Bluestone Wind Project

Case No. 16-F-0559

1001.17 Exhibit 17

Air Emissions

EXHIBIT 17 AIR EMISSIONS

Global climate change has been recognized as one of the most important environmental challenges of our time (NYSCAC, 2010; NYSDEC, 2009, 2010). There is scientific consensus that human activity is increasing the concentration of greenhouse gases (GHGs) in the atmosphere and that this, in turn, is leading to serious climate change (IPCC, 2013). Historically, New York State has been proactive in establishing goals to reduce GHG emissions, including the 2015 State Energy Plan (SEP), which has committed the State to achieving a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total GHG emissions 80% by 2050. In addition, the 2015 SEP calls for 50% of generation of electricity from renewable energy sources by 2030 (NYSEPB, 2015). Fuel combustion accounts for approximately 83% of total GHG emissions in New York State (NYSERDA, 2016).

Operating renewable wind energy facilities do not generate any air emissions. As a result, this Exhibit is not applicable to the Facility once it becomes operational. However, some emissions will be generated during construction of the Facility.

(a) Compliance with Applicable Federal, State, and Local Regulatory Requirements

Several air emission sources will be on-site during construction of the Facility. In particular, one or more fossil fuel-fired generators may be used during facility construction to power general construction activities (e.g., batch plant, lighting). Assuming the generators: (1) are liquid or gaseous fueled with a maximum mechanical power rating less than 400 brake horsepower (bhp); (2) are gasoline powered with a maximum mechanical power rating less than 50 bhp; and/or (3) will not be on-site for longer than 90 days, these generators will not require an air registration or other permit from the New York State Department of Environmental Conservation (NYSDEC). See 6 NYCRR §§ 201-3.2(c)(3) (exempt stationary or portable internal combustion engines); 201-1.11 (exemption for temporary emission sources); 201-2.1(b)(29) (definition of temporary emission source). If one or more of the above-referenced thresholds are exceeded, the Applicant will submit an application to NYSDEC for an air registration or State facility permit, as appropriate.

Because the generator(s) are considered nonroad engines and will not be located at the Facility for more than 12 months, they are not regulated under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (RICE) (40 CFR Part 63, subpart ZZZZ) or the New Source Performance Standards (NSPS) for Stationary Compression or Spark Ignition Internal Combustion Engines (40 CFR Part 60, subparts IIII and JJJJ). See 40 CFR §§ 63.6585(a) (RICE NESHAP applicability); 63.6675 (definition of stationary RICE); 60.4200(a) (NSPS applicability); 60.4219 (definition of stationary internal combustion engine); 1068.30 (definition of nonroad engine).

In addition, construction of the Facility may require use of a concrete batch plant. No air registration or permit is required for concrete batch plants "where the cement weigh hopper and all bulk storage silos are exhausted through fabric filters, and the batch drop point is controlled by a shroud or other emission control device." 6 NYCRR § 201-3.2(c)(37). Any concrete batch plant used to construct the Facility will be equipped as specified in the exemption and so will not require a permit or registration.

(b) Assessment of Existing Ambient Air Quality Levels and Trends in the Region

The NYSDEC Division of Air Resources publishes air quality data for New York State annually. The most recent summary of air quality data available for the State is the *New York State Ambient Air Quality Report for 2016* (NYSDEC, 2016). Included in this report are the most recent ambient air quality data, as well as long-term air quality trends derived from data that have been collected and compiled from numerous state and private (e.g., industrial, utility) monitoring stations across the State. These trends are assessed and reported by NYSDEC regions. The proposed facility is located in NYSDEC Region 7, which encompasses Oswego, Onondaga, Cayuga, Cortland, Madison, Tompkins, Chenango, Broome, and Tioga Counties. There are two monitoring stations in Region 7, one in Oswego County (Fulton) and one in Onondaga County (East Syracuse). The Fulton Station measures ozone (O_3) and the East Syracuse Station measures O_3, fine particulate matter (known as $PM_{2.5}$), and sulfur dioxide (SO_2).

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS)—thresholds that define acceptable air quality for various air pollutants based on health and environmental impacts. In 2016, Region 7 was within the acceptable levels established by EPA for all six NAAQS pollutants (NYSDEC, 2016) and EPA has designated all counties in NYSDEC Region 7 as attainment for all NAAQS. No local air monitoring data is available to further characterize air quality in the immediate vicinity of the proposed Facility. The Facility will not generate any air emissions during operation so will not negatively affect any attainment of the NAAQS.

(c) Emissions by Combustion Sources Table

As previously noted, wind turbines generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, the table required by this Section summarizing the rate and amount of emissions is not applicable to the Facility, and is not included in the Application.

(d) Potential Impacts to Ambient Air Quality

As indicated above, wind turbines generate electricity without combusting fuel or releasing pollutants into the atmosphere. However, an analysis of potential impacts to ambient air quality associated with site preparation and construction of the Facility is set forth below. This section also includes an analysis of the broader impact of operation of the proposed emission-free electricity generating source on ambient air quality.

Construction-Related Impacts

During the site preparation and construction phases of the Facility, temporary minor adverse impacts to air quality could result from the operation of construction equipment and vehicles. Such impacts could occur as a result of emissions from engine exhaust and from the generation of fugitive dust during earth moving activities and travel on unpaved roads. The increased dust and emissions will not be of a magnitude or duration that will significantly impact local air quality. Any impacts from fugitive dust emissions from travel on unpaved roads are anticipated to be short-term and localized and will be corrected quickly by dust control measures consistent with the Standards and Specifications for Dust Control, as outlined in the *New York State Standards and Specifications for Erosion and Sediment Controls* (NYSDEC, 2016a).

As previously noted, in addition to emissions from construction vehicles and equipment, Facility construction may require use of an on-site concrete batch plant and/or fossil fuel-fired generators. Depending on the proximity of an acceptable ready-mix concrete plant, the Facility may require the use of an on-site concrete batch plant. If an on-site concrete batch plant is used, the Balance of Plant (BOP) contractor will not be required to obtain a registration provided the plant meets the criteria for exemption under 6 NYCRR § 201-3.2(c)(37). In the Applicant's experience, temporary concrete batch plants used to construct wind energy facilities typically do not require an air registration or permit. Nevertheless, to minimize adverse impacts, the BOP contractor will be expected to limit the operation of the temporary concrete batch plant to the extent needed for construction and will not allow the batch plant to remain operational/idling for any extended periods of time. In addition, the Applicant will instruct the BOP contractor to maintain the fabric filter, shroud and/or other air pollution control equipment in accordance with manufacturer recommendations and/or best management practices. Therefore, adverse impacts to air quality are not anticipated and additional control or mitigation measures are not required.

Fossil fuel-fired generators may be used by the BOP contractor to provide temporary electrical service to the construction trailers that are typically located at the contractor staging/laydown yard and to provide power to other construction and related equipment. Diesel generators may also be used during turbine commissioning activities. Turbine commissioning activities that require the use of diesel generators typically span a period of only two to three months and only occur during daylight hours. As long as each generator (1) does not exceed the exemption thresholds summarized in Section (a) above and (2) will not be operated for a single consecutive period of 90 days or more, they

will not require a registration or permit from NYSDEC. In the Applicant's experience, fossil fuel-fired generators used to construct wind energy facilities do not require any air emissions permits given their size, transient nature, and limited emissions. To minimize adverse impacts, the Applicant will instruct the BOP contractor to not leave fossil fuel-fired generators idling when they are not in active use providing power to a source. In addition, the Applicant will instruct the BOP contractor to maintain the generators in accordance with manufacturer instructions and/or best management practices. Therefore, adverse impacts to air quality are not anticipated and additional control or mitigation measures are not required.

Operation-Related Impacts

The operation of the Facility is anticipated to have a positive impact on air quality by producing electricity with zero emissions (except for very small emissions from vehicles servicing the Facility). Electricity delivered to the grid from wind energy projects can offset the generation of energy at existing conventional power plants. According to a 2008 U.S. Department of Energy National Renewable Energy Laboratory report, "Wind energy is a preferred power source on an economic basis, because the operating costs to run the turbines are very low and there are no fuel costs (Jacobsen & High, 2008). Wind power with back-up natural gas is the most effective and environmentally friendly way to meet New York's power needs.

As described in Exhibit 8, the Facility will annually displace approximately:

- 72,829 tons of CO_2
- 53 tons of NOx
- 9 tons of SO_2

For information on how these number were calculated, see Exhibit 8.

(e) Offsite Consequence Analysis for Ammonia Stored Onsite

No ammonia will be stored onsite during Facility construction or operation. Therefore, the offsite consequence analysis required by Section (e) is not applicable to the Facility and is not included in this Application.

REFERENCES

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