HECATE ENERGY COLUMBIA COUNTY 1 LLC

SHEPHERD'S RUN SOLAR PROJECT

Matter No. 21-02553

§ 900-2.18 Exhibit 17

Consistency with Energy Planning Objectives

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Acronym List

CES	Clean Energy Standard
CLCPA	Climate Leadership and Community Protection Act
GHG	greenhouse gas
NYCRR	New York Codes, Rules, and Regulations
NYISO	New York Independent System Operator
NYPSC	New York Public Service Commission
NYS	New York State
NYSDOB	New York State Division of Budget
NYSEG	New York State Electric and Gas
NYSERDA	New York State Energy Research and Development Authority
POI	point of interconnection
RGGI	Regional Greenhouse Gas Initiative
SEP	State Energy Plan
SRIS	System Reliability Impact Study

Glossary of Terms

Applicant	Refers to Hecate Energy Columbia County 1 LLC, the entity seeking a siting permit for the Project from the Office of Renewable Energy Siting (ORES) under Section 94-c of the New York State Executive Law.
Point of Interconnection	Refers to the Craryville 115 kilovolt (kV) substation owned by New York State Electric and Gas (NYSEG) on the Craryville-Klinekill and Churchtown-Craryville 115 kV transmission lines.
Project	Refers to the proposed Shepherd's Run Solar Project, an up to 60-megawatt utility scale solar project that will be comprised of solar arrays, inverters, access driveways, electrical collection lines, collection substation, construction staging areas, fencing and plantings, located on private land in the town of Copake, Columbia County, New York.
Project Area	Refers to those privately-owned parcels under option to lease, purchase, easement or other real property interests with the Applicant in which all Project components will be sited totaling approximately 880 acres.
Project Footprint or Limit of Disturbance	Refers to the limit of temporary and permanent disturbance caused by the construction and operation of all components of the Project totaling approximately 265 acres. This includes all areas to be used for project components, maintained areas and landscaping.
Study Area	Refers to the area evaluated for specific resource identification and/or resource impact assessment. The size of this area is appropriate for the target resource and takes into account the project setting, the significance of resource or impact being identified or evaluated, and the specific survey distances included in Title 19 of NYCRR Part 900. As appropriate, the Study Area for each type of survey or resource impact assessment is provided in the respective sections within the Application.

Exhibit 17: Consistency with Energy Planning Objectives

This exhibit addresses the requirements specified in 19 New York Codes, Rules and Regulations (NYCRR) § 900-2.18.

17(a) Consistency with State Energy Policies

The construction and operation of the Shepherd's Run Solar Project (the Project) is consistent with New York State energy policies and long-range planning objectives contained in the Climate Leadership and Community Protection Act (CLCPA); the Accelerated Renewable Energy Growth and Community Benefit Act of 2020; the 2015 State Energy Plan (SEP), as amended in 2020; the August 1, 2016 New York State Public Service Commission (NYPSC) Order Adopting A Clean Energy Standard (CES); the October 15, 2020 NYPSC Order Adopting Modifications to the Clean Energy Standard; and related policies and plans.

State Energy Plan

The SEP, adopted by the New York State Energy Planning Board pursuant to New York State Energy Law § 6-104 in June 2015, provides a wide range of goals for New York's energy system. The SEP is based on five Guiding Principles: market transformation, community engagement, private sector investment, innovation and technology, and customer value and choice. The SEP, among other things, "sets out specific initiatives to increase renewables and decrease [greenhouse gas (GHG)] emissions" (SEP at 11). Its goals include attracting private investment in New York's energy sector and combating climate change. The SEP calls for reducing statewide GHG emissions 40% from 1990 levels and generating 50% of the State's electricity from renewable resources by 2030 (SEP at 112). According to the SEP, large-scale renewables have several immediate benefits for the State: "economic development and jobs for communities across the State, greater stability in customer bills, [and] cleaner air..." (SEP at 71). The SEP was amended in 2020 to include the renewable energy targets of the CLCPA, which are discussed below (SEP Amendment).

Clean Energy Standard (CES)

In August 2016, the New York Public Service Commission (NYPSC) adopted the CES to ensure that New York will achieve the SEP's 50% by 2030 goal. "The chief focus of the CES initiative is on building new renewable resource power generation facilities" (NYPSC 2016 at 78). The CES also sought to reduce the "total emissions of air pollutants resulting from fossil fuel combustion" (NYPSC 2016 at 3).

The CES employs two related mechanisms to reach the SEP's renewables goal. First, it requires load-serving entities (LSEs) to obtain an increasing percentage of their electricity needs from renewables. LSEs demonstrate compliance by purchasing renewable energy credits (RECs) from renewable resources (NYPSC 2016 at 14). Second, to ensure that an increasing amount of RECs are available to LSEs, the CES authorizes the New York State Energy Research and Development Authority (NYSERDA) to procure RECs from renewables (NYPSC 2016 at 16). Renewables sited within New York are eligible to sell RECs regardless of their location within the State (NYPSC 2016 at 106).

The NYPSC's highest projection for the amount of utility-scale solar that would need to be installed to help reach the 50% renewables mandate was approximately 6,900 megawatts (MW) (NYPSC 2016, Appendix G at 17, 19). The NYPSC noted that even if 100% of those projects were sited on New York agricultural lands, only about 0.16% of such lands would be converted to utility-scale solar (NYPSC 2016, Appendix G at 20).

New York State Climate Leadership and Community Protection Act

The CLCPA, signed on July 18, 2019, directed the NYPSC to establish a program requiring that: (a) a minimum of 70% of the statewide electric generation secured by jurisdictional LSEs meet the electrical energy requirements of all end-use customers in NYS with renewable energy systems by 2030; and (b) the statewide electrical generation system produce zero emissions by 2040.

The CLCPA also set a statewide goal "to reduce greenhouse gas emissions from all anthropogenic sources 100% over 1990 levels by the year 2050, with an incremental target of at least a 40 percent reduction in climate pollution by the year 2030."

Following the CLCPA's enactment, the NYS Energy Planning Board amended the SEP on April 8, 2020, to reflect these clean energy and climate targets:

- 70% electricity generation from renewable energy resources by 2030: Renewable energy resources, including solar, wind, and hydropower, will play a vital role in reducing electricity price volatility and curbing greenhouse gas emissions.
- 100% carbon free electricity by 2040: Decarbonizing the electric grid will support greenhouse gas

- (GHG) reductions in the power generation sector directly, as well as facilitate decarbonization of other sources of emissions, like the transportation sector and buildings that will increase reliance on electricity as a primary low- or zero-carbon energy input.
- 40% reduction in GHG emissions by 2030: Reducing GHG emissions by no less than this amount on an economy-wide basis is critical for placing the State on a path toward the 85% emissions reduction goal and signaling to clean energy industries that New York intends to place itself at the forefront of clean energy market growth.
- 85% reduction in GHG emissions by 2050: Reducing GHG emissions by no less than this amount on an economy-wide basis—power generation, industry, buildings, transportation, forestry, and waste—is critical to ensuring society's sustainability and well-being.

Clean Energy Standard 2.0

The NYPSC's 2016 analysis was recently updated to reflect the CLCPA's increased renewables targets (NYPSC 2020). The NYPSC's October 15, 2020 Order Adopting Modification to the Clean Energy Standard ("CES 2.0") established implementing policies to ensure the CLCPA's increased renewables targets are met. In recognition of the need to accelerate deployment of renewable energy resources in the near term, the NYSPSC authorized NYSERDA to solicit a target of 4,500 gigawatt hours (GWh) of Tier 1 renewable electricity annually over the next five (5) years (2021-2025) through annual procurements designed to meet the CLCPA's target of generating 70% of the state's electricity with renewables by 2030. "The commitment to offer a solicitation each year with a target of 4,500 GWh per year would provide sufficient certainty to investors that will allow effective planning and other market-based activities to develop." CES 2.0 at 26. In recognition of the need for annual solicitations that provide market certainty, the NYPSC declined to adopt a minimum or maximum GWh requirements for each solicitation, instead allowing NYSERDA to adjust annual procurement targets based on its annual review of the latest market data and progress towards achieving the CLCPA's targets. *See* CES 2.0, Appendix A (Eligible Tier 1 Resources) and Appendix B (Additional Tier 1 Eligibility Requirements).

While the 2016 analysis assumed that solar facilities require 2 acres per MW, the 2020 analysis increased this assumption to 5 acres per MW (NYPSC 2020 at 5-2). Nevertheless, the 2020 analysis found that increasing the State's renewables mandate from 50% to 70% by 2030 would only see approximately 0.2%–0.5% more of New York's agricultural lands occupied by utility-scale solar facilities (NYPSC 2020 at 5-2). In other words, at most 0.66% of New York's agricultural lands would host utility-scale solar facilities to achieve the 70% by 2030 mandate. Further, the

2020 analysis concluded that, “[g]iven the minor conversion of land compared to available crop and pastureland, project-specific agency guidelines, and restoration following decommissioning, significant adverse impacts on land use and land cover would not be expected from incremental utility-scale solar development” (NYPSC 2020 at 5-2).

Accelerated Renewable Energy Growth and Community Benefit Act

In April 2020, the Legislature adopted the Accelerated Renewable Energy Growth and Community Benefit Act (the “Act”) to further New York’s transition to renewable energy and achieve the CLCPA requirements. The Act, which was adopted as part of the FY2021 Budget Bill, established Section 94-c of the New York State Executive Law and created the Office of Renewable Energy Siting (the “Office”). The Act also set forth a new permitting process for Major Renewable Energy Facilities like the Project. The purpose of the Act is to “dramatically speed up the permitting and construction of renewable energy project, combat climate change, and grow the state’s green economy.” (NYSDOB, 2020). The purpose of the Office is to “undertake a coordinated and timely review of proposed major renewable energy facilities to meet the state’s renewable energy goals while ensuring the protection of the environment and consideration of all pertinent social, economic and environmental factors in the decision to permit such facilities” pursuant to the single forum created by Section 94-c. Exec. Law § 94-c(1). Pursuant to the directives set forth in Section 94-c, the Office promulgated implementing regulations at 19 NYCRR Part 900, which, among other things, establish uniform permit conditions for all solar and wind facilities, as well as a process which aims to build more renewables faster than the prior Article 10 large-scale renewables permitting process.

Regional Greenhouse Gas Initiative

New York State is a member of the Regional Greenhouse Gas Initiative (RGGI), which is a regional marketplace that limits CO_2 emissions through a cap-and-trade program. The direct benefits of CO_2 emissions reductions are realized through the broader regional marketplace that New York participates in through RGGI.

Consistency with State Policies

New York’s energy policies are geared toward increasing the amount of renewable generation generated and consumed in New York State and decarbonizing the energy sector. The State Legislature made this clear with the CLCPA. The Project would represent a major step towards achieving all of the above-stated energy goals. As a solar photovoltaic generation plant with an

expected maximum potential generating capacity of 60 MW, the Project's output would assist NYS in achieving the 70% renewables by 2030 and meeting the 100% carbon free electricity by 2040 targets required by the CLCPA. Because this clean, renewable energy will displace more carbon-intensive electricity sources in the power sector, it will also help NYS towards its economy-wide greenhouse gas reduction targets of 40% by 2030 and at least 85% by 2050. Because other sectors of the NYS economy such as transportation and buildings will rely on electrification to decarbonize, the Project's contribution to a zero-emission grid will have positive environmental effects in those sectors as well. The Project is consistent with the CES's goal of reducing total emissions of air pollutants that result from fossil fuel generation, and RGGI's goal of reducing CO_2 emissions. The Project will reduce reliance on fossil fuels, offsetting 85,745 tons of carbon dioxide emissions, equivalent to taking 18,205 passenger cars off the road for a year[1]. Further, the Project is consistent with the SEP's Guiding Principles. The Project will help transform New York's energy market by moving it further from fossil fuels to a more diverse, renewables-based market. As discussed in detail in Exhibit 2, the Applicant has and will continue to engage with the local community. The Applicant is a private entity and is making a significant private investment to develop the Project. The Project will also employ efficient, state-of-the-art solar technology.

17(b) Impact on Reliability

The Project will improve system reliability in furtherance of the SEP. The SEP stressed the need to install new technology to replace New York State's aging generation fleet to make the grid more reliable and resilient, and the Project will assist in that regard (SEP at 34–35). The SEP explained that "promoting the development of clean, local energy resources" will "strengthen and improve the reliability of the grid" (SEP at 36).

The results of the System Reliability Impact Study (SRIS) concluded that the Project will not adversely impact the reliability of the New York State Transmission System. Numerous analyses were performed for the SRIS, which are discussed in more detail in Exhibit 5. The SRIS is included in the Application as Appendix 21-1, but is being submitted under trade secret and confidential commercial information protection as it contains critical infrastructure information.

[1] The U.S. EPA estimates that 0.82 metric tons of CO2/acre/year is sequestered annually by one acre of average U.S. forest. *See* epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references.

Additionally, the CLCPA calls for large swaths of the NYS economy to undergo beneficial electrification, and the addition of the Project's 60 MW of solar energy capacity will give the grid operator more options to meet that increased demand. By increasing the diversity of the NYS energy resource mix, the Project is likewise increasing the capability of NYS to confront risks that pertain to a single generator or a group of generators with a correlated risk factor.

17(c) Impact on Fuel Diversity

The Project will increase fuel diversity within New York State by increasing the amount of electricity produced by solar generation facilities. The New York electric utility system relies on supply from numerous fuel sources, including natural gas, hydroelectric, nuclear, wind, oil, and solar, as well as interconnections with its neighbors and demand-response resources. Renewables other than hydro and wind (e.g., solar), however, currently only represent 351 MW of New York's 38,670 MW (less than 1%) of total summer installed capacity (New York Independent System Operator [NYISO] 2021 at 71), and solar itself represents only 32 MW (NYISO 2021 at 100). Renewable resources, such as hydro, wind, and solar energy, have no fuel costs and are selected in wholesale market auctions to operate more frequently than older and less efficient fossil units (NYISO 2019 at 25). Additionally, the Project is expected to displace energy production from fossil fuel facilities; this displacement promotes the targets of the CLCPA, CES, SEP, and other related NYS policies that encourage the development of more renewable energy generation.

17(d) Impact on Regional Capacity Requirements

The Project's addition of renewable generation capacity to the region will positively affect the regional requirements for capacity. Due to its size, the Project likely will be able to provide meaningful capacity, reducing such costs for electricity customers in the region. The peak demand hour in New York Control Area's Summer Coincident Peak varies from year to year but typically occurs in the late afternoon when the Project is expected to be generating electricity (NYISO 2020). Exhibit 21 and the SRIS report (Appendix 21-1) detail how the Project's capacity can be accommodated in the regional system.

17(e) Impact on Electric Transmission Restraints

The Project will not result in new electric transmission constraints. In the SRIS, the NYISO did not identify any additional or new electric transmission system constraints that would be created by

the Project. Exhibit 21 discusses the Project's effect on transfer capacity across affected interfaces.

17(f) Analysis of Reasonable and Available Alternative Locations

There are no other reasonable and available alternative locations for the Project that reflect the objectives and abilities of the Applicant. The Applicant is a private entity that lacks the power of eminent domain. Therefore, the locations available and that may be reasonably considered for the Project are limited to those which the Applicant or its affiliates have control. Hecate does not have control of any locations other than the Project Area. Its affiliates control various sites in New York; however, all such sites are already slated for solar and energy storage development. Further, the Project, as proposed at the Project Area, was selected by the New York State Energy Research and Development Authority (NYSERDA) to enter into an agreement to sell renewable energy credits as a result of its 2017 solicitation of utility-scale renewable energy projects as part of the NYPSC's and NYSERDA's efforts to achieve the State's renewable energy targets discussed above.

The selection of utility-scale solar locations is driven by many essential technical, economic, and operational factors. The Applicant selected the Project Area based on the following primary factors:

- Availability of the solar resource – the Project Area was identified as having a strong solar energy potential.
- Available and compatible land from willing landowners – the Applicant was able to secure the rights to the Project Area from willing landowners, and the Project Area has sufficient acreage of suitable land for development of a 60 MW solar facility.
- Land Use – the Project Area was identified as consisting largely of agricultural land, suitable for a solar facility. See Exhibit 15: *Agricultural Resources* of this Application for details.
- Evaluation of Preliminary Site Constraints – the Applicant evaluated preliminary constraints at the Project Area and determined that the Project Area was suitable for development of a solar facility.
- Capacity and local point of interconnection to the existing transmission grid – The Project Point of Interconnection (POI) to New York State's electric grid will consist of one

substation located in the northern portion of the Project Area, directly adjacent to the existing Craryville substation, which is owned and operated by New York State Electric and Gas (NYSEG).

- Relative ease of access to the Project Area – the Project Area is easily accessible from Two Town Road, NY-23, and County Routes 7 and 7a. In addition, the parcels that make up the Project Area are in relative proximity to one another, allowing for sharing of access roads, limiting the need for off-site features and additional impervious surfaces, and consolidating potential Project impacts to a more defined area.
- Sufficient available capacity on the grid – the Project's SRIS indicates that the existing 115 kilovolt transmission line has the available capacity required to support the Project.

The Project layout within the Project Area has been refined extensively based on input from stakeholders and the results of key resource studies and environmental impact assessments. Throughout the design process, Hecate continually reduced the size of the Project in an effort to meet the Town's 20% and 10% lot coverage requirements, as more fully described in Exhibit 24. Changes during the design process resulted in a reduction from an original proposed Project component footprint of 480 acres to the current proposed size of approximately 265 acres, essentially reducing the size by half. Project components were sited to avoid forested areas to the maximum extent practicable, while also considering other sensitive resources (e.g., wetlands, cultural, visual), in an effort to comply with the Town's 10% woodland clearing limitation. No Project components are sited within wetlands and streams will be crossed using horizontal directional drilling to avoid impacts thereto. All potential Project impacts will be avoided or minimized as described in this Application and enforced through the Project's permit conditions.

Additionally, Project lines and wiring will be located underground except at the limited point where the collection system will interconnect. Glare impacts are not anticipated, and a glare analysis has been conducted so that unanticipated glare impacts can be avoided or minimized to the maximum extent practicable. See Appendix 8-2: Glare Analysis of Exhibit 8: *Visual Impacts* of this Application for a copy of this analysis and results. The only Project components that may remain after decommissioning are subsurface wires buried at a sufficient depth, in conformance with the Department of Agriculture and Markets solar guidelines.

During Project design, Hecate avoided or minimized impacts to aquatic resources, ecological resources (including wildlife, wildlife habitat, and sensitive ecological communities), and cultural resources resulting from construction, operation, and maintenance to the maximum extent

practicable. Hecate identified additional measures to further avoid, minimize, and mitigate potential impacts as further described in the following exhibits of this Application:

- Exhibit 11: *Terrestrial Ecology* (impacts to terrestrial ecological/vegetative communities);
- Exhibit 12: *NYS Threatened or Endangered Species* (impacts to threatened and endangered species);
- Exhibits 13: *Water Resources and Aquatic Ecology* and 14: *Wetlands* (impacts to surface water and groundwater, aquatic resources and wetland communities);
- Exhibits 8: *Visual Impacts* and,
- 9: *Cultural Resources* (impacts to cultural and aesthetic resources).

17(g) Public Health and Welfare, Climate Change

The Project will promote public health and welfare, including minimizing the public health and environmental impacts related to climate change. As discussed above, the Project will generate electricity without emissions and reduce reliance on fossil fuel generation that produces emissions that negatively affect the health of nearby residents and contribute to climate change. The Project's solar photovoltaic technology produces no GHGs nor local pollutants such as NOx, SOx, and particulate matter. By replacing other generation sources that produce significant pollution that harms New Yorkers, the Project promotes public health and welfare. As discussed in Exhibit 6: Public Health, Safety and Security of this Application, the Project will reduce carbon and other emissions associated with energy generation, thereby minimizing the public health and environmental impacts related to climate change.

In addition, the placement of Project components has been researched, reviewed and scrutinized in the development and engineering process to avoid and/or minimize negative impacts to the maximum extent practicable and to incorporate extensive siting considerations including (but not limited to) landowner requests, solar resource, constructability, and avoidance (or minimization) of impacts to wetlands, streams, state-listed species, and agricultural land.

The Project location, design, technology, scale, and timing each take into consideration and promote public health and welfare as well as impacts related to climate change. The Applicant has aimed to balance the goals of the State and the Project with the goals of the community and the local landowners. Careful consideration was given to impacts potentially affecting known onsite resources, and time and attention was dedicated to minimizing negative impacts and maximizing positive benefits, to ultimately to arrive at a Project that is best suited for this area, for

this community, and for the State of New York. The CLCPA establishes an ambitious set of objectives that are necessary to reduce GHG emissions, combat climate change, and improve NYS public health and welfare. In furthering those objectives, as discussed in Section 17(a), the Project will, as a matter of state law, be contributing to public health and welfare.

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