

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

**Otter Tail Power Company**  
**Amend – Langdon Wind Upgrade – Cavalier County**  
**Siting Application**

**Case No. PU-23-086**

**ORDER**

\_\_\_\_\_, 2023

**Preliminary Statement**

On May 31, 2007, the Public Service Commission (Commission) issued Findings of Fact, Conclusions of Law and Order (2007 Order) and Certificate of Site Compatibility No. 6 (Case No. PU-07-26) to Langdon Wind, LLC, designating a location in Cavalier County, North Dakota for the construction, operation, and maintenance of up to 159 megawatts (MW) of wind turbines and associated facilities.

On November 21, 2007, the Commission issued a Certificate of Public Convenience and Necessity (CPCN) to Otter Tail Power Company (Otter Tail) for a 40.5 MW portion (Facility) of the originally-permitted 159 MW wind facility (Case No. PU-07-607).

On July 16, 2008, the Commission issued an Order Granting Partial Certificate Transfer (2008 Order) (see Case No. PU-08-159) authorizing the transfer of the 40.5 MW Facility to Otter Tail, issuing Certificate of Site Compatibility No. 8 to Otter Tail for the 40.5 MW Facility, and issuing Second Amended Certificate of Site Compatibility No. 6 to Langdon Wind, LLC for the remainder. The 2008 Order amended the 2007 Order (Case No. PU-07-26) and transferred the same portion of the Facility as was covered by the CPCN.

On December 1, 2021, Otter Tail notified the Commission that the Aircraft Detection Lighting System (ADLS) became operational at the Facility as of November 5, 2021 (Case Nos. PU-07-26 and PU-08-159).

On March 6, 2023 (updated March 7, 2023), Otter Tail filed the Certification of Bradley E. Tollerson, with accompanying documentation, pursuant to N.D.C.C. § 49-22-03(3)(a)(4) regarding plans to improve the turbines operating at the Facility (Upgrade Project) by replacing the existing General Electric (GE) 1.5 MW turbine blades (77 meter/256.6 feet rotor diameter), hub, and gearbox with an upgraded technology package of GE 1.5 MW turbine blades (97 meter/318.2 feet rotor diameter), hub, and gearbox. In addition, the generator technology will be upgraded to accommodate the new equipment. The filing included a request for a variance from the Exclusion Area of one and one-tenth the height of the turbine from the property line of a nonparticipating landowner for three turbines, subject to Otter Tail filing waivers executed by the affected nonparticipating landowners.

On March 6, 2023, Otter Tail filed an Application for Protection of Information related to cultural resource location information.

On March 7, 2023, Otter Tail filed an updated Certification of Bradley E. Tollerson to replace the certification filed on March 6, 2023.

On March 20, 2023, the Commission filed a letter notifying Otter Tail of its intent to process Otter Tail's March 6, 2023 (updated March 7, 2023) filing as an amendment application.

On March 29, 2023, the Commission issued a Notice of Filing and Notice of Opportunity for Hearing, requesting comments and requests for hearing by May 12, 2023. 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 impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On April 18, 2023, Otter Tail filed an update to its March 6 and 7, 2023 certification filing, with accompanying supplemental documentation, and an Application to Amend Order and Certificate, stating that it may replace the current 1.5 MW turbine blades and other components with an upgraded technology package of either: (1) GE 1.5 MW or 1.6 MW generator technology; and (2) 97 meter (318.2 feet) or 91 meter (298.6 feet) rotor diameter blades. If the 1.5 MW generator technology is used, the Upgrade Project's total nameplate generating capacity would remain 40.5 MW. If the 1.6 MW generator technology is used, the Upgrade Project's total nameplate generating capacity would increase to 43.5 MW; however, Otter Tail will limit the output at the point of interconnection to 40.5 MW in accordance with its Generator Interconnection Agreement.

On April 20, 2023, the North Dakota Department Environmental Quality filed comments.

On April 27, 2023, to reflect the updates to the Upgrade Project filed by Otter Tail on April 18, 2023, the Commission issued a Notice of Filing and Notice of Opportunity for Hearing, requesting comments and requests for hearing by June 10, 2023. 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 impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On April 27, 2023, the Commission held an Informal Hearing to discuss the application with Otter Tail.

On May 1, 2023, Otter Tail filed three property line setback waivers in support of its variance request.

### **Discussion**

1. Otter Tail is a public utility company duly authorized to conduct business in North Dakota. Otter Tail provides retail electric and natural gas service in three upper Midwest states, including North Dakota where it serves retail electric customers under the regulatory jurisdiction of the Commission.
2. Otter Tail currently owns and operates 27 GE 1.5 MW turbines at the Facility, with a nameplate capacity of 40.5 MW.
3. Otter Tail proposes to improve the 27 turbines at the Facility by replacing the current GE 1.5 MW turbine blades (77 meters/252.6 feet rotor diameter), hub, and gearbox with new technology. The Upgrade Project will consist of either: (1) new GE 1.5 MW or 1.6 MW generator technology; and (2) new 97 meter (318.2 feet) or 91 meter (298.6 feet) rotor diameter blades.
4. If the 1.5 MW generator technology is used, the Upgrade Project's total nameplate generating capacity would remain 40.5 MW. If the 1.6 MW generator technology is used, the Upgrade Project's total nameplate generating capacity would increase to 43.5 MW; however, Otter Tail will limit the output at the point of interconnection to 40.5 MW in accordance with its Generator Interconnection Agreement.
5. To accommodate the potential increase in nameplate capacity, Otter Tail requests that the Commission amend the Commission's 2008 Order (Case No. PU-08-159), along with Certificate of Site Compatibility No. 8, to remove the designated nameplate megawatt limitation.

6. All 27 of the turbines will reuse the existing 80 meter (262.5 feet) structural steel towers and existing nacelles, and as a result, turbine locations will not change. Otter Tail plans to use the existing turbine foundations (with reinforcement, if needed), collection and communications systems, permanent access roads, and Facility substation. Other associated facilities will remain unchanged.

7. If a rotor diameter of 97 meters is used, the total turbine tip height would be 128.5 meters (421.6 feet). If a rotor diameter of 91 meters is used, the total turbine tip height would be 125.5 meters (411.7 feet).

8. During installation of the upgraded equipment, existing access roads will be temporarily widened to accommodate delivery and staging of components and equipment. Temporary crane paths may also be needed to facilitate equipment removal and installation. A temporary laydown yard will also be used during installation. All activities are expected to occur within areas previously disturbed by initial construction. Temporarily impacted areas will be restored in compliance with applicable provisions of the Commission's 2007 Order (Case No. PU-07-26).

9. The Upgrade Project activities will occur wholly within the site designated by the Commission for the Facility.

10. Otter Tail has conducted new sound and shadow flicker assessments using a 1.5 MW turbine with a 97 meter rotor diameter and 80 meter hub height. Otter Tail provided a letter from Epsilon confirming that the sound and shadow flicker levels for the Upgrade Project using either 1.5 MW or 1.6 MW generator technology with a 91 meter rotor diameter will be the same as or lower than was presented in the sound and shadow flicker reports previously provided.

11. Modeling determined that sound levels may exceed 45 dBA within 100 feet of six occupied residences. Otter Tail has obtained and filed with the Commission copies of waivers from the owner(s) of two affected residences. With respect to the remaining four residences with modeled sound levels above 45 dBA within 100 feet, Otter Tail will either obtain a waiver from the owner(s) of each residence or install noise-reduction technology, such as noise-reducing operating modes (NRO) and/or low-noise trailing edge (LNTE) blades as needed. Accordingly, sound levels within 100 feet of an inhabited residence or community building will not exceed 45 dBA, unless waived in writing by the owner of such residence or building.

12. Shadow flicker levels from the Upgrade Project will be 30 hours per year or less at all occupied residences.

13. Otter Tail has coordinated with the State Historical Society of North Dakota (SHSND) regarding the Upgrade Project. Because the Upgrade Project activities will occur primarily within areas previously surveyed for cultural resources, and all activities will occur within areas previously disturbed by initial construction, the SHSND determined that additional cultural resource surveys are not necessary, except to the extent crane paths are located in previously unsurveyed areas. If any crane paths are located outside

of areas previously surveyed for cultural resources, Otter Tail will complete cultural resource field surveys and will avoid any resources identified that are eligible or unevaluated for listing on the National Register of Historic Places (NRHP). The Upgrade Project will not impact cultural resources.

14. Otter Tail provided information regarding its plan for disposal of turbine components removed in connection with the Upgrade Project. Once removed, Otter Tail plans to have the existing blades transported to a facility for repurposing, and no blades will be deposited in a landfill.

15. The Commission's 2007 Order (Case No. PU-07-26) predates the Commission's current wind facility setback rules.

16. Three turbines (Turbines 11, 12, and 24) do not meet the current Exclusion Area of one and one-tenth the height of the turbine from the property line of a nonparticipating landowner. However, Otter Tail obtained and filed with the Commission written waivers from the affected nonparticipating landowners, and requests that the Commission grant a variance of the nonparticipating property line setback for these three turbines.

17. Upgrade Project construction will not affect any known Exclusion or Avoidance Areas.

18. The Facility is currently operating with an ADLS. Subject to Federal Aviation Administration approval, Otter Tail will continue to operate an ADLS or other technology suitable to the Commission on the Upgrade Project in accordance with N.D.C.C. § 49-22-16.4.

19. Otter Tail will continue to comply with all applicable conditions and protections in the siting laws and rules and Commission Orders previously issued for the Facility.

20. The construction, operation and maintenance of the proposed facilities at the site designated for the Facility will produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.

21. The proposed facilities at the site designated for the Facility are compatible with the environmental preservation and the efficient use of resources.

22. The proposed facility locations at the site designated for the 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.

Having considered this matter, the Commission finds the Commission's 2008 Order (Case No. PU-08-159), along with the Certificate of Site Compatibility No. 8 should be amended to remove the 40.5 MW megawatt limitation. Therefore, the Commission issues the following:

## Order

The Commission orders:

1. The Commission's 2008 Order (Case No. PU-08-159) is amended to remove the 40.5 MW nameplate capacity limitation.
2. First Amended Certificate of Site Compatibility No. 8 is issued to Otter Tail Power Company, removing the 40.5 MW nameplate capacity limitation.
3. A variance of the nonparticipating property line exclusion area of one and one-tenth the height of the turbine is granted for Turbines 11, 12, and 24.
4. Otter Tail will dispose of turbine components in accordance with the disposal plan outlined in Exhibit A to the updated Certification of Bradley E. Tollerson. If solid waste disposal occurs in North Dakota, it shall be at a disposal facility permitted by the North Dakota Department of Environmental Quality – Division of Waste Management.
5. All applicable provisions and requirements in the Commission's 2008 Order and Certificate of Site Compatibility No. 8 (Case No. PU-08-159) continue to apply except where amended by this Order.
6. This Order is effective if no requests for hearing are received by June 10, 2023 and granted by the Commission.

### PUBLIC SERVICE COMMISSION

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**Julie Fedorchak**  
Commissioner

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**Randy Christmann**  
Chair

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**Sheri Haugen-Hoffart**  
Commissioner