion Facility Siting, with accompanying Tree and Shrub Mitigation Specifications (dated February 19, 2019).

47. Based on the current Wind Project layout, as depicted in Hearing Exhibit No. 3, all Project turbines are located at least 2,044 feet from currently occupied residences of nonparticipating landowners.

48. All Project infrastructure will be set back at least two miles from the Fuller Waterfowl Production Area.

49. Subject to FAA approval, Aurora Wind will install an Aircraft Detection and Lighting System or other technology suitable to the Commission on the Project prior to operation.

50. Aurora Wind will utilize best management practices (BMPs) to minimize impacts on ground and surface water, and to prevent soil erosion. Aurora Wind will implement the erosion control measures required under the National Pollution Discharge Elimination System (NPDES) permit and the associated Stormwater Pollution Prevention Plan. Construction of the Project is not anticipated to have a significant adverse impact on surface or ground water resources or soils.

51. Aurora Wind will participate in the North Dakota One-Call Excavation Notice System.

52. Aurora Wind will coordinate with local authorities and first responders regarding emergency response measures as part of the Project commissioning activities.

53. Lightning and grounding protection for all wind farm equipment is designed and constructed to be compliant with all applicable National Electrical Code (NEC) and NESC requirements.

54. Aurora Wind will comply with the Commission's decommissioning rules, including filing a decommissioning plan with the Commission prior to the commencement of operation of the Project, and performing decommissioning in accordance with all applicable rules and regulations.

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 wind energy conversion facility proposed by Aurora Wind is an energy conversion facility as defined in North Dakota Century Code Section 49-22-03(5).

3. The Wind Project Application submitted by Aurora Wind 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 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 location 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 NESC standards in the construction and operation of the proposed energy conversion facility.

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 Aurora Wind Project, LLC, designating a site for a wind energy conversion facility that corresponds to the Project Area depicted in Hearing Exhibit No. 3.

2. That within the designated site, as depicted in Hearing Exhibit No. 3, Aurora Wind is authorized to site, construct, operate, and maintain wind turbines and associated equipment, access roads, an O&M building, a substation, permanent meteorological towers, and a system of underground collection lines and communication cables, as well as any other associated facilities identified in the Application, at the hearing and in any supplemental filings.

3. If modifications are made to the Project layout, Aurora Wind will complete a Class III cultural resource survey for any previously unsurveyed portions of the designated site affected by Project-related construction activities, in accordance with SHSND guidance; will submit cultural resource findings to SHSND for review; and will obtain and file a copy of SHSND's response with the Commission prior to beginning construction in said areas.

4. If modifications are made to the Project layout, Aurora Wind will complete a wetland delineation of any previously unsurveyed areas affected by Project-related activities, as necessary.

5. In the event Project modifications occur that are not covered by its current sound analysis, Aurora Wind will conduct a sound analysis to ensure that the Project complies with the Commission's Avoidance Area Sound Requirement.

6. Aurora Wind shall site Project turbines so as to meet a shadow flicker goal of 30 hours per year or less at each currently occupied residence, considering site-specific conditions, unless otherwise agreed to by the landowner. In the event Project modifications occur that are not covered by its current shadow flicker analysis, Aurora Wind shall conduct a shadow flicker analysis to ensure this requirement is met.

7. Inclusion of the currently unleased parcels in the Wind Project Area as part of the site designated for the Project is conditioned upon Aurora Wind obtaining the requisite wind lease and/or easement agreements with the owners of said parcels.

8. The February 19, 2019 Certification Relating to Order Provisions – Wind Energy Conversion Facility Siting, with accompanying Tree and Shrub Mitigation Specifications (Hearing Exhibit No. 12) is incorporated by reference and attached to this Order.

9. Prior to commencing construction of any portion of the proposed Project, Aurora Wind shall obtain all other necessary licenses and permits for the construction of such portion, and provide copies to the Commission.

PUBLIC SERVICE COMMISSION

Randy Christmann **Commissioner**	**Brian Kroshus** **Chairman**	**Julie Fedorchak** **Commissioner**