

June 29, 2022

VIA E-MAIL

Mr. Steven Kahl
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

**Re: Northern States Power Company
Border Winds Energy Project – Rolette County
Case Nos. PU-22-173**

Dear Mr. Kahl:

Northern States Power Company encloses for filing in the above-referenced docket an electronic copy of its PowerPoint presentation for today's informal hearing. Hard copies of the presentation will be hand-delivered at the hearing.

If you have any questions, please let me know.

Sincerely,



MOLLIE M. SMITH

MMS/7647693
Enclosure

cc: Victor Schock (w/ enclosure, via e-mail)
Brian Johnson (w/ enclosure, via e-mail)
Ellen Heine (w/ enclosure, via e-mail)

20 PU-22-173 Filed 06/29/2022 Pages: 9
Letter enclosing Informal Hearing Presentation
Northern States Power Company
Mollie Smith, Fredrikson&Byron, P.A.



Border Winds Repower

Application to Amend Orders and Certificate
of Site Compatibility

Case No. PU-22-173

Informal Hearing
June 29, 2022

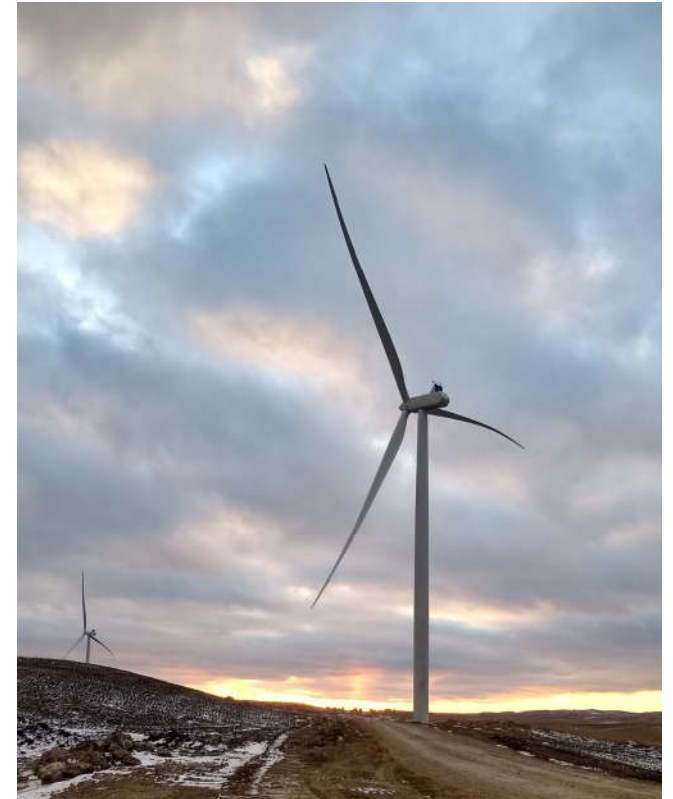


Overview of Filings

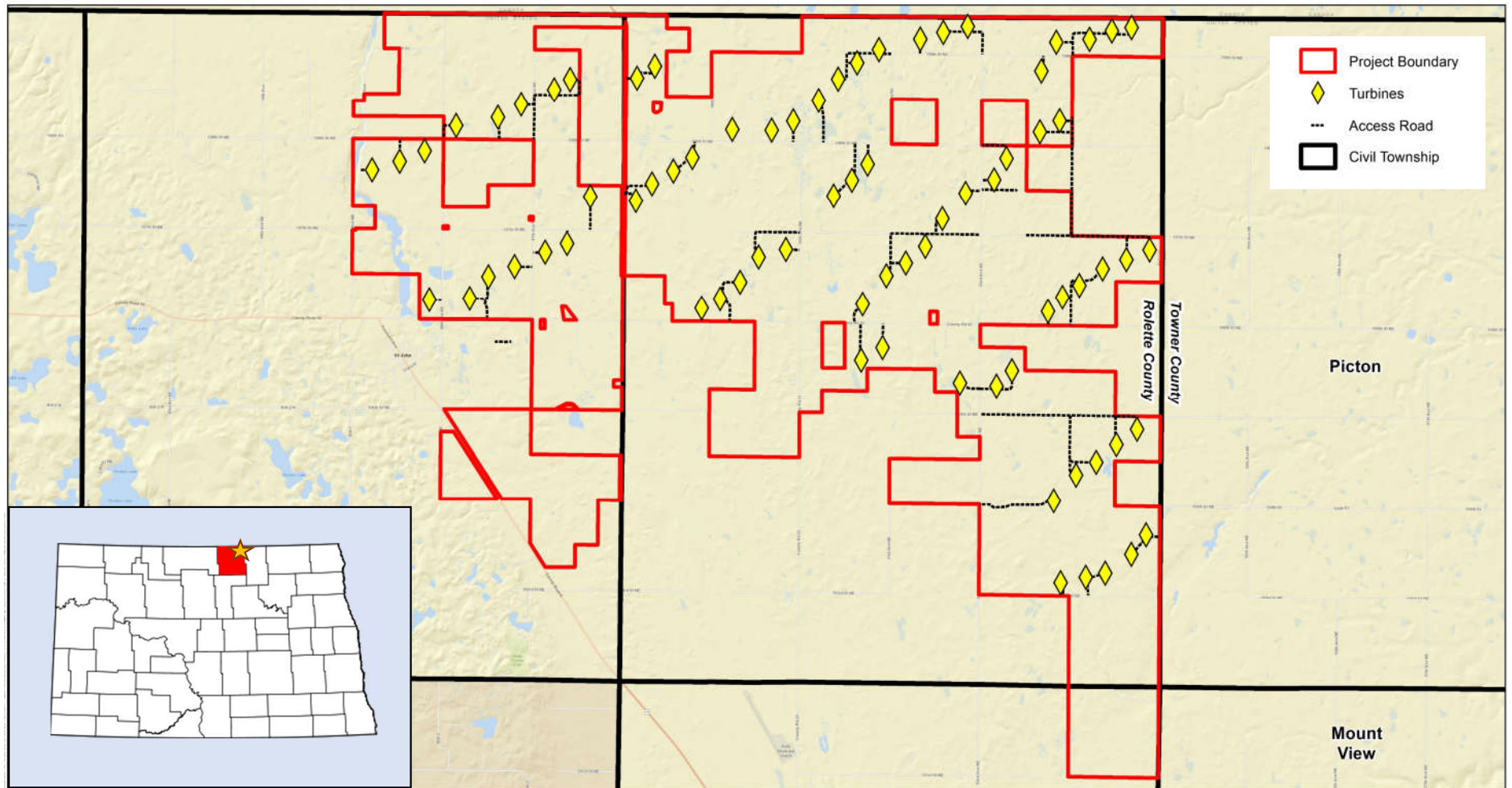
- Repower Certification Filing
 - Certification of Christopher Clark, supported by:
 - Environmental and Regulatory Compliance Memorandum, with:
 - Appendix A – Noise and Shadow Flicker Modeling Reports
 - Appendix B – Obstruction Evaluation and Microwave Beam Path Analysis
 - Appendix C – Cultural Resources Report and Correspondence
 - Appendix D – Delineated Wetland Review
 - Appendix E – Natural Resources Impact Assessment and Correspondence
 - Supplemental State Historical Society of North Dakota Correspondence
- Amendment Request
 - Removal of 150 MW limitation in prior Orders and Certificate of Site Compatibility
 - Repower Project nameplate capacity will be 165 MW, with 150 MW delivered to the grid

Upper Midwest Investment

- In 2021 Xcel Energy began evaluating opportunities to repower existing wind projects
- Repowering increases energy produced, reduces costs in the long term
- Additional landowner and local government tax and lease payments
- PSC granted Advance Determination of Prudence to upgrade four existing wind farms, including Border Winds, in February 2022

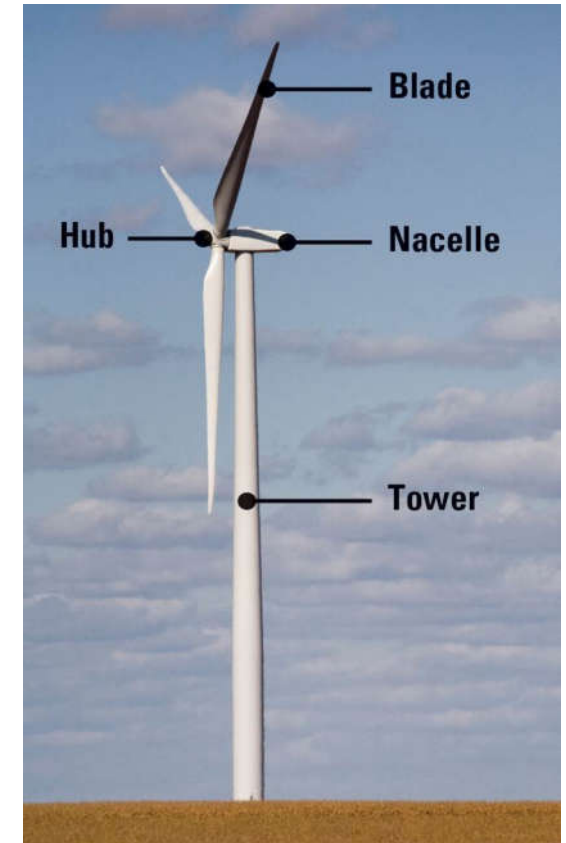


Border Winds Location and Layout



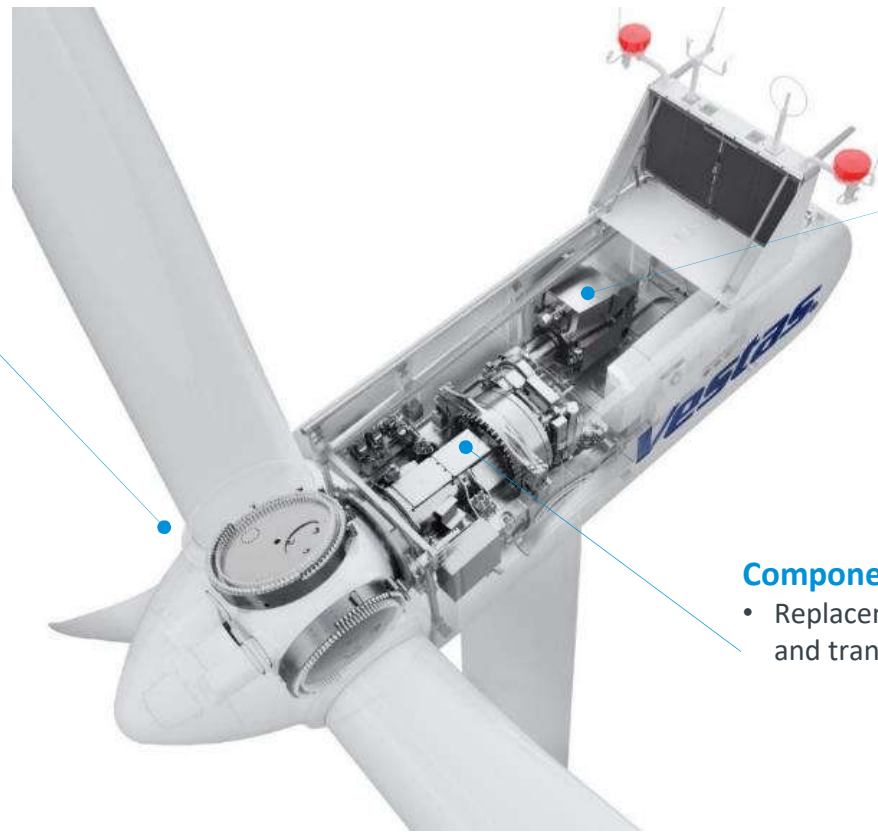
What is Repowering?

- Involves retrofitting existing wind facilities with new and/or refurbished technology or components to maximize energy generation and improve efficiency
- This project:
 - Replace existing 100 m blades with 110 m blades
 - New hub and rotors to support larger blades
 - Some component and electrical upgrades within nacelle
 - Existing towers and foundations remain in place
 - Construction process approximately 6 to 8 months in duration (Q4 2024 to Q3 2025)



V100 to V110 Drivetrain Repower

Schematic illustration of proposed component replacements for Mk10A turbines



Rotor upgrade

- The new V110 blades (54m length) will be 10% longer than the existing V100 blades
- Hub, blade bearings and pitch cylinders will be replaced to accommodate the larger rotor

Electrical system overhaul

- Converter, bus cabinet, cable assembly and controls system will be upgraded to enable 2.2Mw rating

Component replacement

- Replacement of existing gearbox, generator, and transformer

Compliance with Commission Requirements

- Certification Compliance (NDCC § 49-22-03(3)(a)):
 - Wholly within designated Project site
 - Will improve the existing wind energy generation technology
 - Complies with the Commission's current exclusion area and avoidance area requirements, including:
 - Turbine setback requirements
 - 1 Property line setback variance request
 - Sound requirement
 - Cultural and wetland avoidance – within previously surveyed/disturbed areas
 - Complies with Commission's prior Orders
- Amendment Request:
 - Removal of MW limitation consistent with approach in prior repower dockets

Questions and Discussion

