

Mohawk Solar

Case No. 17-F-0182

1001.17 Exhibit 17

Air Emissions

EXHIBIT 17 AIR EMISSIONS

The Facility will produce electricity without generating any 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 (“GHG”) in the atmosphere and that this, in turn, is leading to serious climate change (IPCC, 2013). By its nature, climate change will continue to impact the environment and natural resources of the State of New York (NYSDEC, 2009). Historically, New York State has been proactive in establishing goals to reduce GHG emissions, including Executive Order 24, which seeks to reduce GHG emissions by 80% by the year 2050 (Paterson, 2009). Fuel combustion accounts for approximately 89% of total GHG emissions in New York State (NYSDEC, 2009). The State’s most recent emissions reductions goals are contained in the 2015 State Energy Plan (“SEP”), issued June 25, 2015, by the New York State Energy Planning Board. The SEP recognizes the importance of ensuring that New York’s power system is modern, clean, and diverse and that “renewable resources will . . . play a significant role in shaping New York’s energy future, providing resilient power, reducing fuel cost volatility, and lowering [GHG] emissions.” The SEP describes the State’s energy future through a series of goals such as a 40% reduction in GHG emissions from 1990 levels, and procurement of 50% of electricity generation from renewable energy sources by 2030.¹ In addition, on August 1, 2016, in accordance with the statutory obligation that agency actions must be reasonably consistent with the most recent SEP, the Public Service Commission adopted the Clean Energy Standard (“CES”), which incorporated the SEP’s goals that 50% of New York’s electricity be generated by renewable sources by 2030 as part of a strategy to reduce statewide greenhouse gas emissions by 40% by 2030 .

Operation of the Facility will 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

In accordance with Section 111 of the Clean Air Act Extension of 1970, the U.S. Environmental Protection Agency (“EPA”) established New Source Performance Standards (“NSPSs”) to regulate emissions of air pollutants from new stationary sources. These standards apply to a variety of facilities including landfills, boilers, cement plants, and electric generating units fired by fossil fuels. The NYSDEC Division of Air Resources administers an air permitting program as required by the Clean Air Act and 6 NYCRR Part 201. The two most common types of permit for air

¹ By Executive Order, it is also a goal of the State of New York to reduce current greenhouse gas emissions from all sources within the State 80% below levels emitted in the year 1990 by the year 2050. Executive Order No. 24 (2009) [9 N.Y.C.R.R. 7.24; continued, Executive Order No. 2 (2011) 9 N.Y.C.R.R. 8.2]. In addition, during the 2019 State of the State address, Governor Cuomo announced even more aggressive renewable electric goals to ensure 70% of New York’s electricity is generated from renewable resources by 2030. New York State Governor’s Office, *Governor Cuomo Announces Green New Deal Included in 2019 Executive Budget*, January 17, 2019. Available at <https://www.governor.ny.gov/news/governor-cuomo-announces-green-new-deal-included-2019-executive-budget>. (Accessed February 2019).

contamination sources are State facility and Title V facility permits. Since solar facilities generate electricity without releasing pollutants into the atmosphere, the proposed operational facility will not be subject to NSPSs and will not require air pollution control permits under the Clean Air Act or New York State law or regulation.

The 1984 State Acid Deposition Control Act required the reduction of sulfur dioxide (“SO₂”) emissions from existing sources and nitrogen oxides (“NO_x”) emission controls on new sources in New York State. SO₂ and NO_x in the atmosphere are the primary causes of acid rain. The Acid Rain Program was created under Title IV of the 1990 Clean Air Act Amendments, with the goal of reducing emissions of SO₂ and NO_x for environmental and public health benefits. These regulations are also not applicable to the operating Facility because it will generate electricity without releasing SO₂ or NO_x.

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. Assuming the generators are: (1) liquid or gaseous fueled with a maximum mechanical power rating less than 400 brake horsepower (bhp); (2) 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 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).

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).

(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 Air Quality Report for 2017 (NYSDEC, 2017). 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 4, which encompasses Albany, Columbia, Delaware, Greene, Montgomery,

Otsego, Rensselaer, Schenectady, and Schoharie Counties. There are two monitoring stations in Region 4, both are in Albany County, in Albany and Loudonville. The Loudonville Station measures ozone (O₃), CO, and SO₂, while the Albany Station measures particulate matter (PM_{2.5}).

The Clean Air Act requires the EPA to set National Ambient Air Quality Standards (“NAAQS”) for pollutants considered harmful to public health and the environment. In 2017, all Region 4 sampling points were within the acceptable levels established by the NAAQS for all tested parameters (NYSDEC, 2017). No local air monitoring data is available to further characterize air quality in the immediate vicinity of the proposed Facility.

(c) Emissions by Combustion Sources Table

Solar generation facilities generate electricity without combusting fuel or releasing pollutants into the atmosphere. Therefore, the table required by 1001.17(c) summarizing the rate and amount of emissions is not applicable to the Facility. However, emissions that will be offset by the Facility’s operation are quantified in subsection (d) below.

(d) Potential Impacts to Ambient Air Quality

As indicated above, solar energy facilities 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 construction 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, 2016). See Exhibit 12 for additional information on potential dust-related impacts and control measures during construction.

As previously noted, in addition to emissions from construction vehicles and equipment, fossil fuel-fired generators could be a temporary emissions source during Facility construction. Fossil fuel-fired generators may be used by the

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. In the Applicant's experience fossil fuel-fired generators do not require any air emissions permits give their size, transient nature, and limited emissions. To minimize adverse impacts, the Applicant will instruct the 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 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 Applicant does not anticipate installing/operating any air emission sources, including emergency generators, in association with operation of the collection or interconnection substations or with the Facility generally. From a broader air emissions perspective, the Facility is anticipated to have a positive impact on air quality by producing electricity with zero emissions (except for negligible emissions from vehicles that periodically service the Facility). Power delivered to the grid from this Facility will directly offset the generation of energy at existing conventional power plants. Switching from fossil fuel energy generation to solar energy generation contributes to cleaner and healthier air since solar power generation has zero emissions and is not a source of pollutants such as nitrogen oxides, sulfur dioxide, and mercury.

Natural gas is the most frequent marginal fuel unit in New York's power pool, or the one that is turned on or off as the load fluctuates (Patton et al., 2016). When the proposed Facility is generating power, electricity generation from natural gas would be reduced within the region, thereby eliminating the associated emissions.

Table 17-1 summarizes the Facility's annual displacement of select air pollutants. This information is also reported in Exhibit 8.

Table 17-1: Annual Displacement of Selected Air Pollutants by Facility Operation

Air Pollutant	Tons of Pollutant Displacement Annually
CO ₂	55,500
NO _x	28
SO ₂	2

(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 1001.17(e) is not applicable to the Facility and will not be included in the Article 10 Application.

REFERENCES

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- New York State Climate Action Council (NYSCAC). 2010. *Climate Action Plan Interim Report*. November 9, 2010
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- New York State Governor's Office, *Governor Cuomo Announces Green New Deal Included in 2019 Executive Budget*, January 17, 2019. Available at <https://www.governor.ny.gov/news/governor-cuomo-announces-green-new-deal-included-2019-executive-budget>. (Accessed February 2019).
- Patton, D.B., P.L. VanSchaick, and J. Chen. 2016. *2015 State of the Market Report for the New York ISO Markets*. Prepared by Potomac Economics, Market Monitoring Unit for the NYISO. May 2016.