



Classification: Public

June 8, 2018

Daniel Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: **Exceptions Filing**
In the Matter of the Application of Freeborn Wind Energy, LLC for a Large Wind Energy Conversion System Site Permit for the 84 Megawatt Freeborn Wind Farm in Freeborn County
PUC Docket Number(s): IP-6946/WS-17-410, OAH Docket Number: 80-2500-34633

Dear Mr. Wolf:

Vestas-American Wind Technology, Inc. ("Vestas") respectfully submits these Exceptions to the Administrative Law Judge's May 14, 2018 Findings of Fact, Conclusions of Law and Recommendations in Docket No. IP-6946/WS-17-410 ("Recommendations") with respect to the up to 84 MW wind project located in Freeborn County (the "Project"). The Minnesota Public Utilities Commission (the "Commission") should reject the Administrative Law Judge's findings related to noise (Finding Nos. 177-247) and ice throw (Finding Nos. 309 – 311), and the resulting recommended permit conditions. These Recommendations rely upon a misinterpretation of the Minnesota Pollution Control Agency's ("MPCA") noise standards, do not rely on the best scientific evidence in the record, and, with respect to ice throw, are based on a single, anecdotal event and contradictory evidence within the Recommendations themselves.

By way of background, Vestas is the world's leading supplier of wind energy solutions. Vestas has over 64,000 wind turbines installed on six continents. Vestas currently maintains over 76 gigawatts of wind turbines in more than 65 countries. More than 16,800 Vestas wind turbines have been installed in the United States, with 1,000 of those in Minnesota. Vestas employs approximately 6,300 people in the U.S. (including 3,500 in its four factories in Colorado); 92 of those employees are located in Minnesota.

Vestas is a party to a Master Services Agreement with Xcel that provides an option to enter into a Turbine Supply Agreement with Vestas for the Project. If the Project is not permitted, becomes financially infeasible, or experiences a significant reduction in the number of turbines, this has a direct, financial consequence for Vestas. The Recommendations, if accepted by the Commission

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in present form, would cause a substantial reduction in turbines, giving Vestas a direct interest in the outcome of this matter.

I. The ALJ has misinterpreted the Minnesota Noise Law

The Administrative Law Judge's Finding Numbers. 204, 206 and 245 incorrectly suggest that Minnesota law regulates "total noise" at a receptor such that all noise may not exceed a night-time level of 50 A-weighted decibels ("dB(A)") within the Noise Area Classification 1. This interpretation is inconsistent with Minnesota Statutes §§ 116.07, subd. 2(c) and 116.06, subd. 15, and guidance from the Minnesota Pollution Control Agency ("MPCA").

Minnesota law sets limits on *sources* of noise. Noise is defined "as any sound not occurring in the natural environment, including, but not limited to, sounds emanating from aircraft and highways, and industrial, commercial, and residential sources."¹ The limit on "noise" created by a "source" excludes "background, or ambient, noise" which is defined as "all noise sources other than the noise source of concern."² In other words, the law regulates only manmade noise from the source at issue.

The MPCA provides guidance on the implementation of its Noise Standards (Minn. Rules Chapter 7030) and how to measure total noise and then separate the "source" noise from "background noise" to determine compliance.³ If the Noise Standards were intended to set a "total noise" level which could not be exceeded as the Recommendations suggests, it would render the statutory definition of noise excluding all natural sounds meaningless,⁴ and MPCA would not need to establish protocols for separating the "noise source" from "background noise."⁵ Thus, the Recommendations are inconsistent with state law and the guidance of the agency tasked with enforcing the state's noise rules.

¹ Minn. Stat. § 116.06, subd. 15.

² See, e.g., "A Guide to Noise Control in Minnesota; Acoustical Properties, Measurement, Analysis and Regulation," MPCA (November 2015) available at: <https://www.pca.state.mn.us/sites/default/files/p-gen6-01.pdf> (accessed March 8, 2018) [hereinafter "MPCA Guide"].

³ See, e.g., MPCA Guide, at 11.

⁴ The leading principles of statutory construction are to interpret the language based on the plain language of the statute and to assume that the legislature did not intend to render any language meaningless. *Allan v. R.D. Offutt Co.*, 869 N.W.2d 31, 33 (Minn. 2015) (statutes should be interpreted such that "no word, phrase, or sentence [is] superfluous, void, or insignificant").

⁵ See Minn. R. 7030.0060 (sound is measured with respect to the noise "source").

The Recommendations also are inconsistent with longstanding, well-established Commission precedent. Minnesota Rule 7030.0040, subpart 2, has been applied by the Commission as requiring a wind farm project layout to adhere to a 50 dB(A) L50 maximum noise limit at residences. According to Commission precedent, the 50 dB(A) L50 does not include background noise but is limited to the source at issue. A wind farm developer has no ability to control background noise, but a developer can design a wind turbine layout that meets the 50 dB(A) L50 requirement from the wind turbines. Minnesota wind farms have long been found to be in compliance with Minnesota Noise Standards when noise levels generated by the wind farm source have been at or below the standards required by Minn. Rule 7030.0040, subp. 2.⁶

There are many good reasons for the established precedent. It would be entirely unrealistic to apply the Noise Standards to limit “total noise” since background noise fluctuates hour-to-hour and day-to-day. Such an interpretation also presents an impractical regulatory scheme where it would be nearly impossible to determine which “source” is the cause of an exceedance. Effectively regulating noise sources requires a methodology and standard that isolates the noise source of concern from other sources of noise. The proposed interpretation in the Recommendations simply would be unworkable, not only for the wind industry, but other businesses, such as construction, manufacturing and mining.

Vestas also takes exception to the Administrative Law Judge’s reliance on reports submitted through public comment that were not sponsored by experts and whose authors were not available for cross examination. For example, when discussing infrasound, the Recommendations cites extensively from Keith Stelling, Michael Nissenbaum, Alec N. Salt, Jeffery Lichtenhan, Jerry Punch, Richard James, and Paul Schomer.⁷ None of these individuals testified at the hearing, nor was their work relied upon by an expert witness. In fact, work produced by these individuals

⁶ See, e.g., *In the Matter of the Application of Prairie Rose Wind Farm for a LWECS Site Permit for the 200 MW Prairie Rose Wind Farm*, MPUC Docket No. IP6843/WS-10-425, Post-Construction Noise Study Report, dated November 2013, at 15-16 (filed December 6, 2013) (eDocket No. 201312-94303-01 & 02) (pre-construction noise measurements indicated sound levels at that time exceeded MPCA noise limits so noise measurements and analysis determined only the contribution of project-related noise); *In the Matter of the Application of Pleasant Valley Wind, LLC for a Site Permit for the 301 MW Pleasant Valley Project in Dodge and Mower Counties*, MPUC Docket No. IP6828/WS-09-1197, Pleasant Valley Wind Farm Post-Construction Noise Assessment, dated August 25, 2016, at 51 (filed January 13, 2017)(eDocket No. 20171-128078-01) (to properly determine sound contribution of the facility, the ambient sound level must be deducted from the total noise measured).

⁷ See, e.g., Report at n. 274, 275, 276, 292, 293, 298.

regularly appears in the library of documents promoted by anti-wind organizations such as National Wind Watch.⁸

If the Commission adopts the Recommendations' new interpretation of the Noise Standards – which departs from established precedent, disregards credible scientific evidence presented under oath and tested by cross-examination, and presents the Commission with an unworkable noise testing scheme – the deployment of clean, renewable energy sources in Minnesota will suffer. Put simply, fewer wind farms will be built in the state. Accordingly, Vestas urges the Commission to adopt Freeborn Wind's proposed Findings related to noise and reject Finding Nos. 177-267 of the Recommendations.

II. The ALJ's Recommendations Related to Ice Throw Are Unreasonable and Based on Inapplicable and Contradictory Record Evidence

Vestas takes exception to Report Finding Numbers 309-311 concerning ice throw. Regarding Finding 309, the Report relies on a single, anecdotal incident at the Bent Tree Wind Farm from a non-testifying, non-expert Dan Belshan who alleges that ice was thrown 300 feet from a wind turbine on the Bent Tree Wind Farm to a passing truck. Belshan provides no direct evidence of this allegation.

In fact, the letter from Alliant Energy dated February 23, 2018 to the Minnesota Public Utilities Commission states that:

Following the voicemail from the Highway Patrol, a Bent Tree technician was immediately dispatched to the site to assess the situation and take any turbines offline that were showing signs of ice shedding. The technician reported back to Bent Tree site management that he could find no ice along HWY 13, and that he had not witnessed any turbines shedding ice. However, as a precaution, WPL took 15 turbines along HWY 13 and secondary roads offline while WPL further investigated the matter.⁹

⁸ See, e.g., <https://www.wind-watch.org/documents/author/?a=>

⁹ *In the Matter of the Application of Wisconsin Power and Light for a Site Permit for the 400 MW Bent Tree Wind Project in Freeborn County*, MPUC Docket No. ET6657/WS-08-573, Letter from Alliant Energy at 1, dated February 23, 2018 (eDocket No. 20182-140446-01). See also, *In the Matter of the Application of Wisconsin Power and Light for a Site Permit for the 400 MW Bent Tree Wind Project in Freeborn County*, MPUC Docket No. ET6657/WS-08-573, Letter from Alliant Energy at 2-3, dated April 2, 2018 (eDocket No. 20184-141632-01) (Wisconsin Power and Light Company was unable to conclusively determine that the ice event was the result of ice throw from a Bent Tree wind turbine.)

Based on this single incident of alleged ice throw and commentators concerns about ice throw near the snowmobile trail and public roads, the Administrative Law Judge recommends an unreasonable permit condition. The Recommendation is that Site Permit Condition 5.2.25 be amended to require Project personnel to inspect any turbines closer than 1200 feet to structures, roads or trails for ice when weather conditions are such that ice is likely to accumulate on turbine blades. To the extent that ice is accumulating on the blades of turbines located within 1200 feet of structures, roads, or trails, the Administrative Law Judge would require that turbines be deactivated until such time as the turbine blades are free from ice.

It is unclear how this Recommendation is feasibly implemented. It would seem that each turbine would need to be deactivated for an inspection in unfriendly weather conditions when visibility is impaired. It is unrealistic to think that ice build-up would be readily identifiable in these conditions. Moreover, to impose such a permit condition based on a risk of ice throw in inclement weather, is akin to deactivating all power lines within 1200 feet from any area of human activity, because trees can fall on them in bad weather and electrocute people. The business of generating electricity carries with it some risks of human injury, all of which cannot be entirely eliminated.

Furthermore, as the Administrative Law Judge acknowledges in Finding 308, the Department of Commerce's Energy and Environmental Review and Analysis (DOC-EERA) staff find "the odds of ice throw occurring at the same time that someone would be snowmobiling in the adjacent portion of the trail with optimal weather conditions, resulting in a snowmobiler being struck by ice fragments are 'negligible, or almost non-existent'." And, at Finding 310, the Administrative Law Judge recognizes that the Draft Site Permit Condition 4.4 provides for a setback of 250 feet from the public road rights of way and designated public trails, and that the turbine closest to the snowmobile trail is already 538 feet away. This is much further than the 300 feet the ice travelled in the alleged Bent Tree farm incident. Given the remote risk, the setback requirement in the original Draft Site Permit, and the actual Project layout, it is unclear why the Recommendations call for the ice build-up inspections and curtailments.

Finally, as referenced in the Project's Application, Vestas newer turbines use technology that addresses imbalance.¹⁰ Relative to the older model turbines at Bent Tree Wind Farm, the Vestas turbines for the Project include more advanced technology for detecting rotor imbalance that frequently occurs with significant ice build-up. This autosensing technology of the Vestas turbines causes them to shut down when rotor imbalance occurs, and accordingly to shut down in the event ice accumulation creates imbalance. Although the turbines are not equipped with specific

¹⁰ Ex. FR-1 at 101 (Application).

ice-sensing equipment, the turbine will stop turning if significant ice accumulation causes an imbalance, or a mismatch between expected energy generation for a given wind speed and actual energy generation – the difference being attributable to deformation of the airfoil due to ice formation. Accordingly, Vestas respectfully submits that the Recommendations and associated proposed conditions with respect to ice throw should be rejected.

Yours sincerely,



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