



Vestas American Wind  
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Date: 11/20/2023

Hoffman Falls LLC  
90 State Street, Suite 700,  
Albany, NY 12207

Dear Hoffman Falls LLC,

Subject: Vestas American Wind Technology Approval for Hoffman Falls Wind Project

I am writing to officially convey Vestas American Wind Technology's approval for siting the proposed wind turbine model, V150-4.5MW HH120m, at the Hoffman Falls Wind project site.

The selected wind turbine model has been meticulously designed to meet the stringent standards outlined in the IEC-61400 series. Comprehensive details associated with the turbine model are provided in the performance specification (Document No.: 0067-7057.V04).

Furthermore, based on the specific site data, Vestas has conducted a thorough load evaluation in accordance with the IEC 61400-1 standard. This evaluation aimed to assess the design lifetime of the chosen wind turbines on the site and establish the necessary operational strategy. The detailed results of this assessment, including site conditions and operational strategies, are available in the wind power plant assessment report referenced below,

- US\_Hoffman Falls\_Wind\_Power\_Plant\_Assessment\_V01 (Document no.: 0153-0064 V01).

Sincerely,

*Sriram Ravindran*

Sriram Ravindran  
Specialist, Siting Solutions  
Vestas American Wind Technology



Nordex USA, Inc. • 300 South Wacker Drive • Suite 1400 • Chicago • Illinois 60606 / USA

Hoffman Falls LLC  
90 State Street, Suite 700,  
Albany, NY 12207

Contact  
Ken Jaffe

Phone  
+1 (312) 386-4137

Email  
kjaffe@nordex-online.com

Date  
November 29, 2023

**Re: Hoffman Falls**

Dear Hoffman Falls LLC:

Please take the following as Nordex approval for siting the proposed wind turbine model listed in the table below at the Hoffman Falls project site (Facility Site).

The proposed wind turbine model is rated to withstand wind conditions above those likely to occur at the Facility Site as estimated using site-specific wind data obtained from one 60-meter tall meteorological tower and one LiDAR unit that were installed by Hoffman Falls LLC in 2021.

International standards for wind turbines are developed by working groups of Technical Committee-88 of the IEC, a world-recognized body for standards development. The wind turbine model under consideration for the Facility Site has been designed to meet the standards of the IEC-61400 series and is rated for specific IEC wind classes. The table below lists the wind class and wind standards associated with the turbine model under consideration. Based on the expected wind conditions at the Facility Site, this wind turbine model would be suitable for use at the Facility Site.

**Wind Speed Class**

<b><i>Turbine Model</i></b>	<b><i>Wind Turbine Class<sup>1</sup></i></b>	<b><i>Average Wind Speed (m/s) at Hub Height<sup>3</sup></i></b>	<b><i>Extreme 50-year wind speed (m/s)</i></b>	<b><i>Turbulence Intensity Class<sup>2</sup></i></b>
Nordex: N149-4.X				

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<sup>1</sup> There are five wind turbine classes recognized by the IEC. Wind speed at hub height averages 10 meters per second (m/s) for Class I, 8.5 m/s for Class II, 7.5 m/s for Class III, 6 m/s for Class IV, and is user defined for Class S.

<sup>2</sup> Turbulence intensity is a measure of the variability in wind speed (i.e., the standard deviation of the wind speed within a period divided by the average wind speed over that same period) that a turbine is designed to withstand. Turbulence intensity is measured at 15 meters per second and three classes are recognized by the IEC. Mean turbulence intensity at 15 m/s is >14% for Class A, 12% - 14% for Class B, and <12% for Class C.

<sup>3</sup> Although the N149-4.X has an IEC mean wind speed rating of 7.5 m/s, it has been found to be suitable for this specific project based on loads modeling.

Yours truly,

**Nordex USA, Inc.**

Ken Jaffe

Senior Wind & Site  
Engineer



January 16, 2024

Augusta Mead  
Project Developer  
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**Ryan Sunyak**

System Simulation Engineering Leader

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Executive Summary of GE's suitability assessment of the 6.1-158-117m HH for the Hoffman Falls project

Dear Augusta,

This letter is to confirm that General Electric (GE) has performed an initial assessment to determine the suitability of a 6.1-158 wind turbine with a hub height of 117m for the Hoffman Falls project in New York. The estimated site-specific wind conditions outlined in the below table were used for this evaluation. This data was derived from the furnished site wind data, consisting of (1) mast with 2-years of data and (3) lidars with approximately 1-year of data. GE notes that the (1) mast is approximately 10km from the far western turbines. Accordingly, consideration should be given to installing at least one additional mast to provide a more comprehensive measurement campaign.

Turbine	Maximum Average Wind Speed (m/s)	Mean Average Wind Speed (m/s)	Representative Turbulence Intensity @ 15 m/s (%)	Ve50 3- second gust (m/s)	Average Air Density (kg/m3)	Wind Shear Exponent	Average Weibull k Factor
6.1-158-117	8.11	7.72	14.1	50.5	1.170	0.27	2.20

The conclusion of this assessment is that the 6.1-158 wind turbine with a 117m hub height is likely to be suitable for a lifetime of twenty years when considering the power curve "PCD\_6.1\_158\_60Hz\_LoadsOptimizedOperation\_EN\_r01" and the acoustic specification "Noise\_Emissions\_4.x\_5.x\_6.x-158-60Hz\_IEC\_EN\_C".

The need for some type of loads mitigation strategy for mechanical loads suitability cannot be ruled out without completion of a full Mechanical Loads Assessment (MLA). Confirmation of suitability is predicated on the wind farm layout maintaining a minimum spacing of 480m between the wind turbine locations.

This communication should not be interpreted as a warranty or guarantee of performance.

Sincerely,

Ryan Sunyak

cc: Robert Bienick, Commercial Director, GE Renewables Commercial Operations  
Bridget Barrett, Commercial Leader, GE Renewables Commercial Operations  
Fabio Franco, Senior Sales Manager, GE Renewables Sales