Stipulations

for the

Greene County Solar Facility

proposed in

Town of Coxsackie

Greene County, New York

Case Number 17-F-0619

August 28, 2019

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NEW YORK STATE

BOARD ON ELECTRIC GENERATION SITING

AND THE ENVIRONMENT

IN THE MATTTER

of the CASE 17-F-0619

Application of Hecate Energy Greene 1 LLC, Hecate Energy Greene 2 LLC, and Hecate Energy Greene County 3 LLC (Co-Applicants or Hecate Greene) for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 of the Public Service Law (PSL) for Construction of a Solar Electric Generating Facility Located in the Town of Coxsackie, Greene County.

General Matters

1) The Greene County Solar Facility is discussed in an Article 10 Preliminary Scoping Statement (PSS) submitted to the New York State Board on Electric Generation Siting and the Environmental (Siting Board) on May 29, 2018 by the Co-Applicants. The term "Facility" as used herein includes solar panel arrays, inverters, electric collection lines, collection substation and access roads, as well as any other improvements subject to the Siting Boards jurisdiction.

   These stipulations are governed by Section 163 of the PSL and by any application requirements for federally delegated environmental permits issued by the New York State Department of Environmental Conservation (NYSDEC), if applicable.

2) The Parties hereto may limit their concurrence to one or more of the specific subject area stipulations by so indicating in a notation next to their signature. A signature without any such notation shall indicate concurrence with the entire stipulation.

3) Those signing these stipulations agree that, as of the date hereof, the studies outlined herein constitute all the necessary studies concerning the subject matter of these

stipulations that the Co-Applicants must provide to satisfy Section 164(1) of the PSL. Except as provided herein, and in accordance with Section 1000.5(k) of the regulations, the signatories agree not to request the Co-Applicants to provide additional studies concerning the subject matter of these stipulations in connection with the Article 10 proceeding to the extent they have agreed to such stipulations.

4) Under any of these following circumstances the Co-Applicants agree to consult with the statutory parties to determine if additional studies, evaluations or analyses should be performed:
    a) A new statute, regulation or final, non-reviewable judicial, federal, state or administrative regulation, ruling or order is adopted subsequent to the date of these stipulations which necessitates such additional studies, evaluations or analyses;
    b) The Co-Applicants propose a substantial revision to the Facility, (as defined by 16 New York Codes, Rules, and Regulations [NYCRR] 1000.2(ak)) or other inputs to the stipulated studies, evaluations or analyses that will materially affect the results of the studies, evaluations or analyses;
    c) New material information is discovered during the course of conducting, or as a result of, the stipulated studies, evaluations or analyses that indicates that the results of such studies, evaluations or analyses or their results will be substantially affected and therefore, further evaluation or analysis is needed to determine the potential impacts of the Facility or the appropriate minimization or mitigation measures;
    d) New, material and relevant information obtained independently of the stipulated studies, evaluations, or analyses demonstrates that the conduct of such studies, evaluations or analyses, or their results, will be substantially affected and should be modified or expanded to the extent necessary to meet the requirements of the Article 10 regulations; or
    e) The Chairman of the Siting Board, the Siting Board, or the Presiding Examiner, whose ruling will be appealable to the Siting Board, or Associate Examiner presiding with respect to any proceedings concerning federally delegated environmental permits to be issued by NYSDEC, whose ruling will be appealable to the Commissioner of the NYSDEC or the Siting Board, as the case may be, requires an additional study, evaluation or analysis pursuant to 16 NYCRR §1000.9(a).

5) After the Chairman of the Siting Board determines that the Application complies with the Section 164 of the PSL, if the signatories, in any of the circumstances listed above, reach agreement as to the implementation of any additional studies, evaluations, or analyses, such agreement may be set forth in a new stipulation, which may include the agreement of the Co-Applicants to extend the statutory deadline for completion of the certification proceeding, but only if and only to the extent necessary to provide sufficient time to permit any such studies, evaluations, or analyses to be conducted and reviewed. Any of the signatories, in the circumstances listed in paragraph 4 shall not be restricted from pleading that the Co-Applicants must provide additional studies evaluations or analyses related thereto during the Article 10 proceeding regarding the subject matter of these regulations.

6) Geographic information system (GIS) shapefiles used in development of the Application will be provided to requesting parties, to support the information and analyses in the Application. GIS shapefiles of all Facility and resource locational information, analyses and graphic exhibit preparation will be provided directly to New York State Department of Public Service (NYSDPS) Staff and NYSDEC on CD-ROM along with paper copies of the Application.

7) The Application will provide a list of acronyms used throughout the Application as an appendix to the Table of Contents.

STIPULATION 1 – 1001.1 EXHIBIT 1: GENERAL REQUIREMENTS

Exhibit 1 will contain:

(a) The following information on the Co-Applicants:

(1) name, address, telephone number, facsimile number, and e-mail address of the Co-Applicants;

(2) the address of a website established by the Co-Applicants to disseminate information to the public regarding the application;

(3) the name, address, telephone number, facsimile number, and e-mail address of a person provided by the Co-Applicants that the public may contact for more information regarding the application;

(4) Hecate Greene is composed of Hecate Energy Greene 1 LLC, Hecate Energy Greene 2 LLC, and Hecate Energy Greene County 3 LLC, which are wholly owned subsidiaries of Hecate Energy, LLC. Contact information for Hecate Energy, LLC's Principal Officer will be provided;

(5) the name, business address, telephone number, facsimile number, and e-mail address of the Co-Applicants' agents, if desired for service purposes;

(6) a brief explanation of the type of business entity that the Co-Applicants are, including its date and location of formation and the name and address of any parent entities; and

(7) if the Facility is to be owned by a corporation, a certified copy of the charter of such corporation; if the Facility is not to be owned by a corporation, a copy of the certificate or other documents of formation.

STIPULATION 2 – 1001.2 EXHIBIT 2: OVERVIEW AND SUMMARY OF PUBLIC INVOLVEMENT

Exhibit 2 will not exceed 15 pages of text and will contain:

(a) A brief description of the major components of the proposed Facility, interconnections and related facilities, including proposed acreages (for lease, disturbance, and permanent features); number and size of panels; and type of panel (i.e., fixed or rotating).

(b) A brief summary of the contents of the Application.

(c) A brief description of the PIP Plan conducted by the Co-Applicants prior to submission of the Application and an identification of significant issues raised by the public and affected agencies during such program and the response of the Co-Applicants to those issues including a summary of changes made to the proposal as a result of the PIP Plan.

(d) The summary of the PIP Plan will include the following information:

- Development and use of stakeholder list (including host and adjacent landowners);
- Opportunities for public involvement, including dates, advertising, attendance, and presentations at open houses, copies of notices and invitations and proof of service to Facility public events;
- Establishment of a Facility website with URL address, and toll-free phone number;
- Maintenance of a local Facility office (if one has been established) with public hours and contact name;
- Availability of Facility documents in local repositories. The Application will include a statement indicating that paper copies of all major documents (e.g., PIP, PSS, Article 10 Application), except those subject to a protective order, are properly filed at the designated local repositories as identified in the PIP Plan. Further, the Co-Applicants will ensure that electronic copies of all major documents, except those subject to a protective order are properly filed on the designated website;
- Consultation with affected agencies and stakeholders;
- Identification of environmental justice areas, if any;
- Factsheets on the Article 10 process, intervenor funding and other outreach materials; and
- Use of the meeting logs to track PIP activities and public concerns.

(e) A brief description of the PIP to be conducted by the Co-Applicants regarding the filing of the Facility's Article 10 Application and the public involvement activities after submission of the Application. The Co-Applicants agree to provide in the Application its plans to

continue to implement its PIP Plan after submittal of the Application, such as its plan to schedule additional public open houses, hearings, notification of construction activities, complaint resolution procedures, an updated stakeholder list that will be appended to the Application, including host and adjacent landowners and additional stakeholders identified through the public outreach process, discussion of how stakeholders have been identified and subsequently added to the list during the scoping, stipulation and public involvement processes, and a description of how the list is used during the distribution and notification regarding Project milestones, including submittal of the Application. Also, in addition to the notifications required under 16 NYCRR 1000.6 and 1000.7, the Co-Applicants will mail notice of the Application submittal to the Facility's master stakeholder list comprised of the updated stakeholders list, including host and adjacent landowners, and additional addresses received through public outreach. The notice will include information on the Facility generally and the Article 10 Application specifically. A copy of the mailing list and documentation indicating the dates and mailings that were made will be provided to the Siting Board. In addition to newspaper publication, as required under 16 NYCRR 1000.7(a), the Co-Applicants should publish notification about the Facility in at least one free local community newspaper, circulated in the 2-mile Study Area, if available.

(f) A brief, clearly and concisely written overall analysis in plain language that assembles and presents relevant and material facts regarding the proposed Facility upon which the Co-Applicants proposes that the Siting Board make its decision. The analysis will be analytical and not encyclopedic and will specifically address each required finding, determination and consideration the Siting Board must make or consider in its decision pursuant to Section 168 of the PSL and explain why the Co-Applicants believe that the requested Certificate can be granted. The analysis will point out where discussions regarding agricultural resources occur.

(g) A description of how the Facility will produce clean solar energy and who the likely benefited consumers will be, taking into consideration any power purchase agreements (PPAs), as applicable.

STIPULATION 3 – 1001.3 EXHIBIT 3: LOCATION OF FACILITIES

Exhibit 3 will contain maps, drawings and explanations showing the location of the Facility and all structures and ancillary features as required by 16 NYCRR § 1001.3. in relation to municipalities (county, city, town and village) and taxing jurisdictions associated with any part of the overall development proposal. The Facility is proposed within an approximately 830-acre property (the Facility Area); a related interconnection facility, most likely replacing an existing line within a utility right-of-way (ROW), will likely be constructed and owned by the utility, extending north, off the Facility approximately 0.6 miles to the existing Coxsackie Substation. Such maps, drawings and explanations will include:

(a) United States Geological Survey (USGS) maps (most recent 1:24,000 topographic edition), showing:
  (1) the proposed location of the Facility and any reasonable and available alternative location sites required to be identified by Article 10 and its implementing regulations, including electric transmission line interconnections that are not subject to review under Article VII of the PSL, and including ancillary features located on the Facility Area such as roads, switchyards, and similar facilities;
  (2) the proposed location of any interconnections, including all offsite electric transmission lines, communications lines, stormwater drainage lines, and appurtenances thereto, to be installed in New York State connecting to and servicing the site of the Facility; and
  (3) a study area for the proposed Facility generally related to the nature of the technology and the setting of the proposed site. A 2-mile radius study area will be employed and included on the appropriate maps/figures. The 2-mile study area will not be utilized for all studies/analyses; some studies will utilize resource-specific study areas, such as a 5-mile study area for visual impact analysis and a 100-mile study area (but not beyond New York State borders) for analysis of potential cumulative effects on grassland birds, as provided in these Stipulations.
  (4) Municipal boundaries, as provided in the NYS GIS Clearinghouse data (updated June 2019), will be included in these maps.

(b) Maps clearly showing the location of the proposed Facility Area, any reasonable and available alternative location sites required by Article 10 and its implementing regulations to be identified, the interconnections, in relation to municipal boundaries, taxing

jurisdictions, designated neighborhoods or community districts, at a scale sufficient to determine and demonstrate relation of facilities to those geographic and political features.

(c) Written descriptions explaining the relation of the location of the proposed Facility Area, any reasonable and available alternative location sites required by Article 10 and its implementing regulations to be identified, the interconnections, in relation to the affected municipalities, taxing jurisdictions, designated neighborhoods or community districts.

STIPULATION 4 – 1001.4 EXHIBIT 4: LAND USE

Exhibit 4 will contain:

(a) A map showing existing land uses within the 2-mile study area. Land uses will be based upon the New York Office of Real Property Services Property Classification Codes, consultation with local officials, such as the Town Tax Assessor, and windshield surveys.

(b) A map of any existing overhead and underground major facilities for electric, gas (including natural gas and propane facilities) or telecommunications transmission within the study area, to the extent such information is publicly available.

(c) A map of all properties upon which any component of the Facility or the related facilities would be located, and all properties adjoining such properties, which shows the current land use, tax parcel number and owner of record of each property, and any publicly known proposed land use plans for any of these parcels.

(d) A map of existing zoning districts and proposed zoning districts within the study area, including a description of the permitted and the prohibited uses within each zone.

(e) A statement as to whether the municipality has an adopted comprehensive plan and whether the proposed land use is consistent with such comprehensive plan. The Town and Village of Coxsackie have an adopted comprehensive plan, known as the Town and Village of Coxsackie Community Plan (June 2008) and Greene County has adopted the Greene County Open Space and Recreation Plan and the Green County Agricultural Development and Farmland Protection Plan. This section will include a discussion of consistency with local and regional planning objectives, including but not limited to those set forth in the Town and Village of Coxsackie Community Plan and especially concerning the development of land in agricultural use. The exhibit will contain the address of the internet site where the plan is posted.

(f) A map of all publicly known proposed land uses within the 2-mile study area, gleaned from interviews with state and local planning officials, from the public involvement process, or from other sources.

(g) Maps showing designated coastal areas, inland waterways and local waterfront revitalization program areas; groundwater management zones; NYSDAM-designated agricultural districts; flood-prone areas; and critical environmental areas designated pursuant to the New York State Environmental Quality Review Act.

(h) Maps showing recreational and other land uses within the 2-mile study area that might be affected by the sight, sound or odor of the construction or operation of the Facility,

interconnections and related facilities, including the Hudson River and Greenway Corridor, open space, and any known archaeological, geologic, historical or scenic area, park, conservation easement lands, nature preserves, scenic byways designated by the federal or state governments, designated trails, designated hunting and birding areas, and public-access fishing areas; major communication and utility uses and infrastructure; and institutional, community and municipal uses and facilities including sports and recreational fields at the nearby school property; including a summary describing the nature of the probable environmental impact of Facility and interconnection construction and operation on such uses, including an identification of how such impact is avoided or, if unavoidable, minimized or mitigated. Given the provisions of §304 of the National Historic Preservation Act, 9 NYCRR §427.8, and §15 of the PSL, information about the location, character, or ownership of a cultural resource will not be disclosed to the public, and will only be disclosed to the parties to a proceeding pursuant to an appropriate protective order if a determination is made that disclosure may:

(1) cause a significant invasion of privacy;
(2) risk harm to the affected cultural resource; or
(3) impede the use of a traditional religious site by practitioners.

(i) A qualitative assessment of the compatibility of the Facility and any interconnection, including any off-site staging and storage areas, with: existing, proposed and allowed land uses, including agricultural land uses, Greene County Route 57 (Farm to Market Road), and the neighboring residential uses; and with local and regional land use plans, within a 2-mile radius of the Facility Area and any interconnection route. The qualitative assessment will include an evaluation of the short- and long-term effects of Facility-generated noise, odor, traffic and visual impacts on the use and enjoyment of those areas for the current and planned uses. The assessment will identify the nearby land uses of particular concern to the community and will address the land use impacts of the Facility on residential areas, schools, civic facilities, recreational facilities, and commercial areas.

(j) A qualitative assessment of the compatibility of aboveground interconnections and related facilities with existing, potential, and proposed land uses within the study area.

(k) A qualitative assessment of the compatibility of underground interconnections and related facilities with existing, potential, and proposed land uses within 300 feet from the centerline of such interconnections or related facilities.

(l) While a small portion of the study area is located in a designated coastal area, the Facility is not in, nor is it near, a designated inland waterway or significant coastal fish and wildlife

designated habitat. An analysis of conformance with relevant provisions of the Coastal Zone Management Act and proposed or adopted plans for inland waterways and local waterfront revitalization area will be included in the Application.

(m) Aerial photographs showing the Facility Area in relation to all properties within the study area of such scale and detail to enable discrimination and identification or all natural and cultural features. The source of aerial imagery will be United States Department of Agriculture (USDA) National Agriculture Imagery Program Imagery, New York 100 cm. The most current version of the aerial imagery as of 60 days before filing the Application will be used.

(n) Overlays on aerial photographs that clearly identify the Facility Area and any interconnection route, the limits of proposed clearing or other changes to the topography, vegetation or man-made structures, and the location of access and maintenance routes Layout features will be simplified to allow visibility of other features.

(o) All aerial photographs will be the latest available from either federal, state or commercial entities. All aerial photographs will indicate the source and the date photographs were taken.

(p) A description of community character in the area of the proposed Facility (developed in consultation with the Town Historian and/or Town Planner, as identified by the Town), an analysis of impacts of Facility construction and operation on community character, and identification of avoidance or mitigation measures that will minimize adverse impacts on community character. A photo log will be provided to illustrate elements of community character. For the purposes of this paragraph, community character includes defining features and interactions of the natural, built and social environment, and how those features are used and appreciated in the community.

(q) An identification and graphic depiction of the extent and nature of active agricultural land that will be directly displaced or otherwise affected by Facility development.

(r) An identification of the extent of the Facility Area enrolled in the Agricultural District program, the year of enrollment, and the date such enrollment will expire if not renewed.

(s) An assessment of measures to avoid, minimize and mitigate impacts to agricultural land from construction and operation of the Facility, including a description of potential use of Facility resources for other agricultural operations.

(t) A discussion of consistency, to the maximum extent practicable, of the Facility's construction with applicable New York State Department of Agriculture and Markets (NYSDAM) guidance documents, such as solar, transmission, and pipeline development

relative to specific Facility components. If for any reason the guidelines cannot be met, the NYSDAM will be contacted for an acceptable alternative.

(u) A discussion on the potential impacts of the proposed Facility, over its 40-year service life, on the agricultural viability of the Facility Area during operation of the Facility and after decommissioning, including the potential economic effect of a loss of agricultural commodities on the participating landowner.

(v) Based upon reasonably available public information, identification of threats of non-agricultural development and consideration of their predictable impacts to local agricultural support businesses and services serving the Agricultural District.

(w) Based upon discussions with the Facility Area landowners, a map showing agricultural lands that support habitual row cropping with a separate distinction from permanent pasture land and hay land.

STIPULATION 5 – 1001.5 EXHIBIT 5: ELECTRIC SYSTEM EFFECTS

Exhibit 5 will contain:

(a) System Impact Studies (SIS) have been prepared by the New York Independent System Operator (NYISO). The SIS will be included with the Application and will be filed separately under trade secret protection, as NYISO requires the SIS to remain confidential due to Critical Energy Infrastructure Information Regulations. According to the NYISO-approved scope, the study will show expected flows on the system under normal, peak and emergency conditions and effects on stability of the interconnected system, including the necessary technical analyses (Thermal, Voltage, Short Circuit, and Stability) to evaluate the impact of the interconnection. The study will include the new electric interconnection between the Facility and the point of interconnection (POI), as well as any other system upgrades required.

(b) An evaluation of the potential significant impacts of the Facility and its interconnection to transmission system reliability at a level of detail that reflects the magnitude of the impacts will be provided in the Application.

(c) Based on the results of the SIS, the effects of the Facility on ancillary services and the electric transmission system will be discussed in the Application.

(d) Though not anticipated, should the results of the SIS indicate the Facility will result in adverse reliability impacts, the Application will provide an analysis of any reasonable alternatives that would mitigate the adverse reliability impacts and maintain voltage, stability, thermal limitations, and short-circuit capability at adequate levels.

(e) The Application will provide an estimate of the increase or decrease in the total transfer capacity across the affected interfaces identified in the SIS. If a forecasted reduction in transfer capability across affected interfaces violates reliability requirements, the discussion will include an evaluation of reasonable corrective measures that could be employed to mitigation or eliminate said reduction.

(f) The Application will include a description of criteria, plans, and protocols for generation and ancillary facilities design, construction, commissioning, and operation, including as appropriate to the proposed solar technology.

  (1) Engineering codes, standards, guidelines and practices that apply.

  (2) The Application will include a type certification for a representative technology type that is being considered for the proposed Facility.

  (3) Procedures and controls for Facility inspection, testing, and commissioning.

(4) Maintenance and management plans, procedures and criteria.

(g) There is no thermal component to the Facility.

(h) As the Facility will involve the construction and operation of new solar collection substations to be built and owned by Hecate Greene, as well as an adjacent utility owned interconnecting switchyard, the Application will describe:

(1) The solar substation and switchyard facilities to be constructed and operated;

(2) How substation, switchyard, and interconnection design will meet the transmission owner's requirements; and,

(3) Operational and maintenance responsibilities for the facilities and how they will meet the transmission owner's standards.

(i) Facility maintenance and management plans, procedures and criteria, specifically addressing the following topics:

(1) The maintenance for the collection substations and electrical components of the Facility will be done in accordance with the equipment manufacturers' recommendations and acceptable industry practices. The maintenance schedule will include regularly scheduled safety inspections and the Facility's electric components' integrity will be reviewed in accordance with manufacturer's recommendations. Routine preventative maintenance will be regularly performed, with a general summary of type, schedule, and frequency of maintenance activities to be provided, and corrective maintenance will be performed as needed. The Facility will undertake maintenance activities on a regular basis. If work is to be performed in a public ROW, notification and any applicable permit(s) to work will be addressed with the appropriate agencies prior to starting any work. A Facility maintenance plan, further described in the Application, will address electric substation, gathering and collection line inspections, maintenance, and repairs, including minimization of interference with electric and communication distribution systems. Maintenance of the interconnecting switchyard will be performed by Central Hudson Gas and Electric Corporation (CHGE), as ownership of that related facility will be transferred to CHGE by the Co-Applicants.

(2) Electric transmission, gathering and interconnect line inspections, maintenance, and repairs, including:

(i) vegetation clearance requirements, management plans, and procedures;

(ii) inspection and maintenance schedules; and

(iii) minimization of interference with electric and communications distribution systems.

(j) As part of the operation and maintenance (O&M) procedures for the Facility, a vegetation plan will be developed. This plan will include information on maintaining/mowing vegetation under and between the panels, including information such as time of year and the number of times per year mowing will occur. It will also present information on how an invasive species prevention plan will be implemented in concert with these yearly activities to prevent the introduction and spread of invasive plant species. If pesticides, herbicides or similar measures will be used, the plan should identify representative chemicals and procedures for their use, including community notification methods and minimization of pesticide runoff to keep chemicals out of the watershed, which would reduce effects on down-stream land uses including any organic farming that may be present.

(k) There are no plans to share aboveground facilities with other utilities.

(l) A status update will be provided with the Application regarding equipment availability and expected delivery dates, if available, for major components including panels, inverters, transformers, and switchgear.

(m) Blackstart capabilities are not applicable to the Facility.

(n) Hecate Greene has coordinated with NYISO for the preparation of the SIS, and with CHGE (the local transmission owner) for the preparation of the Facilities Study. The Application will include an identification and demonstration of the degree of compliance with the applicable reliability standards of CHGE.

STIPULATION 6 – 1001.6 EXHIBIT 6: WIND POWER FACILITIES

Not applicable.

STIPULATION 7 – 1001.7 EXHIBIT 7: NATURAL GAS POWER FACILITIES

Not applicable.

STIPULATION 8 – 1001.8 EXHIBIT 8: ELECTRIC SYSTEM PRODUCTION MODELING

Exhibit 8 will be developed, in consultation with NYSDPS, to include an acceptable input data set for the modeling of the Co-Applicants' proposed Facility and inputs for the emissions analysis. It will contain the following analyses developed using GEMAPS, PROMOD, PROBE or a similar computer-based modeling tool:

(a) estimated statewide levels of sulfur dioxide, nitrogen oxides, and carbon dioxide emissions, both with, and without the proposed Facility;
(b) estimated minimum, maximum, and average annual spot prices representative of all NYISO Zones within the New York Control Area, both with and without the proposed Facility;
(c) an estimated capacity factor for the Facility;
(d) estimated annual and monthly, on peak, shoulder, and off-peak megawatt output capability factors for the Facility;
(e) estimated average annual and monthly production output for the Facility in megawatt-hours;
(f) an estimated production curve for the Facility over an average year;
(g) an estimated production duration curve for the Facility over an average year; and
(h) estimated effects of the proposed Facility on the energy dispatch of existing must-run resources, defined for this purpose as existing wind, hydroelectric, and nuclear facilities, as well as co-generation facilities to the extent they are obligated to output their available energy because of their steam hosts.

The Co-Applicants may seek trade secret protection for some or all of the input files used in the analyses. Digital copies of all inputs used in the simulations will be provided to NYSDPS, NYSDEC, and, upon request and pursuant to a protective order issued in the case, other statutory parties, under the appropriate confidentiality protection, and subject to applicable critical infrastructure information restrictions.

STIPULATION 9 – 1001.9 EXHIBIT 9: APPLICABLE REASONABLE AND AVAILABLE ALTERNATIVES

Exhibit 9 will contain:

(a) an identification and description of reasonable and available alternate location sites, if any, owned by, leased, or under option to the Co-Applicants or their affiliates, for the proposed Facility;

(b) for each alternative location identified, an evaluation of the comparative advantages and disadvantages of the proposed and alternative locations at a level of detail sufficient to permit a comparative assessment of the alternatives discussed considering:

(1) the environmental setting;

(2) the recreational, cultural, and other concurrent uses that the site may serve;

(3) engineering feasibility, including interconnections;

(4) reliability and electric system effects;

(5) environmental impacts, including an assessment of known, estimated, and expected impacts to wildlife, habitat, wetlands, site drainage, and archaeological and historical resources as a result of vegetative clearing;

(6) economic considerations;

(7) environmental justice considerations;

(8) security, public safety and emergency planning considerations;

(9) public health considerations;

(10) the site's vulnerability to potential seismic disturbances and current and anticipated climate change impacts, such as sea-level rise, precipitation changes, and extreme weather events; and

(11) the objectives and capabilities of the Co-Applicants.

(c) a description and evaluation of reasonable alternatives to the proposed Facility at the primary proposed location including alternatives regarding:

(1) general arrangement and design;

(2) technology;

(3) scale or magnitude;

(4) timing of the proposed in-service date for the Facility in relation to other planned additions, withdrawals, or other capacity, transmission or demand reduction changes to the electric system;

(d) a statement of the reasons why the primary proposed location is best suited, among the alternative locations required to be identified, to promote public health and welfare, including the recreational, cultural and other concurrent uses that the site and affected areas may serve.

(e) a statement of the advantages and disadvantages of the alternatives and the reasons why the primary proposed design technology, scale or magnitude, and timing are best suited, among the alternatives, to promote public health and welfare, including the recreational, cultural, agricultural, and other concurrent uses that the site may serve.

(f) a description and evaluation of the no action/no build alternative at the primary proposed location including a statement of the reasons why the proposed Facility is better suited to promote public health and welfare including the recreational, cultural and other concurrent uses that the site may serve.

(g) an identification and description of reasonable energy supply source alternatives including but not limited to alternatives to the proposed Facility, if any, consisting of renewable generation, distributed generation, and transmission alternatives; as this requirement is limited to alternatives that are feasible considering the objectives and capabilities of the Co-Applicants or their affiliates, no such alternatives exist and, therefore, this study will not be presented.

(h) a statement of the reasons why the proposed Facility is best suited, among the alternative sources and measures, if any, to promote public health and welfare, including the recreational, cultural, agricultural, and other concurrent uses that the site and affected areas may serve.

(i) A discussion and analysis, including appropriate graphics, of alternative Facility layouts, designs and scales, describing potential viable opportunities for maintaining agricultural uses at the Facility Area during operation of the Facility and for supporting agricultural uses at the Facility Area after decommissioning of the Facility.

(j) A discussion and graphic representation of the use of panels mounted on fixed-tilt racking structures versus single-axis tracking structures, the latter of which follow the sun throughout the day. Include information such as how these panels differ structurally, if at all, and what the impacts are for each. The Co-Applicants anticipate exclusively using single-axis trackers for the Facility; however, this will be assessed and clarified in the Application.

(k) A preliminary assessment of adding energy storage as an ancillary feature of Facility design that accounts for potential additional impacts, the potential for delays to the Facility schedule, the Co‑Applicants' goals and objectives for the Facility and its capabilities.

(l) A discussion of potential uses of project resources for alternative agricultural operations and the use of pollinator-friendly, native, and non-invasive plantings.

STIPULATION 10 – 1001.10 EXHIBIT 10: CONSISTENCY WITH ENERGY PLANNING OBJECTIVES

Exhibit 10 will contain:

(a) a statement demonstrating the degree of consistency of the construction and operation of the Facility with the energy policies and long-range energy planning objectives and strategies contained in the most recent state energy plan including consideration of the information noted below;

(b) a description of the impact the proposed Facility would have on reliability in the state;

(c) a description of the impact the proposed Facility would have on fuel diversity in the state;

(d) a description of the impact the proposed Facility would have on regional requirements for capacity;

(e) a description of the impact the proposed Facility would have on electric transmission constraints;

(f) a description of the impact the proposed Facility would have on fuel delivery constraints;

(g) a description of the impact the proposed Facility would have in relation to any other energy policy or long-range energy planning objective or strategy contained in the most recent state energy plan;

(h) an analysis of the comparative advantages and disadvantages of reasonable and available alternative locations or properties identified for construction of the proposed Facility; and

(i) a statement of the reasons why the proposed location and source is best suited, among the alternatives identified, to promote public health and welfare, including minimizing the public health and environmental impacts related to climate change.

STIPULATION 11 – 1001.11 EXHIBIT 11: PRELIMINARY DESIGN DRAWINGS

Exhibit 11 will contain:

(a) A site plan showing all buildings, structures, driveways, parking areas, emergency access lanes, sidewalks, access ways and other improvements at the Facility Area; depicting the proposed site in relation to adjoining properties; and depicting the layout of onsite facilities and ancillary features, to the extent incorporated into the design. Onsite delineated wetland and stream features will also be depicted on the site plan. Co-Applicants will provide four, full size copies of the preliminary design drawing set (at a scale of 1" = 100' or greater) at the time of Application submittal. Additionally, the Co-Applicants will provide a Flash Drive Memory Stick containing AutoCAD drawing files. The site plan will show, at a minimum, the following on site Facility components:

(1) Solar panels and associated mounting features (concrete pads, foundations, etc.) and inverters, including approximate number of panels and a general detail for the proposed solar panel arrangement;

(2) Electrical Energy Storage System(s), if applicable;

(3) Access road travel lanes;

(4) Proposed grading (temporary grading for construction purposes and permanent contours for final grading);

(5) Electric cable collection lines and number of circuits per proposed electric cable route; overhead and underground cable routes will be differentiated with specific line-types;

(6) Approximate limits of disturbance for all temporary and permanent Facility components (panels, access roads, buildings, electric lines, substation, etc.);

(7) Clearing limits, including tree clearing, for all Facility components (panels, access roads, buildings, electric lines, shading vegetation, etc.);

(8) Indication of off-site permanent ROW and road crossings for electric cable installations;

(9) Outline of collection and interconnection switchyard/substations, including access driveway, setbacks, and fence line;

(10) Proposed locations of electric cable installations for crossing of streams, waterbodies, roads, etc. and, where proposed, any proposed locations of such crossings that will utilize trenchless methods of installation, including the

approximate laydown area (outline of approximate work space needed) and approximate trenchless installation distances;

(11) Laydown, staging, and equipment storage areas for all temporary and permanent Facility features and associated access and parking locations;

(12) O&M facilities including access, parking areas, site maintenance shops or equipment storage areas, local setbacks required for such facilities, and the location of any proposed water supply and septic system(s);

(13) Fencing and gates, including clearing associated with fencing and proposed design (i.e., height, material);

(14) Property lines and zoning setbacks;

(15) Existing utility equipment locations and easement limits of those existing locations, including natural gas pipelines, electric transmission and distribution lines, cable and telecommunication lines, and other features as applicable;

(16) Site security features, including perimeter fencing. Closed-circuit television (CCTV) or similar monitoring equipment is not proposed.

(b) A construction operations plan indicating all materials lay-down areas, construction preparation areas, major excavation and soil storage areas, and construction equipment and worker parking areas.

(c) Grading and erosion control plans indicating soil types, depth to bedrock, general areas of cut and fill, retaining walls, initial and proposed contours, and permanent stormwater retention areas.

(d) A landscaping plan indicating areas of trees to be retained, removed, or restored; berms, walls, fences and other landscaping improvements, include the type(s) and estimated quantities of proposed vegetation; and areas for snow removal storage.

(e) A lighting plan including type, location, and height of installation of proposed exterior lighting fixtures; an indication of the measures to be taken to prevent unnecessary light trespass beyond the Facility property line; and manufacturer cut sheets of any proposed light fixtures.

(f) Architectural drawings including structure arrangements and exterior elevations for all structures (including any electrical energy storage system(s), collection substation and POI switchyard and interconnection equipment, and site security features, such as CCTV or other monitoring equipment support structures, as well as any O&M or other operational support buildings and structures, including retaining walls, and fences), indicating the length, width, height, material of construction, color and finish of all buildings, structures,

and fixed equipment and the type(s) of site perimeter fencing to be installed extensively around the Facility.

(g) Typical design detail drawings including:

(1) Plan and sections of underground facilities, including single and multiple-circuit layouts with dimensions of proposed depth and level of cover, separation requirements between circuits, clearing width limits for construction and operation of the Facility, limits of disturbance, and required permanent off-site ROW;

(2) Elevations for overhead electric facilities (collection and transmission lines, if applicable) including height above grade, structure layouts, clearing width limits for construction and operation of the Facility, permanent off-site ROW widths, average span lengths for each proposed layout, and structure separation requirements (for installations requiring more than one pole, etc.) for all single and multiple-circuit layouts;

(3) Typical foundations (piers, etc., including dimensions) to be used for solar panel installations;

(4) Preliminary seismic protection details regarding any proposed battery storage facilities (if applicable), per the Building and Fire Code of New York State;

(5) A circuit map indicating overhead and underground installations, and number of required circuits proposed per collection line run;

(6) Typical details associated with trenchless installations, including typical staging areas, construction machinery arrangements, and bore pits; and,

(7) Technical data sheets associated with solar panels (indicating dimensions of panel system(s)) to be used for this Facility.

(h) For interconnection facilities, the plans and drawings listed above will be provided for the proposed interconnection facilities and a profile of the centerline of the interconnection facilities at exaggerated vertical scale. A one-line diagram will also be provided.

(i) A list of engineering codes, standards, guidelines and practices that the Co-Applicants intend to conform with when planning, designing, constructing, operating and maintaining the generating facility, electric collection system, substation, transmission line, inter-connection, any electrical energy storage system(s), and any associated buildings and structures. In addition, if applicable, this section will include a summary of correspondence with the local fire department regarding installation of any electrical energy storage system(s).

(j) Wetland impacts will be presented on a separate site plan drawing(s) at 1" = 50' scale, depicting wetland boundaries and their 100' adjacent area, permanent and temporary structures, stream crossings, roads, power interconnects, the limits of disturbance, and proposed grading. Any tree removal proposed within a wetland or stream will be specifically noted on the drawings.

(k) Design information on any proposed culverts.

(l) A site plan drawing depicting agricultural land within the Facility Area in relation to all Facility components and ancillary structures, including identification of the areas containing Prime Farmland Soil and Prime Farmland Soil (if drained), the areas enrolled in the Agricultural District program, and any active agricultural land located within the Facility Area.

STIPULATION 12 – 1001.12 EXHIBIT 12: CONSTRUCTION

Exhibit 12 will contain:

(a) Hecate Greene will prepare a preliminary Quality Assurance and Control (QA/QC) plan, including staffing positions and qualifications necessary, demonstrating how the Facility will be monitored and will conform, to the extent practicable, with all applicable design, engineering and installation standards and criteria. Specific codes, standards, etc., will also be included, as applicable, such as the New York State Building Code, International Building Code, American Concrete Institute, NYSDAM guidelines for Solar Energy Projects (revision date 4/19/18), or any other guidance that will be followed as part of the QA/QC protocol.

(b) Statements that Hecate Greene and its contractors will comply with the requirements for protection of underground facilities contained in PSL §119-b, as implemented by 16 NYCRR Part 753, and will comply with applicable pole numbering and marking requirements, as implemented by 16 NYCRR Part 217.

(c) Hecate Greene will also work with the appropriate parties to develop a mutually agreeable approach for avoiding potential conflicts with existing utility transmission and distribution systems. The Application will include preliminary plans and descriptions indicating design, location and construction controls to avoid interference with existing utility transmission and distribution systems, indicating locations and typical separations of proposed facilities from existing electric, gas, and communications infrastructure and measures to minimize interferences where avoidances cannot be reasonably achieved.

    (1) This Exhibit will also include a discussion of the Champlain-Hudson Power Express (CHPE) underground electric transmission facility, which was granted a Certificate of Environmental Compatibility and Public Need pursuant to PSL Article VII, and the results of any consultations with the NYSDPS Staff and the CHPE development team.

(d) This Exhibit will also include a proposed process for addressing relevant and material public complaints, and procedures for dispute resolution during Facility construction and operation. The Co-Applicants are committed to developing a process, in consultation with the Town of Coxsackie, that is easily accessed, is tracked to time of resolution, provides input from construction managers as appropriate, and clearly defines responsibilities for issue resolution. The complaint process will have assigned personnel to track the

resolution of the complaint from the time of receipt, verification, resolution development, implementation and confirmation of resolution and will:

(1) Include a procedure for transmittal of complaint logs to NYSDPS. The complaint log will list all complaints and resolutions, to be maintained during construction and operation of the Facility and will be available to NYSDPS and to the Town and Village upon request;

(2) Describe the timeframes within which complaints will be addressed and the actions the Co-Applicants will take if a complaint remains unresolved after all steps are followed;

(3) Indicate whether complaints will be accepted from the toll-free line, as well as electronically through e-mail and the Facility website, providing multiple modes of communicating complaints so it is accessible to the public. In addition, complaint handling will address both written and verbal complaints. Verbal complaints received during construction will be converted to written documents that can be tracked by the certificate holder and contractors and be reported to NYSDPS Staff and made available to the Town and Village; and

(4) Identify and include any procedures or protocols that may be unique to each phase of the Facility (e.g., construction, operation, decommissioning of facilities) or based on the subject of the complaint. For example, during construction, complaint calls will be handled locally and quickly.

(5) Identify steps for informing the public about the complaint plan and the process to file a complaint (i.e., written, electronic and oral).

(e) This Exhibit will also include information regarding Co-Applicants' communications with stakeholders about construction activities, schedule and applicable safety and security measures. The Co-Applicants will coordinate with any pipeline owners operating pipelines in the Facility Area in developing the Facility design and layout to avoid effects on pipeline integrity and ROW.

STIPULATION 13 – 1001.13 EXHIBIT 13: REAL PROPERTY

Exhibit 13 will contain:

(a) The Application will include a survey of the Facility Area showing parcel boundaries (leased or subject to easement as well as those that can expect to be leased or made subject to easement) on which proposed Facility components (including panel locations, access roads, fencing, inverters, substation, and laydown yards) are to be located as well as the associated tax map sheet, parcel numbers (block and lot numbers) and owner information. The owner of record of all parcels adjacent to Facility Area properties will also be included. Existing utility facility ROWs (as identified to date), such as the POI, the North Catskill-Coxsackie 69-kilovolt (kV) transmission line, which is owned and operated by CHGE, and public roads will be shown as will the easement associated with the existing pipeline that traverses the Facility Area. Public and private roads on or adjoining or planned for use as access to the site will be depicted. The survey will also show current zoning information for the Town of Coxsackie, including but not limited to the Rural Residential District within which the Facility is proposed to be located, the Residential Density Overlay District where portions of Facility components are proposed to be located, and any other District within which Facility components or ancillary features are proposed to be located.

(b) This Exhibit will also include maps showing all proposed interconnection facilities and off-property/ROW access drives and construction laydown areas for such interconnections using the data obtained above.

(c) The Co-Applicants will provide a description of the agreements for parcels that are secured, under option or to be secured for the Facility, including ingress/egress access to public roads; easements for transmission and collections lines, and crossing existing pipelines and electric transmission lines; and public road use and occupancy for Facility collection and interconnection lines as appropriate to the Facility design. This Exhibit will provide a statement that the Co-Applicants have or will obtain the necessary real property rights for all parcels needed for the Facility and its interconnection.

(d) The Co-Applicants will provide information documenting the discussion and correspondence with municipal representatives to reflect that the Facility will not need any improvement district extensions. In the event it is determined that the Co-Applicants will need improvement district extensions, the Co-Applicants will identify such extensions

necessary and either demonstrate that they have been obtained or otherwise describe how the Co-Applicants intend to obtain them in accordance with 16 NYCRR 1001.13(e).

(e) Should construction and/or operation of the Facility require property rights or easements for mitigation purposes, this information will be included, to the extent known, in the Article 10 Application.

STIPULATION 14 – 1001.14 EXHIBIT 14: COST OF FACILITIES

Exhibit 14 will contain:

(a) A detailed estimate of the total capital costs of the proposed Facility, including a separately stated estimate for each interconnection, broken down in a rational manner by the Co-Applicants into major cost components appropriate to the Facility.

(b) A brief statement of the source of the information used as the basis for the estimates required by subdivision (a) of this section.

(c) Upon the demand of any party or of NYSDPS, the Co-Applicants will supply further detail of the estimates required by subdivision (a) of this section. However, certain components of this exhibit may be considered confidential information, and trade secret protection may be sought in order to control access and use of the information, in which case such further detail will be supplied to the demanding party under applicable confidentiality measures.

STIPULATION 15 – 1001.15 EXHIBIT 15: PUBLIC HEALTH AND SAFETY

Exhibit 15 will contain a statement and evaluation that identifies, describes, and discusses all potentially significant adverse impacts of the construction and operation of the Facility, the interconnections, and related facilities on the environment, public health, and safety, at a level of detail that reflects the severity of the impacts and the reasonable likelihood of their occurrence, identifies the current applicable statutory and regulatory framework, and also addresses:

(a) the anticipated gaseous, liquid and solid wastes to be produced at the Facility during construction and under representative operating conditions of the Facility, including their source, anticipated volumes, composition and temperature, and such meteorological, hydrological and other information needed to support such estimates and any studies, identifying the author and date thereof, used in the analysis;

(b) the anticipated volumes of such wastes to be released to the environment during construction and under any operating condition of the Facility;

(c) the treatment processes to eliminate or minimize wastes to be released to the environment (including, without limitation, chipping or other disposal of tree stumps and waste wood from site clearing);

(d) the manner of collection, handling, storage, transport and disposal for wastes retained and not released at the site, or to be disposed of;

(e) maps of the 2-mile study area and analysis showing relation of the proposed Facility 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; designated evacuation routes; existing known hazard risks including flood hazard zones, storm surge zones, landslide hazard areas, areas of geologic, geomorphic or hydrologic hazard; dams, bridges and related infrastructure; explosive or flammable materials transportation or storage facilities; contaminated sites; and other local risk factors;

(f) a map showing the geographic locations of proposed tree clearing;

(g) all significant impacts on the environment, public health, and safety associated with the information required to be identified pursuant to the sections above, including all reasonably related short-term and long-term effects;

(h) any adverse impact on the environment, public health, and safety that cannot be avoided should the proposed Facility be constructed and operated, and measures for monitoring and measuring such impacts;

(i) information regarding the potential for glare from solar arrays and the visibility effect as it would relate to public safety at County Route 57 (Farm to Market Road) and other public roadways located within the 2-mile Study Area;

(j) any irreversible and irretrievable commitment of resources that would be involved in the construction and operation of the Facility and an explanation of why such a commitment is unavoidably necessary;

(k) any measures proposed by the Co-Applicants to minimize such impacts;

(l) any measures proposed by the Co-Applicants to mitigate or offset such impacts;

(m) any monitoring of such impacts proposed by the Co-Applicants;

(n) Plans for communicating any significant public health and safety issues to appropriate local officials and/or local emergency service providers; and

(o) Should the Co-Applicants employ any pesticides or similar chemicals within the Facility Area, plans for minimization of pesticide runoff and prevention of pesticide contamination to nearby watershed and water supplies.

STIPULATION 16 – 1001.16 EXHIBIT 16: POLLUTION CONTROL FACILITIES

As applicable, Exhibit 16 will contain:

(a) Copies of completed applications for permits, if any, to be issued by the NYSDEC pursuant to federal recognition of state authority, or pursuant to federally delegated or approved authority, in accordance with the Clean Water Act (CWA), the Clean Air Act, and the Resource Conservation and Recovery Act, and permits pursuant to Section 15-1503, Title 9 of Article 27, and Articles 17 and 19 of the New York State Environmental Conservation Law (ECL).

(b) Such evidence as will enable the Commissioner of NYSDEC to evaluate the Facility's pollution control technologies and to reach a determination to issue, subject to appropriate conditions and limitations, permits for such technologies.

(c) Such evidence as will enable the Siting Board to evaluate the Facility's pollution control technologies and to make the findings and determinations required by PSL Section 168.

STIPULATION 17 – 1001.17 EXHIBIT 17: AIR EMISSIONS

Exhibit 17 will contain a discussion of the anticipated impacts to air quality expected to result from the proposed Facility's construction, including from temporary emissions sources such as construction equipment, and an identification of appropriate control and mitigation measures to minimize adverse impacts.

STIPULATION 18 – 1001.18 EXHIBIT 18: SAFETY AND SECURITY

Exhibit 18 will contain:

(a) A preliminary plan for site security of the proposed Facility during construction of such Facility, including site plans and descriptions of the following site security features as planned:
  (1) access controls including fences, gates, bollards and other structural limitations;
  (2) electronic security and surveillance facilities;
  (3) security lighting, including specifications for lighting and controls to address work-site safety requirements and to avoid off-site light trespass; and
  (4) setback considerations for Facility components that may present hazards to public safety.

(b) A preliminary plan for site security of the proposed Facility during operation of such Facility, including site plans and descriptions of the following site security features as planned:
  (1) access controls including fences, gates, bollards, and other structural limitations;
  (2) electronic security and surveillance facilities;
  (3) security lighting, including specifications for lighting and controls to address work-site safety requirements and to avoid off-site light trespass;
  (4) lighting of Facility components to ensure aircraft safety, if required;
  (5) setback considerations for Facility components which may present hazards to public safety, and
  (6) a description of a cyber security program for the protection of digital computer and communication systems and networks that support the Facility demonstrating compliance with current standards issued by a standards setting body generally recognized in the information technology industry, including, but not limited to, the federal Department of Commerce's National Institute of Standards and Technology, the North American Electric Reliability Corporation, or the International Organization for Standardization, and providing for periodic validation of compliance with the applicable standard by an independent auditor.

(c) A preliminary emergency response plan to ensure the safety and security of the local community, including:
  (1) an identification of contingencies that would constitute a safety or security emergency;

(2) emergency response measures by contingency;

(3) evacuation control measures by contingency;

(4) community notification procedures by contingency, including a description of the stakeholders included in the communication/notification efforts, the timeframes for the notification, and the planned communication methods (e.g., letter, doorhangers, electronic mail, text, telephone calls, etc.);

(5) coordination with all pipeline operators of existing pipelines within the Facility Area; and

(d) A statement that the Co-Applicants have provided a copy of the plans required above in this section and requested review of such plans and comment by the New York State Division of Homeland Security and Emergency Services.

(e) A description of all on-site equipment and systems to be provided to prevent or handle fire emergencies and hazardous substance incidents.

(f) A description of all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident.

(g) A statement that the Co-Applicants have provided a copy of the plans required in this section above, and requested review of such plans and comment by, local emergency first responders/emergency services (including Greene County Emergency Management) serving the Facility Area, and a review of any responses received.

(h) A statement that the Co-Applicants will consult with local emergency services and provide materials and training to local emergency services on responding to emergencies within the Facility Area, where applicable.

STIPULATION 19 – 1001.19 EXHIBIT 19: NOISE AND VIBRATION

Exhibit 19 will contain:

A study of the noise impacts of the construction and operation of the Facility, related facilities, and ancillary equipment. The name and qualifications to perform such analyses of the preparer of the study shall be stated. If the results of the study are certified in any manner by a member of a relevant professional society, the details of such certification shall be stated. If any noise assessment methodology standards are applied in the preparation of the study, an identification and description of such standards shall be stated.

Provide qualifications of the preparer(s) of the study and an identification and description of methodologies, standards, and guidelines as an appendix.

The study shall include:

(a) A map of the study area showing

(1) the location of sensitive sound receptors in relation to the Facility, related facilities and ancillary equipment (including any related substations).

(i) The Application should include map(s) in digital format of the sound study area that should extend, at a minimum, as required by any law or regulation; 1,500 feet from the edge of the Facility Area; or until the 30-A-weighted decibel (dBA) noise contour is reached, whichever is greater.

(ii) Show all sensitive sound receptors and boundary lines (differentiating participating and nonparticipating parcels); noise sources within the sound study area (including transformer(s), inverters, and other noise sources, if any).

(iii) Submit one copy of full-size hard copy maps (22"x34") in 1:12,000 scale to NYSDPS Staff with the Application.

(2) The sensitive sound receptors shown within the sound study area shall include residences, outdoor public facilities and areas, hospitals, schools, known livestock areas (e.g., horse breeding), wildlife conservation areas, and other noise-sensitive receptors.

(i) All residences should be included as sensitive sound receptors regardless of participation in the Facility (e.g., participating, potentially participating, and non-participating residences) or occupancy (e.g. year-round, seasonal use).

(ii) Only properties that have a signed contract with the Co-Applicants prior to the date of filing the Application should be identified as “participating.” Other properties may be designated either as “non-participating” or “potentially participating.” Updates with ID-tax numbers may be filed after the Application is filed.

(iii) Other noise sensitive receptors should include libraries, parks, camps, summer camps, places of worship, cemeteries, and Federal and State Lands.

(iv) Seasonal receptors should include, at a minimum, cabins and hunting camps, identified by property tax codes, and any other seasonal residences with septic systems/running water within the sound study area.

(v) The Co-Applicants should coordinate with land owners and local authorities to identify any existing or proposed sound sensitive receptor within the study area.

A map of baseline measurement locations is included as Figure 1.

(b) An evaluation of ambient pre-construction baseline noise conditions, including A-weighted/dBA sound levels, prominent discrete (pure) tones, at representative potentially impacted noise receptors, using actual measurement data recorded in winter and summer and during day and night as a function of time and frequency using a suitable and suitably calibrated sound level meter (SLM) and octave band frequency spectrum analyzer, or similar equipment. The ambient pre-construction baseline sound level should be filtered to exclude seasonal and intermittent noise.

Conduct sound collections by following the most relevant and applicable portions of the most recent versions of ANSI/ASA standards for measurement of sounds. The protocol for conducting the ambient pre-construction baseline noise conditions is included in Appendix A.

(c) An evaluation of future noise levels during construction of the Facility and related facilities including predicted A-weighted/dBA sound levels at potentially impacted and representative noise receptors, using computer noise modeling.

(1) Follow, at a minimum, the guidelines and recommendations of the Federal Highway Administration (FHWA) Highway Construction Noise Handbook (Reference 1) that are applicable to the Facility. Although developed mainly for

roadway projects, the handbook is applicable to many construction projects and provides guidance in measuring, predicting, and mitigating construction noise and developing noise criteria.

(2) Consult the noise database for construction equipment listed in Reference 1 and determine whether those emissions or any other, resemble the noise emissions of the construction equipment that is proposed to be used for the Facility.

(3) Include a discussion of time frames for construction activities indicating seasons of the year, days of the week, hours of the day, and whether construction activities will be performed during evening time (6:00 p.m. to 10 p.m.), nighttime (after 10:00 p.m. or before 7:00 a.m.), during weekends (Saturdays or Sundays), or national holidays.

(4) Use a computer noise modeling software that incorporates the ISO-9613-2 propagation standard for the main phases of construction (e.g., clearing, foundation, and installation of solar panels and transformers).

(5) Recommended Outdoor Propagation Standard: See reference 2.

(6) Report construction sound level contours within the Sound Study area (graphical format) and sound levels at the most impacted receptors (in tabular format)

(d) An estimate of the noise level to be produced by operation of the Facility, related facilities, and ancillary equipment assuming

(1) wind-induced background noise or stable atmospheric conditions, as appropriate,

(i) Use the ISO-9613-2 standard along with proper assumptions for ground absorption factor (G), with no meteorological correction (Cmet).

(ii) Discuss ground absorption values and sound power level assumptions for computer noise modeling (under ISO 9613-2 propagation standard) in the Application.

(iii) Include in the Application, a discussion on the accuracy of computer noise modeling when using the ISO 9613-2 propagation standard (For a discussion about the accuracy and limitations of the ISO 9613-2 standard, consult at a minimum, section 9 of Reference 2).

(iv) If any corrections are applied to any model results, both corrected and uncorrected results should be presented along with a discussion, documentation, and justification for any corrections.

(2) and not assuming any attenuation of sound that transiently occurs due to weather or temperature. Use a temperature of 10 Celsius degrees and 70 percent (%)

Relative Humidity. These assumptions generally yield the lowest sound absorption provided by the air.

(e) An evaluation of future noise levels during operation of the Facility, related facilities and ancillary equipment including

(1) predicted A- weighted/dBA sound levels; specify range of frequencies to be evaluated. Noise computer software typically includes full-octave band sound frequencies from 31.5 hertz (Hz) up to 8,000 Hz using computer noise modeling.

(2) prominent discrete (pure) tones and estimate tonality values by using the simplified definition of prominent tones as recommended for Exhibit. 19 (b) (4).[1]

(3) amplitude modulated sound, at potentially impacted and representative noise receptors (include this analysis only if there will be any amplitude modulated sounds).

(4) an analysis of whether the Facility will produce significant levels of low frequency noise or infrasound.

(f) A statement in tabular form of the A-weighted/dBA sound levels indicated by measurements and computer noise modeling at the representative external property boundary lines of the Facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors, for the following scenarios:

(1) Daytime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the daytime hours (7 a.m. - 10 p.m.) of a year (L90).

(2) Summer nighttime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the nighttime hours (10 p.m. - 7 a.m.) during the summer (L90).

(3) Winter nighttime ambient noise level - a single value of sound level equivalent to the level of sound exceeded for 90% of the time during the nighttime hours (10 p.m. - 7 a.m.) during the winter (L90).

(i) The Application will specify how the information obtained from the baseline pre-construction ambient noise survey was processed to evaluate the L90 statistical noise descriptors required by 16 NYCRR §1001.19(f).

[1] Electrical tonal noise sources should be assumed audible and prominent at the closest residential receptors, unless demonstrated otherwise.

(ii) Following NYSDPS Staff recommendations for the provisions of reference 4 to calculate and report the L90 and Leq values. [2]

(4) Worst case future noise level during the daytime period - the daytime ambient noise level (L90), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year (L10).

(5) Worst case future noise level during the summer nighttime period - the summer nighttime ambient noise level (L90), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year (L10).

(6) Worst case future noise level during the winter nighttime period - the winter nighttime ambient noise level (L90), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of sound exceeded for 10% of the time by such sources under normal operating conditions by such sources in a year (L10).

(7) Daytime ambient average noise level – a single value of sound level equivalent to the energy average ambient sound levels (Leq) during daytime hours (7 am –10 pm); and

(8) Typical Facility noise levels - the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of the sound exceeded 50% of the time by such sources under normal operating conditions by such sources in a year (L50).

(9) Typical future noise level during the daytime period - the energy- average ambient sound level during daytime hours (Leq), plus the noise level from the proposed new sources modeled as a single value of sound level equivalent to the level of

[2] Alternatively, the L90 noise descriptor for the daytime, nighttime, summer, winter, and for a year (see 16 NYCRR §1001.19(f) for details) can be determined by reprocessing short time collections of the Leq noise descriptor (e.g., 1 sec.) after exclusions are applied. Although it may be conservative, the L90 can also be estimated by calculating the percentile 10 of all short-time L90 samples (e.g., Percentile 10 of all L90-10-minute samples)

the sound exceeded 50% of the time by such sources under normal operating conditions by such sources in a year (L50). [3, 4, 5]

(g) A description of the noise standards applicable to the Facility, including

(1) any local requirements; provide full copies of local Laws on noise during the PSS or stipulation phases and in the Application, if any.

(2) and noise design goals for the Facility at representative potentially impacted noise receptors, including residences, outdoor public facilities and areas, hospitals, schools, other noise- sensitive receptors, and at representative external property boundary lines of the Facility and related facilities and ancillary equipment sites.

(i) As recommended by the NYSDPS, the Application will consider the following guidelines and standards: See references 5[6], 6[7], 7[8] and 3[9]. [10]

(ii) NYSPSC standards for transmission facilities and substation generally require designs to minimize environmental impacts and not to exceed a maximum noise level of 40 dBA Leq without prominent tones, or 35-dBA if a prominent tone occurs or is likely to occur (for both daytime and nighttime).[11]

[3]The NYCRR §1001.19(f) requires evaluation of the L10 and L50 noise descriptors during "normal operating conditions" and for that reason NYSDPS recommends excluding the periods of time when the Facility will not be operating (typically nighttime, unless the facility is expected to operate with energy storage options during the lifespan of the Facility) from calculation of the future operational noise levels L10 and L50.

[4] Typically, if the noise sources operate at maximum noise conditions for 10% of the time or more, the L10 may be approximately equivalent to the maximum sound pressure levels calculated with the maximum sound power levels from the noise sources.

[5] L50: Two simple approaches are proposed: The L50 can be conservatively assumed to be equal to the L10 or If sound power levels at different percentages of power load are known for the transformers, a percentile 50 of the power generation can be estimated and expressed as a percentage of the maximum power generation (e.g., 50%). The difference in sound power levels from the noise sources at the maximum power (e.g., 100%) and the L50 power generation (e.g., 50%) can be found and expressed in decibels. The L50's at all evaluated receptors can be estimated by subtracting the same number of decibels from the maximum sound pressure levels.

[6] The recommendation is not to exceed a 40 dBA-Leq-1-year nighttime outdoor sound level. Solar collection facilities may typically comply with this recommendation, unless the facility is expected to operate with energy storage options during the lifespan of the Facility.

[7] The recommendations are: 30 dBA Leq 8-hour-nighttime maximum indoor sound level in a year (Solar collection facilities may typically comply with this recommendation, unless the facility is expected to operate with energy storage options during the lifespan of the Facility) and 35 dBA Leq-16-hour indoor daytime sound level.

[8] The standard calls for an adjustment factor for tonality equivalent to 5 dB.

[9] The standard states that annoyance to low frequency sounds is minimal when sound levels at the 16, 31.5 and 63 Hz. Fulloctave bands are lower than 65 dB (linear-unweighted).

[10] Please note that under previous Article X regulations, generating facilities were designed to minimize environmental noise impacts and not to exceed an mCNR (Modified Composite Noise Rating) level of "C" that corresponds to a level of reaction between "No Reaction" and "Sporadic Complaints". This resulted in Power Generating Facilities designed for maximum noise levels of 42-dBA (daytime and nighttime) or lower at suburban and rural-residential areas. See section (k)(3) and reference 10 for details.

[11] More recently electrical substations and transformers have been approved by the NYSPSC with modeled sound levels of 35-dBA or lower at all residential receptors (See Case # 10-T-0080. Application of Niagara Mohawk Power Corporation d/b/a National Grid for a Certificate of Environmental Compatibility and Public Need Pursuant to Article

(iii) For a discussion of complaint potential criteria see section (k) (3) below.

(h) A tabular comparison of

(1) the noise standards applicable to the Facility,

Evaluation of conformance with identified noise standards, goals, thresholds and local requirements at all sensitive receptors and boundary lines will be included in the Application.

Results will be presented in tabular format (for sensitive sound receptors) and in graphical format (Sound contours for property lines).

(2) including any local requirements,

The Application will specify how the degree of compliance with local laws on noise, if any, will be evaluated including noise descriptors (e.g., L10, Leq), time frame of evaluation (e.g., 10- minutes, 1-hour). This will include a discussion of the parameters, assumptions or corrections that should be used for sound level predictions. NYSDPS notes that the assumptions or corrections for computer noise modeling for evaluation of local laws may be different than for other relevant criteria.

(3) and noise design goals for the Facility,

Report estimates of the number of residences (or population) that will be exposed to noise levels that exceed any identified limit, threshold, goal, guideline or recommendation in the Application. (In terms of absolute and percent values).

(4) and the degree of compliance indicated by computer noise modeling at the representative external property boundary lines of the Facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors.

(i) Participant and non-participant boundary lines will be indicated and differentiated in the map and sound contour drawings. Degree of compliance with noise design goals at the boundary lines of the Facility will be stated in the Application.

VII for the Construction of a New 115 kV Electric Transmission Line from Spier Falls, Saratoga County to Rotterdam, Schenectady County - Lasher Road Substation Amendment. Also see Case 16-T-0499 – Petition of Niagara Mohawk Power Corporation d/b/a National Grid to Amend the Certificate of Environmental Compatibility and Public Need Issued in Case 26573 for the 115 kV Finley Road to Falconer Transmission Line to Allow Interconnection of the Proposed West Ashville Substation in the Town of Harmony, Chautauqua County).

(ii) Sensitive sound receptors will be identified with land/tax ID numbers in tables and on sound contour drawings.

(iii) An identification and evaluation of

(5) reasonable noise abatement measures for construction activities,

The Application will list general examples of candidate noise mitigation measures that may be applied to address reasonable complaints from construction noise.

(6) including a description of a complaint- handling procedure that shall be provided during the construction period.

Include a Protocol to address potential complaints for construction in the Application.

(i) Consideration of potential cumulative impacts, including a discussion of nearby existing sound sources, as well as publicly announced major proposed developments within one half mile of the Facility Area, to the extent relevant acoustical information is made available publicly by the development sponsor, and the extent to which the Facility's sound levels would combine with such existing and proposed sound sources.

(j) An identification and evaluation of

(1) reasonable noise abatement measures for the final design and operation of the Facility.

The Application will provide candidate noise abatement measures available for the final design and operation of the Facility, if necessary.

(2) including the use of alternative technologies, alternative designs, and alternative Facility arrangements.

Results of this identification and evaluation will be included in this exhibit or in 16 NYCRR §1001.9 Exhibit 9: Alternatives.

(k) An evaluation of the following potential community noise impacts:

(1) hearing damage (as addressed by applicable Occupational Safety and Health Administration standards);

Use OSHA 29 CFR 1910.95 and WHO-1999 (Reference 6) for sensitive sound receptors.[12]

(2) indoor and outdoor speech interference; interference in the use of outdoor public facilities and areas;

Following the criteria included in WHO 1999 guidelines (Reference 6) as well as the USEPA- 1974 document (References 8 and 9).

(3) community complaint potential;

Community Complaint will be evaluated by using the MCNR methodology as detailed in reference 10, as well as the discussion included in Reference 11.

(4) the potential for structural damage;

Include evaluation of the potential for some construction activities (such as blasting, excavation, horizontal directional drilling (HDD) or rock hammering, if any) to produce any cracks, settlements or structural damage on any existing proximal buildings or infrastructure, as well as any residences and historical buildings. The Application will use, at a minimum, the FHWA Highway Construction Noise Handbook (Reference 1) for the discussion of noise and vibration impacts from blasting, if any.

(5) and the potential for interference with technological, industrial or medical activities that are sensitive to vibration or infrasound.

Address the potential to create perceptible vibrations or infrasound due to construction and operation of the facilities that may affect technological, industrial or medical activities.

(l) A description of post-construction noise evaluation studies that shall be performed to establish conformance with operational noise design goals.

The Application will include a Post-construction noise compliance protocol that will incorporate applicable portions of the recommendations indicated in Appendix A for Exhibit 19 (b); and Reference 12.

[12] WHO-1999 recommends a limit of 70 dBA Leq-24-hour for long-term operational sound levels; and 120 and 140 dB peak sound levels for impulsive sounds (e.g. blasting) for children and adults respectively.

(m) An identification of practicable post-construction operational controls and other mitigation measures that will be available to address reasonable complaints, including a description of a complaint-handling procedure that shall be provided during periods of operation. (The text is self-explanatory)

(n) The computer noise modeling values used for the major noise-producing components of the Facility shall

(1) fairly match the unique operational noise characteristics of the particular equipment models and configurations proposed for the Facility.

Sound power level information from the relevant equipment manufacturers will be included in the Application. If sound power level information is not available from the manufacturers, it will be estimated using standard engineering guidelines. The methodologies for estimation and results should be described in the Application. If sound power level information is based on actual sound readings from a similar piece of equipment, the procedure for determination will be described along with a discussion of similarities and differences regarding the proposed equipment and whether any corrections to the input data or output results were applied and if so, provide justification.

(2) The software input parameters, assumptions, and associated data used for the computer modeling shall be provided.

(i) The Application will provide input data such as: sound power levels from the noise sources; source location coordinates, ground elevations, and heights; receptor location coordinates, ground elevations, and heights; Ground absorption factors (G); Temperature and relative humidity; and other data as included in the computer model

(ii) GIS files used for computer noise modeling including noise source and receptor locations, topography, and boundary lines which will be forwarded to NYSDPS Staff in digital media, if requested.

Figure 1 – Baseline Monitoring Locations (see attached)

Appendix A.
16 NYCRR §1001.19 Exhibit 19 (b)
Recommendations for evaluation of ambient pre-construction baseline noise conditions

(1) The sound survey will follow a protocol that includes the following recommendations:

(i) Sound instrumentation: Use type 1 or type 2 SLMs and type 1 acoustical calibrators (sensitivity checkers).

(ii) Sound floor will be equal to or lower than: 10-decibel (dB) at 1/3 octave-bands, 12-dB at full-octave bands, and 20-dBA for broadband sounds.

(iii) Wind screens: Use 7"-diameter-foam or equivalent.

(iv) Temperature of operation for SLMs: From 20 to 110 Fahrenheit degrees, at a minimum.

(v) Relative humidity ranges for SLMs: from 20 to 90%, approximately.

(vi) Calibration recommendations: Acoustical calibrator/sensitivity checker: 1-year; SLMs: 2-years, maximum.

(vii) Meter settings: Use “fast” response or as specified in local laws, if any.

(viii) Positions to be evaluated: Select the most representative potentially impacted receptors. A map of the monitoring positions has been provided as Figure 1.

(ix) Noise descriptors to be collected: At a minimum collect L90, L50, and Leq. Lmin and Lmax may help identifying exclusions.

(x) Range of sound frequencies to be measured: 20 to 10,000 Hz. for 1/3 octave bands; 31.5 to 8,000 Hz. for full-octave bands.

(xi) Weather conditions to be tested: Measurements will be conducted when winds speeds are 5 meters per second (11 miles per hour) or less at the microphone height

(xii) Testing conditions to be excluded: periods of rain, thunderstorms, wet-road conditions, and snow-fall.

(xiii) Ambient sound level data will be collected at different monitoring locations in order to characterize the pre-construction ambient acoustic environment. Monitoring locations may be positioned within the Facility Area or near existing residential properties, as accessibility and other constraints allow. Ambient sound level data will be collected at monitoring locations during daytime and nighttime hours to observe diurnal variation. In addition, ambient sound level data will be collected at monitoring locations during leaf-on and leaf-off conditions to observe variation across different seasons. The objective is to obtain an ambient sound level dataset that is representative of the area surrounding the Facility Area.

(xiv) Testing methodologies, standards, and procedures: See References 13, 14, and 15.

(xv) Sounds with strong low frequency noise content: identify, if any.

(xvi) Provisions for analysis of results, reporting, and documentation: A report of ambient preconstruction baseline noise conditions can be included as an Appendix to the Application including sound instrumentation specifications, certificates of calibration, summary of weather conditions during the survey, tested locations and results.

(2) A weighted sound levels: Include, at a minimum, 1/3 sound frequencies from 20 Hz. up to 10,000 Hz. and full-octave band frequencies from 31.5 Hz. up to 8,000 Hz.

(3) Prominent tones: NYSDPS Staff recommends using the simplified definition for identification of existing prominent tones, if any, as follows: A prominent discrete tone is identified as present if it is audible and the time-average sound pressure level (Leq) in the one-third-octave band of interest exceeds the arithmetic average of the time-average sound pressure level (Leq) for the two adjacent one-third-octave bands by any of the following constant level differences: 15 dB in low-frequency one-third-octave bands (from 25 up to 125 Hz);8 dB in middle-frequency one third- octave bands (from 160 up to 400 Hz); or, 5 dB in high-frequency one-third-octave bands (from 500 up to 10,000 Hz). See References 15 and 16.

(4) Representative potentially impacted noise receptors.

(i) Include the most critical and representative locations considering proximity to the new proposed noise sources and existing soundscapes.

(ii) Residential measurement locations are preferred rather than other locations that could be affected by sound from farming, dairy, construction, industrial, commercial, or human activities.

(iii) Sound collections within wooded areas are not recommended, given the potential for contamination with leaf sounds and rustles.

(iv) Open areas, far from wind flow obstacles, are preferred for wind speed monitoring locations.

(v) Sound measurement positions should be selected to:

1) Minimize the influence of traffic noise from local roads: Measurement positions should be no closer than 15 meters (50 feet) from the center of any roadway;

2) Avoid or minimize the influence of any mechanical or electrical noise sources such as air conditioners, air condensers, heaters, boilers, fans, pumps, transformers, lighting, etc.;

3) Avoid or minimize the influence of sounds from flowing or moving water;

4) Minimize the influence of reflections of any buildings and other small reflective surfaces as follows: Sound microphones shall not be located closer than 7.5

meters (25 feet) from any reflective surface; Sound microphones shall not be located closer than 1.5 meters (5 feet) from any reflecting object with small dimensions such as small trees, posts, bushes, etc.

5) The sound level microphone height should be 1.5 ± 0.10 meters above ground elevation (5 feet ± 4 inches).

6) Report Global Positing System (GPS) or GIS coordinates of selected measurement locations, satellite pictures, and photos for all tested locations; include justifications for location selection and specify whether selected locations are representative of potentially impacted receptors, in the Application.

7) Collection of measurement data recorded in winter and summer and during day and night as a function of time and frequency.

(vi) Collect pre-construction ambient noise levels at 1/3 octave bands from 20 to 10,000 Hz.

(vii) Broad-Band A-weighted sound levels should be reported in graphs plotted as a function of time at each evaluated position showing exclusions (due to wind speed, temperature, relative humidity, rain fall or thunderstorms/snow storms).

(viii) Plot sound levels as a function of 1/3 octave and 1/1 band frequencies for the L90 noise descriptor (for winter, summer, daytime and nighttime), including minimum, maximum and average levels for each evaluated location.

(5) All sound level meters will be calibrated in the field immediately before and after each measurement period. As required by ANSI S12.9/Part 3 a type 1 precision calibrator that complies with the accuracy requirements of ANSI S1.40 will be utilized and comply with the standards at references 17, 18, and 19. Copies of the laboratory equipment calibration certificates will be included as an appendix.

(6) Filtering the ambient pre-construction baseline sound level to exclude seasonal and intermittent noise.

(i) Use of the A-Weighted noise compensated (ANS-weighted network) as recommended in reference 4 regardless of the season (for both winter and summer). Report ANS results only.

(ii) Use portable weather station(s) at sound measurement locations to continuously document, at a minimum: temperature; relative humidity; wind direction; and rain fall (precipitation).

Weather information can be supplemented with information from the closest/most representative nearby airport or Mesonet station, unless the weather conditions differ substantially from those found at the site at the time of the sound surveys.

REFERENCES

(1) FHWA Highway Construction Noise Handbook (FHWA-HEP-06-015)

(2) ANSI/ASA S12.92-2012/ISO 9613-2:1996 (MOD) or ISO 9613-2.

(3) Annex D of ANSI Standard S12.9-2005/Part 4 for minimization of annoyance and prevention of vibrations, rumbles and rattles.

(4) ANSI/ASA S3/SC1.100-2014/ANSI/ASA S12.100-2014 (Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas);

(5) Night Noise Guidelines for Europe, World Health Organization Regional Office for Europe, Denmark, 2009. (WHO-2009

(6) Guidelines for Community Noise, World Health Organization, Geneva, 1999 (WHO-1999).

(7) Table 2 of ANSI S12.9-2005/ Part 4.

(8) Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety. U.S. Environmental Protection Agency. March 1974.

(9) Protective Noise Levels. Condensed Version of EPA Levels Document. November 1978. EPA 550/9-79-100

(10) MCNR Method. Electric Power Plant Environmental Noise Guide. Edison Electric Institute. Bolt Beranek and Newman Inc. Report 3636. Second Edition. 1983

(11) Recommended Noise Criteria for Siting Industrial Facilities Near Residential Communities with Extremely Low Ambient Sound Levels. David Hessler. NOISE-CON 2005. Minneapolis, Minnesota. October 17-19, 2005.

(12) Procedures for Outdoor Measurement of Sound Pressure Level. ANSI S12.18-1994 (Reaffirmed June 15, 2009)

(13) ANSI S.12.9-1992 Part 2 (R2013) (Quantities and Procedures for Description of Environmental Sound. Part 2. Measurement of Long-term, wide area sound);

(14) ANSI S1.13 2005 (R March 5, 2010) (Measurement of Sound Pressure Levels in Air.

(15) ANSI Standard S12.9- 2005/Part 4 Annex C Sounds with Tonal Content.

(16) Percentiles of Normal Hearing-Threshold Distribution Under Free-Field Listening Conditions in Numerical Form. Kenji Kurakata, Tazu Mizunami, and Kuzama Matsushita. Acoust. Sci. & Tech. 26, 5 (2005). For hearing threshold use P5 (for a 95% confidence level) Table 2, third column.

(17) ANSI S1.43-1997 (R March 16, 2007). Specifications for Integrating- Averaging Sound Level Meters;

(18) ANSI S1.11-2004 (R June 15, 2009) Specification for Octave-Band Analog and Digital Filters, and

(19) ANSI S1.40-2006 (R October 27, 2011) (Revision of ANSI 1.40-1984) Specifications and Verification Procedures for Sound Calibrators.

STIPULATION 20 – 1001.20 EXHIBIT 20: CULTURAL RESOURCES

Exhibit 20 will contain:

(a) A study of the impacts of the construction and operation of the Facility, interconnections, and related facilities on archaeological resources, including:

(1) a summary of the nature of the probable impact on any archaeological/cultural resources identified addressing how those impacts shall be avoided or minimized;

(2) a Phase IA archaeological/cultural resources study for the Area of Potential Effect (APE) for the Facility Area and any areas to be used for interconnections or related facilities, including a description of the methodology used for such study;

(3) a Phase IB study, as determined in consultation with New York State Office of Parks, Recreation, and Historic Preservation (OPRHP);

(4) where warranted based on Phase I study results as determined in consultation with OPRHP, a Phase II study based on intensive archaeological field investigations shall be conducted in those areas where facilities are planned to assess the integrity and significance of cultural resources identified in Phase I studies. Phase II shall be designed to obtain detailed information on the integrity, limits, structure, function, and cultural/historic context of an archaeological site, as feasible, sufficient to evaluate its potential eligibility for listing on the New York State Inventory and Register or the National Register of Historic Places (NRHP). The need for and scope of work for such investigations shall be determined in consultation with OPRHP and NYSDPS; information regarding tribal consultation will be provided to OPRHP and NYSDPS. The potential for Phase III investigations (Data Recovery) will also be discussed, if warranted;

(5) a statement demonstrating that all important archaeological materials recovered during the Facility cultural resources investigation shall be cleaned, catalogued, inventoried and curated according to New York Archaeological Council (NYAC) standards; that to the extent possible, recovered artifacts shall be identified as to material, temporal or cultural/chronological associations, style and function; and that the Facility archaeologists shall provide temporary storage for artifacts until a permanent curatorial facility is identified; and

(6) an Unanticipated Discovery Plan that shall identify the actions to be taken in the unexpected event that resources of cultural, historical, or archaeological importance are encountered during the excavation process. This plan shall include

a provision for work stoppage upon the discovery of possible human remains. In addition, the plan shall specify the degree to which the methodology used to assess any discoveries follows the most recent Standards for Cultural Resource Investigations and Curation of Archaeological Collections in New York State. Such an assessment, if warranted, shall be conducted by a professional archaeologist, qualified according to the standards of the NYAC.

(b) A study of the impacts of the construction and operation of the Facility and the interconnections and related facilities on historic resources, including the results of field inspections and consultation with local historic preservation groups to identify sites or structures listed or eligible for listing on the New York State Inventory and Register or the NRHP within the viewshed of the Facility and within the 5-mile indirect APE, including an analysis of potential impact on any properties (e.g., standing historical structures, cemeteries) which appear to be at least 50 years old and potentially eligible for listing in the New York State Inventory and Register or the NRHP, based on an assessment by a person qualified pursuant to federal regulation (36 CFR 61). Potential visual and noise effects will be considered for evaluating historic properties listed or eligible for listing on the NRHP. The Co-Applicants will also consult with local municipal officials to identify locally significant historic and cultural sites or structures that the Co-Applicants will include in their study.

STIPULATION 21 – 1001.21 EXHIBIT 21: GEOLOGY, SEISMOLOGY, AND SOILS

Exhibit 21 will contain a study of the geology, seismology, and soils impacts of the Facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures, including:

(a) A map delineating existing slopes on and within the drainage area potentially influenced by the Facility Area and interconnections;

(b) A proposed site plan showing existing and proposed contours at 2-foot intervals, for the Facility Area and interconnections, at a scale sufficient to show all proposed buildings, structures, paved and vegetative areas, and construction areas;

(c) A description and preliminary calculation of the quantity of cut and fill necessary to construct the Facility, including separate calculations for topsoil, sub-soil, and rock, and including a plan to identify the presence of invasive species in spoil material and to prevent the introduction and/or spread of invasive species by the transport of fill material to or from the site of the Facility or interconnections. The Environmental Monitor will be consulted regarding the appropriate placement of cut-and-fill materials;

(d) A description and preliminary calculation of the amount of fill, gravel, asphalt, and surface treatment material to be brought in to the Facility Area and interconnections;

(e) A description and preliminary calculation of the proposed type and amount of cut material or spoil to be removed from the Facility Area and interconnections;

(f) A description of excavation techniques to be employed. If HDD is proposed for Facility construction, an evaluation of the feasibility of HDD within the Facility Area will be included in the Article 10 Application. In addition, an Inadvertent Return (IR) Plan will be provided with Article 10 Application if HDD installation methodology is proposed. The IR Plan will establish proposed setbacks of HDD operations from stream banks, drinking water wells, and other known potential sensitive receptors, and include a description of frac-out mitigation and response measures, including measures to capture frac-out runoff and prevent such runoff from entering the nearby watershed and water supply. The plan should also include measures for mitigating excessive vibration that may result from HDD operations. The plan will also include a scaled drawing showing typical HDD equipment staging layout and design;

(g) A delineation of temporary cut or fill storage areas to be employed;

(h) A description of the characteristics and suitability for construction purposes of the material excavated for the Facility and of the deposits found at foundation level, including factors such as soil corrosivity, bedrock competence, and subsurface hydrologic characteristics.

A preliminary geotechnical investigation report will be provided as an appendix, summarizing the following:

- Surface soils
- Subsurface soils
- Bedrock conditions
- Hydrogeologic conditions
- Results of test borings advanced within the Facility area, including copies of field logs for each boring
- Results of laboratory tests of soil samples collected during the advancement of test borings within the Facility Site, including analysis of the chemical and engineering Properties
- Seismic considerations
- Design recommendations;

(i) In the unlikely event that blasting were to be required, a preliminary plan describing all blasting operations, including location, minimum blasting contractor qualifications, hours of blasting operations, estimates of amounts of rock to be blasted, warning measures, measures to ensure safe transportation, storage and handling of explosives, use of blasting mats, conduct of a pre-blasting condition survey of nearby buildings and improvements, coordination with local safety officials, and procedures and timeframes for notifying host communities and property owners (or persons residing at the locations, if different) within one-half mile of the blasting site;

(j) In the unlikely event blasting were determined to be required, an assessment of potential impacts of blasting to environmental features, aboveground structures and belowground structures such as pipelines and wells;

(k) In the unlikely event blasting were determined to be required, an identification and evaluation of reasonable mitigation measures regarding blasting impacts, including the use of alternative technologies and/or location of structures, and including a plan for securing compensation for damages that may occur due to blasting;

(l) A description of the regional geology[13], tectonic setting and seismology of the Facility Area.

(m) An analysis of the expected impacts of construction and operation of the Facility with respect to regional geology, if such can be determined;

(n) An analysis of the impacts of typical seismic activity experienced in the Facility area based on current seismic hazards maps, on the location and operation of the Facility identifying potential receptors in the event of failure, and if the Facility is proposed to be located near a young fault or a fault that has had displacement in Holocene time, demonstration of a suitable setback from such fault;

(o) A map delineating soil types on the Facility and interconnection sites and the various USDA Natural Resources Conservation Service soil classifications, including Prime Farmland Soil, Prime Farmland Soil (if Drained), Soils of Statewide Importance, and Soils of Unique Importance as identified on the most current publicly available mapping. Methods for identifying the locations of drainage tile in designated farmland will be included, along with a description of practices for restoration of any damaged farmland drainage systems following construction. A map overlaying Facility components on mapped soils will also be provided. A table summarizing the acreages of each soil within the Facility Area and percentage of the total area will also be provided, including the acreage and percentage of each soil that will be improved or otherwise disturbed by Facility components and ancillary facilities;

(p) A description of the characteristics and suitability for construction purposes of each soil type identified above, including a description of the soil structure, texture, percentage of organic matter, and recharge/infiltration capacity of each soil type and a discussion of any de-watering that may be necessary during construction, and whether the Facility shall contain any facilities below grade that would require continuous de-watering;

(q) Maps, figures, and analyses delineating depth to bedrock and underlying bedrock types, including vertical profiles showing soils, bedrock, water table, seasonal high groundwater, and typical foundation depths on the Facility Area, and any area to be disturbed for roadways to be constructed and all off-site interconnections required to serve the Facility, including an evaluation for potential impacts due to Facility construction and operation, including any on-site wastewater disposal systems, based on information to be obtained

[13] Regional geology is the geological study of large-scale regions. Usually, it encompasses multiple geological disciplines to piece together the history of an area. It is the geologic equivalent of regional geography. The size and the borders of each region are defined by geologically significant boundaries and by the occurrence of geologic processes.

from available published maps and scientific literature, review of technical studies conducted on and in the vicinity of the Facility, and on-site field observations, test pits and/or borings as available;

(r) An evaluation to determine suitable building and equipment foundations, including:

(1) A preliminary engineering assessment to determine the types and locations of foundations to be employed. The assessment shall investigate the suitability of such foundation types as spread footings, caissons, or piles, including a statement that all such techniques conform to applicable building codes or industry standards;

(2) If piles are to be used for the equipment foundations, a description and preliminary calculation of the number and length of piles to be driven, the daily and overall total number of hours of pile driving work to be undertaken to construct the Facility, and an assessment of pile driving impacts on surrounding properties and structures due to vibration;

(3) Identification of mitigation measures regarding equipment foundation pile driving impacts, if applicable, including a plan for securing compensation for damages that may occur due to pile driving;

(4) A description of the characteristics and suitability of existing soils, including soil corrosivity with an evaluation for the potential for corrosion of uncoated steel and the potential for corrosion and degradation of concrete;

(5) An evaluation of structural damage or displacement due to frost action and soil shrink/swell potential.

(s) An evaluation of the vulnerability of the Facility Area and the operation of the Facility to an earthquake event and a tsunami event.

(t) An identification of sensitive environmental, agricultural, and human health and safety receptors for potential hazards associated with construction on slopes greater than 25%, should construction be proposed in these areas.

(u) A description of the nature and extent of compaction expected to result from construction within the Facility Area and the potential impact from this compaction on agricultural soils and the viability of agricultural use upon decommissioning;

(v) A site-specific karst conditions assessment including:

(1) How construction activities will minimize excavations in karst-prone areas where excavations may facilitate subsurface erosion;

(2) Potential risks and impacts to karst features and aquifers from directional drilling frac-outs and soil and bedrock displacement during excavations, and how those impacts will be mitigated,

(3) Potential impacts due to boring operations and pile driving during construction; and

(4) If blasting is proposed, description of potential impacts to karst features from blasting operations.

STIPULATION 22 – 1001.22 EXHIBIT 22: TERRESTRIAL ECOLOGY AND WETLANDS

Exhibit 22 will contain the following with regard to:

(a) Identification and description of plant communities on Facility Site and adjoining properties within 500 feet of the Facility's limit of disturbance (LOD):

(1) Plant community and wildlife habitat characterization will be completed for the Facility Area. Land cover classes will be described in detail using *Ecological Communities of New York State* data (Edinger, et al. 2014) and supplemented by field observations of dominant vegetation within the Facility Area, roadside surveys from adjacent parcels, consultation with local officials, and review of recent aerial imagery and National Land Cover Data (NLCD) information. For each community identified, its Heritage Program Element Rank will be provided.

(2) A plant species list, which will include all species identified during various field surveys, including dates observed.

(3) 1:6,000 (1" = 500') Facility maps, based on aerial photography, showing approximate locations and extent of plant communities identified in (a)(1) above, including areas of invasive species concentrations, overlaid with areas of proposed disturbance, will be included.

(4) For project areas within 500 feet of disturbance areas provide a single set of maps at a scale of 1:2000 to the NYSDPS and NYSDEC to illustrate approximate locations and extent of plant communities identified in (a)(1) above.

(5) Shapefiles of the plant community mapping compatible with ESRI's ArcGIS suite of software will be provided to NYSDPS and NYSDEC and the Town and Village and Scenic Hudson upon request.

(b) Characterization of impacts on plant communities from construction and operation including proposed temporary and permanent impacts, and permanent conversion of one cover type to another, including:

(1) Discuss specific assumptions associated with approximate limit of vegetation clearing for each type of Facility component as identified in the Preliminary Design Drawings associated with Exhibit 11:

(2) Provide a table of assumed area disturbance for each project component type associated with Exhibit 11 addressed in (1) above;

(3) Calculate using GIS software, and present in a summary impact table, the number of acres of each cover type impacted. Impact calculations will include all tree clearing for construction and operation of the Facility;

(4) The plant community mapping referenced in 22(a) above will also depict vegetation cover types in relation to proposed limits of vegetation disturbance, and associated GIS shapefiles of all areas of disturbance will be provided to NYSDEC and NYSDPS at the time the Application is filed; and

(c) A detailed description of the proposed measures that will be implemented to avoid, minimize, and mitigate for any temporary and permanent impacts to existing, sensitive non-invasive plant communities, particularly (to the extent present) grasslands, interior forests, wetlands, shrublands, and young successional forests, as a result of the construction, operation and maintenance of the Facility. To avoid and minimize impacts to vegetation, linear project components such as access roads and interconnection lines will be co-located to the extent practicable and all Facility components will be constructed in areas already developed or disturbed, to the extent such previously disturbed areas are available in the Facility Area. Agricultural use of land is not considered “previously disturbed” for the purpose of siting Facility components. Post-construction vegetative restoration will include reseeding disturbed areas with appropriate native seed mix or planting native woody species, as appropriate, to recreate or enhance wildlife habitat. Agricultural lands will be re-planted with species in general accordance with the applicable NYSDAM guidelines.

(d) General Wildlife Habitat

(1) Wildlife studies and data relating to the presence, abundance, and distribution of wildlife species in the Facility Area will be conducted to provide area-specific guidance on the nature and extent of potential direct and indirect impacts. Data have been collected from the New York Natural Heritage Program (NYNHP), NYSDEC, and United States Fish and Wildlife Service (USFWS) and will be supplemented by available data from: the New York State Amphibian and Reptile Atlas Project; the New York State Breeding Bird Atlas and range maps; North American Breeding Bird Survey Routes; Audubon Christmas Bird Counts; eBird; and other similar reference sources, including an identification and depiction of any habitats or significant natural communities that could support state or federally listed endangered or threatened (T&E) species, species of special concern (SSC), and state species of greatest conservation need (SGCN). No

Significant Coastal Fish and Wildlife Habitat Areas designated by New York State Department of State (NYSDOS)/NYSDEC are designated within the Facility Area. In addition, the Co-Applicants have consulted the NYSDEC and will consult the USFWS for additional information on threatened and endangered species.

(2) Habitat characterization within the Facility Area will be based on identification and description of the type of plant communities, plant species, and wildlife habitat present within the Facility Area and the interconnections, and adjacent properties (as access permits). Plant communities will be classified according to *Ecological Communities of New York State* (Edinger et al. 2014). Wetland and aquatic habitats will be classified according to the USFWS Classification of Wetlands and Deep Water Habitats of the United States (Cowardin, et al. 1979). Generated plant community maps will be field verified to corroborate accuracy of mapped cover types and adjusted for recent changes to the landscape. Such descriptions and mapping will include field identification of habitat that could potentially support federally- or state-listed T&E species, SSC, and SGCN as documented during on-site field investigations or otherwise expected to be utilizing the Facility Area. The extent of offsite field corroboration will be based on access availability to adjacent properties. A list of terrestrial invertebrate, amphibian, reptile, avian, and mammal species known or likely to reside in habitats associated with the Facility Area will be compiled, including but not limited to timely input received from the USFWS, NYSDEC, and NYNHP. Specifically, the Application will identify species present at the Facility Area that are dependent on open fields or un-fragmented forest and will include an evaluation of how those species will be affected by construction, operation, and maintenance of the proposed Facility. In addition, the Application will include a discussion of impacts to wildlife concentration areas and travel corridors and how the presence of wildlife corridors is ascertained.

(3) A discussion of the extent, methodology and results of all avian, bat and other wildlife surveys conducted by the Co-Applicants or their agents within or in the vicinity of the Facility will be provided to NYSDEC, USFWS, and NYSDPS, as soon as possible. The information will be provided to the Town and Village and Scenic Hudson pursuant to the protective order adopted for this proceeding.

(4) An analysis of the temporary and permanent impact of the construction, operation, and maintenance of the Facility and the interconnections on the vegetation identified, including a map of vegetation within the Facility Area showing the areas to be removed or disturbed. The Application will also include a plan to identify the presence of invasive species and to prevent the introduction and/or spread of invasive species. A discussion on the items to be included within an Invasive Species Management Plan will be included in Section 22(k)(2).

(5) A demonstration of how the Facility was designed to avoid and minimize impacts to vegetation by co-locating linear Facility components such as access roads and interconnection lines and constructing solar panel arrays and other structures in areas already developed or disturbed, to the maximum extent practicable.

(6) A narrative analysis, associated mapping, and summary impact table that quantifies anticipated temporary and permanent impacts associated with all Facility components in relation to wildlife habitats, identified concentration areas or travel corridors and vegetation cover types including grasslands, interior forests and young successional forests, if affected. Direct and indirect construction operational and maintenance related impacts to wildlife and wildlife habitat will be considered, including but not limited to: incidental injury and mortality due to construction activity and vehicular movement; habitat disturbance and loss associated with vegetation clearing and earth-moving activities; functional loss and degradation of habitat, forest and grassland fragmentation; and the displacement of wildlife from preferred habitat. To the extent any wildlife travel corridors or concentration areas are identified within or in the vicinity of the Facility Site, direct and indirect impacts to such corridors and concentration areas will be addressed.

(7) A discussion on post-construction vegetative restoration and maintenance.

(8) An assessment of direct and indirect impacts on vegetation and wildlife resulting from the application of biocides, should any be utilized during site preparation, construction, operations or maintenance of the Facility. This will include consideration of impacts to trees, ground covers, and other vegetation planted as part of restoration, mitigation, and habitat enhancement activities. A discussion of avoidance and minimization of biocide application within State-regulated freshwater wetlands and State-regulated adjacent areas will be included in the Application.

(9) A description of potential impacts to karst geologic features, if present within the Facility Area, to evaluate what impacts may occur to any species potentially utilizing these habitats.

(10) Cumulative impacts. A cumulative impact analysis will be done to evaluate the actual and expected impacts from the construction, operation and maintenance of the Facility on federally and State-listed T&E species, particularly grassland birds, as they relate to proposed and operating solar energy projects with nameplate capacities greater than or equal to 5 MW occupying grassland habitat within 100 miles of the Facility Area based upon information provided by NYSDEC (Study Projects), but not beyond New York State borders (Grassland Study Area). The Co-Applicants are not required to perform any avian studies at the Study Projects. This analysis will include, at a minimum:

(i) Examination of publicly available grassland habitat data on the Study Projects within the Grassland Study Area;
(ii) Estimated take of state-listed birds at the Facility, if any, and a description of methods used and sources consulted to estimate take;
(iii) Estimates of available grassland habitat within the Grassland Study Area, including the Coxsackie Flats Grasslands;
(iv) Estimates of acres of grassland breeding bird habitat lost directly through installation of panels and other project components at the Study Projects, using best available information and through consultation with NYSDEC;
(v) Estimates of acres of grassland habitat indirectly affected by the Study Projects due to functional loss/degradation of habitat, to the extent applicable; and
(vi) Cumulative impacts of grassland habitat use, particularly potential impacts on state-listed grassland bird species, within the Facility Area.

(e) Amphibians and Reptiles: Information on amphibians and reptiles, including the Jefferson Salamander, based on the New York State Amphibian & Reptile Atlas Project (Herp Atlas), database records obtained from NHP, NYSDEC and USFWS, assessments of suitable habitat within the Facility Area, and any field observations made on-site and in the vicinity of the Facility. To the extent that vernal pools and their functions (including the surrounding upland habitat) may be impacted by construction, operation or maintenance of the Facility, these impacts shall be identified and assessed in the Application. Such

impacts may require, in consultation with NYSDEC and NYSDPS, the development and implementation of site-specific surveys for amphibian and reptile species under appropriate seasonal conditions in order to fully quantify the level of impact from the Facility. The Applicant shall submit to NYSDEC detailed location maps and ecological characterization data for all vernal pools located within 500 feet of all proposed areas of disturbance, if any, based on existing wetland delineation field reconnaissance.

(f) Mammals:

(1) Indiana bat and northern long-eared bat have been documented within the vicinity of the Facility Area. Potential Indiana bat and northern long-eared bat habitat has been preliminarily identified within the Facility Area. Avoidance measures, such as limiting all tree-cutting to timeframes specified by the NYSDEC (November 1 through March 31) to avoid impacts to bat species, will be assessed in the Application.

(2) A list of the species of mammal likely to occur on, or in similar habitat to the Facility Area, as appropriate to the region, based on site observations and supplemented by publicly available sources. The Application will also include an analysis of karst geologic formations within the Facility Area and evaluate any corresponding potential bat or other wildlife impact considerations.

(3) Habitat for mammals currently hunted in the Facility Area will be identified and a qualitative discussion of how Facility operations may impact these species and the opportunity for continued hunting in the Facility Area will be provided. Publicly available hunting and trapping records maintained by NYSDEC will be consulted.

(g) Avian Resources:

(1) A list of and information on birds known or likely to occur within the Facility Area based on site observations and supplemented by publicly available sources, as well as species identified by: NYSNHP; NYSDEC; and USFWS; reports from certified ornithologists published by the Northern Catskills Audubon Society and the Greene Land Trust; Breeding Bird Atlas (BBA); Breeding Bird Surveys (BBS); Christmas Bird Counts (CBC); Hawk Migration Association of North America (HMANA); eBird; The Nature Conservancy surveys/reports; The Kingbird publication; and any other publicly available source that may provide relevant information regarding bird occurrences within or in the vicinity of the Facility and electric interconnection line. On-site field surveys (e.g., avian surveys, ecological cover type assessments, habitat assessments, wetland delineations, etc.) and the

availability of suitable habitat will also be used to identify species that could potentially occur within or in the vicinity of the Facility at some time during the year. The list will specify whether species were observed during the avian surveys or if they were incidentally identified during other field survey efforts. The Facility Area is located within or immediately adjacent to four BBA survey blocks, including 5969C, 5968A, and 5968C. The nearest Breeding Bird Survey route, the Austerlitz route, is located approximately 3 miles east of the Facility Area. Data from this route will be included in the Application. The Facility Area falls within the 15-mile wide count circle of the Catskill-Coxsackie Christmas Bird Count location, which will be assessed as part of the Application.

(2) Final reports, along with any other supplemental material or information requested by NYSDEC and USFWS, will be included in the Application. In coordination with NYSDEC, Hecate Greene conducted end of season 2017/2018 winter raptor surveys for the Facility Area. Surveys were conducted in general accordance with the NYSDEC Draft Survey Protocol for State-listed Wintering Grassland Raptor Species (NYSDEC 2015b). These protocols specifically target the New York State-listed short-eared owl (*Asio flammeus*) (Endangered) and northern harrier (*Circus cyaneus*) (Threatened). Surveys at two survey stations were simultaneously run on March 26, 2018, April 2, 2018 and April 11, 2018. The results of this survey will be provided in the Application. In addition to the 2017/2018 survey, the NYSDEC has been conducting winter raptor surveys on and around the Facility Area for the past ten years; this data was provided to the Co-Applicants and a summary will be provided in the Application. Results of at least one full season (November 1–April 30) of winter raptor surveys, based on NYSDEC data and surveys conducted in areas not covered by NYSDEC data, plus any additional survey data collected by the Co-Applicants (e.g., surveys or observations during part of a season), will be summarized in the Application and provided to NYSDEC as soon as practicable. Data shall be collected every other week throughout the season. If changes to the Facility Area are proposed for the placement of solar components, the Co-Applicants will identify and collect data for additional winter raptor survey locations at the newly added parcels.

(3) In coordination with NYSDEC, Hecate Greene initiated grassland breeding bird surveys on May 21, 2018 and conducted weekly surveys until July 20, 2018 in accordance with a work plan reviewed by NYSDEC. The results of this survey will

be provided in the Application. Results of at least one full season (May 20–July 20) of grassland breeding bird surveys and any additional survey data collected by the Co-Applicants (e.g., surveys or observations during part of a season) will be provided in the Application and to NYSDEC as soon as practicable. Data shall be collected weekly throughout the season in accordance with the work plan. If changes to the Facility Area are proposed for the placement of solar components, the Co-Applicants will identify and collect data for additional grassland breeding bird survey locations at the newly added parcels.

(4) A discussion of potential impacts of the proposed Facility, including fencing, on any identified concentration areas or migration corridors identified within the Facility Area.

(5) A literature review and impact analysis evaluating how the construction, operation and maintenance of the Facility will affect wintering and breeding grassland bird species. Cumulative effects on these species are addressed in Section 22(d)(10).

(h) State and Federal Endangered or Threatened Species:

(1) Information on the presence, distribution, and abundance of known occurrences of federally and state-listed T&E species, SSC and SGCN documented within the Facility Study Area and a discussion of the Facility's potential direct or indirect impact such species or their habitats will be included. Analyses of documented occurrences will be based on database records obtained from the NYNHP and the USFWS. Results of onsite surveys completed and yet to be completed (as requested by the NYSDEC), as well as results of species-specific surveys conducted by the NYSDEC, if any, will supplement the documented occurrences. This will include available USFWS, NYSDEC, and NYNHP database information to determine if any bat hibernacula area located within the Study Area. The NYSDEC Region 4 Wildlife Office will be contacted to obtain the most recent breeding, wintering, and habitat data for state-listed species. The USFWS Field Office in Cortland, New York will be contacted to obtain the most recent breeding, wintering, and habitat data for federally listed and protected species. A spatial analysis of these data will be completed to assess potential impact of the Facility on identified listed species. A summary impact table containing information on all species within the above listed categories will be compiled and included in the application. The summary table will include state and federally listed species occurring or likely to occur within the project including the following columns:

(i) Species name.
(ii) Federal status.
(iii) NYS status.
(iv) SGCN listing.
(v) Habitat preference identified according to *Ecological Communities of New York State* (Edinger et al., 2014).
(vi) Identify maps from 1001.22(a)(4) that include habitat for each species.
(vii) Source of information indicating potential presence of species.
(viii) Indicate if species was observed onsite, if appropriate habitat occurs onsite, and if the species may occur onsite.
(ix) An evaluation of potential direct and indirect impacts to listed species and their habitats.
(x) Avoidance, minimization, and mitigation measures.

(2) The Application will include a discussion and analysis of the potential impact the construction and operation of the Facility is likely to have on species listed as T&E or state SSC and their habitat in 6 NYCRR Part 182, as well as SGCN, that are known or suspected of being present within the Facility Area. This section will contain an identification, discussion and evaluation of reasonable avoidance measures and, where impacts are demonstrably unavoidable, minimization and mitigation measures regarding Facility-related impacts on the aforementioned species. Construction activities and the presence of Facility components in occupied habitats of listed T&E species may constitute take of individuals or the habitat they depend on, or both. If it is determined by the Co-Applicants, NYSDEC or USFWS that construction, operation or maintenance of the Facility is likely to result in a take of a listed species, including the adverse modification of habitat on which a listed species depends, the Co-Applicants will submit with the Application an avoidance, minimization and mitigation plan that demonstrates a net conservation benefit to the affected species pursuant to 6 NYCRR §182.11 (Part 182), along with the informational requirements of an incidental take permit (ITP), as provided for in Part 182, including proposed actions to first avoid all impacts to listed species. Should an ITP be required, details of a proposed post-construction monitoring plan will also be developed on a site-specific basis through discussions between the Co-Applicants, NYSDEC, and USFWS (if federally-listed species may

be impacted). The Application will include a discussion and analysis of information collected as part of pre-construction monitoring surveys at the Facility and information provided by state and federal agencies. If impacts are unavoidable, the Application will demonstrate that they are unavoidable and provide a clear and reasoned explanation as to why complete avoidance of impacts to each affected species is not practicable, how the proposed minimization actions will minimize impacts to the maximum extent practicable, and proposed mitigation actions where impacts cannot be avoided or secondly minimized. If such impacts cannot be demonstrably avoided to the maximum extent practicable, the minimization actions and mitigation measures to be implemented will: be developed in consultation with NYSDEC and USFWS (if federally-listed species may be impacted); result in a net conservation benefit to the target species; and require thorough post-construction monitoring that adequately measures the Facility's direct and indirect impacts on the target species. If it is determined that it is not likely that a take of a listed species will occur or that an ITP is not required, the Application will provide a clear and reasoned explanation as to why.

(3) Post-construction Monitoring: Information associated with a proposed post-construction monitoring plan to be implemented to assess direct and indirect impacts of the Facility on avian and bat species and their habitats. The details of a full post-construction monitoring plan will be developed on a site-specific basis through discussions between NYSDEC, the Applicant, and USFWS (if federally-listed species may be impacted), and at a minimum specify the following: the expected and allowed level of take of each T&E species; survey monitoring methods, effort, duration, data reporting and compliance documentation; construction parameters; proposed adaptive management responses, if applicable; and mitigation measures sufficient to ensure the Applicant complies with the substantive requirements of Part 182.

(i) Impact Avoidance, Minimization, and Mitigation: This section will include a detailed description of the impact avoidance and minimization efforts used in siting and developing the Facility, as they pertain to vegetation, wildlife, and wildlife habitat. The Facility design, construction controls, and operational measures that can be reasonably implemented to avoid, minimize, and mitigate for impacts to wildlife and wildlife habitat within the Facility will also be described. This description will include a discussion of measures to avoid impacts to the maximum extent practicable. If such impacts cannot be demonstrably

avoided to the maximum extent practicable, the Applicant will minimize indirect impacts associated with habitat loss, fragmentation and displacement, though appropriate panel, road and electric line siting; and direct impacts to individuals of federally and state-listed and protected species, SSC, and SGCN through appropriate Facility siting and construction activity timeframes. A commitment to mitigate, in an appropriate and timely manner, for any demonstrably unavoidable impacts to listed T&E species will also be discussed in the Application, which discussion shall include a commitment to post-construction monitoring. This information shall be included in the Application regardless of whether it is determined that there is likely to be a take of a listed species.

(j) Wetlands:

(1) The determination of wetland boundaries within the Facility Area were field-delineated during November to December 2016 (and reexamined during September 2017 in the accepted growing season) and subsequent supplement surveys using the three-parameter methodology described in the 1987 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2012). Wetland boundaries were defined in the field by sequentially numbered surveyor's flagging and documented using GPS technology with sub-meter accuracy. As appropriate, wetlands identified by these methods will be referred to as "Field Delineated," and wetlands that are verified by the USACE and NYSDEC will be referred to as "Agency Verified." All information, including maps, size, and shapefiles of delineated wetlands, will be provided to NYSDEC as soon as possible after delineations are completed to allow for NYSDEC to determine the full extent of State wetland jurisdiction. Any jurisdictional determinations by NYSDEC will be included in the Application (if practicable, upon notice to NYSDEC as to the estimated filing date of the Application) and used to fully and accurately assess potential impacts to wetlands and adjacent areas. All portions of the Facility Area under the control of the Co-Applicants within 500 feet of areas to be disturbed by construction have been delineated, including 100-foot adjacent areas.

(2) Wetland delineations will comport with Department of Public Service document "Advice to Applicants on the Wetlands Delineation Requirements of the Article 10 Regulations, May 31, 2018."

(3) A map showing delineated boundaries based on on-site identification of all federal, state and locally regulated wetlands present within the Facility Area. The Application will include information indicating which delineated wetlands are likely state-regulated, if any, including those that are part of wetland complexes that meet state criteria for jurisdiction (e.g., 12.4 acres or larger, of Unusual Local Importance and/or support listed species) but are not currently mapped. All state-regulated wetlands will be identified by NYSDEC's wetland identification number in addition to the code assigned by the Co-Applicants during delineation. Investigations may need to be extended to make these determinations.

(4) For adjacent properties without accessibility (i.e., not under control of the Co-Applicants) within 500 feet of areas to be disturbed by construction, desktop delineations will be completed based upon analysis and interpretation of available remote-sensing and GIS data including: NYSDEC Freshwater Wetlands maps; National Wetland Inventory (NWI) maps; the USGS National Hydrography Dataset; and USDA Natural Resources Conservation Service soil survey data. Compiled information will be geo-referenced with USGS 1:24,000-scale quadrangle maps and recent aerial photography. Based on an examination of previously mapped wetlands, hydric mapped soils, and photointerpretation of vegetation cover type, approximate wetland boundaries will be determined. Wetlands identified in this way will be referred to as "predicted wetlands." Predicted wetland boundaries shown on site plans will be differentiated from delineated wetlands when displayed on maps, site plans, and shapefiles.

(5) Maps and shapefiles showing the boundaries of all delineated wetlands, jurisdictional wetlands, predicted wetlands, and all corresponding adjacent areas will be provided to NYSDPS and NYSDEC. One set of additional maps at a scale of 1" = 50' depicting all the following will also be provided to NYSDPS and NYSDEC: all Facility components; proposed grade changes; the limits of ground disturbance and vegetative clearing; and all field-delineated wetlands, predicted wetlands, and 100-foot adjacent areas within 500 feet of all areas to be disturbed by construction. Two 36x24 maps will also be provided to NYSDEC: 1) showing the entire Facility Area on an aerial image with mapped and delineated wetland resources; and 2) showing the entire Facility Area on an aerial image with the proposed Facility Layout.

(6) A description and summary table of the vegetation, soils, and hydrology data collected for each of the wetland sites identified, based on actual on-site wetland observations, as well as the size (acres) of each wetland. Hydric vegetation, soil, and hydrology indicators at representative sampling station locations have been recorded on the United States Corps of Engineers (USACE) regional data forms for each delineated wetland. Wetland cover types have been characterized using the USFWS classification of wetlands (Cowardin 1979). Observations supporting potential functions and values will be recorded at each wetland. Copies of all Wetland Determination Data Forms, compiled into a Wetland and Stream Delineation Report, along with photographs of each delineated wetland will be provided.

(7) A qualitative and descriptive wetland functional assessment, including seasonal variations, for all wetlands delineated as above. Qualitative scores that assess the functions and values for each delineated wetland will include: groundwater recharge/discharge; flood flow alteration; fish and shellfish habitat; sediment/toxicant retention; nutrient removal; production export; sediment/shoreline stabilization; wildlife habitat; recreation; education/scientific value; uniqueness/heritage; visual quality/aesthetics; and protected species habitat.

(8) Qualitative and descriptive functions and values of delineated wetlands will be assessed using procedures outlined in the Highway Methodology Workbook Supplement issued by the USACE New England District (USACE 1995) that prescribes a descriptive approach. This method integrates wetland science and value judgment into the overall assessment of a wetland. This method considers eight functions and five values. Principal and secondary (where applicable) functions and values will be designated to each onsite wetland delineated within the 500-foot buffered Facility limits of disturbance.

(9) The Application will include an analysis of the potential hydrologic connectivity of all wetlands within the Facility Area to offsite wetlands that are identified based upon desk top review, any publicly available aerial imagery, observations from nearby public roads, and incidental observations including a summary of those wetlands anticipated to fall under NYSDEC jurisdiction (under Article 24 of the ECL) and USACE jurisdiction (under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act). Assessments of potential state

wetlands jurisdiction will include both “mapped” and “unmapped wetlands” that meet NYSDEC’s 12.4-acre size threshold (including any wetlands of any size separated by less than 50 meters which function as a unit in providing wetland benefits, pursuant to 6 NYCRR Part 664, or otherwise meet state criteria for jurisdiction (e.g. wetlands or vernal pools determined to be of Unusual Local Importance, pursuant to 6 NYCRR 664.7(c)). A summary will be provided of off-site wetlands adjacent to the Facility Area and any disturbed areas that may be hydrologically or ecologically influenced or impacted by development of the Facility, including Significant Coastal Fish and Wildlife Habitat Areas designated by NYSDOS, and publicly owned lands, to determine their general characteristics and relationship, if any, to the delineated wetlands within the Facility Area.

(10) An identification and quantification of temporary and permanent impacts to, and any permanent conversions of wetlands and state-regulated 100-foot adjacent areas based on the proposed footprint of all Facility components and associated impact assumptions. This assessment will also include a description of applicable permanent forest conversion, if any, which will occur as a result of the construction or maintenance of the Facility. Such impacts will be presented in a table that shall provide:

(i) The applicable Co-Applicant-assigned wetland identification code, NYSDEC wetland identification number, and NYSDEC stream classification;

(ii) The acreage and type of impact, including but not limited to permanent or temporary fill, crossing methodology, and conversion of vegetation class, associated with each wetland and adjacent area (distinguishing between federal and state wetland or 100-foot adjacent areas impacts), including vegetative cover type affected by each impact;

(iii) Wetland delineation type depending upon land under control of the Co-Applicants (e.g., field survey, roadside observation, review of aerial imagery, desktop assessment, etc.);

(iv) The page or sheet number on preliminary design drawings depicting the resource;

(v) Explanation, for each impact, as to whether it could reasonably be avoided; and

(vi) Proposed site-specific actions to minimize and/or mitigate impacts to resources that are not avoided. Where proposed measures apply to multiple impact areas, cross-referencing to narratives and maps will be employed rather than repeating technical details.

(11) Impacts to wetlands will also be presented to NYSDPS Staff on a separate set of site plan drawings at 1":50' scale, showing wetland boundaries, permanent and temporary structures, stream crossings, roads, power interconnects, grade changes, and the limits of disturbance.

(12) Wetland Mitigation, as necessary – Site specific actions to mitigate impacts to resources that are not bypassed. Where proposed measures apply to multiple impact areas, cross-referencing to narratives and maps will be employed rather than repeating technical details.

(i) A discussion of all avoidance and minimization measures considered during site planning and design, and an indication of methods to be implemented to avoid wetland and stream impacts, including crossing methodology and a description of Facility construction and operation in relation to the standards established by ECL Articles 15 and 24. Direct impacts to wetlands and streams will be minimized by utilizing existing or narrow crossing locations wherever possible. Additional impact avoidance and minimization measures may include consideration of alternative siting or routing options, trenchless crossings (such as horizontal directional drilling (HDD) or other special crossing techniques), equipment restrictions, herbicide use restrictions, and erosion and sedimentation control measures. Exhibit 23 (Water Resources and Aquatic Ecology) will contain further discussion of how potential impacts to streams will be evaluated, avoided, minimized, and mitigated. Final impact calculations to the 100-foot adjacent area of state-regulated wetlands and associated mitigation will be based on verified delineation boundaries and NYSDEC jurisdiction determination.

(ii) Where impacts are demonstrably unavoidable, and have been minimized to the maximum extent practicable, the anticipated mitigation measures

to be implemented to offset impacts to wetlands and state-regulated 100-foot adjacent areas will be discussed, including the use of reasonable alternative crossing methods.

(iii) Pursuant to 6 NYCRR 663.5(g), a conceptual mitigation plan for impacts to state-regulated wetlands and adjacent areas will be included in the Application, if required, and at a minimum will meet the following provisions, to the extent practicable:

i. The mitigation will occur on or in the immediate vicinity of the Facility (preferably elsewhere in the same wetland), if possible;

ii. The area affected by the proposed mitigation will be regulated by the Freshwater Wetlands Act and 6 NYCRR Part 663 after mitigation measures are completed; and

iii. The mitigation will provide substantially the same or more benefits than will be lost through the proposed activity.

(iv) Evaluation of mitigation options will occur during initial planning of the Facility. Off-site mitigation will only be considered if an analysis is provided showing that all options within the immediate vicinity were thoroughly evaluated and determined to not be feasible. In-lieu-fee does not meet the state requirements for mitigation. Alternative mitigation analyses will be based on the final verified delineation boundaries if timely received from NYSDEC.

(v) The Environmental Compliance and Monitoring Program (ECMP) to be implemented during Facility construction, demonstrating adherence to all relevant permit conditions to protect wetlands, streams, and other waterbodies that will be included in the ECMP, will be included in the Compliance Filing. The Facility's ECMP will include an Environmental Monitor(s) who will be retained by the Applicant during construction and restoration activities on the Facility Area, and the duties of the Environmental Monitor will be described. The EMCP will clearly describe the locations of staging areas, temporary spoil or woody debris stockpiles, "extra work" areas, and other places material or equipment may be placed on site. The limits of disturbance around all such areas will be clearly defined in plan maps and, during construction, physically marked in the field using orange construction fencing or other similar

indicators. Plans to restore all temporary, disturbances in regulated areas, including replanting trees in temporarily disturbed forested areas, will also be provided in the Compliance Filing. Adaptive management actions will be incorporated to be implemented should the planned mitigation fail.

(k) Invasive Species

(1) Invasive species identification will include:

(i) A list of all non-native invasive plant, vertebrate, invertebrate, fungal, algal and cyanobacteria species observed during site-specific field investigations, or incidentally while on site for other purposes, and known to occur within the Facility. The list of non-native invasive plant species in areas of proposed disturbance shall be based on a qualitative survey conducted concurrent with field surveys conducted in support of Exhibits 22 and 23;

(ii) "Invasive species" is defined as all terrestrial and aquatic invasive species included in 6 NYCRR Part 575, https://www.dec.ny.gov/docs/lands_forests_pdf/islist.pdf. Additional invasive species not included on this list (e.g., reed canary grass, wild parsnip) may also warrant specific management and control measures, depending on current populations of such species within and nearby the Facility and based on consultation with the Environmental Monitor.

(iii) GIS shapefiles and maps at a scale of 1:2000 of any identified concentrations of non-native invasive plant species will be included

(2) An invasive species management plan, to be provided as part of the Compliance Filing, will apply to all prohibited and regulated invasive species, and for all species listed in 6 NYCRR Part 575 will include:

(i) A description of the incidental survey methods used to support the ISMP will be included in the Application and a commitment to field-verify invasive species during the growing season immediately prior to (within at least six months) of the start of vegetation clearing or ground disturbance activities; field verification survey will be submitted as a Compliance Filing.

(ii) For each invasive species identify an area and concentration threshold that requires mapping and an individual treatment plan;

(iii) Specific methods the Co-Applicants propose to use to ensure that packing material, imported fill, and fill leaving the Facility site will be free of non-native invasive plant and insect species or material to the extent practicable;

(iv) Specific methods the Co-Applicants propose to use to ensure that fill material brought to the Facility site will be free of non-native invasive plant and insect species and material, seeds and parts, by source inspection or other;

(v) A description of best management practices the Co-Applicants propose to use to prevent the introduction, proliferation and spread of non-native invasive species due to the implementation of the Facility's grading, erosion and sediment control plan;

(vi) Details of procedures for preventing the spread of invasive invertebrates and diseases, and a discussion of how the Applicant will comply with the state quarantine and protective zones, where applicable;

(vii) Implementation plans for ensuring that equipment and personnel arrive at and depart from the Facility Site clean and free of non-native invasive plants, seeds, parts, and insect species, including the protocol for inspection of equipment arriving at and departing from the Facility;

(viii) A detailed description of cleaning procedures for removing non-native invasive species material, seeds, and parts from equipment and personnel, and proper disposal of materials known to be or suspected of being infested;

(ix) A detailed description of the Best Management Practices or procedures that will be implemented, and the education measures that will be used to educate workers;

(x) A plan for of a minimum 5-year post-construction monitoring and corrective action plan to achieve the goal of no new invasive species in the Facility area and no new locations of existing invasive species in the Facility area, and survey measures and procedures for revising the Invasive Species Management Control Plan in the event that the established goals are not met within a specified timeframe;

(xi) Anticipated methods and procedures used to treat non-native invasive species that have been introduced or spread as a result of the

construction, operation or maintenance of the Facility (based on comparisons against the baseline survey); and

(xii) Landscape re-vegetation plans, including specification of native seed mix to be used, as appropriate.

(l) Agricultural Resources:

(1) an analysis of the temporary and permanent impacts of the construction and operation of the Facility and the interconnections on agricultural resources, including the acres of agricultural land temporarily impacted, the Co-Applicant's intent to adhere to NYSDAM's construction and restoration guidelines, to the maximum extent practicable, and the number of acres of agricultural land that will be permanently converted to nonagricultural use. If for any reason the guidelines cannot be met, the NYSDAM will be contacted for an acceptable alternative. Analysis of alternative designs that maintain active agricultural uses of portions of the Facility Site shall be provided.

STIPULATION 23 – 1001.23 EXHIBIT 23: WATER RESOURCES AND AQUATIC ECOLOGY

Exhibit 23 will contain the following with regard to:

(a) Groundwater:

(1) hydrologic information reporting depths to high groundwater and bedrock, including a site map showing depth to high groundwater and bedrock in increments appropriate for the Facility.

(2) a map based on publicly available information showing all areas within a 2-mile Study Area, which includes a portion of Sleepy Hollow Lake and its watershed, delineating all groundwater aquifers and groundwater recharge areas, and identifying groundwater flow direction, groundwater quality, and the location, depth, yield and use of all public and private groundwater wells or other points of extraction of groundwater, and including delineation of well head and aquifer protection zones. The maps will distinguish between public and private wells and further indicate whether well locations are approximate or have been confirmed in the field. GIS data for the locations of public and private well locations will be provided to NYSDPS Staff.

(3) an analysis and evaluation of potential impacts (during normal and drought conditions) from the construction and/or operation of the Facility on drinking water supplies, including potential effect on water quality and/or use of the Climax Reservoir Drinking Water District, which supplies drinking water to the Village of Coxsackie, and public and private water supplies, including active, private wells within a 1-mile radius of the Facility Area, and wellhead and aquifer protection zones.

(4) to identify existing water wells in the area, a Freedom of Information Law request letter will be sent to the NYSDEC, NYSDOH and Greene County to request any information pertaining to groundwater wells (including location, construction logs, depths, and descriptions of encountered bedrock) within one mile of the Facility Area. Spatial data on water wells available for download from NYSDEC will also be provided. The Application will include information received from the NYSDEC, NYSDOH, and Greene County on water wells, including location, depth, yield, and use, if such data are available.

(5) If blasting is proposed, a well survey will be distributed to all landowners within 2,000 feet of blasting locations. in order to obtain a list of private wells, and available well design, location, and production information, the survey will solicit well construction details, usage patterns, and water quality data, as well as include educational information describing the Facility and the Article 10 process, ways to contact Facility personnel, a link to the Co-Applicant's website, and methods by which survey recipients can obtain additional information regarding the Facility and be added to the stakeholder list. As applicable, landowners who respond to the survey, if distributed, with well information will be added to the stakeholder list.

(b) Surface Water:

(1) Map(s), at a scale that supports legibility, identifying all surface waters, including intermittent and ephemeral streams and wetlands, within the study area using data from Greene County, NYSDEC, Environmental Systems Research Institute (ESRI), USGS, NWI, and stream data collected during on-site surveys of water resources. Surface waters located within the Facility Area were delineated in November 2016 (and confirmed in September 2017) and May 2018 in conjunction with wetland delineations. Surface waters were delineated based on the USACE Jurisdictional Determination Form Instruction Guidebook, USEPA and USACE joint guidance regarding CWA jurisdiction after Rapanos, and joint guidance on identifying waters protected by CWA (USEPA/USACE 2007, 2008, 2011). All surface waters and wetlands in portions of the Facility Area under the control of the Co-Applicants within 500 feet of areas to be disturbed by construction have been delineated. For adjacent properties without accessibility (i.e. not under control of the Co-Applicants) within 500 feet of areas to be disturbed by construction desktop delineations will be completed based upon analysis and interpretation of available remote-sensing and GIS data including NYSDEC Stream maps, USGS National Hydrography Dataset survey data, and National Wetland Inventory and ESRI mapping. One set of maps at a scale of 1":50' and shapefiles identifying all the foregoing will be submitted to NYSDEC. Stream data will also be provided in tabular format able to be easily cross-referenced to maps.

(2) The following will be provided for each waterbody that may be disturbed or crossed: a description of the New York State listed Water Classification and Standards pursuant to 6 NYCRR Part 800-941; Part Item Numbers; Water Index Numbers (WIN); physical water quality parameters; flow rate; biological aquatic

resource characteristics (including species of vertebrates and invertebrates, habitat, and presence of aquatic invasive species), and; other characteristics of such surface waters, including intermittent streams, within the study area using publicly available data, and when necessary, supplemented by field data collected during wetland and stream delineations or information provided by NYSDEC. Aquatic invasive species as identified by NYSDEC (http://www.dec.ny.gov/docs/lands_forests_pdf?islist.pdf) which are observed while conducting delineations and field investigations, will be documented and included in the Application. Terrestrial invasive species are further addressed in Exhibit 22 (Terrestrial Ecology and Wetlands).

(3) An identification of surface water drinking-water supply intakes within one mile of the Facility and contained within the drainage basin(s) in which the Facility is located, or if none are located within one mile, an identification of the nearest one (giving location of the intakes by longitude and latitude). A discussion of the potential impacts to drinking water supplies due to the Facility or onsite non-Article VII interconnections will include characterization of the type, nature, and extent of service provided from the identified source(s).

(4) This section will include a narrative discussion and analysis that describes all potential impacts to surface water resources, including streams and lakes, that may result from the construction and operation of the Facility and interconnections. Environmental impacts to be discussed and addressed will include the following: thermal changes to waterbodies resulting from vegetative clearing; changes to in-stream structure, morphology and stability; potential impacts to or taking of habitat for federally or state-listed threatened and endangered species (T&E), state species of special concern (SSC), and species of greatest conservation need (SGCN); and the effects of turbidity on adjacent habitat. If any dredging/sediment removal may occur, sediment sampling will be conducted prior to removing material in accordance with protocol established by NYSDEC, and the impacts of (potentially contaminated) sediment resuspension/dispersion will be discussed. Where appropriate and practical, mitigation actions will be discussed to offset acute and/or chronic impacts to waterbodies. The aforementioned analysis will address the surface waters at and downstream of the Facility, specifically Sleepy Hollow Lake, and the measures to be employed during construction and operation

of the Facility to avoid and minimize impacts to these species and their habitats to the maximum extent practicable, will also be included in the Application.

This section will also include a demonstration that any discharge into waters of the United States will comply with the following: effluent limitations, effluent prohibitions, water quality-related effluent limitations, and pre-treatment standards set forth in 6 NYCRR 750-1.11 and 750-2.1; water quality standards and thermal discharge criteria set forth in 6 NYCRR Parts 701, 702, 703 and 704; standards of performance for new sources set forth in 6 NYCRR 750-1.11 and 750-2.1; prohibited discharges set forth in 6 NYCRR 750-1.3; and regulations and criteria otherwise applicable to such activities. The source(s) of and collection systems for water for construction period uses, including for concrete batch plant (none are proposed), invasive species wash station(s), fire control, and other uses will be provided.

For any HDD installations, an Inadvertent Release (IR) Plan will be provided to address any inadvertent releases of drilling fluid. If HDD is planned, the IR Plan will include consideration of impacts to Sleepy Hollow Lake and its watershed. The feasibility of using overhead crossings with poles more than 50 feet from the top of banks, or trenchless crossings, will be assessed and implemented for all streams proposed to be crossed. A table will be provided that identifies all resource impacts to surface waters, at a minimum including:

(i) A calculation of the approximate acreage and linear distance of surface waters that will be temporarily or permanently impacted based on the proposed Facility footprint and associated impact assumptions, and field delineated stream, ponds or other surface waters;
(ii) The construction impact type at each waterbody and, as applicable, the crossing methodology impact (e.g., buried collection line, access road) and construction technique used (e.g., HDD or access road utilizing temporary bridge);
(iii) Typical details of Best Management Practices (BMPs) to be used. Detailed BMPs will be provided for each construction technique as appendices to the Application;
(iv) For all stream crossings for temporary and permanent roads, culvert placement specifications and construction details will be described and

enumerated, the expected flow calculations described in detail, and culvert capacity with BMP considerations for culvert placement demonstrated. All new stream crossings or upgrades of existing crossings will be designed for a 100-year storm event;

(v) Clear photographs depicting all perennial and intermittent stream crossings identified for the Facility, including photos upstream and downstream of the crossing site, referenced to the stream WIN and crossing location on maps and shapefiles, and;

(vi) Incorporation of all items in 23(b)(2) above.

A map of all anticipated HDD locations in relation to surface water resources will also be included, specifically noting the location of all proposed HDD operations within 500 feet of surface waters, wetlands or existing water supply wells. Additionally, a description of mitigation measures to minimize impacts of HDD operations on surface water quality and the hydrologic flow patterns and groundwater quality of the aquifer will be included.

(5) This section will include an identification and evaluation of reasonable avoidance measures and Facility layout alternatives. This will include an evaluation of alternatives that may entirely avoid impacts to regulated waterbodies and identification of work prohibition dates for stream crossings and other surface water impacts. Where impacts are unavoidable and have been minimized to the greatest extent practicable to regulated resources, mitigation measures, including habitat creation, the use of water storage, stormwater reuse, and offsetting water conservation, regarding groundwater and surface water impacts will be discussed. All stream crossing structures will include the bankfull width at the crossing location, and the dimensions of the proposed structure. The specific methodology for controlling water flow during construction will be discussed for each stream crossing. For all underground lines, an indication of whether the crossing will be done via open cut or a trenchless installation method will be provided, including for all open trench crossings an analysis demonstrating that a trenchless method is not practicable. The Co-Applicants will provide final engineering plans for all stream crossings in the Compliance Filing.

(c) Stormwater:

(1) Prior to commencement of construction activities, the Applicant will submit to NYSDEC a Notice of Intent for Stormwater Discharges from Construction Activity and will seek coverage under the State Pollutant Discharge Elimination System (SPDES) General Permit issued in January 2015 and effective January 29, 2015 (modified July 15, 2015) at http://www.dec.ny.gov/chemical/43133.html. A preliminary Stormwater Pollution Prevention Plan (SWPPP) will be included in the Application. The SWPPP will describe in general terms the erosion and sediment control practices that will be implemented during construction activities, and the stormwater management practices that will be used to reduce pollutants in stormwater discharges after Facility construction has been completed, and include:

(i) an introduction that will review the proposed Facility, and the purpose, need, and appropriate contents of the complete SWPPP;

(ii) anticipated stormwater retention and management practices, including temporary and permanent erosion and sediment control measures (vegetative and structural);

(iii) anticipated construction activities, including a preliminary construction phasing schedule and definition of disturbance areas;

(iv) site waste management and spill control measures;

(v) proposed site inspection and maintenance measures, including construction site inspection, and construction site record keeping; and

(vi) conditions that will allow for the termination of permit coverage.

(2) The Preliminary SWPPP identified in section 23(c)(1) will be prepared in accordance with the most current version of the New York State Standards and Specifications for Erosion and Sediment Control (NYS Standards), and the New York State Stormwater Management Design Manual, and will identify the post construction erosion and sediment practices that will be used to manage stormwater runoff from the developed Facility Area. This will include runoff reduction/green infrastructure practices, water quality treatment practices, and practices that control the volume and rate of runoff.

(d) Chemical and Petroleum Bulk Storage

(1) A description of the Spill Prevention, Control, and Countermeasure plan that will be in place for the small volumes of chemical, petroleum or hazardous substances that may be stored on site will be included in the Application. Spill containment

requirements for electric transformers at the substation and panel sites will be provided.

(2) It is not anticipated that the Facility will require on-site storage or disposal of large volumes of any substances subject to regulation under the State of New York's chemical and petroleum bulk storage programs (e.g. fuel oil, petroleum, etc.). If construction, operational, or maintenance activities at the Facility require petroleum or other hazardous chemicals be stored on site, the Application will identify all such substances and demonstrate compliance with State laws, regulations and guidelines.

(3) If construction, operational or maintenance activities at the Facility require petroleum or other hazardous chemicals be stored on site, the Application will identify such substances and demonstrate compliance with all Local laws, regulations, and guidelines.

(e) Aquatic Species and Invasive Species:

(1) This section will include a discussion and analysis of the impact the construction and operation the Facility is likely to have on critical and sensitive habitat and biological aquatic resources, particularly species listed as T&E or state SSC in 6 NYCRR Part 182, as well as SGCN, that are known or suspected of being present within the Facility. The analysis will include a discussion on the potential for introducing and/or spreading invasive species within and adjacent to the Facility. The presence of invasive species within the Facility Area will be documented during wetland and stream delineations and other on-site investigations, as described in Exhibit 22 (Terrestrial Ecology and Wetlands), and an Invasive Species Plan will be provided in the Compliance Filing. Exhibit 22 and Exhibit 23(b)(2) will contain additional information on invasive species.

(2) This section will contain an identification, discussion, and evaluation of reasonable avoidance measures and, where impacts are demonstrably unavoidable, minimization and mitigation measures regarding Facility-related impacts on all aquatic biological resources, particularly listed species. Construction activities and the presence of Facility components in occupied habitat of listed T&E species may constitute take of individuals or the habitat they depend on, or both. If it is determined by the Co-Applicants, NYSDEC or USFWS that the construction, operation or maintenance of the Facility is likely to result in a take of a listed species, including the modification of habitat on which a listed species depends,

the Co-Applicants will submit with the Application an avoidance, minimization and mitigation plan that demonstrates a net conservation benefit to the affected species as defined pursuant to 6 NYCRR Part 182.11 (Part 182), along with the informational requirements of an ITP, as provided for in Part 182, including proposed actions to avoid all impacts to listed species. If impacts are unavoidable, the Application will demonstrate this and contain thorough and clear justification of why complete avoidance of impacts is not feasible, how the proposed minimization actions will minimize impacts to the maximum extent practicable, and proposed mitigation actions. This section will also include a discussion of the measures that will be taken to ensure compliance with applicable water quality standards, pursuant to 6 NYCRR Part 703. All information and material described in section 23(e), including all associated attachments and appendixes, will be provided to NYSDEC in full and un-redacted at the time the Application is submitted.

STIPULATION 24 – 1001.24 EXHIBIT 24: VISUAL

Exhibit 24 will contain:

(a) Hecate Greene has started to conduct the visual analysis for the visual impact assessment (VIA) which will contain all information required by Section 1001.24 (Visual Impacts) of the Article 10 regulations, and with *NYSDEC Policy Assessing and Mitigating Visual Impacts (DEP-00-2)* (2000). The VIA will address the following issues:

(1) Character and Visual Quality of the Existing Landscape: a discussion of the character and visual quality of the existing landscape within the 5-mile visual study area. The VIA will identify Landscape Similarity Zones (LSZs) within the 5-mile study area to describe the landscape in greater detail. LSZs are delineated based on shared characteristics including but not limited to scenic character, topography, vegetation, land use patterns, and water features. The LSZs will be shown on maps in the VIA and will provide a basis for discussing the visual quality of the landscape.

(2) Visibility of the Facility – Operational Characteristics: an analysis of the visibility of the Facility focusing on operational characteristics. Digital viewshed mapping will be used to determine the visibility of above-ground facilities including but not limited to the solar panels, the Facility substation, electrical interconnection equipment, and access roads. Two digital viewshed maps will be completed; one showing the potential visibility of Facility components based on topographic screening (bare earth viewshed), and one showing the potential visibility of Facility components based on topographic and existing vegetative screening (vegetated viewshed). The maps will show relevant distance zones; foreground (up to 0.5-mile from the viewer), middle ground (0.5 mile to 4 miles from the foreground), and background (4 miles from the viewer to the horizon) (United States Forest Service 1995). The maps will also show locations of potentially sensitive viewpoints in relation to visibility zones and distance zones. Line-of-sight analyses will be performed for important viewpoints to confirm potential visibility.

Field verification will be employed to confirm visibility of the proposed Facility from sensitive viewpoints. Photographs will be taken to record findings, using a single lens reflex camera (dSLR). The camera will be equipped with a “normal

lens," which means it most closely approximates the field of vision of the human eye. In photos taken with this lens, the size and scale of objects in the background and foreground are depicted in ratio and are not distorted. The resolution of the photography will be suitable for use in small and large format page layouts. Time, date, and weather conditions will be recorded for each viewpoint, and viewpoint locations will be recorded using a GPS unit. In addition to recording field findings, the photographs will be used to develop visual simulations.

(3) Visibility of all Aboveground Interconnections and Roadways: visibility of all other aboveground facilities including access roads, the Facility substation, any other electrical equipment required, and fences. These features will be shown on visual simulations prepared as part of the VIA.

(4) Appearance of the Facility upon Completion/Representative Views: a select number of visual simulations will be developed to show the anticipated appearance of the Facility upon completion. Locations of visual simulations will be selected by Hecate Greene after conferring with state agencies, municipal planning representatives, Scenic Hudson, and other stakeholders. Simulations locations will be selected from locations that provide unobstructed views of Facility components, represent sensitive viewpoints as identified by the NYSDEC policy or stakeholders, and represent a variety of views from different elevations, distances, lighting conditions, and LSZ. The Co-Applicants will include a list of the visual stakeholders and copies of its viewpoint selection correspondence in the Application. In addition, the Co-Applicants will include the visual representatives on the master stakeholder list for notification of Facility milestones and outreach activities.

Photographic-based simulations will be developed using Autodesk 3ds Max® three-dimensional (3D) modeling and rendering software. An accurate, scaled, detailed 3D model of the proposed Facility components will be created based on the engineering plans and specifications included in the Application. To create the model, photograph location data captured by the GPS device will be transferred to GIS software, where it will be combined with GIS data of the preliminary layout of the Facility. A map showing these data will then be exported at true scale and imported into the 3D modeling software to create a 3D model

of the Facility Area. GIS data will also be used to generate a terrain model and the Facility 3D model will be placed into the simulated landscape in real-world coordinates to ensure spatial accuracy.

To create the visual simulations, the location data captured by the GPS device is transferred to design software that combines the GIS data and the 3D model of the Facility. The views from the digital photographs are matched in the 3D modelling software using virtual cameras with the same focal length and field-of-view as the dSLR camera settings used to capture the digital photographs. Date- and time-specific lighting is added into the 3D model and then renderings are created for each simulation. The renderings are then overlaid on the site photography and any necessary modifications to the existing landscape are made to the images. The simulations will be presented on a page layout that shows the visual simulation along with an existing conditions photograph, location map, and information regarding the photography and simulated conditions.

The existing conditions photograph will be formatted in a one-page layout in landscape format covering most of the page; a brief description on the viewpoint and the photograph will be included in the margins. The next page will have the photo-simulation showing proposed conditions. If additional photo-simulations are prepared, such as to show the effectiveness of mitigation measures, they will be similarly formatted. Panoramic images will be laid out in 11x17 or as appropriate depending on their size. No annotation will be placed directly on the images and there will be no intervening pages between the existing conditions photograph and the photo-simulation(s).

(5) Lighting: description of lighting associated with the proposed Facility, the visual impact created by proposed lighting, and any proposed mitigation measures. Nighttime lighting will be limited to the proposed site entrance, substation, and possibly motion detection lighting at select locations along fence if needed to improve security. No nighttime lighting is proposed as part of the photovoltaic (PV) arrays. Mitigation measures are anticipated to include considering off-site receptors when locating lights and choosing type of light and use of security lighting and fixtures that are shielded and/or downward facing to minimize light

intrusion off-site. Specifications should consider the use of full cut-off fixtures and task lighting, as appropriate to identified needs for lighting.

(6) Nature and Degree of Visual Change from Construction: visual impacts as they relate to construction activities. Minor and temporary visual impacts are anticipated during construction, and are anticipated to include views of construction equipment, ground disturbance activities, construction worker activity, construction materials, vegetation removal, and dust.

(7) Nature and Degree of Visual Change from Operation: long-term visual impacts will include addition of the PV panels, access roads, and Facility substation to the landscape where they are visible. Visual simulations will be utilized to illustrate visual change from selected sensitive viewpoints. Photographs of existing conditions will be compared with the simulations to determine how the Facility introduces contrasting elements into the landscape.

The level of visual contrast introduced by a project is measured by changes in form, line, color, and texture. In the context of the proposed Facility, existing landscape scenery is defined by the visual characteristics (form, line, color, and texture) associated with the landform, vegetation, and existing facilities within and adjacent to the Facility Area. Visual contrast will be assessed considering: (1) landscape contrast – landform modifications that are necessary to prepare the Facility for access and/or construction, and the removal of vegetation to construct and maintain the facilities; and (2) structure contrast – the introduction of new, aboveground facilities into the landscape. A visual resource specialist trained in the Bureau of Land Management (BLM) Visual Resource Management (VRM) process will utilize a modified version of the VRM Contrast Rating Form to assess contrast. The Co-Applicants will provide NYSDPS, Scenic Hudson, the Town and Village of Coxsackie, and Saving Greene with a copy of the modified BLM VRM approach, including forms and rating criteria, that is proposed to be used as soon as practicable and prior to Application filing.

The term “sensitive viewers” refers to specific user groups associated with various land uses that have a sensitivity to landscape change and, therefore, could be adversely affected by the construction and operation of the proposed Facility. The sensitivity of viewers at each viewpoint is based on the following criteria: type of use; volume of use; duration of use; expected concern for

aesthetics; and special status or designation. The expected response of sensitive viewers will be assessed based upon: (1) level of visual contrast (i.e., form, line, color, and texture), (2) distance from the Facility, (3) viewing condition (i.e., level, inferior, or superior), (4) visibility (screened, backdropped, or skylined), and (5) expected level of viewer sensitivity. These factors will be combined to determine the level of significant impact for sensitive viewpoints.

(8) Related Operational Effects of Facility: visual effects of the Facility will be limited to visibility of the PV panels and associated components, substation and POI equipment, and fencing: No plumes, shading, flare, or other visual impacts are anticipated during operation of the Facility. Glare will be discussed and assessed, particularly in terms of potential visibility from nearby residences and County Route 57 (Farm to Market Road) and other public roadways within the vicinity of the Facility Area.

(9) Proposed Mitigation: mitigation measures that will be considered include those identified in NYSDEC Policy DEP-00-2 Assessing and Mitigating Visual Impacts, which include professional design and siting, screening, relocation, camouflage, low profile, use of non-specular materials, lighting, maintenance and setbacks (offsets). The Application will discuss these factors, and the feasibility and potential effects of additional mitigation measures if proposed to mitigate potentially significant impacts from specific sites.

(10) Description of All Visual Resources that would be Affected by the Facility: the VIA will identify significant scenic and aesthetic resources within the 5-mile visual study, including the following types of resources:

- Properties listed on or eligible for inclusion in the National or State Register of Historic Places, including the Pieter Bronck House;
- State Parks;
- New York State Heritage Areas;
- State Wildlife Management Areas;
- the Hudson River - American Heritage River and Hudson River Greenway;
- Sites, areas, lakes, reservoirs or highways designated or eligible for designation as scenic, such as the Olana State Historic Site;
- Scenic Areas of Statewide Significance: Columbia-Greene North sub-units;
- Scenic byways and roads (e.g., NYS Route 385);

- State or federally-designated trails, or one proposed for designation (Hudson River Greenway Water Trail); and
- Bond Act Properties purchased under Exceptional Scenic Beauty or Open Space Category.

The Olana State Historic Sites lies outside the 5-mile visual study area. This one exception is being made for the 5-mile visual study area at the request of Scenic Hudson. The Co-Applicants reserve all rights to object to any similar requests for exceptions from the 5-mile visual study area in this or any other proceeding.

In addition, Article 10 regulations (Section 1001.24.b.3) state that sensitive viewing areas "shall include recreational areas, residences, businesses, historic properties (listed or eligible for listing on the State or National Register of Historic Places, including properties identified through the Applicant's historic resources analysis pursuant to Exhibit 20), and travelers (interstate or other highway users)." These viewing areas will also be identified, in consultation with local municipal officials.

(b) The viewshed analysis component of the VIA shall be conducted as follows:

(1) Viewshed maps depicting areas of Facility visibility within the Facility study area shall be prepared and presented on a 1:24,000 scale recent edition topographic base map. A line of sight profile shall also be done for resources of statewide concern located within the VIA study area. The viewshed maps shall provide an indication of areas of potential visibility based on topography and vegetation and the highest elevation of Facility structures. The potential screening effects of vegetation shall also be shown. The map(s) shall be divided into foreground, midground and background areas based on visibility distinction and distance zone criteria. Visually-sensitive sites, cultural and historical resources, representative viewpoints, photograph locations, and public vantage points within the viewshed study area shall be included on the map(s) or an overlay. An overlay indicating landscape similarity zones shall be included.

(2) The VIA will include a detailed description of the methodology used to develop the viewshed maps, including software, baseline information, and sources of data. Hecate Greene conducted a preliminary digital viewshed analysis to evaluate the potential visibility of the PV panels based on the height of the PV

panel and screening provided by topography as well as vegetation. This analysis was conducted using ESRI ArcGIS GIS software with the Spatial Analyst extension to process 10-meter Digital Elevation Models based on the National Elevation Dataset, forested land cover (Homer et al. 2015) and the height of the PV modules above ground. The topographic viewshed assumed "bare earth" conditions and was developed from the proposed Facility Area boundary looking out to determine areas with potential visibility. National Land Cover Database land cover data were then used to determine where forested areas would obscure the Facility components using average heights of tree species based on forest type (deciduous forest= 61.5 feet; evergreen forest = 52.5 feet; and mixed forest = 57 feet). This assessment will be updated to account for the final Facility layout, existing tree heights surrounding the perimeter of the property and a field reconnaissance will be conducted to verify visibility from sensitive viewpoints.

(3) The viewshed mapping shall be used to determine the sensitive viewing areas and locations of viewer groups in the Facility vicinity. These shall include recreational areas, residences, businesses, historic properties (listed or eligible for listing on the State or National Register of Historic Places), and travelers (interstate and other highway users), and locations of local concern as identified in consultation with local municipal officials.

(4) The Co-Applicants will confer with municipal planning representatives, NYSDPS, NYSDEC, and OPRHP in its selection of important or representative viewpoints. Hecate Greene will send a letter describing the proposed Facility and the Article 10 process, a map of the visual study area, a preliminary viewshed and inventory of sensitive resources, a description of next steps including the process for selecting simulation points, and a request for feedback regarding sensitive resources and simulation locations.

(5) Photographic simulations of the Facility and interconnections shall be prepared from the representative viewpoints to demonstrate the post-construction appearance of the Facility. Where vegetation screening is relied on for Facility mitigation, leaf-off and leaf-on simulation shall be provided. Where new vegetation is proposed for mitigation, simulations will depict 5- and 15-year growth. Representative viewpoints will be established in consultation with NYSDEC, NYSDPS, OPRHP, and the Town and Village, assuring a range of

landscape similarity zones and user groups, distance zones, resource types, and representative visibility.

(6) Additional revised simulations illustrating mitigation will be prepared for those observation points for which mitigation is proposed in the application.

(7) Each set of existing and simulated views of the Facility shall be compared and rated and the results of the visual impact assessment will be summarized. Visual contrast will be assessed considering (1) landscape contrast – landform modifications that are necessary to prepare the Facility for access and/or construction, and the removal of vegetation to construct and maintain the facilities; and (2) structure contrast – the introduction of new, aboveground facilities into the landscape. A visual resource specialist trained in the BLM VRM process will utilize a modified version of the VRM Contrast Rating Form to assess contrast. Where visual impacts from the proposed Facility are identified, potential mitigation measures will be outlined, and the extent to which they effectively minimize such impact shall be discussed.

(8) The analysis will include analyses of overall appearance and operational characteristics of the Facility and related facilities, including related visible effects of Facility operation, including an assessment of the predicted extent, frequency, and duration of any such visible effects (including glare) created by the Facility.

(9) The Co-Applicants will consider the use of the FHWA Guidelines for the Visual Impact Assessment of Highway Project when conducting the Facility's VIA. A description of the rationale as to whether or not the FHWA Guidelines were employed will be provided.

(10) The VIA will be made available in both print and digital format, to allow interested parties to review materials.

STIPULATION 25 – 1001.25 EXHIBIT 25: EFFECT ON TRANSPORTATION

Exhibit 25 will contain:

(a) A conceptual site plan, drawn at an appropriate scale, depicting all Facility Area driveway and public roadway intersections horizontal and vertical geometry, the number of approach lanes, the lane widths, shoulder widths, traffic control devices by approaches, and sight distances. The site plans will be developed for the Facility Area driveway off County Route 57 (Farm to Market Road) and any other access points determined to be necessary from public roadways;

(b) A description of the pre-construction characteristics of the roadways in the vicinity of the Facility, including:

  (1) a review of existing data on vehicle traffic, use levels and accidents obtained from obtained from the New York State Department of Transportation Traffic Data Online Viewer, the Accident Location Information System, and other publicly available data;

  (2) a review of transit facilities and routes, including areas of school bus service, public transportation (such as the Capital District Transportation Authority [CDTA]), senior citizen transportation (CDTA ACCESS for Greene County) and Greene County Advocacy Resource Center, as applicable;

  (3) an identification of potential approach and departure routes to and from the Facility Area for police, fire, ambulance and other emergency vehicles, in consultation with local emergency service providers;

  (4) a review of available load bearing and structural rating information for expected Facility traffic routes; and

(c) An estimate of the trip generation characteristics of the Facility during both construction and operation, including:

  (1) for each major phase of construction, and for the operation phase, an estimate of the number and frequency of vehicle trips, including time of day and day of week arrival and departure distribution, by size, weight and type of vehicle;

  (2) an identification of approach and departure routes to and from the Facility Area out to a 5-mile distance for vehicles carrying water, fuel oil, bulk fuels (including wood, biomass, coal and municipal solid waste), chemicals or hazardous materials for construction or operation of the Facility;

(3) an identification of approach and departure routes to and from the Facility Area for construction workers and employees of the Facility.

(d) An analysis and evaluation of the traffic and transportation impacts of the Facility, including:

(1) a comparison of projected future traffic conditions with and without the proposed Facility, the analysis to be conducted separately for the peak construction impacts of the Facility and for the typical operations of the completed Facility;

(2) an evaluation of the adequacy of the road system to accommodate the projected traffic, the analysis to be conducted separately for the peak construction impacts of the Facility and for the typical operations of the completed Facility, the analysis will also include an identification of the extent and duration of traffic interferences during construction of the Facility and any interconnections;

(3) an assessment of the adequacy of roadway systems to accommodate the vehicles to be utilized for delivery of Facility components during construction; improvements necessary to accommodate deliveries; impacts associated with such improvements; and mitigation measures appropriate to minimize such impacts;

(4) the extent and duration of visible solar panel glare effects on roadways to identify potential safety hazards;

(5) an identification and evaluation of practicable mitigation measures as warranted regarding traffic and transportation impacts, including time restrictions, the use of alternative technologies, the construction of physical roadway improvements, the installation of new traffic control devices, and the repair of local roads due to damage by heavy equipment or construction activities during construction or operation of the Facility; and

(6) a description of all road use and restoration agreements, if any, between the Co-Applicants and landowners, municipalities, or other entities, regarding repair of local roads damaged by heavy equipment or construction activities during construction or operation of the Facility. If road use agreements are not executed, this section will include a description of the Co-Applicants' proposal for ensuring that any damage caused to local roadways or associated features shall be repaired at no cost to the affected localities. Language will be included noting how the Co-Applicants proposes to memorialize in the Certificate Conditions its responsibilities of such actions.

(e) An analysis and evaluation of the impacts of the Facility on airports and airstrips, railroads, subways, buses and any other mass transit systems in the vicinity of the Facility. The analysis and evaluation shall include impacts on military training and frequent military operations in the National Airspace System and Special Use Airspace designated by the Federal Aviation Administration.

STIPULATION 26 – 1001.26 EXHIBIT 26: EFFECT ON COMMUNICATION

Exhibit 26 will contain:

(a) An identification of all existing underground cable and fiber optic major transmission telecommunication lines within a 2-mile radius of the Facility and the electric interconnection between the Facility and the POI, to the extent such information is publicly available.

(b) A statement describing the anticipated effects of the proposed Facility and the electric interconnection between the Facility and the POI on the communications systems required to be identified above, including the potential for:

- physical disturbance by construction activities;
- adverse impacts to co-located lines due to unintended bonding; and
- any other potential for interference.

(c) Communication systems are not anticipated to be affected by Facility construction and operation. However, the Co-Applicants will develop a complaint resolution process through which residents can submit a formal complaint should any issues arise as a result of construction or operation of the Facility to communication systems. The complaint resolution process will be included in Exhibit 12 of the Application.

STIPULATION 27 – 1001.27 EXHIBIT 27: SOCIOECONOMIC EFFECTS

Exhibit 27 will contain:

(a) An estimate of the average construction work force, by discipline, for each quarter, during the period of construction; and an estimate of the peak construction employment level. The Co-Applicants should rely, as much as possible, on the actual number of jobs budgeted for the Project, as well as the Co-Applicants' prior industry experience with similarly situated projects.

(b) An estimate of the annual construction payroll, by trade, for each year of construction and an estimate of annual direct non-payroll expenditures likely to be made in the vicinity of the Facility (materials, services, rentals, and similar categories) during the period of construction.

(c) A range of estimates of the annual secondary employment and economic activity likely to be generated in the vicinity of the Facility by the construction of the solar Facility, to reflect the uncertainty associated with the direct input estimates and the share of these inputs expected to occur locally. A qualitative discussion will address the annual net secondary effects from Facility construction.

(d) An estimate of the number of jobs and the on-site payroll, by discipline, during a typical year once the Facility is in operation, and an estimate of other expenditures likely to be made in the vicinity of the Facility during a typical year of operation. The Co-Applicants should rely, as much as possible, on the actual number of jobs budgeted for the Project, as well as the Applicant's prior industry experience with similarly situated projects.

(e) A range of estimates of the annual secondary employment and economic activity likely to be generated in the vicinity of the Facility by its operation, to reflect the uncertainty associated with the direct input estimates and the share of these inputs expected to occur locally. A qualitative discussion will address the annual net secondary effects from Facility operation.

(f) An estimate of incremental school district operating and infrastructure costs due to the construction and operation of the Facility, this estimate to be made after consultation with the affected school districts.

(g) An estimate of incremental municipal, public authority, or utility operating and infrastructure costs that will be incurred for police, fire, emergency, water, sewer, solid waste disposal, highway maintenance and other municipal, public authority, or utility

services during the construction and operation phases of the Facility (this estimate to be made after consultation with the affected municipalities, public authorities, and utilities).

(h) An identification of all jurisdictions (including benefit assessment districts and user fee jurisdictions) that levy real property taxes or benefit assessments or user fees upon the Facility Area, its improvements and appurtenances and any entity from which payments in lieu of taxes will or may be negotiated.

(i) For each jurisdiction, an estimate of the incremental amount of annual taxes (and payments in lieu of taxes, benefit charges and user charges) it is projected would be levied against the post-construction Facility Area, its improvements and appurtenances.

(j) For each jurisdiction, a comparison of the fiscal costs to the jurisdiction that are expected to result from the construction and operation of the Facility to the expected tax revenues (and payments in lieu of taxes, benefit charge revenues and user charge revenues) generated by the Facility.

(k) An analysis of whether all contingency plans to be implemented in response to the occurrence of a fire emergency or a hazardous substance incident can be fulfilled by existing local emergency response capacity, and in that regard identifying any specific equipment or training deficiencies in local emergency response capacity (this analysis to be made after consultation with the affected local emergency response organizations).

(l) A detailed statement indicating how the proposed Facility and interconnections are consistent with each of the state smart growth public infrastructure criteria specified in ECL 6-0107, or why compliance would be impracticable.

(m) A summary of available information on the feasibility of providing local access to energy generation by the Facility.

(n) A commitment by the Co-Applicants to track and report the actual number of direct jobs created during the construction and operational phases of the Facility, as well as the tax payments to local jurisdictions made during the course of the Facility.

STIPULATION 28 – 1001.28 EXHIBIT 28: ENVIRONMENTAL JUSTICE

Exhibit 28 will contain, for Potential Environmental Justice Areas (PEJAs) within or near the Facility Area, including Census Block Group ID: 360390808001 encompassing the New York State Coxsackie Correctional Facility and the Greene Correctional Facility:

(a) A map of the environmental justice areas in relation to the Facility.

(b) An identification and evaluation of significant and adverse disproportionate environmental impacts of the Facility, including traffic, noise, and visual impacts, if any, resulting from its construction and operation, including any studies which were used in the evaluation identifying the author and dates thereof, in a manner that is in accordance with any requirements for the contents of an Article 10 application contained in 6 NYCRR Part 487. Analysis of any significant and adverse disproportionate impacts will include GIS maps and shapefiles of impacted areas overlaid with PEJAs and a geographic analysis that compares the percentage of PEJAs that overlap with any impacts, including visual, traffic (including construction vehicle route), and noise impacts, with the percentage of the area in general.

(c) Separately stated for all significant and adverse disproportionate environmental impacts of the Facility resulting from its construction and operation required to be identified pursuant to subdivision (a) of this section, a description of:

(1) The specific measures the Co-Applicants propose to take to avoid such impacts to the maximum extent practicable for the duration that the Certificate is granted, including a description of the manner in which such impact avoidance measures will be verified and a statement of the cost of such measures.

(2) If such impacts cannot be avoided, measures the Co-Applicants propose to take to minimize such impacts to the maximum extent practicable for the duration that the Certificate is granted, including a description of the manner in which such impact mitigation measures will be verified and a statement of the cost of such measures.

(3) If such impacts cannot be avoided, the specific measures the Co-Applicants propose to take to offset such impacts to the maximum extent practicable for the duration that the Certificate is in effect, including a description of the manner in

which such impact offset measures will be verified and a statement of the cost of such measures.

(4) any outreach activities conducted by the Co-Applicants.

(d) A qualitative and where possible quantitative analysis demonstrating that the scope of avoidance, mitigation, and offset measures is appropriate given the scope of significant and adverse disproportionate environmental impacts of the Facility resulting from its construction and operation.

STIPULATION 29 – 1001.29 EXHIBIT 29: SITE RESTORATION AND DECOMMISSIONING

Exhibit 29 will contain:

(a) A statement of the performance criteria proposed for site restoration in the event the Facility cannot be completed and for decommissioning of the Facility, including a discussion of why the performance criteria are appropriate. Among other things, the statement shall address:

(1) safety and the removal of hazardous conditions;

(2) environmental impacts;

(3) aesthetics;

(4) salvage and recycling;

(5) potential future uses for the Facility Area; and

(6) the useful life of the Facility.

(b) A plan for the decommissioning and restoration of the Facility Area, including how such decommissioning and restoration shall be funded and a schedule for the conduct of decommissioning and site restoration activities. This plan shall include a discussion and timeline of the removal of Facility components and the anticipated site restoration activities. This plan shall include a detailed preliminary estimate to support the proposed decommissioning and site restoration funding upon cessation of operation of the Facility based on decommissioning and site restoration costs from similar projects (if similar costs are available).

(c) A discussion of consistency, to the maximum extent practicable, of the Facility's decommissioning with the NYSDAM guidance document entitled *Guidelines for Agricultural Mitigation for Solar Energy Projects* last revised April 2018. If for any reason the guidelines cannot be met, the NYSDAM will be contacted for acceptable alternative. The discussion will include the potential and feasibility of returning the Facility Area to agricultural use at the end of the Facility's operating life, subject to coordination with the landowner.

(d) Information on the Co-Applicants' plan for accounting for subsurface drainage improvements that may have occurred and are functional at the Facility Area should they have been disturbed during construction of the Facility.

(e) Methods and schedule for notifications regarding decommissioning and site restoration activities to the local municipalities and landowners.

STIPULATION 30 – 1001.30 EXHIBIT 30: NUCLEAR FACILITIES

Not applicable.

STIPULATION 31 – 1001.31 EXHIBIT 31: LOCAL LAWS AND ORDINANCES

Exhibit 31 will contain:

(a) The requirements of 16 NYCRR 1001.31 (a) through (j) will be addressed. The Co-Applicants will consult with the local authorities having jurisdiction whose requirements are the subject of this exhibit to identify the applicable requirements and discuss consistency and applicability within the context of the Article 10 process.

(k) Electronic copies of the applicable Town of Coxsackie zoning and land use regulations including attachments, tables, zoning and other maps, related documents. The Town of Coxsackie zoning and land use regulations are also available online: https://ecode360.com/CO0785.

(l) An identification of any applicable Greene County regulations or legal requirements, particularly permitting and approval authority from the Greene County Highway Department regarding access to the Facility Area from County Route 57 (Farm to Market Road), and the use of County ROW for temporary or permanent site access.

STIPULATION 32 – 1001.32 EXHIBIT 32: STATE LAWS AND REGULATIONS

Exhibit 32 will contain:

(a) A list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of the proposed major electric generating facility (including interconnection electric transmission lines) of a procedural nature. These state procedural requirements are supplanted by PSL Article 10, except for permits to be issued by the NYSDEC pursuant to federal recognition of state authority, or pursuant to federally delegated or approved authority, in accordance with the CWA, unless the Siting Board expressly authorizes the exercise of such authority by the state agency.

(b) A list of all state procedural requirements required to be identified pursuant to subdivision (a) of this section for which the Co-Applicants request that the Siting Board expressly authorize the exercise of such authority by the state agency, including a statement why such exercise would be desirable or appropriate.

(c) A list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of the proposed major electric generating facility (including interconnection electric transmission lines) of a substantive nature, together with a statement that the Facility as proposed conforms to all such state substantive requirements. Pursuant to PSL §168(3)(e), the Siting Board must find that the Facility is designed to operate in compliance with these state substantive requirements, all of which will be binding upon the Co-Applicants.

The Co-Applicants have preliminarily identified state approvals, consents, permits, certificates or other conditions that are anticipated to be required for the construction and operation of the proposed Facility, associated interconnections, and ancillary features through initial discussions with state agencies. These preliminary identified requirements are provided in Table 32-1.

Table 32-1 State Approvals, Consents, Permits, or Other Conditions

Permit/Consultation	Trigger	Requirements	Status/Timeframe
STATE OF NEW YORK			
New York State Department of Environmental Conservation			
SPDES General Stormwater Discharge Permit for Construction Activity GP-0-15-002	Soil disturbances greater than 1 acre	A GP-0-15-002 General Stormwater Discharge Permit for Construction Activity requires that a Notice of Intent along with a SWPPP be filed with the governing agency(ies). Permit is required if discharge occurs to Waters of the State or municipal sewer systems.	Permit issuance to be coordinated with Article 10 proceeding in accordance with Section 172 of PSL.
Section 401 of the CWA Water Quality Certification (WQC)	Discharge of dredged or fill material regulated under Section 404	The Section 401 WQC is generally limited to discharges of dredged or fill material regulated under Section 404. The Facility must be consistent with the designated use of a given water body and the water quality criteria established.	Certification issuance to be coordinated with Article 10 proceeding in accordance with Section 172 of PSL.
New York State Office of Parks, Recreation, and Historic Preservation			
Section 14.09 of the New York State Historic Preservation Act and Section 106 of the National Historic Preservation Act consultation with the OPRHP	Potential to directly or indirectly affect any building, structure, archeological site, object, landscape or district. This consultation is	The OPRHP provides review to ensure that effects or impacts on eligible or listed properties are considered and avoided or mitigated during the Facility planning process. The OPRHP also consults with federal agencies in identifying archaeological site and	Initial consultation with OPRHP has occurred. Recommendations will be included within Application.

Permit/Consultation	Trigger	Requirements	Status/Timeframe
	required by Article 10 regulations and if there is a federal nexus.	historic properties and avoiding or minimizing any potential adverse effects from federally funded, licensed, or authorized projects in New York.	
New York State Department of Agriculture and Markets			
Notice of Intent to ensure Compliance with Agricultural District Laws	All facilities located within agricultural districts.	If the Facility is located in or within 500 feet of an Agricultural District, an Agricultural Data Statement (Town or County Village form) is required and the neighboring landowners are to be notified of the Facility. Hecate Greene will coordinate with NYSDAM to assist in the determination of Facility impacts and to identify remedial actions to consider. Hecate Greene will follow the Notice of Intent (NOI) checklist to prepare the NOI.	Initial consultation with NYSDAM has occurred.

The Co-Applicants will construct and operate the Facility in conformance with the applicable state substantive requirements for those approvals, consents, permits, certificates or other conditions. As part of this Exhibit of the Application, substantive requirements associated with necessary state approvals, consents, permits, certificates or other conditions will be provided in a summary table demonstrating the degree of compliance with the substantive provision.

(d) A summary table of all state substantive requirements required to be identified pursuant to subdivision (c) of this section in two columns listing the provisions in the first column

and a discussion or other showing demonstrating the degree of compliance with the substantive provision in the second column.

(e) A list of all state approvals, consents, permits, certificates, or other conditions for the construction or operation of any proposed offsite interconnections and ancillary features that are not encompassed within the definition of Major Electric Generating Facility. These state actions not for the construction or operation of the proposed major electric generating facility are not supplanted by PSL Article 10 and may be state procedural requirements or state substantive requirements.

(f) A new medium-voltage distribution line will connect Greene 2 to the existing Coxsackie Substation, which is located within the State-designated Coastal Area. A consistency assessment of the Facility with the applicable New York State Coastal Area Policies will be included in the Article 10 Application.

STIPULATION 33 – 1001.33 EXHIBIT 33: OTHER APPLICATIONS AND FILINGS

Exhibit 33 will contain:

(a) A statement whether the Co-Applicants have pending, or know of others who have pending, with the Commission or with any other governmental department, agency or court of competent jurisdiction (state or federal), any application or filing which concerns the subject matter of the proceeding before the Siting Board. If any such applications or filings are pending, the Co-Applicants will state, for each such application or filing, whether the granting of any such application or filing will have any effect on the grant or denial of a certificate, and whether the grant or denial of a certificate will have any effect upon the grant or denial of any such other application or filing. The Co-Applicants will notify the Secretary, Presiding Examiner and each party of any significant change in the status of each such application or filing.

(b) The Application will identify any Federal permit, consent, approval or license that will be required for the construction or operation of the Facility, including Power Purchase Agreements, Renewable Energy Credits or contract to sell energy or clean energy credits. The Application will specify the date on which an application for any such approval was made or the estimated date on which it will be made. The Co-Applicants will notify the Secretary, Presiding Examiner and each party of any significant change in the status of each such application.

STIPULATION 34 – 1001.34 EXHIBIT 34: ELECTRIC INTERCONNECTION

Exhibit 34 will contain a detailed description of the proposed electric interconnection including:

(a) The design voltage and voltage of initial operation;
(b) The type, size, number and materials of conductors;
(c) The insulator design;
(d) The length of the transmission line;
(e) The typical dimensions and construction materials of the towers;
(f) The design standards for each type of tower and tower foundation;
(g) For underground construction, the type of cable system to be used and the design standards for that system;
(h) For underground construction, indicate on a profile of the line the depth of the cable and the location of any oil pumping stations and manholes;
(i) Equipment to be installed in any proposed switching station or substation including an explanation of the necessity for any such switching station or substation;
(j) Any terminal facility; and
(k) The need for induced voltage and cathodic protection measures.

STIPULATION 35 – 1001.35 EXHIBIT 35: ELECTRIC AND MAGNETIC FIELD

The Facility will include two on-site substations for Greene 1 and Greene 3 where the electrical output voltage will be combined and increased to the transmission line voltage of 69 kV via step-up transformers, one for each facility. Each substation will be owned and operated by the Co-Applicants Hecate Greene 1 and Hecate Greene 3, respectively and will be located within the Facility Area, adjacent to the existing utility 69-kV transmission line located adjacent to the Facility Area. A new utility-owned and operated switchyard is planned within the Facility Area, adjacent to the existing utility 69-kV transmission line, that will interface between the substations and the existing 69-kV transmission line. Both POIs for Greene 1 (POI #1) and Greene 3 (POI #3) are proposed to be located within the Facility Area. As neither of these interconnections will require off-site transmission lines, consistent with Article 10 regulations (16 NYCRR § 1001.35(a)), an electric and magnetic field study is not required.

The Greene 2 collection facilities will collect and export electricity at the existing medium-voltage that the utility system operates at and, therefore, no new substation is planned for Greene 2. A 13.8-kV interconnection line will be constructed, most likely by the utility to replace an existing line, for Greene 2 between the Facility Area and the existing Coxsackie Substation located about 0.6 mile north of the Facility Area. It is anticipated that the new 13.8-kV line will follow existing utility ROWs, most likely either replacing an existing medium-voltage utility line or adding a new circuit within an existing ROW.

The following will be included in Exhibit 35:

(a) The strength and location of EMFs modeled at representative areas for the planned off-site interconnection route. Modeling calculations will identify existing EMFs and future EMFs that would result from construction and operation of the planned off-site interconnection line.

(b) The EMF study will provide cross-sections for both the base case (where existing electrical lines are present) and the proposed case, which will show, to scale, the following features:

  (1) Any known overhead and underground electric transmission, sub-transmission, and distribution facilities showing estimated dimensions and phase spacing, and other characteristics affecting EMF emissions;

  (2) Facility Area boundaries as they relate to the interconnection route; and

(3) Estimated details for the proposed interconnection line including planned route, structural details, dimensions, and phase spacing.

(c) The EMF study will include aerial photos/drawings showing the estimated location of interconnection route and any residences or occupied buildings below or immediately adjacent to the route

(d) The EMF study will include a discussion of the potential induced voltage or lack thereof (due to relatively low 13.8 kV voltage) on fencing.

The EMF study will include proposed (including the planned interconnection line) and base (without the planned interconnection line) case scenarios. The EMF study will be performed by a licensed Professional Engineer and the computer software program used to model the facilities and the calculation methodology will be described. The interconnection line EMF will be modeled based on the Facility operating at the highest possible generation output. Since the maximum output of a solar energy facility is fixed at the nameplate capacity and since no other transmission will be on the proposed interconnection route segments, modeling the line at the highest possible generation output will capture the highest realistic EMF levels and be sufficient for this study. The EMF study will model only one situation (highest possible generation output) for this study for both the proposed (with Facility) and base (without Facility) case scenarios.

STIPULATION 36 – 1001.36 EXHIBIT 36: GAS INTERCONNECTION

Not applicable.

STIPULATION 37 – 1001.37 EXHIBIT 37: BACK-UP FUEL

Not applicable.

STIPULATION 38 – 1001.38 EXHIBIT 38: WATER INTERCONNECTION

Not applicable.

STIPULATION 39 – 1001.39 EXHIBIT 39: WASTEWATER INTERCONNECTION

Not applicable.

STIPULATION 40 – 1001.40 EXHIBIT 40: TELECOMMUNICATIONS INTERCONNECTION

Exhibit 40 will contain:

(a) A detailed description of the proposed telecommunications interconnection, including all interconnecting facilities, line route, design details, size, functions, and operating characteristics.

(b) An analysis demonstrating that there will be sufficient capacity to support the requirements of the Facility.

(c) A description of the status of negotiations, or a copy of agreements that have been executed, with companies or individuals for providing the communications interconnection including any restrictions or conditions of approval placed on the Facility imposed by the provider, and a description of how the interconnection and any necessary system upgrades will be installed, owned, maintained, and funded.

STIPULATION 41 – 1001.41 EXHIBIT 41: APPLICATIONS TO MODIFY OR BUILD ADJACENT

Not applicable.