



February 28, 2018

Mr. Dan Wolf  
Executive Secretary  
Minnesota Public Utilities Commission  
121 7<sup>th</sup> Place East, Suite 350  
St. Paul MN 55101

**In the Matter of the Site Permit Amendment Application for Repowering the Trimont Wind I Project in Martin and Jackson Counties  
PUC Docket: IP6907/WS-13-258**

Dear Mr. Wolf:

Trimont Wind I, LLC (Trimont Wind), a subsidiary of Avangrid Renewables, LLC, appreciates the opportunity to provide reply comments on its application (Application) to retrofit the existing wind turbines at the Trimont project in Jackson and Martin counties (Facility). The Facility consists of 67 wind turbines, each currently equipped with rotors measuring 77 meters (253 feet) in diameter. Trimont Wind proposes to retrofit all 67 turbines with rotors measuring 91 meter (299 feet) in diameter for the purposes of increasing the efficiency, reliability, and energy output of the Facility, as well as prolonging its useful life.

**Request for Commission approval for adjustment of the Wind Access Buffer Setback to accommodate 91 meter Rotor Diameter**

As noted in the Application, Trimont Wind has requested that the Public Utilities Commission (PUC) adjust the Wind Access Buffer (WAB) setback for 21 turbines to accommodate the use of 91 meter rotors. Trimont Wind constructed the project in 2005 compliant with its permit, which generally required WAB Setbacks of not less than five rotor diameters (RD) from the wind and land rights on the predominant wind axis and five RD on the secondary wind axis. However, Trimont Wind was granted adjusted WAB setbacks for several turbines prior to construction to allow Trimont Wind to avoid placement of turbines in sensitive areas. After issuance of the permit for the Facility, the PUC's 2008 Order Establishing General Wind Standards (2008 Order) similarly provided that wind turbine towers shall not be built less than five RD from all boundaries of the wind and land rights on the predominant wind axis and three RD on the secondary wind axis, without the approval of the Commission. Consistent with the Commission's prior approvals and consistent with the 2008 Order, approval for further adjustments to the Trimont Wind permit WAB setbacks should be granted here.

The 21 turbines for which Trimont Wind seeks adjustment to the WAB are identified in Table 7 of the Application. As shown in Table 7 and Figure 4, the WAB adjustments requested are minor and range from 16 to 226 feet (5 to 69 m). All of these adjustments fall within the PUC's 250 foot road right-of-



way setbacks. If the PUC grants the requested WAB adjustment, all retrofitted 91 m RD turbines at Trimont Wind will be more than 1235 feet (376 m) from unleased property lines.

The Minnesota Department of Natural Resources (DNR) filed written comments expressing concern with adjusting the WAB, contending that visibility of turbines will be increased if rotor diameters are increased, and noting that landowners may be non-participating because they did not want the project on or near their lands. Trimont Wind notes that the DNR does not own any land adjacent to Trimont Wind leased lands, so granting Trimont Wind the requested adjustments to the WAB will not impact DNR lands. Further, no other adjacent non-participating landowners raised concerns with the Application at the public meeting or provided comments.

DNR also suggests that the PUC should “establish a clear policy on exemptions to existing (permitted) wind access buffers before allowing them on any project.” Trimont Wind disagrees and believes such an action could limit the Commission’s ability to consider unique circumstances in the future. Rather, Trimont Wind suggests that the Commission consider the particular circumstances of each request for adjustment of the WAB in making these decisions. For the Trimont Wind, the circumstances justify an adjustment to the WAB because the encroachment on the WAB will be minimal in each instance, and the adjustment will allow for retrofitting of an existing project to increase efficiency, reliability and energy output while prolonging the useful life of the Facility, all without moving turbines.

### **Turbine Feathering**

The Minnesota DNR also recommended that any Amended Permit include a requirement that “turbines are locked or feathered at wind speeds up to the manufacturer’s standard cut-in speed” from April 1 to October 31. As presented in the Application, Trimont Wind currently implements a voluntary strategy of feathering for all turbines up to the manufacturer’s cut-in wind speed of three meters/second (m/s), from one-half hour before sunset to one-half hour after sunrise, between July 15<sup>th</sup> and October 15<sup>th</sup>, when temperatures are over 50° Fahrenheit. Trimont Wind proposes to implement the same protocol with the repowered GE 1.6 turbine, which has a cut-in speed of 3.0 m/s. This practice of feathering blades to manufacturer’s cut-in speed is expected to reduce impacts to bats by as much as 30% (Baerwald et al. 2009<sup>1</sup>, Young et al. 2011<sup>2</sup>, and Good et al. 2012<sup>3</sup>).

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<sup>1</sup> Baerwald, E. F., J. Edworthy, M. Holder, and R. M. R. Barclay. 2009. A Large-Scale Mitigation Experiment to Reduce Bat Fatalities at Wind Energy Facilities. *Journal of Wildlife Management* 73(7): 1077-1081.

<sup>2</sup> Young, D.P., Jr., S. Nomani, W. Tidhar, and K. Bay. 2011b. Nedpower Mount Storm Wind Energy Facility, Post-Construction Avian and Bat Monitoring: July - October 2010. Prepared for NedPower Mount Storm, LLC, Houston, Texas. Prepared by Western EcoSystems Technology (WEST), Inc., Cheyenne, Wyoming. February 10, 2011.

<sup>3</sup> Good, R. E., A. Merrill, S. Simon, K. L. Murray, and K. Bay. 2012. Bat Monitoring Studies at the Fowler Ridge Wind Farm, Benton County, Indiana. Final Report: April 1 – October 31, 2011. Prepared for Fowler Ridge Wind Farm, Fowler, Indiana. Prepared by Western EcoSystems Technology, Inc. Bloomington, Indiana.



In contrast, the DNR's recommendation for an extended season for feathering from April 1 to October 31 is overly conservative, and may put more strain on the turbine equipment than is necessary to minimize impacts to bats. Based on one-year post-construction fatality studies (PCFS) at Elm Creek I and

Elm Creek II, the time period from July to October is when most of the bat fatalities occurred. The PCFS at the Elm Creek I Wind plant, which is adjacent to the Facility (Derby et al., 2010<sup>4</sup>) found a total of five bats between mid-August and the end of September 2010. Overall, the fatality rate for bats was estimated at 2.23 fatalities per turbine per year (1.49 fatalities per megawatt per year). The PCFS at the Elm Creek II wind plant, which is also adjacent to the Facility, (Derby et al., 2012<sup>5</sup>) found a total of 26 bats from late spring (4/25/11) through early fall (9/30/11), with the majority of fatalities found during late July to late September. The adjusted estimate of bat fatalities from Elm Creek II PCFS was 6.75 fatalities per turbine per year (2.81 fatalities per MW per year). Based on these study results demonstrating that the period of highest risk is late summer through fall migration, Trimont Wind contends that requiring feathering from mid-July through mid-October would appropriately minimize impacts to bats. Trimont Wind believes that including a temperature component as part of the feathering requirement is appropriate because bat activity is correlated to temperature -- as temperature decreases, so does bat activity (Johnson et al. 2011<sup>6</sup>, Roby and Gumbert 2016<sup>7</sup>). This correlation is the basis for the 50° Fahrenheit (10° Celsius) threshold for bat feathering. The temperature component can help to minimize strain on turbine equipment by initiating feathering only when feathering will actually have a positive mitigation impact on bats, as opposed to requiring feathering in the fall and spring when temperatures regularly drop below 50° Fahrenheit in Minnesota.

The Minnesota DNR also stated, without citation or evidence, that "Increasing the turbine height, rotor diameter, and rotor swept area at repower sites is likely to increase bat fatalities in Minnesota, especially when they are near suitable habitat." The Facility retrofit will not increase the hub height of 80 m at the Facility. Notably, the adjacent Elm Creek I and Elm Creek II are also at 80 m hub height. The Facility retrofit would increase rotor diameter from 77 m RD to 91 m RD. In comparison, the rotor diameters at Elm Creek I and II are 77 m and 95 m, respectively. Importantly, while the change in RD at the Facility will increase the total turbine height by 7 m (23 feet), an increased turbine height and rotor diameter does not necessarily increase risk to bats. A recent scientific journal article (Thompson et al., 2017)<sup>8</sup> concluded that although tall turbines reach into airspace used by large numbers of migrating bats, we found no evidence that turbine height influences bat mortality. As described in the Application,

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<sup>4</sup> Derby, C; K. Chodachek, K. Bay and A. Merrill (WEST). 2010. Post-Construction Fatality Surveys for the Elm Creek Wind Project, Iberdrola Renewables, March 2009-February 2010, 61 pp.

<sup>5</sup> Derby, C; K. Chodachek and M. Sonneberg (WEST). 2012. Post-Construction Fatality Surveys for the Elm Creek II Wind Project, Iberdrola Renewables, March 2011-February 2012, 73 pp.

<sup>6</sup> Johnson, J.B.; J.E. Gates and N.P. Zegre. 2011. Monitoring seasonal bat activity on a coastal barrier island in Maryland, USA. *Environmental Monitoring and Assessment*, 173(1): 685-699. doi: 10.1007/s10661-010-1415-6.

<sup>7</sup> Roby, P and M. Gumbert. 2016a. Final Report. Bats and Wind Energy: A Comparison Between Spring and Autumn Migration Behavior. Service Award Number: F14AC00766. 29 September 2016.

<sup>8</sup> Thompson, M.; J. A. Beston; M. Etterson; J.E. Diffendorfer; and S.R. Loss. 2017. Factors associated with bat mortality at wind energy facilities in the United States; *Biological Conservation* 215(2017) 241-245.



the habitat in the Trimont project area is primarily agricultural fields and there are no known, occupied bat roost trees or hibernacula in Jackson or Martin County.

### **Wetlands**

Trimont Wind will apply for any necessary wetland permits required in connection with the retrofit of the Facility, as noted by the DNR in its comments.

### **Road use permits and agreements**

Jackson County engineer Tim Stahl made verbal comments at the PUC's public information meeting in Trimont, MN on February 6, 2018. Trimont Wind agrees that the company will need to enter into agreements with the counties and townships for permitting, use and any necessary repair of public roads necessary for the retrofit project.

Trimont Wind wishes to clarify the record with respect to one part of Mr. Stahl's comments. Trimont Wind does not anticipate the need to haul the entire wind turbine nacelle off site to complete the component replacement as Mr. Stahl states. Rather, Trimont Wind anticipates removing components within the nacelle and trucking those off site individually for replacement, recycling or refurbishment. This eliminates the need to transport the entire nacelle over turbine access and public roads.

### **Job Creation**

Finally, Trimont Wind is committed to commercially reasonable efforts to maximize employment and utilization of responsible contractors and local skilled workforce for this proposed retrofit project.

Trimont Wind appreciates the Commission's consideration of the requested permit amendment. Please feel free to direct any questions, comments or consideration to [adam.sokolski@avangrid.com](mailto:adam.sokolski@avangrid.com), or 612-840-6511.

Sincerely,

*Amy McGinty*

Amy McGinty, Vice President, O&M Services  
Avangrid Renewables, LLC