

# **Heritage Wind Project**

**Case No. 16-F-0546**

**1001.10 Exhibit 10**

## **Consistency with Energy Planning Objectives**

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## EXHIBIT 10 CONSISTENCY WITH ENERGY PLANNING OBJECTIVES

### (a) Consistency with the 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 (SEP), and with the energy policies and long-range planning objectives of the State. NY PSL § 168(4)(e). As demonstrated below, the Heritage Wind Project will be a beneficial addition to the State's electric generation capacity; and advances important objectives of the SEP and other state initiatives, the Reforming the Energy Vision (REV) initiative, the Clean Energy Standard (CES), the Regional Greenhouse Gas Initiative (RGGI), the recently-enacted Climate Leadership and Community Protection Act (CLCPA), and other important state policies.

#### (1) Overview of State Energy Policies and Plans

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 in the energy field and meet renewable energy generation and GHG emissions reductions targets. These tools and targets will continue to evolve in the wake of the State's recent enactment of the CLCPA.

##### (i) State Energy Plan

In accordance with New York State Energy Law § 6-104, the New York State Energy Planning Board (NYSEPB) adopted the most recent State Energy Plan in June 2015. The 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. The SEP aims to reduce statewide GHG emissions 40% from 1990 levels by 2030 and calls for 50% generation of electricity from renewable energy sources by 2030 (NYSEPB, 2015, p. 112).

The Guiding Principles of the SEP most relevant to large-scale renewable (LSR) generation projects include, but are not limited to:

- *Market Transformation* – regulatory reforms, initiatives, and programs that focus on market transformation, allowing for a new, integrated, and self-sustaining private sector-driven clean energy market. To accelerate market transformation, State initiatives focus on identifying, mitigating and removing market barriers to clean energy deployment, among other measures.
- *Private Sector Investment* – By removing market obstacles, New York will facilitate development of competitive markets, increasing the leverage of private sector capital investment per ratepayer dollar.
- *Innovation and Technology* – New York will align energy innovation with market demand and support the growth of the clean energy economy.

Encouraging new renewable energy generation figures prominently in the SEP, which notes that “renewable resources will . . . 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). The SEP 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).

Of particular note, the SEP notes that “central generation and transmission will continue to serve as the backbone of [the State’s] power grid” (NYSEPB, 2015 p. 70), emphasizing the need to encourage LSRs in New York (NYSEPB, 2015, pp. 70-72). The immediate benefits of LSRs identified in the SEP 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.

(ii) Reforming the Energy Vision Initiative

The Reforming the Energy Vision (REV) Initiative represents a broad effort by the Governor, the New York State Public Service Commission (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.

To further the SEP's Guiding Principles, the REV Initiative also focuses on short- and long-term actions, including:

- Making energy more affordable for all New Yorkers;
- Building a more resilient energy system;
- Creating new jobs and business opportunities;
- Improving existing initiatives and infrastructure;
- Cutting GHG emissions;
- Protecting New York's natural resources, and
- Helping clean energy innovation grow.

(iii) Clean Energy Standard

In furtherance of the specific SEP goal of reaching 50% renewable energy consumption in New York by 2030, on August 1, 2016 the PSC adopted a comprehensive Clean Energy Standard (CES), 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, 2016a, p. 70). "The chief focus of the CES initiative is on building new renewable resource power generation facilities" (PSC, 2016a, 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.

According to the PSC, the State needs 33,700 GWh of additional renewable generation to meet the 2030 50% renewable target (PSC, 2016a, 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, 2016b, pp. 4-3 to 4-4). In its 2019 Power Trends report, the New York State Independent System Operator (NYISO) put the State's wind energy generation capacity at 1,739 MW (NYISO 2019, p. 26), as compared with 1,461

MW which existed in 2015 when the SEP was adopted (See PSC 2016, Appendix G, p. 21). At that pace it would take the State over 67 years, or until 2086, to meet its 50% by 2030 renewable goal. Although the NYISO estimates that approximately 4,313 MW in onshore wind generation capacity had been proposed in New York as of March 1, 2019 (NYISO, 2019a, p. 47), even if New York approved and built *all* of the onshore wind energy proposed within the current NYISO queue before 2030, it would still fall short of its 2030 goals for new onshore wind development. The Heritage Wind Project will bring New York 184.8 MW closer to its renewable energy targets.

(iv) Regional Greenhouse Gas Initiative (RGGI)

Established in 2009, the Regional Greenhouse Gas Initiative (RGGI) is a regional, market-based initiative designed to reduce GHG emissions across nine northeastern and mid-Atlantic states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.<sup>1</sup> Through RGGI, participant states agree to cap total GHG emissions from fossil fuel-fired electric power plants 25 MW in size or greater. Power plants are then given carbon dioxide (CO<sub>2</sub>) allowances, each equal to one ton of CO<sub>2</sub>, and can purchase additional CO<sub>2</sub> allowances through RGGI-sponsored auctions. Proceeds from the auctions are reinvested into energy efficiency, renewable energy and other programs. Studies show that RGGI's cap- and-trade emissions program has directly or indirectly resulted in lower GHG emissions levels across the region, accounting for as much as half of the region's emissions reductions achievements between 2009 and 2015.<sup>2</sup>

In the Recommended Decisions issued to the Cassadaga and Baron renewable projects under Article 10, the Hearing Examiners concluded that wind projects contribute to RGGI's regional GHG emissions reduction goals, and the State's overall goal of reducing GHG emission 40% by 2030 (Siting Board, 2017, pp. 152-53; Siting Board, 2019a, p. 26). The Heritage Wind Project will also contribute to the RGGI goal of reducing carbon emissions by adding up to 184.8 MW of clean energy generation capacity in the State of New York.

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<sup>1</sup> The State of New Jersey was initially included in RGGI, but pulled out of the program in 2011. Recently, New Jersey lawmakers have taken steps to rejoin RGGI. Starting in 2017, Virginia also began taking steps to join RGGI, although the most recent state budget contains provisions which restrict the state's participation at this time. See Materials on New Participation, Regional Greenhouse Gas Initiative, Inc., <https://www.rggi.org/program-overview-and-design/meeting-new-participation>.

<sup>2</sup> Murray, Brian C. and Maniloff, Peter T., Nicholas Institute for Environmental Policy Solutions at Duke University, 51 Energy Economics 581-89 (2015), available at <https://www.sciencedirect.com/science/article/pii/S0140988315002273>; Ramseur, Jonathan L., The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress, Congressional Research Service (May 16, 2017), available at: <https://fas.org/sqp/crs/misc/R41836.pdf>.

(v) Climate Leadership and Community Protection Act

On July 18, 2019, Governor Andrew Cuomo signed the Climate Leadership and Community Protection Act (S.6599/A.8429), which is widely described as the most ambitious climate change initiative in the country. The CLCPA—which is codified primarily at New York Environmental Conservation Law Article 75, Climate Change—calls for reducing GHG emissions in the State to 15% of 1990 levels by 2015 (i.e., an 85% reduction), with an interim 40% reduction from 1990 levels by 2030. With respect to electricity generation, the CLCPA requires the PSC to establish a renewable energy program that achieves a 70% renewable energy generation by 2030, with 100% carbon-free electricity generation by 2040. To reach these targets, the CLCPA calls for establishment of a Climate Action Council, which will be responsible for preparing a scoping plan containing recommendation on regulations and other state measures to achieve the necessary GHG reductions. Among other things, the scoping plan must identify measures to reduce emissions from the electricity sector by displacing fossil fuel-fired electricity with renewable electricity or energy efficiency. It must also identify measures to achieve 6 gigawatts of solar energy capacity by 2026, 3 gigawatts of energy storage capacity by 2030 and 9 gigawatts of offshore wind by 2035. The New York State Department of Environmental Conservation must then adopt regulations to ensure compliance with the statewide emission reduction targets and work other state agencies, including DPS in promulgating their own regulations. State agencies, when considering whether to issue permits, licenses and other approvals, including grants and loans, must consider whether the decisions are consistent with or will interfere with attainment of the statewide GHG reduction limits. The law includes several provisions requiring that the policies and regulations adopted to achieve the GHG reduction goals will not unduly burden disadvantaged (i.e., environmental justice) communities.

(2) Facility Consistency with State Energy Policies

The proposed Facility is consistent with State policies that encourage the development renewable energy projects, such as the SEP/REV, CES and the CLCPA. The Facility, as proposed, will add up to 184.8 MW of clean New York-based renewable power into the grid. As set forth below, the Facility will advance the SEP/REV and CLCPA goal of cutting State GHG emissions 40% from 1990 levels by 2030 and the proposed goals of significantly increasing the proportion of renewable energy generation in New York State. It will also advance the State's goals of transforming the energy market, encouraging private sector investment, increasing fuel diversity, and improving resiliency.

NYSERDA recognized the merits of the project when it awarded a contract to the Applicant as part of its 2018 Renewable Energy Standards (RES) solicitation for the purchase of renewable energy credits generated by the proposed Facility. NYSERDA's award is indicative of the Project's consistency with the SEP goal of achieving 50% renewable energy by 2030 and the CLCPA's goals of generating 70% of electricity from renewables by 2030 and eliminating all carbon emissions from electricity generation by 2040.

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, 2016a, p. 92). The State cannot reasonably hope to achieve these short-term targets without LSR projects such as the proposed 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, 2016a, pp. 92-93). The proposed Facility will contribute up to 184.8 MW, or roughly 498,880 MWh annually, toward the State's achievement of this goal.

Projects such as the Heritage Wind Project 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. 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, 2016b, pp. 5-48 to 5-49, 5-55 to 5-56; PSC, 2016a, pp. 30, 106 and Appendix A; PSC, 2016a, Appendix G, pp. 36-43). Further, the CES does not anticipate that offshore wind facilities will be operational prior to at least 2023 (PSC, 2016a, p. 61). The Heritage Wind Project offers the opportunity to add 184.8 MW to the State's renewable portfolio in the short term.

The Heritage Wind Project also is consistent with the SEP, REV and CES goal of transforming the energy market to stimulate private sector investment and activity, increase competition, and send market signals that attract investment in New York's energy system (PSC, 2016a, pp. 3-9; DPS, 2016, pp. 4-5). The addition of large, distributed generation resources throughout the State such as the Heritage Wind Project contributes to the SEP's goal of fostering more sustainable and resilient communities, prompting investment in, and modernization of, existing electric infrastructure, and encouraging investment in New York's clean energy economy.

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, 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 NYSEPB 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. (NYSEPB, 2013, p. S-5)

As competition grows among renewable generators within and outside of New York, the Commission and others anticipate this market-based encouragement of growth and investment will ultimately drive down energy costs and encourage further competition among 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 encourage 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). The Applicant has already expended significant money to participate in New York’s market and expects to contribute millions more to the State, regional, and local economy over the lifetime of the Project.

Projects like the proposed 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. As more LSRs like the Heritage Wind Project are constructed, market participants will have increased opportunities to compete and innovate, providing additional opportunities for skilled jobs in these fields. The growth of wind energy has already had a marked impact on innovation, as newer, more efficient, quieter wind turbines are developed to take better advantage of available resources in a less impactful manner.

(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, 2016a, pp. 76-77). The Siting Board acknowledged these benefits in orders granting CECPNs to the Cassadaga and Baron Wind Projects under Article 10 when it declared that the facilities will “serve the goals of improving fuel diversity, grid reliability, and modernization of grid infrastructure” (Siting Board, 2018, p. 15; Siting Board, 2019, p. 32). 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).

A System Reliability Impact Study (SRIS) was initiated for the Facility in April 2018 and was completed by the NYISO as part of the Application. The SRIS results are presented in Exhibit 5 of the Application. The SRIS found that the

Facility will 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 more thorough 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 and Baron Order’s granting CECPNs that the projects would “serve the goal[] of improving fuel diversity” (Siting Board, 2018, p. 15; Siting Board, 2019, p. 32). 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. However, according to the NYISO *2019 Load and Capacity Data* (also known as the “Gold Book”), of the 39,395 MW of total electricity generating capacity in New York State available for the summer of 2019, 64.3% is generated from the combustion of gas, oil, or a combination of gas and oil. An additional 24.5% is comprised of nuclear and hydro. 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. 2019 Installed Summer Generating Capacity by Fuel Type in New York State<sup>1</sup>**

<b>Generator Fuel Type</b>	<b>2018 Capacity (MW)</b>	<b>Percent of Total Capacity</b>
Gas	3,777	9.6
Oil	2,407	6.1
Gas and Oil	19,112	48.6
Coal	837	2.1
Nuclear	5,400	13.7
Pumped Storage	1,411	3.6
Hydro	4,253	10.8
Wind	1,739	4.4
Other	358	<1
<b>Total</b>	<b>39,294</b>	<b>100</b>

<sup>1</sup>Data are from NYISO *2019 Load and Capacity Data*, Table II-1a (NYISO, 2019b).

As Table 10-1 shows, the vast majority of electricity generating capacity in New York is comprised of four fuel types: gas, oil, nuclear and hydro. Despite development of wind energy facilities over the past two decades, wind energy currently comprises only 4.4% of total generating capacity in New York State. Development of the Facility would add up to 184.8 MW of wind energy to the existing 1,739 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 percent of the generating capacity brought online since 2000 is located in New York City, Long Island, and 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 northern and western regions of the State, and the existence of nuclear and hydropower plants in upstate regions that can be upgraded (NYISO, 2014). With respect to the Heritage Wind Project, development was driven by wind resources and the availability of land on which to construct wind turbines.

The Facility is located in NYISO Zone A. Upstate New York as a whole, which includes NYISO Zones A-E, has a total generating capacity of approximately 14,228 MW, but a peak electric load of 9,000-10,000 MW (NYISO, 2019b). The Facility is proposed in western 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 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, 2014). As discussed in Exhibits 5, 8, and 34, 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.

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 predicted to need replacement within 0-10 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.

(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. By producing additional electricity that does not require fuel, the Facility will contribute toward reducing overall demand for fuel, easing fuel delivery constraints and contributing toward the State Energy Plan's goal of 50 percent renewable energy 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 and CLCPA is discussed in Sections (a) through (c) above. As these sections make clear, development of the Facility is consistent with several State mandates, particularly those related to renewable energy development, reduction in GHG emissions, market animation, fuel diversity and improved reliability and resiliency.

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, an 80% and an 80% percent reduction by 2050, with additional reduction mandated under the recently enacted CLCPA. The SEP also calls for 50% of generation of electricity to come from renewable energy sources by 2030. The CLCPA has accelerated this goal to 70% renewable energy by 2030 and 100% by 2040. The GHG reduction and renewable energy goals are inextricably connected and will be advanced by the construction of LSR projects such as Heritage Wind. The Facility advances other SEP/REV goals, such as increasing private investment in New York's clean energy economy; 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, 2016a, 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, 2016a, 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. The recently enacted CLCPA imposes more stringent GHG reduction goals, increasing the pressure on the State to accelerate deployment of new renewable energy projects.

As discussed in Section (a) above, the proposed Facility has the potential to contribute up to 184.8 MW of wind electricity generation capacity toward achieving the State's renewable energy goals. The Facility will generate this electricity without producing GHG emissions, thereby advancing the SEP/CLCPA goal of reducing GHG emissions 40% by 2030.

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

## (2) Advancing Regional Energy and Climate Change 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 projects fill the energy pool with an increasing amount of clean, 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 proposed Facility.

Although the Applicant proposes to sell renewable energy from the Facility into New York, 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 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 and CLCPA into action.

### (3) Advancing Environmental Justice

Development of the Facility is consistent with the SEP and CLCPA goal of avoiding disproportionate impacts on environmental justice (EJ) communities. As discussed in Exhibit 28, the nearest potential EJ area is approximately 2.2 miles from the Facility Site in the Village of Albion. The area was designated as a potential EJ area because more than 23.59% of households in the census block group have incomes below the federal poverty level. No impacts to this or other potential EJ areas are anticipated.

More generally, the power generated by the Facility will aid in reducing the need for power generation from dirtier power plants. As noted in the SEP, fossil fuel-fired energy power generation facilities have often been located in EJ communities, which have borne the disproportionate share of the environmental impacts of these facilities. As a result, there are EJ benefits associated with transitioning away from fossil fuel generation to cleaner, renewable sources (NYSEPB, 2015, p. 39).

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

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, as discussed in Section (a) above. “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 21<sup>st</sup> 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 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 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 proposed 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 Heritage Wind Project.

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

Given the unique nature and constraints associated with the siting of wind-powered electric generation facilities, such as the regional availability of adequate wind resources, and the need for willing land lease participants and host communities, and adequate access to the bulk power transmission system, the alternatives available for wind energy development are limited. A wind energy generation facility such as Heritage Wind is proposed in a location because of its available wind resource; deployment of an alternative generation technology, such as solar or biomass, would not represent the best use of the State's limited available wind resources, or of lands in areas where wind resources are sufficient to support energy generation. With those constraints in mind, the Article 10 Application focuses on comparing alternative facility configurations within the proposed Facility Area, primarily in Exhibit 9. Such alternatives may include alternative Facility layouts, alternative Facility size, alternative turbine heights, and a no action alternative.

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

As will be discussed in detail in the Application, the Facility will have a positive impact on public health and welfare by producing electricity with zero emissions. Electricity delivered to the grid from wind energy projects can off-set the generation of energy at existing conventional power plants, such as coal and nuclear facilities slated for closure in the near term, and less efficient oil and gas plants responsible for significant air pollution in their communities. According to a 2008 U.S. Department of Energy National Renewable Energy Laboratory report, "Wind energy is a preferred power source on an economic basis, because the operating costs to run the turbines are very low and there are no fuel costs. Thus, when the wind turbines produce power, this power source will displace generation at fossil fueled plants, which have higher operating and fuel costs." On a long-term basis, wind generated power also reduces the need to construct and operate new fossil fueled power plants (Jacobsen & High, 2008). Natural gas is the most frequent marginal fuel unit in New York's power pool, or the one that is turned on or off as the load fluctuates (Patton et al., 2015). When the proposed Facility is generating power, electricity generation from natural gas would be reduced within the region, thereby eliminating the associated emissions and the price volatility that can result from an overreliance on natural gas.

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