

**STATE OF NORTH DAKOTA  
PUBLIC SERVICE COMMISSION**

**Glacier Ridge Wind Farm, LLC  
Glacier Ridge Wind Farm Project – Barnes County  
Siting Application**

**Case No. PU-16-539**

**FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER**

**September 6, 2017**

**Appearances**

Commissioners Randy Christmann, Julie Fedorchak, and Brian Kroshus.

Sara Bergan, Esq. and Andrew Pieper, Esq., Stoel Rives LLP, 33 South Sixth Street, Suite 4200, Minneapolis, Minnesota 55402, on behalf of the Applicant, Glacier Ridge Wind Farm, LLC.

Zachary E. Pelham, Special Assistant Attorney General, 314 East Thayer Avenue, Bismarck, North Dakota 58502, on behalf of the North Dakota Public Service Commission.

Patrick J. Ward, Administrative Law Judge, Office of Administrative Hearings, 2911 North 4th Street, Suite 303, Bismarck, North Dakota 58503, as Procedural Hearing Officer.

**Preliminary Statement**

On July 19, 2016, Glacier Ridge Wind Farm, LLC (Glacier Ridge) filed an application (Application) for a certificate of site compatibility concerning a proposed 300.15 megawatt wind energy conversion facility, to be known as the “Glacier Ridge Wind Farm” (Project). The Project would be located on 34,450 acres in Barnes County, approximately five miles northeast of Valley City, North Dakota.

On August 24, 2016, the Commission deemed the application complete and issued a Notice of Filing and Public Hearing (Notice), scheduling a public hearing on the application for September 27, 2016, at 9:00 a.m. Central Time, to be held at Vangstad Auditorium, Valley City State University, 101 College Street SW, Valley City, North Dakota 58072. The Notice identified the following issues to be considered with respect to the application:

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 September 27, 2016, the public hearing was held as scheduled.

On December 2, 2016, Glacier Ridge filed a motion to amend the Application to bifurcate the proposed Glacier Ridge Wind Farm into two separate phases, to be known as "Phase I" and "Phase II". The motion further requested that the Commission approve Phase I and hold in abeyance a decision concerning Phase II.

On December 7, 2016, the Commission issued its Findings of Fact, Conclusions of Law and Order granting Glacier Ridge's motion and issuing Certificate of Site Compatibility Number 51 to Glacier Ridge designating a site for Phase I of the Glacier Ridge Wind Farm.

On January 30, 2017, Glacier Ridge filed a Motion to Lift the Stay with Respect to a Decision on Phase II (Motion), requesting that the Commission lift the stay on Phase II and approve Phase II of the Project.

On May 3, 2017, Glacier Ridge filed a Notice of Correction updating and correcting Attachment I to its Motion.

On May 19, 2017, the Commission issued a Notice of Opportunity for Hearing (Notice of Opportunity), setting a deadline for receiving written comments and requests for hearing of June 23, 2017.

On June 22, 2017, Glacier Ridge filed an Updated Attachment I to the Motion reflecting revisions within the Phase II Project Area that resulted from additional land agreements being executed.

On June 22, 2017, a request for a second hearing was filed with the Commission by Ms. Shirley Starke. Glacier Ridge responded to the request on June 29, 2017 and the Commission discussed it at a work session on July 26, 2017.

On August 28, 2017 the Commission discussed Glacier Ridge's Motion to Lift the Stay with Respect to a Decision on Phase II at a work session.

On September 6, 2017, 2017, the Commission issued an Order denying Ms. Starke's request for a second 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. Glacier Ridge is a Delaware limited liability company and a subsidiary of Renewable Energy Systems Americas, Inc. Glacier Ridge has been authorized to do business in the State of North Dakota since June 11, 2009, as evidenced by corporate papers filed with the Commission on July 27, 2016, in Case No. PU-16-555.
2. Glacier Ridge has been issued Certificate of Site Compatibility Number 51, designating a site for Phase I with locations for up to 52 turbines plus three alternate turbine locations totaling up to 179.4 MW of generating capacity.
3. Phase II will add 35 turbines (120.75 MW) to the Project. There are also 9 proposed alternate turbine locations in Phase II for a total of 12 alternate locations in the entire Project. Together, Phase I and II of the Project will consist of up to 87 turbines and 12 alternates, for a total of up to 300.15 MW.
4. Glacier Ridge expects to use Vestas V126 3.45 MW turbine generators for both Phase I and Phase II. These turbines have a 285 foot hub height and a 413 foot rotor diameter yielding a total turbine height of 491.5 feet.
5. Associated facilities to be located within Phase II will include access roads and underground electrical collection and communication cables.
6. The anticipated cost of Phase II is \$173 million, with the total Project cost estimated at \$375 million.
7. The Phase II Project Area will be 11,804 acres, bringing the total Project Area to 25,039 acres.

### Study of the Preferred Location

8. Glacier Ridge evaluated the Phase II footprint for natural resources, including wildlife, protected species and critical habitats, wetlands and waterbodies, vegetation and soil types
9. Glacier Ridge conducted a Class I cultural resources desktop study on the Phase II footprint and on a one-mile area surrounding the Phase II footprint for archaeological resources.
10. Glacier Ridge conducted a Class I cultural resources desktop study on a two-mile area surrounding the complete Phase II turbine layout for architectural resources.
11. Glacier Ridge conducted a Class III resources field inventory for archaeological and architectural resources on areas to be disturbed by construction within the Phase II footprint.

12. Glacier Ridge conducted eagle and avian use studies, raptor nest surveys, and bat acoustic modeling for Phase II.

13. Glacier Ridge conducted a shadow flicker analysis for Phase II. Predicted shadow flicker above 30 hours per year was estimated at one receptor; the owner of this residence (R119) has signed a waiver for shadow flicker impacts from the Project.

14. Glacier Ridge conducted acoustic modeling for Phase II. Predicted sound levels are less than 50 decibels within 100 feet of occupied residences. The closest non-participating residence to a turbine (Residence #25) is located 1,996 feet northwest of turbine #79.

15. No objections to Phase II of the Project were raised by any federal or state agencies.

16. Up to 4 permanent self-supporting meteorological towers will be installed in Phase II. The precise locations of these towers will be determined at a later date.

17. The estimated permanent footprint for Phase II is 35.5 acres, or 0.33% of the Phase II Project Area. This includes 7.0 acres for 35 turbines, 28.4 acres of new service roads, and negligible acreage for junction boxes and four meteorological towers. The total estimated permanent impact of the Project is expected to be 92 acres as stated in the initial application.

18. The estimated permanent impact to prime farmland from construction of Phase II is approximately 29 acres, or 0.25 percent of the Phase II Project Area. When combined with the 41 acres in Phase I, the estimated permanent impact to prime farmland for the full project is 70 acres or less than 0.3 percent of the full Project Area. The Commission finds that the prime farmland expected to be removed from use is of such small acreage as to have a negligible impact on agricultural production.

19. Glacier Ridge's Class III cultural resource inventories identified four archeological resources and three site leads for Phase II. Avoidance was recommended for two of the sites, both of which are Native American artifact scatters and will be avoided during Project Construction. The State Historic Preservation Office of North Dakota (SHPO) has concurred with the cultural resource inventories for both Phase I and Phase II.

20. No additional Exclusion Areas have been identified within the Phase II Project Area.

21. Wetlands are present within the Phase II footprint. Glacier Ridge testified that wetlands under easement to the USFWS will be avoided. Impacts to other wetlands will be avoided or minimized as practicable.

22. Trees and shrubs are located within the Phase II Project Area. Phase I and Phase II will be constructed to minimize impacts to trees and shrubs to the extent practicable. All trees and shrubs removed during construction will be replaced in accordance with the Commission's tree and shrub mitigation specifications.

23. No other Avoidance Areas have been identified within the Phase II Project Area.
24. Glacier Ridge has agreed to a number of steps to mitigate the impact of Phase II as contained in the Certification Relating to Order Provisions - Wind Energy Conversion Facility Siting with accompanying Tree and Shrub Mitigation Specifications filed in this proceeding as Exhibit 34 and attached to the Phase I Order.
25. Glacier Ridge has indicated that a supervisory control and data acquisition system will be installed for Phase I and Phase II, which will allow turbines to be continuously monitored and controlled at a control center located in Broomfield, Colorado.
26. There are no eagle nests within 10 miles of the Phase II Project Area and Glacier Ridge has committed to continued coordination with the USFWS and the NDGFD concerning eagles in order to mitigate impacts to eagles for the life of the Project.
27. Glacier Ridge has obtained all land rights necessary to construct Phase I and Phase II.
28. Glacier Ridge will file a decommissioning plan with the Commission for review and approval prior to the operation of either Phase I or Phase II. Glacier Ridge will fully comply with North Dakota Administrative Code chapter 69-09-09 including all financial assurances required under section 69-09-09-08.

From the foregoing Findings of Fact, the Commission 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 Glacier Ridge is an energy conversion facility as defined in North Dakota Century Code § 49-22-03(5).
3. The application submitted by Glacier Ridge meets the site evaluation criteria required by the North Dakota Century Code Chapter 49-22.
4. The location, construction and operation of the Project will produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota and is otherwise compatible with the environmental preservation and the efficient use of resources.
5. 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.

6. The Commission has jurisdiction to ensure compliance with the National Electric Safety Code 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. Glacier Ridge's Motion to Lift the Stay with Respect to a Decision on Phase II is granted.
2. First Amended Certificate of Site Compatibility for Energy Conversion Facility, Certificate No. 51 is issued to Glacier Ridge for the construction, operation and maintenance of the Glacier Ridge Wind Project. The designated site is depicted in Attachment I as Phase I Project Area and Proposed Project Area - Phase II of the Motion, as updated on June 22, 2017 in this proceeding.
3. Within the designated site, Glacier Ridge is authorized to site, construct, operate, and maintain wind turbines and associated equipment, access roads, an operation and maintenance 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 supplemental filings.
4. Glacier Ridge is authorized to construct up to 87 turbines producing a total nameplate capacity of 300.15 MW within the designated site (Phase I and Phase II) along with associated access roads, met towers, underground electrical collection systems and communications cables, and a combined substation/operations and maintenance building.
5. The Glacier Ridge project layout currently meets all Barnes County (except for granted variances) and Commission setbacks, and must continue to meet these setbacks in the event the layout is modified, including the setbacks under NDCC 49-22-05.1.
6. In the event the Phase II Project layout is modified, Glacier Ridge shall complete a Class III cultural resource survey for any previously un-surveyed areas affected by the Project-related activities, in accordance with the SHPO guidance, and shall submit cultural resource findings to SHPO for review and obtain and file a copy of SHPO's concurrence with the Commission prior to beginning construction in affected areas.
7. In the event the Phase II Project layout is modified, Glacier Ridge shall complete a wetland determination of any previously un-surveyed areas affected by the Project-related activities, as necessary, and file the report with the Commission.

8. Glacier Ridge shall locate turbines such that shadow flicker at any currently inhabited residence is 30 hours or less per year and noise within 100 feet of any currently inhabited residence is 50 dBA or less, unless otherwise agreed to by the landowner.

9. In the event Phase II Project modifications occur that would change its existing acoustic or shadow flicker analysis, Glacier Ridge shall conduct a revised acoustic and/or shadow flicker analysis as necessary and file the results of that analysis with the Commission.

10. Subject to FAA approval and in accordance with NDCC 49-22-16.4, Glacier Ridge will install a light-mitigating technology system by December 31, 2019, or by the commercial operation date, whichever is later.

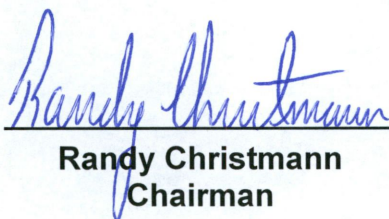
11. All provisions and requirements of the Commission's December 7, 2016 Findings of Fact, Conclusions of Law and Order continue to apply except where altered by this Order.

**PUBLIC SERVICE COMMISSION**



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**Brian Kroshus**  
Commissioner



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**Randy Christmann**  
Chairman



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**Julie Fedorchak**  
Commissioner

## CONCURRENCE

Commissioner Randy Christmann

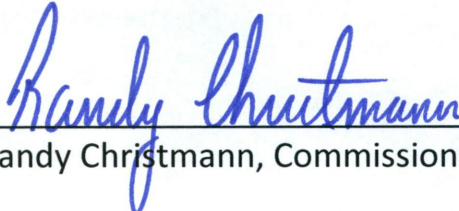
September 6, 2017

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In a dissenting opinion to the first phase of Glacier Ridge issued December 9, 2016, I expressed concern that the cumulative uncertainty involved with this application causes it to not satisfy the comprehensive demands of North Dakota Century Code section 49-22-02. While the developers have now acquired the easements necessary for collection lines and access roads, I still maintain serious apprehension.

Despite that apprehension, the solution to uncertainty is not more uncertainty. The North Dakota Public Service Commission did issue a Certificate of Site Compatibility for much of the project area of the Glacier Ridge Wind Farm, the developers have begun construction, and constraining the scope of the project at this time could jeopardize this project with no clear reclamation plan in place.

  
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Randy Christmann, Commissioner

# **PUBLIC SERVICE COMMISSION**

## **STATE OF NORTH DAKOTA**

### **First Amended Certificate of Site Compatibility Number 51**

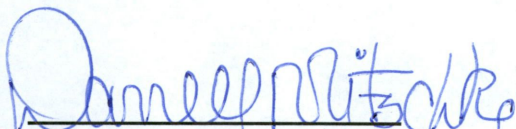
*This is to certify that the Commission has designated a site for Glacier Wind Farm, LLC for the construction, operation and maintenance of a wind energy conversion facility and associated facilities in Barnes County, North Dakota.*

*This certificate is issued in accordance with the Findings of Fact, Conclusions of Law and Orders of the Commission in Case No. PU-16-539 dated December 7, 2016 and September 6, 2017 and is subject to the conditions and limitations noted in those Orders.*

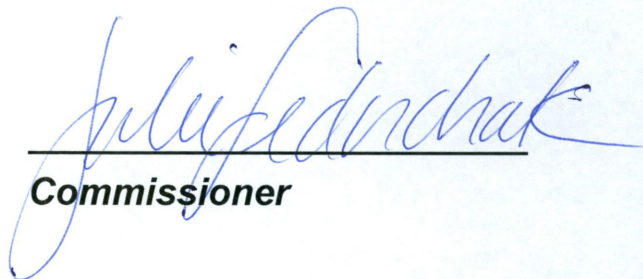
*Bismarck, North Dakota, December 7, 2016.*

**ATTEST:**

**PUBLIC SERVICE COMMISSION**



**Executive Secretary**



**Commissioner**