



South Ripley
SOLAR PROJECT

ConnectGen Chautauqua County LLC

South Ripley Solar Project

Matter No. 21-00750

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Supplement

Consistency with Energy Planning Objectives

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EXHIBIT 17 CONSISTENCY WITH ENERGY PLANNING OBJECTIVES

(a) Consistency with New York State Energy Policies

The Section 94-c regulations require an analysis of the Project's consistency with New York State energy policies, including Climate Leadership and Community Protection Act (CLCPA) targets and long-range energy planning objectives and strategies contained in the most recent State Energy Plan (SEP) at the time of filing. As demonstrated below, the South Ripley Solar Facility (the Facility) will be a beneficial addition to the State's electric generation capacity and advance important objectives of the CLCPA, the 2015 New York SEP,¹ the Reforming the Energy Vision (REV) initiative, the Clean Energy Standard (CES), and other important state policies.

(1) Overview of State Energy Policies and Plans

Climate Leadership and Community Protection Act

In June 2019, New York passed some of the most ambitious climate protection legislation in the country, the CLCPA, which is designed to combat climate change and set the state on a path to reach 100% zero-emission electricity generation by 2040 (CLCPA, 2019) and 85% reduction in greenhouse gas (GHG) emissions by 2050. With the passage of the CLCPA, the New York State legislature has made it clear that New York's energy policy is focused on increased renewable energy generation in the State. The CLCPA requires that all state agencies consider whether their decisions regarding permits, licenses and other approvals are inconsistent with or interfere with achieving the CLCPA's statewide GHG limits and, if so, identify alternatives or GHG mitigation to be required. In addition, the State's last coal-burning plant officially shut down in April 2020,² and the CLCPA requires the elimination of all fossil fuel-fired power plants in New York by 2040. The State has set aggressive renewable energy generation goals and achieving these goals will require the deployment of thousands of megawatts of new utility-scale wind and solar generation to help transition New York to a zero-emission energy portfolio.

New York State relies on a suite of public policy planning tools to guide State actions and initiatives in the energy field and to meet renewable energy generation and GHG emissions reductions targets. These tools and targets will continue to evolve as the State transitions to a net-zero emissions future under the CLCPA. The CLCPA created the Climate Action Council which over the next year will prepare a Scoping Plan to achieve the State's bold clean energy and climate agenda. The Scoping Plan must evaluate technology and policy pathways across all sectors of the economy, including the energy sector, in order to identify the actions New York can take to meet the stated CLCPA goals. The final Scoping Plan, as well as required updates over time, will inform future policies

¹ As amended on April 8, 2020.

² <https://news.wbfo.org/post/somerset-power-plant-shuts-down-idling-52-workers>

and programming, including future State Energy Plans. Until the final Scoping Plan is issued, the State's energy goals, and policy are still guided by the SEP and CES, and other important state policies.

State Energy Plan

New York State Energy Law §6-104 requires the New York State Energy Planning Board (NYSEPB) to adopt a SEP at minimum every 10 years. Among other things, the SEP accomplishes the following: forecasts New York State energy supply and demand and the State's ability to satisfy that demand; projects GHG emissions; identifies and assesses energy supply source alternatives and emerging trends relating to energy supply, price, and demand; assesses current energy policies and programs and their contributions to achieving long-range energy planning objectives; analyzes energy security issues; and assesses the impacts of plan implementation on economic development, health, safety and welfare, environmental quality, and consumer energy costs. Under NY Energy Law §6-102(5), these efforts must be guided by the following objectives: "improving the reliability of the state's energy systems; insulating consumers from volatility in market prices; reducing the overall cost of energy in the state; and minimizing public health and environmental impacts, in particular, environmental impacts related to climate change."

The NYSEPB issued the most recent SEP in 2015. As discussed in greater detail below, the 2015 SEP sets forth a broad range of goals for New York's energy system, from attracting private investment in New York's energy sector and encouraging competition and innovation within the energy markets, to decarbonizing New York State's economy and putting the Empire State at the forefront in the battle against climate change, with the stated goal of reducing statewide GHG emissions 40% by 2030. Again, these goals have been accelerated by the CLCPA which calls for 100% generation of electricity from renewable energy sources by 2040. On April 8, 2020, the SEP was amended by the NYSEPB to incorporate the CLCPA goals and now incorporates the CLCPA targets including:

- 85% reduction in GHG emissions by 2050
- 40% reduction in GHG emissions by 2030
- 100% carbon free electricity by 2040
- 70% electricity generation from renewable energy resources by 2030

Reforming the Energy Vision Initiative

Launched in 2014, the REV represents a broad effort by the Governor, the NYSPSC, the New York State Energy Research and Development Authority (NYSERDA), and others to identify regulatory, infrastructure, and market-based barriers to SEP's goals. REV also proposes reforms that better align the State's regulatory schemes, utility

tariffs, energy markets, incentive programs, procurement strategies, and allocation of resources with the goals of the SEP. Additional goals include:

- Making energy more affordable for all New Yorkers
- Building a more resilient energy system
- Empowering New Yorkers to make more informed energy choices
- Creating new jobs and business opportunities
- Improving existing initiatives and infrastructure
- Cutting GHG emissions 80% by 2050
- Protecting New York's natural resources
- Helping clean energy innovation grow.

Clean Energy Standard

In August 2016, the NYSPSC adopted the Clean Energy Standard (CES) to ensure, among other things, that the SEP and REV goal of reaching 50% renewable energy consumption in New York by 2030 is achieved. The CES imposes mandatory renewable procurement requirements on the State's electric utilities; establishes a system and market for awarding Renewable Energy Credits (RECs) and Zero-Emissions Credits (ZECs) to those injecting renewable or carbon-free power into the New York grid; directs certain changes to the ways in which New Yorkers are permitted to purchase or generate their own energy; and adopts a number of measures designed to send market signals to encourage investment by renewable developers and others in the State's energy sector with the goal of "transform[ing] the electric system" (PSC, 2016, p. 70). "The chief focus of the CES initiative is on building new renewable resource power generation facilities" (PSC, 2016, p. 78).

(2) General Consistency with State Policies

The aforementioned planning documents and policies, which are interrelated and interdependent, are collectively meant to spur progress toward diverting New York away from the fossil fuel-based utility market and toward a cleaner, greener, cheaper, more diverse, more flexible, and more reliable market-based renewable energy future. The Applicant draws on significant, historic experience supporting the development of New York State's current renewable energy economy and seeks to leverage its extensive renewable energy development experience and capabilities to support the continued transformation of New York's future energy sector consistent with the goals of the CLCPA, SEP and CES. Through the proposed Facility, the Applicant seeks to contribute to New York State's growing green economy and to play a role in the State's high-tech, renewable energy future.

As discussed below, the proposed Facility is consistent with State policies that encourage the development of renewable energy projects, seek solutions to fight climate change, and emphasize the need to transition New York's energy markets away from a reliance on fossil fuels for electricity generation. The proposed Facility will play a key role in advancing this market transformation and signify the responsiveness of the private sector to the State's articulated goals and promised reforms by adding up to 270 megawatts (MW) of clean, green, New York-based renewable power into the grid. The Facility thus will aid in advancing the CLCPA goals, including increasing renewable energy generation to 70% by 2030 and 100% carbon-free electricity by 2040. The Facility also will protect New York's natural resources, help grow clean energy innovation, and create new jobs and business opportunities.

Increasing Renewable Energy Generation

A core initiative in the CLCPA and SEP is the siting of new renewable energy generation. The 2015 SEP plan notes that "conversations about the energy system of tomorrow often start with renewable energy production, and renewable resources will indeed play a critical role in shaping New York's energy future, providing resilient power, reducing fuel cost volatility, and lowering GHG emissions" (NYSEPB, 2015, p. 69). Not only does the SEP envision continued public investment in renewables—such as through existing or new financing programs or NYSEBDA solicitations—it ultimately aims to enact regulatory reforms that increase the competitiveness of renewable energy within the market, attracting companies willing to invest private dollars in New York because it makes financial sense to do so (NYSEPB, 2015, pp. 71-72).

Aggressive pursuit of renewable generation also positions New York as a model among states in the region and across the country. As the REV proceeding has repeatedly emphasized, "New York has been at the forefront of energy leadership and innovation since the earliest days of the system," and, through REV, New York intends to lead "the transition to a clean energy economy" (DPS, 2016a, p. 1). While acknowledging that small-scale renewable distributed generation sources "are a major focus of the REV strategy," the SEP emphasizes that "central generation and transmission will continue to serve as the backbone of [the State's] power grid" (NYSEPB, 2015, p. 70). Accordingly, the SEP emphasizes the need to encourage additional "large-scale renewables" (LSRs) in New York (NYSEPB, 2015, pp. 70-72). The immediate benefits of LSRs identified include economic development and jobs, greater stability in customer bills, and cleaner air (NYSEPB, 2015, p. 71). Additional direct and indirect benefits include increased property tax revenues, growth of related industries and service-based businesses, investments in modernized infrastructure, and job creation and innovation in related fields, such as training programs, manufacturing, and other new opportunities in the green energy sector. Like the SEP, the CES will rely primarily on LSRs to achieve goals relating to energy production from renewable sources.

The New York State Department of Public Service (DPS) staff and NYSERDA estimates that a total of 106,174 Gigawatt hours (GWh) of annual generation from renewable energy must be operating by 2030 to meet the State's goal of 70% by 2030. As of June 2020, approximately 63,000 GWh are already in operation or under contract and 17,868 GWh/year is estimated to be added by offshore wind energy, yielding an estimated balance of 24,990 GWh/year that must be realized through other RES programs (NYSERDA and NYSERDA, 2020).

In March 2020, NYSERDA awarded the South Ripley Solar Project a long-term contract for the purchase of all RECs produced by the Project through NYSERDA's 2019 solicitation for large-scale renewables. The development, construction and operation of the Project is critical to meeting both the Applicant's specific commitments under the CES and the broader renewable energy production and GHG reduction goals of the SEP and CLCPA. The Facility has the potential to diversify the energy sector in New York and make a critical contribution toward meeting these goals. As proposed, the Facility is expected to be constructed and operational by the end of 2023, which will help support achievement of shorter-term incremental renewable capacity targets. Contributions from land-based energy projects will be particularly important in the short term because the development of new large-scale hydropower dams or nuclear facilities is unlikely (PSC, 2016a, pp. 5-48 to 5-49)³ and incremental contributions from these technologies and others such as anaerobic digesters⁴ or biomass⁵ will not be available on a large enough scale. In addition, while there are currently five offshore wind projects in active development, only one project (i.e., Long Island South Fork Wind Farm) is expected to be operational by 2023 (NYSERDA, 2020). While energy efficiency and other behind-the-meter investments will aid in advancing the goals of the CES, ultimately the incremental renewable targets will be met largely through the addition of new LSRs (DPS, 2016, at Appendix 17-B) such as the South Ripley Solar Facility.

Market Animation, Competition, and Innovation

Contemporary State energy policies and initiatives amount to far more than a blueprint for renewable energy procurement designed to increase renewable energy usage by New York consumers. Collectively, they represent efforts to transform and animate regional energy markets, diversify energy supplies, overhaul regulations, and

³ The FSEIS points out that future hydroelectric development in New York will likely be limited to upgrades of existing dams to increase their capacity and/or efficiency, and the conversion of non-powered dams into energy-producing dams. The estimated maximum cumulative energy potential of additional hydropower is 240 MW (PSC, 2016a, pp. 5-48 to 5-49). Further, the CES does not allow any new storage impoundment for hydroelectric facilities, which limits the capacity of any new hydroelectric facilities which might be proposed (PSC, 2016, pp. 30, 106 and Appendix A).

⁴ The FSEIS estimates that approximately 53 to 54 MW of new anaerobic digester-based generation at wastewater treatment plants, particularly in the New York City area, and between 40 and 80 MW of new anaerobic digester-based generation on farms, especially dairy farms, could be available as a result of the CES and investments in the Clean Energy Fund (PSC, 2016a, pp. 5-55 to 5-56). Thus, the total estimated potential contribution from anaerobic digestion across the State is between 93 and 134 MW—less than half the size of the proposed Facility (PSC, 2016, Appendix G, pp. 36-38).

⁵ Eligible biomass projects must be sustainably harvested to qualify as renewables in New York, but they nevertheless raise concerns about air emissions, including GHGs, and potential public health problems. The CES did not set forth an estimate of how much incremental renewable capacity could be derived from biomass projects, either on the small or utility scale (PSC, 2016, Appendix G pp. 38-43).

invest in the future of New York State and its communities. Two of the guiding principles of the REV initiative's targeted actions are market transformation and private sector investment, both of which are advanced by the entry of projects like the Facility into the State's energy market.

The CES reiterates REV's guiding principles by setting as one of its primary goals encouraging fundamental changes in the State's energy markets to stimulate private sector investment and activity, increase competition, and send market signals that attract investment in New York's energy system (PSC, 2016, pp. 3-9). In particular, the CES Order stresses the need to encourage production of new, clean generation regardless of how and where that energy will ultimately be sold (PSC, 2016, pp. 69-70). In fact, the CES recognizes that procurement of renewable energy for use in New York is only part of the story. The portion of the REV addressing LSR, in part, was meant to be a "reassessment of New York's approach for encouraging the expansion of large-scale renewable energy generation" within the State (PSC, 2016, pp. 21-22). The goal of REV/CES is to develop "large-scale, self-sustaining, private sector-driven clean energy markets" able to drive further investments on their own (DPS, 2016a, pp. 4-5).

New York's State Energy Law § 6-102(5) specifically requires the State take steps to "reduce the overall cost of energy in the state." To that end, both the REV and SEP stress the need to move toward a market-based future where participants see the right price signals and decide to invest private capital into the system without the need for direct governmental or utility procurement of generation, thus increasing competition, building a dynamic energy market, driving efficiencies and, ultimately, reducing costs. "Enabl[ing] private capital investment to drive self-sustaining independent clean energy markets" will allow New York State to "deliver true scale to the clean energy sector, which in turn is an essential component for meaningful economic development" (NYSEPB, 2015, p 52). As NYSERDA states:

in-state renewable energy investments help keep New Yorkers' money in the State, fueling economic growth and the creation of . . . jobs. . . . It is critical to note that generation displaced by the operation of new renewable energy facilities is the most expensive generation, which sets the prices for the entire market. By displacing this generation, the wholesale electricity price paid by in-state ratepayers is reduced. (NYSERDA, 2013, pp. S-5)

The price of RECs will be determined by the market. This will encourage consistency and competition in the price of RECs among renewable developers—in theory, driving down the costs and opening up competition to a broader pool of projects across the region. Greater competition among all types of project developers and owners will likely result in lower-cost projects, reducing electric rates for residents, businesses and industries, and freeing up capital for other purposes. Ultimately, the intention of the REV and CES is to drive additional capital investment in New York and participation in New York's energy market—precisely what the Applicant seeks to do in proposing the Facility.

The proposed Facility will contribute to New York State's position as a leader in clean energy technology, innovation, and production, while helping to reduce costs and stimulate the markets to drive further private investments. Consistent with the market-based vision of the SEP, REV, and CES, renewable developers like the Applicant will be provided an incentive to pursue efficient, reliable, and cost-effective projects that can perform well in a market setting in order to earn a reasonable rate of return. In designing the Facility, the Applicant will have significant incentives to innovate, draw on the latest technology and advancements in infrastructure and project design, and carefully explore the quality of the solar resource to develop the most marketable proposal. An environment which promotes such innovation by the private sector also will be ripe for secondary economic and intellectual development in New York, as related businesses, service industries, vocational programs, and research institutions are drawn here, and existing industries and tech firms are provided with new market opportunities, jobs for skilled workers, and a pool of market participants eager to invest in future advances.

Adding to the State's Generation Capacity

The Applicant currently plans to sell the power generated by the Facility into the State's competitive wholesale market. Not only will the Facility provide additional renewable power for possible consumption by New Yorkers, the Facility will contribute renewable capacity to the growing competitive electricity market in New York, displace more expensive and less efficient units, reduce the amount of power the State needs to import to meet its needs, increase reliability by providing additional generation capacity which the NYISO can draw on in order to address congestion or ramp down other units, diversify the State's energy supply to reduce overdependence on natural gas generation, and provide the State with additional capacity that does not depend on imported fuels subject to price volatility and disruptions in supply, as discussed further below.

Fuel Diversity, Resiliency and Reliability

Another important SEP core initiative and REV goal is building a more sustainable, modern, and resilient energy system—one that can respond to rapidly changing weather and consumption patterns, recover quickly from problems, and does not depend excessively on a single fuel source to fulfill all of its needs. New York's energy supply system suffers from "an over-dependency on natural gas" which can create significant financial and other problems for customers during cold weather events or other times of natural gas price volatility (PSC, 2016, pp. 76). Additions to the State's—and region's—renewable capacity diversifies fuel sources, increases grid reliability and resiliency, and supports the modernization of grid infrastructure (PSC, 2016, pp. 76-77). This advances the State energy planning objectives of "improving the reliability of the state's energy systems, insulating customers from volatility in market prices" and "reducing the overall cost of energy in the state", as outlined in NY Energy Law § 6-102(5).

As discussed in greater detail in Section (c) below, the Facility is consistent with New York’s policy of increasing fuel diversity. Currently, approximately 73% of the State’s electricity is generated by fossil fuel or nuclear generating facilities. The Facility will add up to 270 MW of solar energy generation to the State’s generation capacity and so contribute to diversification of the State’s energy resources.

As a generation facility that does not rely on fuels which must be sourced and delivered from other parts of the country or the world, the Facility has the ability to generate energy consistently and unencumbered by transportation problems, extraction-related complications or delays, or political unrest in foreign countries—all potential issues for traditional fossil fuel facilities which rely on price-volatile commodities sourced from outside New York. This improves system resiliency and allows the State to recover more quickly from significant disruptions to the grid, such as large storms or other incidents. As noted in the SEP, siting facilities throughout the State that are capable of rapid recovery during periods of disruption allows those facilities to operate independently of the central grid until the rest of the system is able to recover.

While the CLPCA and SEP are attracting new renewable energy generation facilities to connect to the grid, other state goals and policies are requiring existing power plants to implement facility upgrades or deactivate in response to facility conditions or economic, resource availability, and transmission constraints. For example, New York is involved in the Regional Greenhouse Gas Initiative (RGGI) aimed at reducing the carbon dioxide emissions cap by 30% from 2020 to 2030 which applies to fossil fuel generators 15 MW and above. Additionally, in an effort to reduce NOx emissions from peaking generation units⁶, NYSDEC’s recent “Peaker Rule” phases in compliance obligations between 2023 and 2025 that requires generation owners to consider plant retrofits, replacements, or deactivations (NYISO, 2021). As such, New York’s power system has experienced a pattern of expansion and contraction as facilities are in and out of service. Since 2000, approximately 13,000 MW of new generation capacity have been added to New York’s electric system, including new power plants and upgrades to existing power plants, while approximately 11,000 MW have retired or suspended operation (NYISO, 2021a).

Projects like the Facility represent a significant opportunity to deploy new technology in an otherwise rapidly aging and often outdated energy system. As noted in the SEP, “promoting the development of clean, local energy resources” will “strengthen and improve the reliability of the grid” (NYSEPB, 2015, pp. 36). In an emergency, the

⁶ Per 6 NYCRR Subpart 227-3, peaking power plants, or “peakers”, include simple cycle and regenerative combustion turbines that generally run when there is high demand for electricity. Many peaking units in New York State are nearly 50 years old, inefficiently ran, and are known to emit high levels of nitrogen oxides (NOx) or smog producing pollutants.

availability of local solar energy may offer opportunities to restore power to the community until connections to the central generation grid are reestablished.

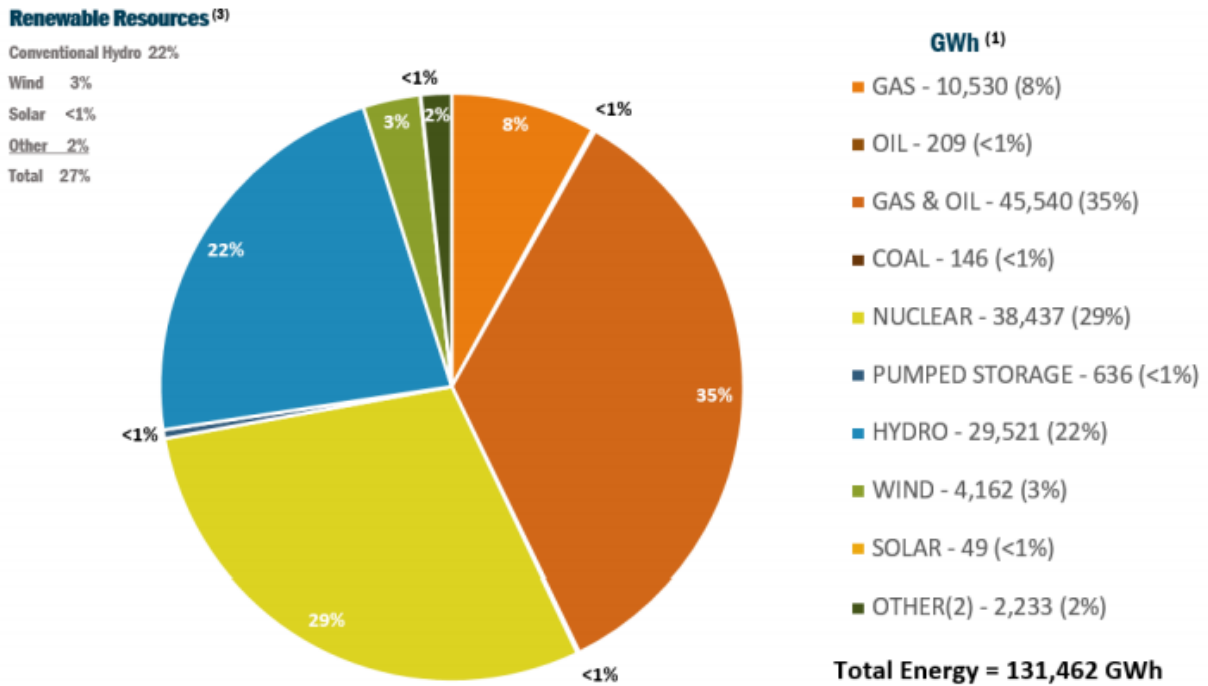
(b) Impact on Reliability

A System Reliability Impact Study (SRIS) has been completed for the Facility. No adverse impact on reliability is anticipated as a result of the Facility. The SRIS found that the Facility does not result in any degradation of system reliability or noncompliance with the North American Electric Reliability Corporation (NERC), Northeast Power Coordinating Council (NPCC), or New York State Reliability Council (NYSRC) reliability standards. See Exhibit 21 for a discussion of system reliability issues.

(c) Impact on Fuel Diversity

The proposed Facility will improve fuel diversity within the State by increasing the amount of electricity produced by non-fuel dependent solar power. According to the NYISO, “[m]aintaining and improving fuel diversity in New York will lead to less volatile electric prices, improved reliability, and positive environmental impacts” (NYISO, 2008). In the last decade, New York’s generating capability from power plants using coal and oil has declined while the generating capacity of natural gas has grown (NYISO, 2020). Likewise, alternative forms of electric generation such as solar, hydro, wind, and other renewables have grown in the last decade and are becoming increasingly important to maintain fuel diversity. The following graphic (Figure III-3 in the NYISO’s 2021 Load and Capacity Report Report) depicts the statewide electric energy production by fuel type in New York in 2020 (NYISO, 2021b).

Figure III-3: 2020 NYCA Energy Production by Fuel Type



(1) All values are rounded to the nearest whole GWh. Total may not match due to rounding.
 (2) Includes Methane, Refuse & Wood.
 (3) Renewable Resources do not necessarily match the NYS Clean Energy Standard (CES) definition.

Despite increased development in renewable energy facilities over the past decade, currently solar energy comprises less than 1% of the total generating capacity in New York State. Development of the Facility would add 270 MW to the existing renewable sector, and an additional 20 MW in storage, helping to diversify New York’s energy economy and ease New York’s overdependence on natural gas and other polluting fossil fuels.

(d) Impact on Regional Requirements for Capacity

Since 2000, private power producers and public power authorities have added more than 13,969 MW of new generating capacity in New York State. This additional generation represents more than 35 percent of New York’s current generating capacity. The regional capacity requirements of New York’s wholesale electricity markets and location-based pricing encourages investment in areas where the demand for electricity is highest. Accordingly, over 80 percent of that new generation is located in the eastern and southern regions of New York, where power demand is greatest (NYISO, 2020). Other additions to New York’s power-producing resources resulted from upgrades to existing power plants or the interconnection of new renewable resources sited in upstate regions based on physical factors such as the suitability of solar conditions for energy production.

The Facility's addition of renewable generation capacity within the region will not adversely affect regional requirements for capacity. Operation of the Facility will allow for the replacement of fossil fuel use with (renewable) solar energy, thereby promoting goals identified in the SEP. In addition, the Project is expected to provide meaningful capacity which could result in 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).

A System Reliability Impact Study (SRIS) was completed for the Facility and is included as Appendix 21-A to this Application, but will be filed separately under confidential cover, as NYISO requires the SRIS to remain confidential due to Critical Energy Infrastructure Information Regulations. The SRIS Study results indicate that the Facility has no significant adverse impact on the reliability of the New York State Transmission System. Exhibit 21 of this Application describes the results of the SRIS study in more detail and how the Facility will impact regional electricity and capacity demands.

(e) Impact on Electric Transmission Constraints

As noted elsewhere herein, locational requirements dictate placement of renewable resources and, as such, much of the State's renewable power is and will be provided by projects located in the western and northern portion of the State, with the southeastern region remaining host to power plants fueled primarily by natural gas. According to NYISO, three main issues must be addressed with respect to system reliability before SEP and CES goals can be achieved: (1) additional transmission capability necessary to reliably transport energy from renewable resources developed in remote areas, mainly western and northern New York, to New York's southeast load centers, (2) additional energy and ancillary service requirements necessary to maintain system reliability with the level of intermittent resource penetration required by the CES, and (3) the State's resource adequacy requirements resulting from the significant additional intermittent resource penetration required by the CES (NYISO, 2017).

Therefore, achieving New York's public policy objectives will require additional transmission capacity to deliver renewable resources to the bulk electric grid. Much of the renewable power is provided by hydroelectric projects and wind farms located in western and northern localities, while the southeastern region hosts power plants fueled primarily by natural gas. Therefore, most of New York's existing and proposed renewable generation is located in Upstate New York (i.e., NYISO Zones A-F) and most of the demand (consumers of energy) is downstate (NYISO Zones F-K). The increase of renewables and geographic distribution of energy resources are expected to dramatically change power flows. Taking full advantage of statewide fuel diversity will require upgrades and enhancements of the transmission system (NYISO, 2020). These transmission enhancements will help move energy from upstate regions with a surplus

of generating capacity to more populous areas with higher power demands, such as the Hudson Valley, New York City, and Long Island (NYISO, 2020).

The Facility is located in NYISO Zone A which, according to NYISO's 2019 Congestion Assessment and Resource Integration Study, includes constrained transmission pockets, primarily of 115kV in the Buffalo and Rochester areas. However, these transmission constraints will continue to exist regardless of whether or not the Facility is constructed and, at this time, the Facility will not result in new electric transmission system constraints and current infrastructure with substation upgrades constructed prior to project operation has been shown to be sufficient to allow addition of the Facility, as discussed in Exhibit 21.

Looking to the future, several solutions have already been initiated and more have been proposed to address these congestion problems (NYISO, 2020). For instance:

- NYISO is encouraging the utilization of Energy Storage Resources (ESRs), which include batteries, flywheels, pumped storage, and compressed air storage. ESRs have unique capabilities that can help grid operators meet demand, manage the variability of intermittent resources, and potentially defer transmission upgrades.
- Under the NYISO's public policy transmission planning process, interested entities propose, and the PSC identifies, transmission needs driven by public policy requirements. In response to a declared public policy need, the NYISO requests that interested entities submit proposed solutions and evaluates the viability and sufficiency of those proposed solutions to satisfy each identified need. Following NYISO staff ranking of proposed solutions, the NYISO Board may select the more efficient or cost-effective transmission solution to each identified need. Below are two of the selected projects:
 - In October 2017, a proposal from NextEra was selected to address the public policy need for new transmission in Western New York, which is planned to enter into service by June 2022.
 - In April 2019, a proposal was selected to relieve congestion on the Central East (Segment A) and the interfaces between upstate and southeastern New York (Segment B), which run from central New York, through the Capital Region, to the lower Hudson Valley. These projects will add significant transfer capability to deliver renewable resources from upstate to meet the power needs of downstate New York and are planned to enter into service by December 2023.
 - Pursuant to the NYPSC's Order issued October 15, 2020, NYSERDA recently issued a solicitation for eligible Tier 4 transmission projects to increase the penetration of renewable energy into New York City (NYISO Zone J), which is particularly dependent on polluting fossil fuel-fired generation.

Any progress realized through the above efforts will only enhance the benefits of the Facility to the electric system.

(f) Comparison of Advantages and Disadvantages of Proposed and Alternative Locations

Given the unique nature and constraints associated with the siting of solar-powered electric generation facilities, no reasonable alternative locations have been identified for the Facility. As a part of Facility Site selection, preliminary assessments of specific criteria were undertaken to consider suitability of the Facility Site for solar development. Criteria include: (1) available transmission capacity for electrical interconnection; (2) solar energy potential; and (3) compatible land use and willing landowners. There are no other reasonable and available locations for the Facility, given the land permissions available, transmission capacity in the region, and objectives of the Applicant. The Applicant does not have the power to exercise eminent domain, and thus is constrained to property on which it was able to negotiate site control agreements. Furthermore, in 2020 the Facility was awarded a contract with NYSERDA to sell Tier 1 renewable energy credits as a part of its 2019 large-scale renewable energy standard solicitation. The selection of the Facility was driven by both technical and economic factors, including availability of the solar resource, willing landowners, and grid accessibility.

(g) Why the Proposed Location and Source Best Promotes Public Health and Welfare

According to the NYSPSC, “[f]or New York, the need and ability to take steps to combat climate change is immediate.” (PSC, 2016). “Climate change will cause not only sea level rise, heat waves, and extreme weather events, but also threatens massive economic and lifestyle disruption from damage to agriculture, water resources, public health, energy and communication systems, and the natural ecosystems that define and support communities” (PSC, 2016, pp. 4). Electricity generated from zero-emission solar energy facilities like the proposed Facility will assist in combating climate change and have a positive impact on public health and welfare by producing enough electricity to power 60,000 households and displacing the electricity generated from conventional power plants, reducing emissions of conventional air pollutants, such as mercury and sulfur and nitrogen oxides, and GHGs (e.g., carbon dioxide).

Likewise, the proposed location is best suited to promote public health and welfare because it properly balances the siting constraints and will provide the public health benefits associated with renewable energy generation. Despite the significant amount of undeveloped land in upstate New York, the number of viable sites for utility-scale solar development are relatively few. Relative to the rest of Chautauqua County, the proposed location (including the 5-mile Study Area) contains a higher-than-average amount of vacant land (see Exhibit 3 for a more detailed analysis). In addition to its consistency with the rural agricultural character in terms of land use, the Facility is also consistent with the surrounding agricultural goals of the area to protect prime farmland (see Exhibit 15 for a more detailed analysis). Additionally, the Facility will provide a guaranteed revenue stream to the landowners and offer an opportunity to

combine agricultural uses within the Facility, where practicable. Furthermore, utility-scale solar projects must be located in relatively close proximity to a suitable point of interconnection with the local utility to minimize interconnection costs. Significant interconnection costs can easily render a solar project uneconomic. This Application explains how, taking into consideration locational constraints, the proposed Facility promotes public health and welfare.

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