

# **POST-CONSTRUCTION NOISE MONITORING PLAN**

## **Stony Creek Wind Farm Wyoming County, New York**

### **1 INTRODUCTION**

The Stony Creek Wind Farm (the “Project”) is a wind energy facility being developed by Stony Creek Energy LLC (“Stony Creek”) in Wyoming County, NY. Section 1116 of the Town of Orangeville Zoning Code (the “Town Law”) regulates installation and operation of wind energy facilities; it includes a requirement that audible noise from a wind turbine not exceed L10-50dBA at non-participating residences. Pre-construction studies performed as part of the environmental review showed expected noise levels from the wind turbines would meet this requirement.

This Post-Construction Noise Monitoring Plan (the “Plan”) describes studies to measure noise generated by the Project during operation and to compare these noise levels to those permitted under the Town Law.

### **2 OPERATING SURVEY**

#### **2.1 Overall Plan**

Noise measurements will be collected at (i) locations in the Project Area at distances similar to those where non-participating residences are located from wind turbines and (ii) at locations where noise conditions are expected to be similar to those in the Project Area but where little to no noise from wind turbines is expected to be present. Results will be compared and analyzed to characterize the noise levels from the operating wind turbines. Results will be compared to the Town Law limits and the levels predicted in the pre-construction noise studies.

#### **2.2 Monitoring Schedule and Duration**

Post-construction noise measurements will be conducted starting on a date that is 12 months or less that the date that the Project begins commercial operations. Noise monitoring shall be conducted for a period of one week or more, and it shall include (i) periods where the Stony Creek turbines are operating at wind speeds where the turbine specifications indicate the turbine is producing maximum noise levels, and (ii) periods where 50% or less of the Stony Creek turbines are not generating any electricity.

#### **2.3 Study Personnel and Responsibility**

Noise monitoring shall be performed by a qualified acoustical consultant or engineer who will employ methods that generally conform to applicable ANSI and ASTM standards for the measurement of sound, and the requirements in the Town Law. Stony Creek shall be responsible for hiring and paying the costs of the noise monitoring firm or consultant.

#### **2.4 Monitoring Equipment**

All direct measurements will be made with a precision sound level meter that meets the provisions in ANSI S1.4 Type 1 or IEC 61672-1 Class 1, and if used, a filter that meets the provisions in ANSI S1.11 Class 1 or IEC 61260 Class 1. Information on the manufacturer and model of the equipment used shall be

documented and provided in the final report. Additional information, including instrument serial number and date of most recent laboratory calibration will be kept on file. All instrumentation used to monitor noise at the Project shall have been calibrated in the lab within the 12 months prior to being deployed at Stony Creek, and will be calibrated in the field prior to and following the series of measurements. If the before-and-after calibration level change exceeds  $\pm 1.0$  dB, then data from that sensor shall not be used in the final analysis and report.

## **2.5 Monitoring Locations and Equipment Set-up**

The noise consultant will identify locations on one or more properties where Stony Creek has an agreement to allow access for contractors and noise experts to conduct studies.

### Monitoring Locations Near Wind Turbines

Locations will be selected to be representative of the locations of the closest non-participating residences, i.e., approximately 1,350 feet downwind from one or more operating wind turbines. Selection of the noise monitoring location(s) will consider factors such as proximity to roads, tree cover, and other ambient noise sources.

### Monitoring Location for Ambient Sounds

The noise consultant will select a location to conduct measurements where acoustical conditions are expected to be similar to those in the Project Area but where little to no noise from the Stony Creek wind turbines is expected to be present. Selection of the ambient noise monitoring location(s) will consider factors such as proximity to roads, tree cover, and other ambient noise sources.

### Equipment Setup for Monitoring Stations

During the Study, microphones at noise monitoring stations will be fitted with the manufacturer's recommended windscreen, and where practical, removed from any large, vertical reflective surface. Locations will be selected to expose the microphone primarily to facility sound and to minimize any undue influence of wind-generated noise at the microphone itself. If deemed useful and necessary, a supplemental windscreen may also be employed. The sound level meter will be set with the fast time constant.

## **2.6 Manual Observations**

In addition to setting up the noise monitoring equipment, the field team will study the measuring locations and the Project Area to identify and document typical sounds in the area and from the Stony Creek turbines, including any prominent pure tones from the facility or other sources, observed at the noise monitoring sites.

## **2.7 Weather Conditions**

For the period when noise monitoring is conducted, the noise consultant obtain from Stony Creek time-stamped on-site meteorological data, including wind speed and wind direction, that can be correlated to the noise measurements collected by the noise consultant. The noise consultant shall supplement this data with general observations on weather conditions, including wind speed, wind direction, relative humidity, air temperature, and precipitation.

### **3 ANALYSIS AND REPORTING OF RESULTS**

The noise consultant shall evaluate the collected data to determine the measured hourly A-weighted L10 sound level at each noise monitoring location. Measurements from the ambient noise monitoring site and from the site(s) near wind turbines will be compared to determine the noise level produced by the wind turbines under various conditions. The noise consultant may conduct other analyses determined necessary or useful for demonstrating whether the Project is compliance with the requirements of the Town Law.

The noise consultant shall produce a report documenting the noise monitoring conducted at Stony Creek and this report shall be provided to the Town. The report will include:

- A description of the methods used to conduct the noise monitoring, including details on the test personnel, the meteorological conditions, the project layout and measurement locations, and the test equipment.
- A thorough presentation of the measured sound level data including explanatory or summary graphics, tables, and charts, as appropriate.
- A summary discussion relating the measured results to the requirements of the Town Law.

The final report shall be provided to the Town on date no later than 60 days after the completion of the on-site noise monitoring.