GARNET ENERGY CENTER

Case No. 20-F-0043

1001.15 Exhibit 15

Public Health and Safety

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Exhibit 15: Public Health and Safety

This Exhibit will track the requirements of Final Stipulation 15, dated March 5, 2021, and therefore, the requirements of 16 New York Codes, Rules and Regulations (NYCRR) § 1001.15. Commercial-scale solar arrays provide the means to harness solar energy for electricity production that is both clean and renewable. Through the development of solar energy technology, communities can maintain air quality with minimal, temporary emissions produced during construction activities, typical of any commercial construction site, as further discussed in Exhibit 17.

As explained in Exhibit 10, solar energy significantly contributes to the New York State energy planning objectives of New York State's 2015 State Energy Plan[1] (SEP), promotes the objectives of the New York State Public Service Commission's (NYPSC) adopted Clean Energy Standard, and helps achieve the aggressive renewable goals of the Climate Leadership and Community Protection Act (CLCPA).

The New York State's 2015 SEP is designed to conserve the environment by reducing greenhouse gas (GHG) emissions and other air pollutants to provide New York with a clean, resilient, and affordable energy system. The plan is designed to promote solar energy technology and increase the amount of energy generated by renewable energy technologies in New York. New York State has adopted the 2015 SEP with the goals of reducing statewide GHG emissions by 40% from 1990 levels and generate 50% of the State's electricity from non-GHG sources by 2030. Solar energy technology plays a significant role in reducing GHG emissions by providing clean energy, which successively improves the quality of the overall environment. Development of solar energy production will help move New York toward a more sustainable environment. Solar energy is a dependable source in the energy market that will improve public health by providing better air quality and water quality.

The 2019 CLCPA increases the State's renewable energy generation goal to 70% by 2030, with a specific goal of 6 gigawatts (GW) of solar generation by 2025. The CLCPA also requires 100% carbon-free electricity in New York State by 2040. The 2015 SEP was amended in April 2020 to incorporate the CLCPA's renewables mandates.

[1] Amended in 2020.

15(a) Anticipated Gaseous, Liquid, and Solid Wastes Produced at the Project during Construction and Operation

Solar energy technology and energy storage systems allow for the production of electricity without creating any gaseous, liquid, or solid wastes during operation, and therefore eliminates the need to treat, collect, transport, and dispose of such waste in any significant amount. During the construction phase, the Project anticipates the disposal of minimal solid waste. Dumpsters will be located in construction staging areas for proper disposal of construction-related materials. Approximately ten 40-yard dumpsters will be placed in areas nearest to construction activity producing waste material to later be disposed of at approved local landfill facilities. Waste materials generated during construction are typical of construction projects and will include plastic, wood, cardboard, metal packing materials, construction scrap, debris from blasting (if applicable), and general refuse that will be properly disposed of at local landfill facilities. Minimal construction material will accrue over the construction phase. During operation of the Facility, routine maintenance activities will generate small amounts of waste and will be disposed of at the appropriate landfill facilities (e.g., cardboard, cleaning rags, and general refuse).

Waste materials from Project construction are anticipated to be collected in dumpsters and receptacles located on site at the laydown yards. It is anticipated that a local waste management company will be contracted to collect and properly dispose waste at a local waste disposal facility.

Gaseous and liquid waste will be limited to the operation of construction equipment that will be managed by the designated contractor. Construction equipment and vehicles will be fueled by unleaded gasoline and ultra-low sulfur diesel and will have maintained mufflers.

Concrete washout will generate small amounts of waste during construction. Concrete washout will be located near the foundation areas (at the interconnection facilities and energy storage). The concrete will settle within the concrete truck washout. The contractor will be responsible for the removal and disposal of concrete at a licensed facility.

Where Project Components impact forested areas, there will be some amount of tree clearing for access roads; placement of fences, laydown yards, solar panels, inverters, underground collection lines, and energy storage systems; and to prevent shading. The locations of tree clearing are shown on Sheets C.401 through C.443 of the Preliminary Design Drawings in Appendix 11-1. The Applicant is proposing to clear approximately 261.9 acres of forested area.

Trees otherwise not claimed by the given landowner will be cut, logged, and removed to local timber/firewood buyers. To reduce impacts to existing land uses, branch and brush debris will be chipped in place and spread to a maximum depth of 3 inches in upland areas (safely away from water resources) onsite so as not to interfere with existing land use practices. Any wood that is chipped will be used as stabilization in accordance with the Project's Stormwater Pollution Prevention Plan (SWPPP) and Certificate Conditions.

15(b) Anticipated Volumes of Waste to be Released to the Environment at the Project during Construction and Operation

No additional volume of waste beyond that addressed in Section 15(a) will be released to the environment by the Project during construction or operation. The proposed solar panels are made of solid materials and do not pose a hazard to the general public, underlying soil, or groundwater as described further in Section 15(g) below. A manufacturer's specification sheet for the typical type of crystalline silicon solar panel is included in Appendix 2-1.

15(c) Treatment Processes to Eliminate or Minimize Waste Released to the Environment

No treatment process to eliminate or minimize waste will be necessary as no additional volume of waste beyond that addressed in Section 15(a) will be released to the environment by the Project during construction or operation.

15(d) Collection, Handling, Storage, Transport, and Disposal for Wastes Retained

Collection, handling, storage, transport, and disposal procedures are addressed in Section 15(a).

15(e) Wind Power Facility Impacts

Impacts specific to wind powered facilities will not be addressed in the Application as they are not applicable to the Project.

15(f) Study Area Maps and Analysis

Figures 15-1 and 15-2 show the relation of the Project Area to public water supply resources; community emergency response resources and facilities including police, fire and emergency medical response facilities and plans; emergency communications facilities; hospitals and emergency medical facilities; existing known hazard risks including flood hazard zones; dams, bridges, and related infrastructure; explosive or flammable materials transportation or storage facilities; contaminated sites; major natural gas facilities, and other local risk factors.

Designated evacuation routes, storm surge zones, landslide hazard areas, and areas of geologic, geomorphic, or hydrologic hazard (aside from flood hazard) are not applicable to the Project.

15(g) Significant Impacts on the Environment, Public Health, and Safety

No significant adverse impact on the environment, public health, and safety were determined through the many studies performed to prepare this Application.

Based on the weight of scientific evidence and the design measures incorporated into the proposed Project design, the Project will not have any adverse impact on public health or safety. No short-term, long-term, or cumulative receptor impacts are anticipated. This includes issues surrounding audible sound, low frequency noise, glare, ambient air, potable water or other quality of life issues. Evaluations of these issues are discussed in the respective exhibits. The glare analysis (Appendix 24-2) is discussed below and in Exhibit 24.

Potential impacts from fire, project component materials, and waste were also evaluated. There is a very low likelihood that a fire would occur at the Project. The solar field itself has no substantial fuel source to support a fire (the panels are primarily metal and glass) and the modules do not generate heat. Vegetation grown within and under solar arrays will consist of grasses that are maintained less than 3 feet in height. The inverter units and pad-mounted transformers contain no hazardous materials (the inverters are anticipated to be air-cooled and transformers typically only contain mineral oils). In the event a piece of equipment catches fire, the lack of fuel in the solar field prevents the fire from spreading. See Exhibit 18 for a discussion of the Project's Emergency Response Plan (ERP), Exhibit 12 for a discussion of the Project's Quality Assurance and Quality Control Plan, and Exhibit 11 for the codes, standards, and guidelines to which the Project components will adhere.

With respect to a concern for the potential leaching of hazardous materials and heavy metals into the soil, the proposed solar PV panels are a solid material and do not have a liquid component. They consist of glass, polymer, aluminum, copper, and semiconductor materials that can be recovered and recycled at the end of their useful life. To provide decades of corrosion-free operation, solar cells are encapsulated from air and moisture between two layers of plastic with a layer of tempered glass and a polymer sheet or industrial laminate. The current proposed solar panels do not contain cadmium, nor do they contain lead above regulatory protocol that would render them a "hazardous waste."

In addition, based on the weight of scientific evidence of the peer-reviewed literature on solar farms and health, no adverse impacts on public health or safety are anticipated from the designed Project. To the contrary, public health can be positively influenced as a result of renewable energy technology and its contribution to displace harmful emissions from other fossil fuel generation technologies. The total potential human health benefits depend on the amount of emissions a generation facility is capable of displacing and its capacity factor; therefore, the larger the facility the greater the potential human health benefits (Buonocore et al., 2015). The Project is expected to reduce emissions of sulfur dioxide, nitrogen oxides, and carbon dioxide from the power sector in New York. Refer to exhibits 8 and 17 for details on emission reductions.

The energy storage systems for the Project will comply with the applicable codes and standards and the guidance issued by the U.S. Department of Energy and the New York State Energy Research and Development Authority (NYSERDA). The Project will also be designed to industry standards and all components will be Underwriters Laboratories (UL) listed. As technology is constantly changing, the energy storage units that will be used for the Project have not been finalized yet. Appendix 2-4 includes specification sheets for current energy storage models that are typical of the type of technology that will be utilized for the Project. Updated specification sheets will be provided to the Secretary as specified by the Siting Board.

The energy storage system will have a staged approach for prevention and control to optimize safety. The stages include 1) Physical Safeguards; 2) Battery Management System (BMS) Safety Controls; 3) Site Controller Safety Controls; 4) Remote Monitoring Facility; and 5) UL Cascading Testing.

Physical safeguards include setbacks and the battery enclosure. The BMS monitors the individual modules and controls the voltage, temperature, and current for the safe, reliable transfer of energy. The system automatically shuts off if the batteries are operating outside predefined parameters. The Site Controller Safety Controls include manual shutoffs, fire detection systems, alarms, and the BMS. The Applicant’s Remote Monitoring Facility can remotely shut off systems from the center located in Juno Beach, Florida. This center is discussed in more detail in Exhibit 18 and Appendix 18-2. The UL Cascading Testing includes the UL listings on batteries and inverters. All these systems together provide a staged approach that optimizes safety at the Project and in the vicinity.

15(h) Potential Impacts on the Environment, Public Health, and Safety

Adverse impacts on the environment, public health, and safety have been avoided or minimized to the maximum extent practicable. Solar panels will introduce a new visual cue in the environment. A Visual Impact Assessment is provided in Exhibit 24, showing that potential visibility of the Project has been avoided or minimized. A glare analysis is available in Appendix 24-2, showing that the potential for glare, which is conservatively overstated in the modeling results, is minimal and no significant impacts from glare are expected from the Project. Where glare is predicted, mitigation measures have been proposed as discussed in the Visual Impact Assessment (Appendix 24-1), the glare study (Appendix 24-2) and the glare mitigation package (Appendix 24-3).

All workers will be trained and familiar with the Garnet Energy Center ERP (Appendix 18-2). The Town of Conquest Fire Department, Cayuga County Sheriff's Department, New York State Police Troop E Station, Cayuga County Emergency Management Services, and the New York State Division of Homeland Security and Emergency Services have recieved a draft copy of the ERP included with this Application and their comments will be incorporated into the final ERP submitted prior to the start of construction and operation of the Project. The ERP contains details for emergency workers, fire, ambulance, and police/sheriff. In addition, in the unlikely event that hazardous materials or environmental contaminants are encountered during excavation, the protocol in the ERP will be followed. The ERP includes additional information regarding safety protocols for energy storage systems. Energy storage systems are located in 11 locations in the Project Area within the array area, sited 684 feet or more away from neighboring homes, minimizing any impacts and unlikely potential hazards to adjacent landowners. The ERP will be updated, refined, and filed with the Secretary post-certification once a contractor is selected.

Construction impacts are short-lived. Long-term unavoidable impacts associated with operation and maintenance of the Project include varying degrees of panel visibility and loss of forest land. As evaluated through site-specific environmental and ecological analyses, which are presented in Exhibits 4, 22, 23, and 24 of the Application, these impacts are not considered significant, have been minimized to the maximum extent practicable (e.g., through vegetative screening and a comprehensive Preliminary Landscaping Plan - see Appendix 11-2) and are outweighed by the benefits of providing a source of clean, renewable energy. Thus, by adding electricity from a renewable energy source to the power grid, the Project will have an incremental and long-term beneficial impact on climate and air quality.

15(i) Irreversible and Irretrievable Commitment of Resources

There are a number of resources that will be committed to the Project for construction and operation.

During the Article 10 Application phase, there are significant human and financial resources committed to the Project. This includes an irretrievable investment by the Applicant and its partners in preparing the necessary studies and evaluations required for the Application. However, through proper design and the proposal of mitigation measures, it is assumed that the Application will be successful, and the Project will proceed to construction and operation. In addition, it is recognized that State of New York agencies, Cayuga County, and the Town of Conquest, together will interested parties, will be expending human resources on the review of the Application.

During the construction phase of the Project, a number of manufacturing materials, construction materials, and building supplies will be committed to the Project. This includes the material required for physical components of the solar panels, energy storage system, gravel, concrete, steel, cables, etc. that will be dedicated for the life of the Project. Where possible, these materials will be recovered and reused at the end of the useful economic life of the Project. Details on this reclamation are provided in Exhibit 29.

15(j) and (k) Proposed Minimization and Mitigation Measures

The Applicant is dedicated to minimizing the commitment of resources to the Project and any potential adverse impacts on the environment, public health, and safety. The Applicant is consistently striving to achieve efficiencies throughout the development and operational phases of this solar project.

The Project has been designed according to industry standards. This includes necessary standards listed in Exhibit 11 and standards included in the National Electrical Code (NEC), the International Building Code (IBC), and the National Fire Protection Association (NFPA) for energy storage systems. The energy storage system will also be designed to withstand any potential seismic activity in the area. The racks that hold the modules will be braced to the floor and to adjacent racks. In addition, prior to construction, seismic calculations are performed to ensure the bracing is sufficient for the given site location.

The avoidance, minimization, and mitigation measures contained in the Application together with the proposed setbacks will provide that there is no risk to public health and safety, while also serving to minimize the annoyance to local residents. The solar arrays and energy storage system are also to be located on leased or purchased, private property. Therefore, public access to the Project is limited.

Compliance with Article 10 regulations assures that public and agency comments are solicited and appropriately addressed. The Applicant intends to propose certificate conditions based upon applicable best management practices and other protective measures adopted by the Siting Board. Compliance with applicable federal, state, and substantive local regulations (that are not unreasonably burdensome – see Exhibit 31), pertaining to the construction and operation of the proposed Project, which also will serve to minimize adverse impacts. Construction activities and Project engineering will be undertaken in compliance with applicable state regulations, substantive local building codes (that are not unreasonably burdensome), and Federal Occupational Safety and Health Administration (OSHA) guidelines to protect the safety of workers and the public. The implementation of a state-approved State Pollutant Discharge Elimination System (SPDES) permit for construction-related stormwater runoff will protect against inadvertent spills during construction and operation. Road use and repair and traffic control will be coordinated at the local level to assure that safety, congestion, and damage to roadways in the area is avoided, minimized, or repaired through Road Use Agreements to be negotiated with the Town of Conquest, Cayuga County, and the New York State Department of Transportation, as applicable.

15(l) Proposed Impact Monitoring

The Applicant has provided a proposed Complaint Resolution Plan (Appendix 12-3). The objective of this plan is to establish a consistent method and procedure by which the Applicant will address public complaints during the construction and operation of the Project. The Complaint Resolution Plan outlines the numerous ways an individual can file a complaint, how the Applicant will investigate and attempt to resolve the complaint, and the dispute resolution procedure. Exhibit 5 addresses the Operations and Maintenance (O&M) plans and Exhibit 18 addresses emergency response and contingency plans.

The Project, including the energy storage system, will be monitored 24/7 by the Applicant's Renewable Operations Control Center (ROCC) located in Juno Beach, Florida. The energy storage system containers have smoke alarms/fire detection systems. Fires are detected by the

use of photoelectric smoke detectors and thermal detectors. Each module will have a temperature sensor that will shut down the system if a condition out of the normal range is reached. Alarms generated from the smoke detector will trigger remote alarms to the ROCC. In the event of an emergency, the ROCC will shut down necessary equipment remotely and contact the Applicant's local Site Leader or emergency responders who will arrive on site as soon as practicable. This monitoring system and procedure helps the Applicant to prevent any additional impacts to the surrounding area as a result of an emergency situation.

To provide compliance with the Article 10 certificate conditions and other applicable regulations, the Applicant will provide funding for an Environmental Monitor to oversee Project construction and restoration activities.

15(m) Receptor Locations

Receptors have been identified by the Applicant via field review along public roads, public outreach, correspondence with local stakeholders, and review of aerial photos and tax records. Residential receptors have been differentiated between "full-time" or "seasonal," and have been categorized conservatively – in that if there was uncertainty as to whether it was full-time or seasonal, in many instances it was conservatively identified as full-time. Additionally, all receptors identified by the Applicant have been further divided to participating and nonparticipating receptors, based on whether they have entered a lease agreement with the Applicant. Receptor locations are shown on Figure 15-2. The visual receptors are shown in Appendix 24-1 and the noise receptors are included in Appendix 19-1. This information will assist in the determinations of operational sound impacts that exceed applicable standards as a result of the Project. Should operational sound impacts occur, receptors are encouraged to notify the Applicant as indicated in the Complaint Resolution Plan in Appendix 12-3.

15(n) Glare Analysis

A Glare Analysis was prepared in order to determine the extent and assess the significance of glare from the Project (see Appendix 24-2). No significant adverse impacts from glare are predicted from the Project.

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