Bluestone Wind Project

Case No. 16-F-0559

1001.10 Exhibit 10

Consistency with Energy Planning Objectives

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EXHIBIT 10 CONSISTENCY WITH ENERGY PLANNING OBJECTIVES

(a) Consistency with State Energy Plan

In order to issue a Certificate of Environmental Compatibility and Public Need (CECPN), the New York State Board on Electric Generation Siting and the Environment (Siting Board) must find, among other things, that a proposed project (i) is a beneficial addition to the electric generation capacity of the State and (ii) will serve the public interest. New York Public Service Law (NY PSL) § 168(3). These findings are made, in part, by determining the project's consistency with the most recent New York State Energy Plan, and with the energy policies and long-range planning objectives of the State. NY PSL § 168(4)(e). As demonstrated below, the Bluestone Wind Project will be a beneficial addition to the State's electric generation capacity; advances important objectives of the State Energy Plan (SEP), the Reforming the Energy Vision (REV) initiative, the Clean Energy Standard (CES), the Regional Greenhouse Gas Initiative (RGGI), and other important state policies. In particular, the Bluestone Wind Facility will help the state meet short-term renewable energy and greenhouse gas emission reduction goals articulated in the SEP and REV and will provide other important environmental, social, and economic development benefits to New Yorkers by supplying up to 124 megawatts (MW) of clean renewable energy to the State's energy grid. The Bluestone Wind Facility is also the first large-scale wind energy project in the State to include an energy storage component, making it a particularly valuable addition to New York's energy market and a potential model for other facilities. For these and other reasons set forth below and elsewhere in the Application, there is ample evidence upon which the Siting Board can rely to make the required findings under NY PSL § 168(3), and determine that the Facility is consistent with state energy policy.

(1) Overview of State Energy Policies and Plans

Recent changes to New York's state energy policy have focused on the need to increase competition among energy providers, lower the cost of energy to consumers, increase efficiencies, drive investments in the electric system, and send market signals to support broad State policy preferences for green energy, energy efficiency, equal access to affordable and clean energy, and other goals. In order to advance these interests both generally and with respect to specific projects, New York State relies on a suite of public policy planning tools, including the SEP and, more recently, the REV and CES proceedings, to guide State actions and initiatives. Before granting a CECPN to major energy projects like the Bluestone Wind Project, the Siting Board is charged with reviewing a project's consistency with these planning tools to determine whether approval will advance one or more articulated State energy goals.

(i) State Energy Plan

New York State Energy Law § 6-104 requires the New York State Energy Planning Board (NYSEPB) to adopt a State Energy Plan at minimum every 10 years. Among other things, the SEP forecasts New York State energy supply and demand and the State's ability to satisfy that demand; projects greenhouse gas (GHG) emissions; identifies and assesses energy supply source alternatives and emerging trends relating to 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 State law, 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." NY Energy Law § 6-102(5).

The NYSEPB issued the most recent SEP in June 2015. 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% from 1990 levels by 2030. In addition, the SEP calls for 50% generation of electricity from renewable energy sources by 2030 (NYSEPB, 2015, p. 112). This represents approximately 33.7 million megawatt hours of new generation, which is projected to include between 4,000 and 5,900 megawatts of new land-based wind energy (PSC, 2016a, pp. 4-3 to 4-4).

(ii) Reforming the Energy Vision Initiative

In order to transform the aspirational goals of the SEP into action, Governor Andrew Cuomo and the New York State Public Service Commission (PSC) have undertaken the Reforming the Energy Vision initiative. The REV represents a broad effort by the Governor, the PSC, the New York State Energy Research and Development Authority (NYSERDA), and others to identify regulatory, infrastructure and market-based barriers to the realization of the SEP's broad goals, and propose 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.

Guiding principles of the SEP as implemented through the REV include, but are not limited to:

- *Market Transformation* – REV, regulatory reforms, initiatives, and programs will focus on market transformation, allowing for a new, integrated, and self-sustaining private sector-driven clean energy market. To accelerate market transformation, REV initiatives will focus on identifying, mitigating and removing market barriers to clean energy deployment, among other measures.
- *Private Sector Investment* – By removing market obstacles, REV will facilitate development of competitive markets, and will look to increase the leverage of private sector capital investment per ratepayer dollar.
- *Innovation and Technology* – REV will align energy innovation with market demand. NYSERDA and New York Power Authority (NYPA) will partner with New York's academic research institutions and the private sector to support the development of clean energy technology and innovative business and financing models, along with training the next generation to support the growth of the clean energy economy.
- *Customer Value and Choice* – REV aims to empower customers and enable the private sector to provide the services and energy options that customers value. Residential, commercial, and industrial customers will have the tools to easily and efficiently manage when and how much power they will consume.

(iii) Clean Energy Standard

In furtherance of the SEP goals of reaching 50% renewable energy consumption in New York by 2030, on August 1, 2016 the PSC adopted a comprehensive Clean Energy Standard, which: 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). This system is designed to encourage development of large scale economically viable renewable projects that can compete with all other generation sources in the electric market by awarding credits for each megawatt hour of renewable energy generated that contributes to the State's targets regardless of the fuel or project type. The system is designed to incentivize projects sponsors to keep their costs as low as possible in order to sell power profitably.

(iv) Energy Storage Target

The SEP acknowledges the importance of encouraging development of energy storage technologies. "Energy storage technology will play a critical role in the . . . energy future by helping to improve reliability, reducing peak

load, and enabling greater integration of intermittent renewable resources such as solar and wind" (NYSEPB, 2015, p. 100). Likewise, the CES Order declares that "[s]torage is a critically important component of the energy system that is both distributed and increasingly reliant on intermittent resources. Unlike other resources, the load shifting and fast response capabilities of various forms of storage resources allow them to provide simultaneous value as an energy and reliability resource" (PSC, 2016, pp. 103-104).

In recognition of these benefits, Governor Andrew Cuomo signed legislation in November 2017 requiring NYSERDA to establish a statewide energy storage target (A.6571). The law, which is codified primarily at PSL § 74, applies to "qualified energy storage systems," which is defined as:

> commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy. A qualified energy storage system shall be cost-effective and either assist the integration of variable energy resources, reduce emissions of greenhouse gases, reduce demand for peak electrical generation, defer or substitute for an investment in generation, transmission or distribution assets, or improve the reliable operation of the electrical transmission or distribution grid. PSL § 74(1)(a).

These systems may be used for various purposes including "stor[ing] energy generated from renewable resources for use at a later time." PSL § 74(1)(b). Shortly after signing the legislation, Governor Cuomo included in his State of the State address an energy storage target of 1,500 MW by 2025. Although the final target will be set by NYSERDA, the announcement reflects a commitment by the State to encourage energy storage initiatives.

(2) General Consistency with State Policies

The Bluestone Wind Facility is consistent with State policies that encourage the development renewable energy projects. The Facility, as proposed, will add up to 124 MW of clean, green New York-based renewable power into the grid. As set forth below, the Facility will aid in advancing the specific SEP/REV goals of cutting State GHG emissions 40% by 2030 and increasing renewable energy generation to 50% by that date. It will also advance the State's goals of transforming the energy market, encouraging private sector investment, increasing fuel diversity, and improving system reliability and resiliency. NYSERDA recognized the merits of the project when it awarded a contract to the Applicant as part of its 2017 Renewable Energy Standards (RES) solicitation for the purchase of renewable energy credits generated by the Bluestone Wind Facility. NYSERDA's award is indicative of the Project's consistency with the State's Energy Plan and achieving 50% renewable energy by 2030. The contract also was awarded, in part, due to the energy storage component of this Facility and how the Facility and the energy

storage proposal aligns with recent policy statements and goals to be established by the Commission. See Section (g) below for a discussion of other impacts of the proposed Facility in relation to State energy policy.

(i) Increasing Renewable Energy Generation: the 50 by 30 Goal

A core initiative in the SEP is new generation of renewable energy. The 2015 plan notes that "[c]onversations 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 NYSERDA solicitations—it ultimately aims to 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).

Although 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.

According to the PSC, the State needs 33,700,000 MW hours (MWh) of additional renewable generation to meet the 2030 50% renewable target (PSC, 2016, p. 36). To reach the nearer-term and long-term CES goals, the Final Supplemental Environmental Impact Statement (FSEIS) prepared in support of the CES assumed that at least half of the incremental renewable generation needed will come from land-based wind, accounting for more than 5,000 MW in *additional* new installed renewable generation capacity through 2030 (PSC, 2016a, pp. 4-3 to 4-4). The Bluestone Wind Facility will make a critical contribution toward meeting the "50 by 30" goal.

In the short term, the CES set renewable energy procurement targets for Load-Serving Entities (LSEs) beginning in 2017, and increasing each year through 2021 (PSC, 2016, p. 92). The State cannot reasonably hope to achieve these short-term targets without LSR projects such as the Bluestone Wind Facility. In 2017, the percentage of LSE total load required to be sourced from *new* renewable generators was 0.6 percent, or about

974,000 MWh, which increases to 4.8 percent of LSE load, or 7.5 million MWh, by 2021 (PSC, 2016, pp. 92-93). The Bluestone Wind Facility will contribute up to 124 MW, or between 350,000 and 400,000 MWh, toward the State's achievement of this goal.

Projects such as Bluestone Wind are particularly important in the short term because other types of renewable energy sources cannot reasonably be expected to contribute significantly to achievement of State renewable energy goals. Of particular note, the CES assumes no offshore wind development until 2023 at the earliest (PSC, 2016, p. 61). Other options such as new and/or improved hydroelectric, nuclear, anaerobic digesters or biomass will not be available on a large enough scale during the relevant period to contribute significantly to short-term renewable goals (PSC, 2016a, pp. 5-48 to 5-49, 5-55 to 5-56; PSC, 2016, pp. 30, 106 and Appendix A; PSC, 2016, Appendix G, pp. 36-43).

(ii) Market Animation, Competition, and Innovation

Two guiding principles of the SEP/REV initiative are market transformation and private sector investment. Similarly, the CES sets 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). 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).

With the emphasis on competitive electric markets necessarily comes the need to consider New York's energy market within the context of the regional energy grid. The CES requires that RECs be allocated to each megawatt hour of renewable energy generated which contributes to the State's renewable targets. New York's RECs are compatible with those of other states, allowing trading of RECs between New York and programs in nearby states, such as those in New England.

New York's State Energy Law specifically requires the State take steps to "reduce the overall cost of energy in the state." NY Energy Law § 6-102(5). 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. 20). 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, p. 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 and across state lines—in theory, driving down the costs and opening up competition to a broader pool of projects across the region. Each project will need to compete on its own in the electric markets, and a developer's profits will be directly tied to its ability to contain costs so that it can offer its power on the market, or in a contract, at a competitive price. 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.

In addition, the SEP commits the State to developing "[n]ew mechanisms to facilitate voluntary market activity," and market signals to encourage innovation and investment by private investors in New York's economy—an objective that is reflected and refined in the CES (NYSEPB, 2015, p. 72). This will increase competition, drive down the cost of renewable projects and energy, usher in modernization of the grid, achieve additional economies of scale through increased deployment, and put LSRs "on a path to grid-parity" with other energy sources (NYSEPB, 2015, p. 72).

Projects like the proposed Bluestone Wind Facility will continue to position New York as a leader in clean energy technology, innovation, and production, while helping to reduce costs and stimulate the markets to drive further private investments. While these projects will be eligible to bid into the New York REC market to obtain contracts to purchase the renewable attributes of their power, they also will compete with other renewable generators for favorable power purchase agreements or to sell their electricity on the wholesale market in competition with other energy generators. 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 wind 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.

(iii) Other State Policies

As set forth elsewhere in this Exhibit, the Bluestone Wind Facility is consistent with other goals of State energy policy as embodied in the SEP, REV and CES. In particular, the Facility will:

- Improve system resiliency and reliability (see Section (b));
- Increase fuel diversity (see Section (c));
- Advance regional climate change and air quality goals, including helping the State meet its target of reducing GHG emissions in the State 40% by 2030 (see Section (g)(1));
- Advance environmental justice (see Section (g)(2)); and
- Enhance economic development opportunities (see Section (g)(3)).

(b) Impact on Reliability

An 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 which does not depend excessively on a single fuel source to fulfill all of its needs. 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). The Siting Board acknowledged these benefits in its recent order granting a CECPN to Cassadaga Wind for its proposed Article 10 wind project when it declared that the facility would "serve the goals of improving fuel diversity, grid reliability, and modernization of grid infrastructure" (Cassadaga Order, 2018, p. 15). 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." NY Energy Law § 6-102(5).

The SEP's core sustainable and resilient communities initiative stresses the need to ensure a more modern, reliable and resilient energy grid. As of 2015, 81% of the State's power generators were more than 16 years old, and 60% were more than 35 years old (NYSEPB, 2015, pp. 34-35). 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, p. 36).

The battery storage component of the Facility will further enhance the resiliency and reliability of the State's energy system. Wind energy facilities generate electricity only when wind is blowing above certain speeds; this period of generation does not always correspond to periods of peak electricity demand. Energy storage systems such as the proposed battery storage unit at the Bluestone Wind Facility can help manage the variability of this intermittent resource by storing production when demand is lower and then releasing electricity when demand is higher. Energy storage systems thus could "support greater renewable energy penetration while maintaining grid reliability" (NYISO, 2017a, p. 8). Such systems also "could enable further penetration of renewable resources by storing renewable energy for delivery when the transmission system is not constrained" (NYISO, 2017a, p. 9).

More generally, because energy demand is not consistent, sufficient supply must be maintained to meet peak demand. As noted above, the Facility's battery storage system will potentially help the system manage peak demand by storing excess supply and deploying it during periods of greater demand. Energy storage also has the potential to improve reliability. The energy grid must be designed to meet annual project peak load plus a minimum reserve margin requirement to account for unanticipated outages. Storage could "help meet annual peak demand in the energy market" and "improve system reliability" (NYISO, 2017a, p. 12). Other potential benefits of the planned battery storage system include: providing a means of quickly ramping generation up and down; providing reserve services to be tapped in response to unplanned events that jeopardize system reliability; and providing voltage support (NYISO, 2017a, pp. 12-15).

A System Reliability Impact Study (SRIS) has been prepared and 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 5 for a discussion of system reliability issues.

(c) Impact on Fuel Diversity

As noted in the discussion of resiliency and reliability in Section (b), the Siting Board specifically declared in the recent Cassadaga Order that the Cassadaga wind project would "serve the goal[] of improving fuel diversity" (Siting Board, 2018, p. 15). 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 recover quickly, and generate energy unencumbered by transportation problems, extraction-related complications or delays, or political unrest in foreign countries. This improves system resiliency, and allows the State to recover more quickly from significant disruptions to the grid.

The New York electric utility system relies on supply from numerous fuel sources, including natural gas, hydroelectric, nuclear, wind, solar, oil, and coal, as well as interconnections with its neighbors and demand-response resources. According to the NYISO *2017 Load and Capacity Data* (also known as the "Gold Book"), total electricity generating capacity in New York State in the summer of 2017 was 38,778 MW (NYISO, 2017). Table 10-1 shows the generating capacity and percent of total for each of the fuel types included in the NYISO report.

Table 10-1. 2017 Installed Generating Capacity by Fuel Type In New York State[1]

Generator Fuel Type	2017 Capacity (MW)	Percent of Total Capacity
Gas	3,588	9.3
Oil	2,499	6.4
Gas and Oil	18,529	47.8
Coal	1,011	2.6
Nuclear	5,375	13.9
Pumped Storage	1,407	3.6
Hydro	4,251	11.0
Wind	1,740	4.5
Other	378	1.0
Total	38,778	100

[1]Data are from NYISO *2017 Load and Capacity Data,* Table II-1a (NYISO, 2017).

Despite development of wind energy facilities over the past two decades, wind energy currently comprises only 4.5% of total generating capacity in New York State. Development of the Facility would add up to an additional up to 124 MW to the existing 1,740 MW of generating capacity from wind projects in the State, thus helping to diversify New York's energy economy.

(d) Impact on Regional Requirements for Capacity

The regional capacity requirements of New York's wholesale electricity markets and location-based pricing encourage investments in areas where the demand for electricity is the highest. As a result, over 80% of the generating capacity brought online since 2000 is located in New York City, Long Island, and in the Lower Hudson Valley. Other additions to New York's power-producing resources are determined by physical factors, such as the suitability of wind conditions in the State and the existence of nuclear and hydropower plants in upstate regions that can be upgraded (NYISO, 2014). The proposed Facility falls into the latter category, with siting driven by wind resources and the availability of

land on which to construct wind turbines. The need for additional renewable capacity in New York is also driven by the statewide need for carbon-free energy generation to meet its statewide goal of significantly reducing GHG emissions.

The Facility is located in NYISO Zone E. Upstate New York as a whole, which includes NYISO Zones A-F, has a total generating capacity of approximately 18,500 MW, but a peak electric load of just over 13,500 MW (NYISO, 2016). Although this part of New York State does not require significant additional capacity to meet its own local or regional demands for electricity, other areas of the State that do not have this region's wind resources and suitable land are dependent on the availability of reliable electricity generation from areas that can offer these resources. The Facility is proposed in south central New York because that region offers an available wind resource to be harvested, available land, and sufficient transmission capacity to deliver the resulting electricity to areas where it is needed.

(e) Impact on Electric Transmission Constraints

New York State has a diverse mix of generation resources compared to many other states. However, much of the renewable power is provided by hydroelectric projects and wind farms located in the western and northern portion of the State, while the southeastern region hosts power plants fueled primarily by natural gas. Taking full advantage of statewide fuel diversity will require upgrades and enhancements of the transmission system (NYISO, 2016). These transmission enhancements will help transfer 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, 2016).

As previously noted, the Facility is located in NYISO Zone E. According to the NYISO, the most congested transmission areas were in NYISO Zones C, D, and E (NYISO, 2010). However, these transmission constraints will continue to exist regardless of whether the Facility is constructed. Other proceedings, such as the AC Transmission Proceeding and the proposed transmission upgrades by incumbent Transmission Owners, are intended to address some of these congestion problems, and progress realized through those efforts will enhance the benefits of the Facility to the electric system. At this time, the Facility will not result in new electric transmission system constraints, and current infrastructure has been shown to be sufficient to allow the addition of the Facility, as discussed in Exhibits 5, 8, and 34. The proposed operation of a battery storage system will allow excess energy to be diverted from the transmission system to the batteries during periods of surplus generation or constraints on the local transmission system. The battery storage system will enable deployment of that stored energy at a later time when it is most needed by the system, whether that is to meet peak demand or aid frequency regulation.

New York's transmission infrastructure is aging, and much of it needs replacement or upgrades. The *New York State Transmission Assessment and Reliability Study* (STARS) predicted the need for replacement of approximately 4,700 miles of 115 kV and above transmission lines in New York State within 30 years as of 2012. The 115 kV line to which the Facility will connect was among the transmission lines predicted to need replacement within 30 years (STARS Technical Working Group, 2012). The need for replacement of this line and for replacement/upgrades to the existing transmission system generally will exist regardless of whether the Facility is ultimately constructed. However, the transmission infrastructure that will need to be installed in connection with the Facility will make some modest contribution toward modernization of, and investment in, the transmission system—and by a private company instead of by ratepayers.

(f) Impact on Fuel Delivery Constraints

The proposed Facility will generate electricity without the use of fuel. Consequently, there will be no adverse fuel delivery impacts, and no fuel delivery constraints which might impair the Facility. By producing additional electricity that does not require fuel, the Facility will reduce the overall demand for fuel, easing fuel delivery constraints and advancing the SEP's goal of 50% generation from renewables by 2030.

(g) Impact on Energy Policy

The impact of the proposed Facility in relation to State energy policy, long-range planning objectives, and strategies contained in the most recent SEP is discussed in Sections (a) through (c) above. As these sections make clear, development of the Facility is consistent with a number of State mandates, particularly those related to renewable energy development, market animation, fuel diversity and reliability and resiliency. In addition to the advancement of the SEP's energy generation, diversification, and market restructuring goals, the Facility will help the State achieve broader environmental and economic development goals, such as GHG emissions reductions and investment in New York's green energy economy, which advances the objectives of the SEP as well as the REV and CES.

By law, the SEP must consider and develop policies, programs and actions to "minimiz[e] public health and environmental impacts, in particular, environmental impacts related to climate change" from New York's energy sector. NY Energy Law § 6-102(5). Two specific goals of the SEP, as carried forward into the REV initiative and CES, are ensuring a pathway to achieving a 40% reduction in the State's GHG emissions from 1990 levels by 2030, as well as an 80% percent reduction by 2050, and increasing private investment in New York's clean energy economy. These goals are inextricably connected, and will be advanced by the construction of LSR projects such as the Bluestone Wind Project. The SEP also calls for 50% of generation of electricity to come from renewable energy sources by 2030. The Facility also advances other specific SEP/REV goals, such as protecting New York's natural resources; helping grow

clean energy innovation; creating new jobs and business opportunities; and helping meet the State's environmental justice goals.

(1) Reducing GHG Emissions and Combating Climate Change; Reducing Air Pollution

The State has "adopted strongly proactive policies to combat climate change and modernize the electric system" by, among other things, reducing "total emissions of air pollutants resulting from fossil fuel combustion" (PSC, 2016, pp. 3-4). These goals are "part of the State's sweeping initiative to transform the way energy is produced, delivered and consumed," which "places New York in a leadership position among states" to meet these challenges (PSC, 2016, pp. 6 and 10). The State Legislature has adopted an energy policy that seeks to minimize environmental impacts from climate change, and facilitate and accelerate the use of low carbon energy sources to protect New Yorkers, their environment, and the State's economy. NY Energy Law §§ 6-102(5) and 6-104(2)(i). These policies are emphasized in the 2015 SEP, which pledges to increase deployment of renewable generation, reduce GHG emissions to decarbonize the energy grid, and avoid or mitigate the effects of climate change. To further these policies, New York has committed to achieving a 40% reduction in GHG emissions from 1990 levels by 2030 and reducing total GHG emissions 80% by 2050 (REV Website, 2017).

For New York to achieve the State's GHG emission reduction goals, the New York State Climate Action Council (NYSCAC) concluded in its 2010 Climate Action Plan that "*close to 100 percent of New York's electricity will need to come from low-carbon sources—sources with near zero-carbon emissions—by 2050*" (NYSCAC, 2010, p. 8-9 [emphasis added]). The primary method for achieving the required emissions reductions in the short term: substantially increasing renewable generation (NYSCAC, 2010, pp. 8-10).

As discussed in Section (a) above, the Bluestone Wind Facility has the potential to contribute up to 124 MW of wind electricity generation capacity toward achieving the State's "50 by 30" renewable energy goal. The Facility will generate this electricity without producing GHG emissions, thereby advancing the SEP goal of reducing GHG emissions 40% by 2030.

Also, as discussed in Exhibit 17, the Facility will produce no direct emissions of pollutants such as nitrogen oxides and sulfur dioxide. The Facility thus will advance the CES goal of "reduc[ing] total emissions of air pollutants resulting from fossil fuel combustion" (PSC, 2016, p. 3).

(2) Advancing Regional Climate Change and Air Quality Goals

The Siting Board, the PSC, and courts across the country recognize that energy markets—and the environmental impacts therefrom—cross state lines. As technology has advanced, the way we generate and transmit power has evolved, to the point that "[t]ransmission grids are now largely interconnected, which means that 'any electricity that enters the grid immediately becomes a part of a vast pool of energy that is constantly moving in interstate commerce . . .'" *New Jersey Board of Public Utilities v. FERC*, 744 F.3d 74, 81 (3d Cir. 2014) (quoting *New York v. FERC,* 535 U.S. 1, 7 [2002]). This concept was confirmed in the Cassadaga Order which declared that the "goals of the SEP are not restricted to renewable electricity consumed within the state, but are also oriented toward national and international goals of reducing carbon and transforming the energy industry" (Siting Board, 2018, p. 16). New Yorkers and others throughout the region will benefit as new initiatives continue to fill this energy pool with an increasing amount of low-cost renewable energy. Conversely, New Yorkers will benefit from similar initiatives pursued by neighboring states that share common goals. In this way, the continued leadership and contribution of New York State toward achieving regional climate and energy generation objectives will compound the benefits to New Yorkers as other states follow suit.

The regional nature of the electric market underlies the Regional Greenhouse Gas Initiative, which establishes a multi-state GHG emission cap-and-trade program covering major fossil fuel-fired electric generating facilities in the Northeast. Regulated entities can satisfy their obligations under the program either by reducing their own emissions or by acquiring credits from facilities in other states. As the Siting Board recently acknowledged in the Cassadaga Recommended Decision, "[b]ecause the Project will operate without generating any direct greenhouse gas emissions, it will help New York achieve the SEP's goal of reducing greenhouse gas emissions 40% by 2030 and the RGGI's regional emissions goals" (Siting Board, 2017, p. 153). The same thing can be said of the Bluestone Wind Facility.

The Applicant proposes to sell renewable energy from the Facility into New York, and participation in New York's energy markets will have a broad impact on the region regardless of where in the region the power is sold. Projects such as the proposed Facility advance New York's leadership position amongst neighboring RGGI states and across the country in transitioning to a clean energy economy. As a participant in the REC market, and by selling renewable energy into a changing wholesale market, the Applicant will be among the first new renewable generators to participate in the CES, and the Facility will help New York send signals to the market and the region that the State is moving forward with the work of turning the lofty climate change and other goals articulated in the SEP into action.

(3) Advancing Environmental Justice

Development of the Facility is consistent with the SEP goal of avoiding disproportionate impacts on environmental justice (EJ) communities. As discussed in Exhibit 28, the nearest potential EJ area is located in the Village of Sidney, approximately 12.8 miles from the Facility Site boundary. The Facility thus will have no direct impact on any EJ community.

(4) Economic Development Opportunities Associated with Decarbonizing New York's Economy

Renewable energy development generates far more than green electricity. A guiding principle of the past decade's state energy policies, and of the 2015 SEP, is increasing private investment in New York's clean energy economy. "Developing New York's clean energy economy offers one of the most viable means of stimulating environmentally sustainable economic activity in New York in the 21st century" (NYSCAC, 2010, p. 13-1).

The SEP views the transition to a renewable, clean energy sector as an enormous economic opportunity to infuse new private sector investment across New York, to "drive sustainable direct and indirect job growth," and create a future of prosperity and progress (NYSEPB, 2015, p. 48). The SEP emphasizes the critical role energy will play in shaping the State's future economic growth, acknowledging that "a state-of-the-art energy system is an essential element for a high-caliber business environment," and that a "high-quality affordable energy system will create synergies with the State's emerging high-tech industries . . . [and] retain and attract new businesses to the State" (NYSEPB, 2015, pp. 48-49). By encouraging broad, statewide growth in green energy, the SEP posits that "New York can become a major export center for energy innovation and expertise" (NYSEPB, 2015, p. 49).

Local communities stand to reap significant direct and indirect benefits from these investments in clean energy, as discussed in greater detail in Exhibit 27. Experts and government agencies at all levels have acknowledged the myriad local public benefits derived from investment in renewable generation—from increased local tax revenues and direct lease payments to struggling farmers and rural landowners, to secondary economic gains such as the growth of related services and businesses and additional local economic activity by ratepayers paying less for power.

Even before a renewable energy project generates its first megawatt of electricity, the New York State economy—and the economies of rural communities where many renewable projects are proposed—receives an influx of investment made during the planning and development stages of a project. As projects proceed to construction and operation, economies are buoyed by purchases of local materials, employment of construction crews and transportation workers, patronage of local hospitality establishments, and investments in local infrastructure.

NYSERDA has estimated that for every MWh a large-scale wind energy project generates, the New York State economy receives between $9.71 and $10.66—returns which yield hundreds of millions annually from the statewide fleet of wind energy projects. Further, the money spent on construction has a ripple effect in the surrounding communities. NYSERDA estimated that the direct spending from a wind project in rural New York counties can have a multiplier effect of 1.3 (NYSERDA, 2005, p. 3).

Further, a core initiative of the SEP is innovation and research and development, which is mirrored in the REV guiding principle of innovation and technology, and the REV goal of increasing clean energy innovation. The more LSR projects, such as the Bluestone Wind Facility, are constructed in New York, the more these goals and objectives will be advanced. The Applicant will choose the best, most efficient and advanced wind energy generation technology that makes financial sense for the facility at the time of construction. Researchers, investors, and tech companies working on turbine technology, collection and interconnection solutions, smart grid advances, and other cutting-edge innovations will benefit from developers like the Applicant seeking out their best ideas, most powerful innovations, and greatest advances in impact avoidance for facilities like the Bluestone Wind Project.

The Applicant's proposal to incorporate battery storage into the Bluestone Wind Facility, in particular, represents a significant technological advance. The Facility is the first large-scale wind energy facility in New York State to propose energy storage as part of the project. The Facility will serve as a model for other LSRs in the State and nationwide.

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

A comparison of alternative Facility configurations within the proposed Facility Site, including an alternative layout, is provided in Exhibit 9. As discussed in Exhibit 9, while the no action alternative would eliminate environmental impacts associated with construction and operation of the Facility, it would also do nothing to help the State achieve the GHG reduction and renewable energy goals of the SEP, REV and CES.

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

This section is not applicable because it requires an evaluation of alternative fuel sources, which is beyond the scope stipulated for this Application. To the extent alternate locations are relevant, see Exhibit 9(e). Additional discussion of the Facility and public health and welfare is included in Exhibit 2(e).

REFERENCES

Department of Public Service (DPS) Staff. 2016. *Staff White Paper on Clean Energy Standard*. Case 15-E-0302 Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard. January 25, 2016.

DPS Staff. 2016a. Staff White Paper Summary of REV. March 2016. Available at: https://www.ny.gov/sites/ny.gov/files/atoms/files/WhitePaperREVMarch 2016.pdf.

New York State Climate Action Council (NYSCAC). 2010. *Climate Action Plan Interim Report*. November 9, 2010.

New York State Energy Planning Board (NYSEPB). 2015. *2015 New York State Energy Plan.* June 25, 2015.

New York State Energy Research and Development Authority (NYSERDA). 2005. *Major Economic Impacts of Utility-Scale Wind Projects in New York*. December 2005.

NYSERDA. 2013. *Renewable Portfolio Standard Main Tier 2013 Program Review: Direct Investments in New York State: Summary.* September 5, 2013.

New York State Independent Systems Operator (NYISO). 2010. *Growing Wind: Final Report of the NYISO 2010 Wind Generation Study*.

NYISO. 2014. *Power Trends 2014: Evolution of the Grid*. June 2014.

NYISO. 2016. *Power Trends 2016: The Changing Energy Landscape*.

NYISO. 2017. *Load & Capacity Data.* Released April 2017.

NYISO. 2017a. *The State of Storage: Energy Storage in New York's Wholesale Energy Markets.* December 2017.

PSC. 2016. *Order Adopting a Clean Energy Standard (CES Order)*. Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard. August 1, 2016.

PSC. 2016a. *Final Supplemental Environmental Impact Statement (FSEIS).* Case 15-E-0302, Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, and Case 14-M-0101, Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision. May 19, 2016.

REV Website, last updated 8/10/2017. Available at http://www3.dps.ny.gov/W/PSCWeb.nsf/All/CC4F2EFA3A23551585257DEA007DCFE2?OpenDocument.

Siting Board. 2017. Recommended Decision of Administrative Law Judge Regarding Certificate of Environmental Compatibility and Public Need (Cassadaga Recommended Decision), Case No. 14-F-0490, Application of Cassadaga Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Project. Nov. 8, 2017.

Siting Board. 2018. Order Granting Certificate of Environmental Compatibility and Public Need, With Conditions (Cassadaga Order), Case 14-F-0490, Application of Cassadaga Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Project. Jan. 17, 2018.

STARS Technical Working Group. 2012. *New York State Transmission Assessment and Reliability Study (STARS) Phase II Study Report*. April 30, 2012.

United States Energy Information Administration (USEIA). 2015. *Electric Sales, Revenue, and Average Price: 2014 Average Monthly Bill – Residential*. Data from Forms EIA-864 schedules 4A-D, EIA-861S, and EIA-861U. Available at: http://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf.

U.S. Environmental Protection Agency (USEPA). 2017. *eGRID2014v2 Summary Tables*. Available at: http://www2.epa.gov/sites/production/files/2015-10/documents/egrid2012_summarytables_0.pdf (Accessed January 2018).