NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

NOTICE OF SCHEDULE FOR FILING EXCEPTIONS

(Issued May 23, 2019)

Attached is the Recommended Decision of Presiding Examiners Sean Mullany and Michelle L. Phillips, Administrative Law Judges of the Department of Public Service, and Associate Examiner James T. McClymonds, Chief Administrative Law Judge of the Department of Environmental Conservation, which is hereby issued for exceptions pursuant to 16 NYCRR §4.10. Briefs on exceptions are due electronically to the Secretary and to all parties on June 12, 2019.

Briefs opposing exceptions are due on June 27, 2019. The parties' briefs should adhere to the guidelines for filing documents with the Secretary (on the left of the home page, www.dps.ny.gov, click on "Filing Guidelines") and to the requirements of Rule 4.10.

(SIGNED) KATHLEEN H. BURGESS
Secretary

NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

CASE 16-F-0062 - Application of Eight Point Wind, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

RECOMMENDED DECISION

BY

PRESIDING EXAMINERS SEAN MULLANY AND MICHELLE L. PHILLIPS,
ADMINISTRATIVE LAW JUDGES, DEPARTMENT OF PUBLIC SERVICE

AND

ASSOCIATE EXAMINER JAMES T. MCCLYMONDS,
CHIEF ADMINISTRATIVE LAW JUDGE, DEPARTMENT OF ENVIRONMENTAL CONSERVATION

May 23, 2019

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RECOMMENDED DECISION

Presiding Examiners, Sean Mullany and Michelle L. Phillips,
Administrative Law Judges, Department of Public Service

AND

Associate Examiner, James T. McClymonds,
Chief Administrative Law Judge, Department of Environmental Conservation

I. INTRODUCTION

This Recommended Decision (RD) concerns the application of Eight Point Wind, LLC (Eight Point or the Applicant) to construct and operate a proposed wind farm generating facility in Steuben County, New York. After considering the record compiled over a one-day evidentiary hearing in March 2019, briefs of the parties, public comments, Article 10 of the New York Public Service Law (PSL), and all other applicable laws and regulations, the Presiding Examiners, Sean Mullany and Michelle L. Phillips of the Department of Public Service (DPS), and Associate Examiner, James T. McClymonds of the Department of Environmental Conservation (DEC),[1] recommend that the New York State Board on Electric

[1] In addition to Judges Mullany, Phillips, and McClymonds, DPS Administrative Law Judge Kevin Casutto served as presiding examiner until his retirement in early 2017, and DEC Administrative Law Judge Lisa Wilkinson served as associate examiner until January 2019.

Generation Siting and the Environment (the Board) issue a conditional Certificate of Environmental Compatibility and Public Need (Certificate) to the Applicant to proceed with its proposal. This RD provides our reasoning and recommended Certificate Conditions, which are set forth in Attachment A.

II. BACKGROUND

Description of the Project

The Applicant proposes to construct a commercial-scale wind power project consisting of up to 31 wind turbines with a total capacity of up to 101.8 megawatts (MW) (the Project or the Facility).[2] Turbines will be located on leased or purchased land located in the Towns of Greenwood and West Union. Eight Point will most likely use General Electric (GE) 3.43 MW wind turbines for most of the Project (i.e., 27 turbines) and will likely use four GE 2.3 MW wind turbines. The 3.43 MW wind turbines will have a rotor blade diameter of 137 meters (449.4 feet) and will be mounted on a 110 meter (360.8 feet) tubular steel tower, for a total height of approximately 585 feet. The 2.3 MW wind turbines will have a rotor blade diameter of 116 meters (380.5 feet) and a 94-meter (308.3 feet) tubular steel tower, for a total height of approximately 498.5 feet.[3]

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[2] Eight Point evaluated 35 wind turbine sites to identify the potential maximum level of possible impacts. While only 31 turbines will be constructed, the additional four sites were evaluated in case any of the 31 primary sites become unfeasible due to issues discovered prior to or during construction. Hearing Exhibit (Hrg. Ex.) 8, Application Exhibit (App. Ex.) 2, p. 1.

[3] Id.

Procedural History

On January 29, 2016, Eight Point, a wholly-owned subsidiary of NextEra Energy Resources, LLC, submitted a letter to the Secretary of the Board, indicating its intent to apply for an Article 10 Certificate for a proposed 103.4 MW wind energy project located in the Towns of Canisteo, Greenwood, Hartsville, Hornellsville, Jasper, Troupsburg, and West Union. The January 29, 2016 letter also served as a formal submittal, pursuant to §1000.4 of Part 16 of the Official Compilation Codes, Rules and Regulations of the State of New York (NYCRR), of the Applicant's Public Involvement Plan (PIP). After amendment and revision pursuant to DPS review, the Applicant filed its final PIP on March 29, 2016.[4]

On October 11, 2016, Eight Point submitted its Preliminary Scoping Statement (PSS).[5] The PSS indicated that the Applicant's proposed wind facility would be constructed in the Towns of Greenwood, Troupsburg, and West Union and would consist of up to 32 wind turbines with associated collection lines, access roads, and other temporary and permanent supporting infrastructure. Eight Point Wind also indicated that the Project's output would interconnect with New York State Electric and Gas Corporation's existing Bennett Substation in Hornellsville. As designed in the PSS, the Project would have a maximum generating capability of approximately 102 MW from an estimated 32 wind turbines.

The PSS is part of the pre-application procedures prescribed by the Board in 16 NYCRR §1000.5. During the pre-application scoping phase, the project applicant, DPS, other statutory parties, and interested participants determine the

[4] Hrg. Ex. 1.

[5] Hrg. Ex. 6.

nature and scope of the studies that the applicant must conduct to support its Article 10 application. The scope of the studies, documented in written stipulations, determine what information the project applicant must include in its formal application. In general, the applicant's studies should evaluate the potential impacts of the project on the environment, public health, and other public interest factors. When the application is submitted, stipulations, if any, are used in conjunction with 16 NYCRR Part 1001, which states the required contents of an Article 10 application, to determine whether the application complies with PSL §164.

In this case, at the pre-application stage, an intervenor fund of $36,190 was established when the PSS was filed. The Towns of Greenwood and West Union (the Towns) requested pre-application intervenor funding, and no other party requested such funding. In a series of rulings, the Towns were awarded all of the available intervenor funding, which was used by the Towns to defray eligible legal and engineering services.

Stakeholders provided comments on Eight Point's PSS on November 1, 2016. Eight Point responded to the stakeholder comments on November 22, 2016. After conducting several meetings to negotiate stipulations concerning the studies necessary to complete its application, Eight Point filed draft stipulations on June 30, 2017. After receiving comments on the draft stipulations on October 19, 2017, Eight Point filed final, executed stipulations that had been signed by representatives for the Applicant, DPS Staff, DEC Staff, the New York State Department of Agriculture and Markets (DAM) Staff, the New York State Department of Health, and the Towns of Greenwood and West Union (the Towns).

On November 29 and December 1, 2017, Eight Point filed the first iteration of its formal application for the Project.

As proposed in the Application, the Project's nameplate capacity would be 101.8 MW and would include the installation and operation of up to 31 wind turbines, together with access roads, a collection substation, mostly underground 34.5 kilovolt (kV) collection lines, up to two permanent meteorological towers, temporary staging and laydown areas, an operations and maintenance building, and related facilities. However, its construction would be limited to the Towns of Greenwood and West Union. On December 5, 2017, the Secretary issued Notices regarding party status requests and indicating the availability of the intervenor funds for the application phase of the proceeding.

At the application stage, an intervenor fund of $105,885 was established. Subsequently, the Towns of Greenwood and West Union were jointly awarded $52,942,50, representing one-half of the available funds. The other half of the available moneys was awarded to a local advocacy group, the Citizens for Maintaining Our Rural Environment.

Two application deficiency letters were issued on January 29 and June 18, 2018, respectively. Eight Point filed application supplements on April 17, 2018, and August 13, 2018. Thereafter, by letter dated September 6, 2018, the Chair of the Board sent formal notice to the Applicant that its application was deemed compliant with the requirements of PSL §164. In accordance with PSL §165(1), the Chair of the Board set October 17, 2018, as the date for commencement of the public hearings.

On October 17, 2018, Examiners Mullany and Wilkinson conducted public statement hearings in Hornell, New York. At the public statement hearings, 34 members of the public spoke, 26 against and eight in favor of the proposed Facility. On October 18, 2018, Examiners Mullany and Wilkinson conducted a procedural conference, also held in Hornell, to address party

status and requests for the same, award intervenor funding, discuss applicable procedural rules and requirements, identify issues for adjudication, and establish a schedule for the filing of testimony and exhibits and the evidentiary hearing. The procedural schedule, adopted by rulings issued November 5, 2018, and January 18, 2019, called for the filing of DPS Staff and Intervenor direct testimony and exhibits on January 22, 2019, and rebuttal testimony and exhibits on February 11, 2019.

On November 13, 2018, Eight Point filed a Notice of Impending Settlement Negotiations. Eight Point indicated that the negotiations would be aimed at crafting proposed conditions to be included in any Certificate that may be issued in this proceeding. In accordance with the Board's rules, the required review of the notice was completed and reported on November 16, 2018.

On January 22, 2019, DPS Staff, DEC Staff, DAM Staff, and Citizens for Maintaining Our Rural Environment (CMORE) filed direct testimony and exhibits concerning the Project. Eight Point and CMORE filed rebuttal testimony and exhibits. The evidentiary hearing was held in Alfred, New York, on March 11, 2019. The evidentiary record includes a transcript exceeding 780 pages and a total of 62 exhibits, many of which are multipart. A site visit was conducted for the benefit of the Examiners on March 12, 2019. Representatives of interested parties, including Eight Point, CMORE, DEC Staff, and DAM Staff attended the site visit. Eight Point, DPS Staff, DEC Staff, DAM Staff, and CMORE filed their initial post-hearing briefs on April 5, 2019. Eight Point filed its reply brief on April 19, 2019.

Public Involvement and Comments

PSL §163(3) requires that the Department of Public Service and any person proposing to submit an application pursuant to Article 10 provide opportunities for citizen involvement in order to facilitate the pre-application and application processes and enable citizens to participate in decisions that affect their health and safety. The primary goals of the citizen participation process are to facilitate communication between the applicant and interested or affected persons and to foster the active involvement of the interested or affected persons.

There is no statutory requirement that, prior to issuing a Certificate, the Board make express findings with respect to public involvement in the Article 10 review process. The implementing regulations require that Application Exhibit 2 briefly describe the applicant's public involvement program before the application was submitted, identify significant issues raised by the public and affected agencies, describe the applicant's response and summarize any changes made as a result of the public involvement program.[6] The regulations also requires Exhibit 2 to briefly describe the public involvement program that will be conducted after an application is submitted.[7]

In this case, Eight Point submitted a draft Public Involvement Program (PIP) Plan to the DPS for comment in January 2016. The Applicant then incorporated DPS's comments and filed a final PIP Plan in March 2016.[8] An updated PIP Plan was filed

[6] 16 NYCRR §1001.2(c).

[7] 16 NYCRR §1001.2(d).

[8] Hrg. Ex. 1; 16 NYCRR § 1000.4(d)–(e).

in July 2016 to include updated stakeholder information following a revision to the Project boundary.[9]

Throughout the pre-application, scoping and application phases, Eight Point implemented its public involvement program as described in the PIP Plan.[10] A Project website was established, a local office was opened in the Project area, and a toll-free number was disseminated for public access to Project information.[11] Logs were completed recording public consultations and outreach activities.[12] The Applicant attended local town board meetings, met with school districts and emergency response organizations, communicated with certain stakeholders by letter and email, and hosted three open houses for the public between June 2016 and July 2017. The Applicant posted notice of the meetings and Project milestone filings in the local newspapers of record.[13] Local public repositories were also established where case documents could be reviewed by the public.[14]

DPS Staff testified that Eight Point successfully implemented the PIP Plan elements and that Eight Point encouraged participation from municipal officials and affected local, State and federal agencies and, as evidenced in the meeting tracking logs, sought input from these stakeholders. DPS Staff also testified that there were elements of the PIP Plan that were less successfully implemented, related to tracking the public involvement program and providing regular

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9 Tr. 383.

10 Tr. 386.

11 Tr. 384.

12 Tr. 386.

13 Tr. 385.

14 Tr. 385–86.

updates on meetings.[15] According to DPS Staff, during the pre-application stage of the review, the Applicant was diligent in filing timely meeting logs as the project progressed. However, after the Application was filed at the end of November 2017, only one update was filed, in August 2018.[16]

DPS has maintained a list of parties to the case and of persons and organizations that request to be informed of Project filings. Those listed on the party and service lists were advised, by mail or email, of filings, rulings and notices of Project milestones. The party and service lists were also used to provide information relating to Project activities, such as comment periods, procedural conferences, technical conferences and public statement hearings.[17]

After the Chair of the Board determined that the Application was in compliance with the Public Service Law, a press release was issued announcing that a public statement hearing would be held. A DPS-prepared letter and factsheet describing the Project was mailed to approximately 150 municipal and elected officials, agencies, and community-based organizations in the Project area. On September 26, 2018, Eight Point was directed to publish the Notice of Informational Forums and Public Statement Hearings in four local newspapers in the Project area and to mail a copy of the Notice to the stakeholder list, including host and adjacent landowners. These steps were taken to ensure public awareness of the opportunities for submitting comments on the Project. Informational forums and

[15] Tr. 386.

[16] Tr. 386.

[17] Tr. 387.

public statement hearings (PSH) were held in the afternoon and evening of October 17, 2018.[18]

The Board also provided opportunities for public involvement through the issuance of notices, at the pre-application and application stages, of the availability of intervenor funding. Under the PSL, each applicant must pay fees for these purposes. The amount of the fee depends upon the stage of the review process and upon the proposed size of a given project. An applicant submitting a preliminary scoping statement must pay a fee equal to $350 per megawatt (MW) of generating capacity of a proposed project, up to a total of $200,000.[19] An applicant submitting an application must pay a fee of $1,000 per 1 MW of generation capacity, up to a total of $400,000.[20] The intervenor funds can be used by eligible municipalities and local parties to defray costs incurred in connection with participating in both the pre-application and application stages of the Article 10 review process.

In this case, when Eight Point filed the PSS and when it filed the Application, Eight Point paid fees of $36,190 and $105,885, respectively. At the pre-application stage, the $36,190 in intervenor funding was awarded jointly to the Towns of Greenwood and West Union, to defray eligible legal and engineering consulting services costs. At the application stage, Greenwood and West Union were jointly awarded $52,942.50, representing one-half of the available intervenor funding. The non-profit local citizens group CMORE was awarded $52,942.50,

[18] Tr. 387-88.

[19] PSL §163(4).

[20] PSL §164(6).

representing the other one-half of the available funding.[21] These intervenors were granted intervenor funding to ensure their constituents were represented in the Article 10 review process and to ensure the Board has a complete record on which base its decision regarding the facility.[22]

Public comments have been received by mail, by email, and, as noted above, in person at the October 17, 2018 public statement hearings that were held at the Hornell City Hall. Public comments, including a transcript of the public statement hearing, are maintained on the Department's Document Matter and management system (DMM), accessible from the Department's website under the Eight Point Wind case file.[23]

Comments supporting the Project cited the economic benefits of the Project, including tax relief. They noted that the area is economically depressed, and that there are very limited opportunities for industrial and agricultural growth. Supporters mentioned landowners' struggles to retain family properties that have been held for generations. They cited examples of landowners auctioning off cattle, equipment and property to pay taxes. Commenters believed the Project will provide tax relief and additional income to help landowners pay bills. Supporters stated that the Project will provide funds for schools, equipment and local infrastructure. They also said that the Project will provide new temporary and permanent jobs

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21 Case 16-F-0062, Eight Point Wind, LLC, Corrected Ruling on Intervenor Funding (issued February 5, 2019).

22 Tr. 390.

23 Many comments received during the pre-application stage of the Project focused on the Town of Hartsville's wind law and the pros and cons of wind turbines in Hartsville. Because no portion of the Project will be constructed in Hartsville, DPS Staff testified that those comments are no longer relevant.

for electricians, tradesmen, and others, during and after construction.

Supporters stated that Project employees will spend income they earn in the community and provide associated benefits for local hotels, businesses and eateries. Project supporters also pointed to the need to move toward clean energy and away from fossil fuels, noting that wind energy does not produce emissions, does not require fracking, and does not result in oil spills.

Supporters believe that the Applicant and agencies have carefully reviewed the possible environmental impacts of the Project and will take steps to mitigate any risks. Some commenters asserted that landowners should have the right to manage their land as they choose, including allowing wind turbines on their property.

Opponents cited concerns about adverse environmental, public health, financial, and community impacts. Overall, opponents opined that the Project's adverse impacts will far outweigh any of its benefits. Opponents viewed the benefits as short-term, and the adverse impacts as long lasting. Many opponents expressed serious concerns about adverse health impacts due to turbine noise, infrasound, vibration, and shadow flicker on humans and animals living proximate to the turbines. These commenters cited reports of "wind turbine syndrome," asserting that symptoms can range from dizziness to sleep disturbance, depression and anxiety to cardiac problems.

At the public statement hearing, some dairy farmers expressed concerns regarding potential adverse impacts on their herds, such as shortened life expectancy and reduced milk

production.[24] Other commenters expressed concerns about infrasound, noting that it has been weaponized by the military, and asserting more studies are needed about impacts on human health impacts. Some commenters urge that wind farm proposals be put on hold until more information becomes available. Other commenters asked that setbacks be established at appropriate distances to protect the health, safety and welfare of area residents. Some opponents noted that offshore wind planning in the Long Island regions would be sited 30 miles offshore and recommended that Steuben County residents be allowed the same consideration. Comments also cited potential impacts during construction, including impacts on drinking water wells due to leachate from the concrete and rebar that will be used as foundations for the turbines.

Several opponents described concerns potentially negative impacts on bird and bat populations. Some stressed the presence of eagles in the Project area. Others pointed out that there are wetlands in the vicinity, and that these provide habitat for eagles and other birds. Several commented that wind farms will displace wildlife and contribute to deforestation. Other commenters noted concerns about cumulative adverse impacts, given that several large-scale wind farms are proposed in and around Steuben County.

Several commenters expressed concerns that the Project will be harmful to the rural, bucolic character of the area, and disrupt the aesthetic beauty that residents have enjoyed and valued deeply for generations. They argued that the huge turbines will cause significant visual impacts, changing the landscape, disrupting the peace and quiet of the area, and

[24] See Section III.C.5.iv, which includes a discussion on the comments of DAM and CMORE regarding potential impacts on dairy farming operations.

ruining the area’s scenic vistas and unspoiled natural features. Several residents stated that the Project will destroy their way of life and the character of their land. They stated that the current character of the land is one of the area’s greatest resources and has more value to them than can be measured by looking at tourism dollars and property values.

One couple commented that they moved to back to the area because it is peaceful and quiet. They noted their renovation of an Amish home and a brewery, adding that, just over a year ago, they opened a business, the success of which depends in part on the beauty and scenery of the area. They noted that both their home and their business run entirely on solar energy. They stated that they would not have invested their time and money if there had been 600-foot turbines within 1,500 feet of their house. If the Project is built, they said they will move away because they will not live in a state, county or town that so freely gives up their citizens' rights to enjoy their land, just for short-term gains. They described themselves as “fighting for their future” and expressed hope that the Board takes this into consideration.

Other commenters observed that, even without being built, the Project has disrupted the community by pitting landowners who will benefit monetarily against those that choose not to participate but will suffer the negative impacts of the Project nonetheless. Some commenters argued that any properties harmed by the Project, including non-participating landowners, should be financially compensated. Some asked that the Applicant be taxed at full industrial rates instead of under a PILOT program. One commenter noted that decommissioning funds should be put into an escrow account or bonds in case the Applicant is not capable of paying these costs ten to twenty years in the future.

Finally, some commenters stated that the intermittent nature of wind power will require back-up power, noting that wind turbines only operate at approximately 22% of capacity in New York State. Others argued that governmental subsidies supporting wind power should be paid by the public in the form of higher taxes.

There will be additional opportunities for public involvement during the certification and compliance stages of the Project. For example, Eight Point will be required to notify the public of Project milestones and site activities.[25] DPS Staff testified that the proposed Certificate Conditions will ensure that the public continues to receive Project information and that Project-related complaints are handled consistently.[26]

Settlement of Proposed Certificate Conditions

The settlement process that began with the Applicant's November 13, 2018 Settlement Notice was open to all interested parties and resulted in the filing of proposed Certificate Conditions. Eight Point and DAM filed signature pages supporting all the proposed Certificate Conditions, while DPS Staff, DEC Staff, and the Towns filed signature pages supporting most of them. After rebuttal testimony was filed and additional discussions ensued, Eight Point, DPS Staff, and DEC Staff reached additional areas of agreement on previously disputed issues.

On April 1 and 4, 2019, Eight Point filed Final Proposed Certificate Conditions and attached appendices.[27] In

[25] See, for example, Proposed Certificate Conditions 12 and 56.

[26] Tr. 391.

[27] Hrg. Ex. 24.

their initial briefs, DPS Staff and DEC Staff reported support for the proposed Final Certificate Conditions, with the following exceptions: DPS Staff noted its disagreement with the Applicant's indirect and induced economic impact analysis, which is addressed more fully below, and DEC Staff noted the omission of several edits and typos that it believed should be made to the April 1 version of the proposed Final Certificate Conditions. The edits proposed by DEC Staff along with a correction to proposed clause 4 were submitted in the Final Recommended Eight Point Wind Certificate Conditions that were filed on April 30, 2019.[28]

The proposed Final Certificate Conditions represent extensive efforts by the signatory parties. Their efforts successfully and significantly narrowed the number of issues that were litigated, resulting in the reduced expenditures of time and effort on a contentious and drawn out evidentiary hearing, and allowing more time and effort to be directed to crafting Certificate Conditions that are carefully tailored to address many of the issues raised and concerns articulated in this proceeding.

The proposed Final Certificate Conditions specify that the Applicant is responsible for obtaining all other permits and approvals required for this Facility, including, for example, the approval of the Public Service Commission (Commission) to construct the transmission line that will connect the Project to the electric system and any Commission approval that may be required pursuant to PSL §§68, 69 and 70. They require the Applicant to incorporate specified measures to minimize noise levels, visual impacts, and the extent of tree and vegetation clearing that will be required. In short, the proposed

[28] Hrg. Ex. 24.

conditions are comprehensive, addressing all phases of the Project, and they enjoy broad support from most of the active parties. As discussed in more detail below, we recommend that the proposed conditions, as revised herein, should be adopted by the Board if it decides to issue an Article 10 Certificate authorizing the construction and operation of this Project.

III. REQUIRED STATUTORY FINDINGS

Article 10 Standards

On August 4, 2011, Governor Andrew Cuomo signed into law the Power NY Act of 2011 creating a new PSL Article 10.[29] The updated Article 10 recreates the Board and charges it with establishing rules and regulations relating to the procedures for certifying major electric generating facilities. Recognizing the multi-disciplinary breadth of such a charge, the Board is comprised of five permanent members: the Chair of the DPS, who also serves as Chair of the Board; the Commissioner of Environmental Conservation; the Commissioner of Health; the Chair of the New York State Energy Research and Development Authority; and the Commissioner of Economic Development. To include local input into the Board's decisions, Article 10 also

[29] L. 2011, c. 388 (effective August 4, 2011). NY Senate Bill No. S5844 and NY Assembly Bill No. A08510 of the 2011-12 Legislative Session. The Bill states that its purpose was, *inter alia*, to "reauthorize and modernize Article X of the Public Service Law, regarding siting of major electric generating facilities in a manner that enhances public participation and augments environmental justice." Between 1992 and 2003, PSL Article X set forth the process applicable to siting major electric generating facilities in New York. After Article X expired on January 1, 2003, the State Environmental Quality Review Act (Environmental Conservation Law [ECL] Article 8 [SEQRA]) and applicable permitting provisions of the ECL governed the decision-making and permitting for proposed siting projects.

establishes two *ad hoc* board positions that are reserved for residents of the municipality in which a facility is proposed to be located, one appointed by the president *pro tem* of the Senate and the other by the speaker of the Assembly.[30]

Article 10 addresses the Legislature's desire to expand public participation in the process by providing intervenor funding earlier in the process and expanding its scope to include coverage of legal fees. Additionally, the new Article 10 includes a lower production threshold, one that applies at 25 MW instead of 80 MW.

Article 10 charges the Board to make specific findings before issuing a Certificate. Specifically, PSL §168(2) requires that the Board make explicit factual findings as to the probable environmental impacts of constructing and operating the facility, including impacts on (a) ecology, air, ground and surface water, wildlife, and habitat; (b) public health and safety; (c) cultural, historic, and recreational resources, including aesthetics and scenic values; and (d) transportation, communication, utilities and other infrastructure. The Board's

[30] PSL §160(4). Pursuant to PSL §161(2), after receiving Eight Point's final PIP, the Secretary sent requests, dated June 22, 2016, to the municipal chief executive officers in the Project area seeking their nominations for ad hoc Board members. After receipt of the Applicant's PSS, the Secretary, via letters dated October 17, 2016, again contacted the municipal chief executive officers in the Project area seeking their nominations for ad hoc Board members, and also contacted the president *pro tem* and the speaker of the assembly to request that they each appoint an ad hoc Board member from the lists of nominees that were supposed to be submitted to them by the municipal chief executive officers. On December 7, 2016, the president *pro tem* of the Senate appointed Larry McCaffrey as the ad hoc Board member. Mr. McCaffrey ultimately withdrew due to a conflict of interest. No other ad hoc appointments were made.

findings must examine the cumulative impact of emissions on the local community to determine whether the construction and operation of the Facility will result in a significant and adverse disproportionate environmental impact.[31]

Section 168(3) prohibits the Board from issuing a Certificate unless it determines that: the facility is a beneficial addition to, or substitution for, the electric generation capacity of the State; the adverse environmental impacts of the project's construction and operation have been adequately minimized or avoided to the maximum extent practicable; and, the construction and operation of the facility will serve the public interest. The Board also must determine that the facility is designed to operate in compliance with applicable State and local laws and regulations concerning, among other matters, the environment, public health and safety. To assist the Board in its local law determination, PSL §168(3) requires that the Board provide the affected municipalities an opportunity to present evidence on its own ordinances, laws, resolutions, regulations or other relevant local actions. PSL §168(3) states that the Board may not issue a Certificate unless it determines either that the facility does not result in or contribute to a significant and adverse disproportionate environmental impact in the community in which it would be located, or, if it does create such an impact, that the applicant will avoid, offset or minimize such to the maximum extent practicable for the duration of the Certificate.

Pursuant to PSL §168(4), the Board's conclusions under PSL §168(3) are to be supported by consideration of the state of available technology, the nature and economics of reasonable alternatives, the Board's PSL §168(2) findings on the project's

[31] PSL §168(2)(d).

environmental impacts, the impact of construction and operation of any related project facilities, the consistency of the construction and operation of the facility with the most recent State energy plan, and the impact on community character and whether the facility would affect communities that are disproportionately impacted by cumulative levels of pollutants. Finally, the Board may consider any other social, economic, visual or other considerations that it deems pertinent. We have examined the record evidence regarding these factors, where relevant, in our discussion of the PSL §168(3) determinations.

A. Electric Generation Capacity - PSL §168(3)(a)

PSL §168(3)(a) requires the Board to find that the Facility will be a beneficial addition to the electric generation capacity of the State. We note at the outset that no party filed testimony or introduced any other evidence disputing that this finding could be made based on the record created in this proceeding. In contrast, Eight Point and DPS Staff provided sufficient evidence to conclude that the Facility is a beneficial addition to New York's generating capacity, one that will result in a modest beneficial addition of electric generation capacity in the State and will not inefficiently displace other existing efficient generation due to local delivery constraints. As discussed in more detail, *infra*, we agree that the record supports a finding by the Board that the Facility's output will be a beneficial addition to the electric generation capacity of the State.

1. Contribution to Clean Energy Standard

Hearing Exhibit 28 contains the latest State Energy Plan (SEP), issued in 2015. The SEP explains that renewable

resources will "play a critical role in shaping New York's energy future, providing resilient power, reducing fuel cost volatility, and lowering [greenhouse gas (GHG)] emissions."[32] The SEP recognizes that large-scale renewables (LSRs) help power the State's economy and will serve as the backbone of New York's power grid and offer both immediate and long-term benefits, including, economic development and jobs for communities across the State, greater stability in customer bills, cleaner air, compliance with Federal mandates and, in the long run, potential for benefits such as below-market electricity prices and a healthier environment.[33]

The Clean Energy Standard, adopted by the Commission in Case 15-E-0302,[34] implements the SEP's renewable target by requiring that 50% of energy consumed in New York State come from renewable sources by 2030.[35] And, as Eight Point notes, the success of every renewable project becomes even more critical as Governor Cuomo seeks to increase the 50% renewables target to 70% by 2030 in his proposed Green New Deal.[36]

Both the Applicant and DPS Staff have demonstrated that the additional wind energy that will be generated by this Facility is consistent with the SEP and the CES. The record shows that the Project is a beneficial addition because it is a renewable energy resource that will produce energy in New York State.[37] It also shows that Eight Point has signed a long-term

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32 Hrg. Ex. 28, p. 68.

33 Hrg. Ex. 28, pp. 69-70.

34 Case 15-E-0302, Implementation of a Large-Scale Renewable Program and a Clean Energy Standard, Order Adopting a Clean Energy Standard (issued August 1, 2016) (CES Order).

35 Transcript (Tr.) 571.

36 Eight Point Initial Brief (IB), p. 8.

37 Tr. 321, 570.

agreement to sell renewable energy credits (RECs) to the New York State Energy Research and Development Authority (NYSERDA).[38] The record demonstrates that the Project will reduce GHG emissions, a result consistent with the State's policy to reduce such emissions by 40% from 1990 levels by 2030 and consistent with the State's energy planning objectives and goals.[39] Finally, it shows that the Project also will contribute to New York's efforts to reduce carbon emissions through its participation in the Regional Greenhouse Gas Initiative.[40]

2. Effect on Zonal Energy Prices

According to the Applicant, the Project is expected to lower annual average zonal prices[41] and, according to DPS Staff's modeling, it also is forecasted to result in ". . . a decrease in statewide wholesale energy market prices."[42]

3. Effect on Fuel Diversity

DPS Staff expects that the Project will add to the fuel diversity utilized by load serving entities in New York State by adding additional wind power to the system.[43] DPS Staff asserts that because the Project will generate wind energy, which has no fuel cost, it will likely be selected more frequently in New York Independent System Operator auctions than those plants that have fuel costs associated with their

38 Tr. 321.

39 See Ex. 8, App. Ex. 8, p. 1 and App. Ex. 10, pp. 1-3; Tr. 611-612.

40 Tr. 572–73.

41 Hrg. Ex. 8, App. Ex. 8, p. 2; Tr. 332.

42 Tr. 333, 608.

43 Tr. 612.

operation.[44] Eight Point adds that the Project reduces the potential for over-dependency on natural gas generation, noting that the SEP "recognized this as a concern because the State faces severe weather patterns that cause price volatility."[45]

Recommendation

Based on Hearing Exhibits 8 and 28, the testimony of DPS Staff and Applicant witnesses, and the arguments by DPS Staff and the Applicant, we conclude that there is ample record support for finding that the Facility will be a beneficial addition to the electric generation capacity of the State. Hearing Exhibits 8 and 28 support findings that the Project is consistent with the CES and SEP, may modestly decrease zonal and wholesale market prices, and should result in an increase in fuel diversity by adding more wind into the mix.

The SEP specifies that 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. The SEP thus supports a determination that this Project, as a commercial-scale wind farm, is consistent with the State's policy goals.

We recommend that the Board determine that the Project is a beneficial addition to New York's electric generation capacity through the provision of renewable energy to the regional market, the diversification of New York's generation mix, and the lowering of greenhouse gas emissions.

B. Public Interest (PSL §168(3)(b))

Section 168(3)(b) of the PSL requires the Board to determine that construction and operation of the Project will

[44] DPS IB, p. 9, citing Ex. 8, App. Ex. 10, p. 4.

[45] Eight Point IB, p. 6.

serve the public interest. In making this determination, the Board considers the consistency of the construction and operation of the Facility with energy policies and long-range planning objectives and strategies contained in the most recent SEP and additional social, economic, and other factors deemed relevant by the Board. We note at the outset that the Applicant and DPS Staff assert that there is ample record support for the Board to make the finding required by PSL §168(3)(b) and that no party disputes this assertion or has introduced evidence to the contrary.

1. Consistency with the State Energy Plan and Other State Energy Policies

The consistency of the construction and operation of this Facility with the State Energy Plan and other State Energy Policies is addressed in Section III.B.1, *supra*.

2. Job Creation and Other Economic Impacts

Application Exhibit 27 of Hearing Exhibit 8 provides the Applicant's estimates of various socioeconomic effects, including, for example, the average quarterly construction workforce levels, peak construction workforce levels, annual construction payroll, annual secondary employment and economic activity likely to be generated in the vicinity of the facility due to its construction, and the annual number of jobs and payroll during the Facility's operation. Such estimates are required by 16 NYCRR §1001.27. The only dispute concerning this information is between the Applicant and DPS Staff regarding the appropriate evidentiary weight to be accorded to the Applicant's estimated secondary employment figures, specifically the 236 indirect jobs estimated to be created by the Applicant consisting of 164 jobs created by Eight Point's purchases of

materials and equipment, and 72 induced impact jobs (i.e. local jobs created from worker household spending).[46]

Eight Point used the Jobs and Economic Development Impact (JEDI) model to estimate that the Project will result in 339 total jobs (i.e., 103 direct plus 236 secondary/induced jobs) during the construction phase of the Project and 16 total jobs (i.e., 6 direct plus 10 secondary/induced jobs) during the Facility's on-going operation.[47] DPS Staff agrees with the Applicant's direct jobs numbers (i.e., the 103 jobs during construction and six jobs on an on-going, annual basis), but not its indirect/induced jobs estimate.

DPS Staff states that the estimate of direct jobs is sufficiently robust, having confirmed the estimate using its own analysis. DPS Staff however challenges the robustness and accuracy of the indirect/induced jobs estimate, testifying that the JEDI model has numerous limitations, including producing results that: are an estimate and not "a precise forecast"; reflect gross but not net impacts; rely solely on positive multipliers; and fail to consider offsetting negative multiplicative secondary job impacts.[48]

As an example of the model's results showing gross but not net impacts, DPS Staff states that the JEDI model fails to recognize that a wind facility can cause job losses as well as job gains. In explaining this answer further, DPS Staff testified that the JEDI model does not capture possible indirect or induced job losses because it does not reflect the offsetting effect on the creation of induced and indirect jobs that is

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[46] Eight Point Reply Brief (RB), p. 1.

[47] Eight Point IB, p. 9, citing Hrg. Ex. 8, App. Ex. 27, Table 27-2.

[48] DPS IB, p. 10-11, citing Tr. 462, 465-466.

attributable to the recovery, via increased retail electricity rates, of the costs of the REC contract that the Applicant signed with NYSERDA. DPS Staff testified that the "over-market costs of a wind facility … mean that such a facility requires a subsidy to operate in the market," which "subsidy" is paid for by NYSERDA's acquisition of RECs, the costs of which are recovered via a surcharge on electric ratepayers' bills. That surcharge, says DPS Staff, increases the retail price of electricity.[49]

DPS Staff cites the New York Solar Study, published by NYSERDA in 2012, as an example of a model that considers the net benefits of a renewable generating facilities. DPS Staff however acknowledges that the Solar Study is a large macroeconomic model, and that "large macroeconomic models are not designed to capture the benefits of an individual project that might have a relatively small impact on the statewide economy."[50] DPS Staff further acknowledges that attempting to use such a model for the objectives desired here would be "problematic."[51]

DPS Staff also argues that the JEDI model was, in this instance, modified by the Applicant to produce an estimate "based on exogenous expectations."[52] Specifically, DPS Staff testified that the Applicant incorrectly modified the model's labor costs input without concomitantly changing the wages per hour inputs and, thereby, produced results consistent with the Applicant's expectations.[53] DPS Staff adds that its benchmarking

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49 Tr. 464-465.

50 DPS IB, pp. 11-12, citing Tr. 460.

51 DPS IB, p. 12, citing Tr. 467-468.

52 Tr. 474.

53 Tr. 473-474.

analysis revealed that the Applicant's induced and indirect job estimates were not clearly demonstrated to be reasonable.[54]

Eight Point notes the agreement between it and DPS Staff regarding the Project's forecasted creation of 103 direct, construction-related jobs, estimated to pay $17.5 million in local payroll.[55] Eight Point also stresses DPS Staff's acceptance of the estimated six permanent jobs that will be created during operation, with an associated local payroll of approximately $0.5 million annually.[56] The Applicant notes that the six permanent jobs will last the life of the facility, estimated at 30 years, and thus are equivalent to 180 full time-equivalent jobs over the service life of the Facility.[57]

Eight Point, however, urges the rejection of DPS Staff's recommendation that indirect and induced jobs estimates be given little or no weight, saying that it is counterintuitive to assume away any indirect job creation. Eight Point asserts that DPS Staff's concerns that retail electric prices may rise in the future, that other power plants may not get built, or other, unrelated economic activity may not take place is "nothing more than speculation, with no nexus to the tens of millions of dollars being spent" by the Applicant to build this Project.[58]

Eight Point also argues that neither the Article 10 statute nor regulations nor the Stipulations require any analyses of the effects on retail prices from a project. It asserts that for "obvious reasons," the law solely requires an

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54 DPS IB, p. 14, citing Hrg. Ex. 34 and Tr. 477-479.

55 Eight Point IB, p. 9 and 12, RB, p. 1; DPS IB, p. 10.

56 Eight Point IB, p. 12, RB, p. 1; Tr. 330.

57 Eight Point IB, p. 12, RB, p. 1.

58 Eight Point RB, p. 2.

analysis of impacts on the wholesale generation market. Eight Point adds that many factors affect retail electric prices which are set by the Commission.[59] Eight Point contends that by (1) arguing that a jobs and economic impact model should reflect the retail price of electricity and the effect on indirect and induced jobs, (2) rejecting the results of Eight Point's study performed in accordance with the Article 10 regulations and the Stipulations, and (3) criticizing the JEDI model for producing results that are "an estimate, not a precise forecast," DPS Staff is essentially asking for a new study, contrary to both the regulations (which require "an estimate") and Stipulations.[60]

Eight Point asserts that the estimated development and construction-related indirect and induced jobs will be created even if, arguendo, retail prices were to rise during operation. It states that construction jobs will be created, paychecks will be issued, equipment and materials will be produced and purchased, meals will be bought, and hotels will be occupied, all before one kilowatt hour of electricity is generated. Eight Point therefore concludes that even if DPS Staff's recommendation is adopted, it can only be applied to the estimate of operational indirect and induced jobs.[61]

Eight Point asserts that because indirect construction jobs are unaffected by retail prices or conventional power plants, the real issue at hand is the indirect and induced

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[59] Eight Point IB, p. 10. Eight Point also takes issue with DPS Staff's characterization of RECs as a "subsidy," saying that labeling RECs as such is "inconsistent with NYS policies" as articulated in the Case 15-E-0302 Order on Petitions for Rehearing (issued December 15, 2016), p. 26 (which noted that REC revenues compensate generators for environmental attributes that are not valued by market revenues).

[60] Eight Point IB, p. 10, RB, pp. 2-3.

[61] Eight Point IB, p. 11, RB, p 2.

permanent job impacts, estimated at 10 per year, with annual local payroll and output totaling for these two categories approximately $4 million per year. Thus, if DPS Staff's position is accepted, Eight Point states that these are the only benefits that should not be considered because the hypothetical retail price increases and power plant displacements would only occur after operation of the Project.[62]

Eight Point notes that the JEDI model was developed by the National Renewable Energy Laboratory (NREL), a national laboratory of the US Department of Energy, Office of Energy Efficiency and Renewable Energy, specifically to "estimate the economic effects associated with the construction and operation of power projects at the local or state level."[63] Eight Point states that it selected this model because it: was developed by an outside, credible government agency; has a wind power-specific model developed for estimating economic impacts; and is freely available on-line, which allows for greater transparency.

Eight Point notes that it attempted to address DPS Staff's concerns with the proprietary multipliers in the JEDI model, which no party can access, by customizing the inputs with Project-specific data, as allowed by the model, including, for example, developing the workforce estimate from the actual budget estimated for this Project and inputting that labor expenditure total into the model, leading to a lower job estimate.[64] Eight Point contends that had it also changed the wage rates, as urged by DPS Staff, the wage rate would be illogical and would have distorted the wage rates and total number of jobs, as indicated by the chart provided with its

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62 Eight Point IB, p. 12.

63 Eight Point RB, p. 3.

64 Id.

reply brief.[65] Eight Point further notes that the JEDI model does not prohibit the user from making changes to labor totals without also changing labor wage rates, but does provide a "pop-up" message explaining the impact of changing the default values. That message explains in relevant part that "if the User increases (or decreases) the total labor costs without changing the wage per hour, the results will show more workers. Similarly, if the average wage per hour is increased (or decreased), without a subsequent increase in the total labor costs, the results will show fewer workers."[66]

Eight Point highlights the DPS Staff witness's acknowledgement that the 2012 NYSERDA study cannot be used for a single renewable project as the exercise "would be very imprecise."[67] Eight Point adds that neither the Article 10 regulations nor the Stipulations require estimates concerning the possible displacement of new conventional power plants.[68]

Recommendation

Both Eight Point and DPS Staff note that the Project will create new jobs and other economic benefits and will inject money into the local economy continuously for many years.[69] They highlight, for example, Eight Point's anticipated payments to participating landowners of more than $25 million over the life of the Project, its payments-in-lieu-of-taxes (PILOTs) to the taxing jurisdictions of millions of dollars over the life of the Project, and Host Community Agreements Eight Point executed with the Towns of Greenwood and West Union worth over $300,000 per

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65 Eight Point RB, p. 4.

66 Eight Point RB, p. 5, citing Hrg. Ex. 32 at 5.

67 Id.

68 Id.

69 Eight Point IB, pp. 7, 12; DPS IB, p. 9.

year.[70] We find that this record information, when combined with the undisputed benefits of the numerous direct construction and on-going jobs created as a result of the Project and the Project's compliance with the State's SEP and CES policies and goals, provide adequate support for finding that the Project is in the public interest.

With respect to the estimates that are in dispute, we find that there are several reasons why the reliability of such estimates might reasonably be questioned. These include the limitations inherent in the JEDI model, noted as including, *inter alia*, that the results of the model reflect only gross and not net inputs and that the results are dependent on the multipliers that are used. We note that the Applicant attempted to account for these limitations, including by inputting location- and project-specific data into the model. However, where, as here, the data produced in response to such inputs shows the level of uncertainty that was highlighted by DPS Staff's benchmarking analysis, we conclude that such estimates should be discounted due to their apparently speculative and unreliable nature. Unfortunately, the record does not establish the appropriate extent to which such estimates should be discounted. Accordingly, and in an excess of caution, we recommend that such data be given little to no weight in determining whether the Project will be in the public interest.[71]

We note that in reaching this conclusion we were not persuaded by DPS Staff's arguments regarding the Applicant's

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[70] Hrg. Ex. 8, App. Ex. 4 at 14, and App. Ex. 27, pp. 26-29, and Hrg. Ex. 23.

[71] As DPS Staff correctly observes, the Article 10 regulations require an Article 10 applicant to provide an estimate of indirect and induced jobs, but do not preclude that estimate from being zero.

failure to offset its indirect and induced jobs estimate to account for retail electricity price increases. While it may make sense, in theory, that retail rates/prices and induced/indirect job creation likely are inversely related, DPS Staff failed to demonstrate any specific correlation between any increased retail prices/rates and secondary job estimates related to this Project.

Even though we ultimately agree that the secondary jobs estimates should be given little to no weight here, we nonetheless recommend that the Board find that the Project is in the public interest based on its other estimated monetary benefits and on its consistency with the State's CES and SEP policies and goals. We also agree with the Applicant's and DPS Staff's recommendation, as reflected in Certificate Condition 72, that if the Project is constructed, the Applicant should be required to file a tracking of the actual number of jobs and the actual earnings and output created during the construction and operation phases of the Project, as well as the actual tax payments to local jurisdictions made during the course of the Project. We note that such a filing will enable the DPS Staff and the Board to assess, for future reference, the actual accuracy of the JEDI model's estimates.

C. Nature of Probable Environmental Impacts and Mitigation or Avoidance Thereof – PSL §168(2) & §168(3)(c) and (e)

PSL §168(2) requires the Board to make explicit findings regarding the probable environmental impacts from the construction and operation of a proposed facility. Among the environmental impacts the Board is specifically directed to examine are impacts related to: (a) ecology, air, ground and surface water, wildlife, and habitat; (b) public health and safety; (c) cultural, historic, and recreational resources,

including aesthetics and scenic values; and (d) transportation, communication, utilities and other infrastructure. PSL §168(2).

PSL §168(3)(c) further requires the Board to determine that any adverse environmental effects of the construction and operation of the facility will be minimized or avoided to the maximum extent practicable before it issues an Article 10 Certificate. In addition, PSL §168(3)(e) requires the Board to determine that the facility is designed to operate in compliance with applicable State environmental, and public health and safety laws.[72] In making its determinations, the Board may impose, and monitor compliance with, any terms and conditions it deems necessary.[73]

The following sections examine each of the environmental topics for which factual findings are required by

[72] PSL §168(3)(e) also requires the Board to determine whether the facility is designed to operate in compliance with applicable local laws and regulations. Compliance with local law is examined in Section III.D below.

[73] PSL §§162 and 168(5).

PSL §168(2).[74] Then, we discuss the proposed minimization and avoidance measures and make our recommendations to the Board as to whether those measures minimize or avoid adverse environmental impacts to the maximum extent practicable. In addition, in those areas where specific State environmental, and public health and safety laws and regulations apply, we discuss whether the facility is designed to operate in compliance with those State laws and make our recommendations to the Board as to whether the determination required by PSL §168(3)(e) can be made. Finally, we include our recommendations for accepting or modifying the proposed Certificate Conditions.

1. Ecology

Part 1001 requires an applicant to provide information about the terrestrial (16 NYCRR §1001.22) and aquatic ecology (16 NYCRR §1001.23) in the project area, analyze the potential impacts of the construction and operation of the project on the local ecology, and identify and evaluate measures to avoid or

[74] To assist applicants in providing information sufficient to enable the Board to make its environmental impact factual findings, the Board's regulations located at 16 NYCRR §§1001.1 through 1001.41 contain detailed application requirements for each area of environmental concern set forth in PSL §168(2). While the regulations detail specific information to be included in an application for each topic area listed in PSL §168(2), the application exhibit headings of 16 NYCRR Part 1001 do not simply repeat the PSL §168(2) categories. Rather, they provide a more refined list of topic areas that in some categories break the PSL §168 categories into their component parts, or combine topics where information is shared across more than one PSL §168(2) category. Notwithstanding the structure of 16 NYCRR Part 1001, given the findings required by PSL §168(2) and based upon a table of contents agreed to by the parties, this Recommended Decision generally follows the list of categories as set forth in the statute rather than as set forth in the regulations.

mitigate those impacts. In this case, information regarding the probable impacts of construction and operation of the Project on the area's ecology is found in Application Exhibit 22 (Terrestrial Ecology and Wetlands) and Exhibit 23 (Water Resources and Aquatic Ecology) (all in Hearing Exhibit 8). Additional information regarding impacts to the area's ecology is also provided in the April 2018 Supplement to the Application for a Certificate of Environmental Compatibility and Public Need (Supplement to Application[75]) and the August 2018 Second Supplement to the Application for a Certificate of Environmental Compatibility and Public Need (Second Supplement to Application[76]). The issues related to findings of impacts to the local ecology, and the adequacy of the Applicant's avoidance and mitigation measures, were undisputed by the parties. Subject to the proposed Certificate Conditions relevant to ecology, DPS Staff urges the Board to make the required statutory findings.

The Project area is located within the Northern (High) Allegheny Plateau ecological region. Specifically, it is located in the Glaciated Low Allegheny Plateau and the Glaciated Hills sub-ecoregions. The Glaciated Low Allegheny Plateau sub-ecoregion consists of a mosaic of farmland and forestland situated on low and rolling hills worn through glaciation, and wide river valleys. Plant communities alternate between Appalachian oak-pine forest on drier, rocky slopes, and northern hardwoods-conifer forest in ravines, valleys, riparian areas, and on moist slopes. Most hilltops and river valleys have been clear-cut and converted to agricultural lands.[77]

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[75] Hrg. Ex. 10, p. 19

[76] Hrg. Ex. 13, p. 4

[77] Hrg. Ex. 8, App. Ex. 22, p. 1.

The higher elevation Glaciated Hills sub-ecoregion, on the other hand, is underlain by strata of sandstone and shale that was more resistant to glaciation and weathering. The soils in the sub-region are more suited to tree growth than agriculture and, accordingly, the sub-ecoregion is predominately forested throughout the area. Northern hardwood forest communities are the most dominant with Appalachian oak forests occurring on more dry or south-facing slopes in the sub-region.[78]

With respect to the aquatic ecology, the Project area is located within the Chemung River (Tioga sub-basin) and Genesee River (Upper Genesee sub-basin) drainage basins.[79] Due to the high elevations needed for the Project's turbines, most of the Project area is located in the highest regions of the surrounding watersheds. The waterbodies in these regions are characterized as narrow, steep in grade, and with marginal depths. Waterbodies with sufficient depth and habitat characteristics to support fish are located at the bases of the hilltops in the area and in the river valleys bisecting the Project area.[80]

The Project area covers approximately 15,295 acres and is composed primarily of deciduous forest and agricultural land. Agricultural areas consist of predominately hay, corn, wheat, and soy crops. Other open field uses include pasture and livestock grazing. Cover types located in the Project area include approximately 7,944 acres of deciduous forest (52%), 3,675 acres of agricultural pasture/hay land (24%), 2,393 acres of cultivated crops (16%), 597 acres of shrub/scrub (4%), 484 acres of developed land (3%), 138 acres of herbaceous and woody

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78 Id.

79 Hrg. Ex. 8, App. Ex. 23, p. 7.

80 Hrg. Ex. 8, App. Ex. 23, p. 9.

wetlands (1%), 45 acres of open water (0.3%), 7 acres of barren land (rock/sand/clay) (0.05%), and 6 acres of grassland/herbaceous cover (0.04%).[81]

Approximately 506 acres of plant communities will be impacted by the construction and operation of the Project, representing approximately 3% of the total Project area. Of this amount, approximately 477 acres will be temporarily impacted, with such areas to be restored to their original condition to the extent practicable. Temporary impacts include the burying of underground collection lines, clearing along the margins of access roads and turbine workspaces required for construction, and the construction and use of staging and laydown areas during construction. Approximately 29.8 acres (0.19% of total Project area) will be permanently impacted as a result of the built components of the Project. Permanent impacts will result from the construction of new access roads, turbines, and meteorological tower foundations and pads, transmission line and overhead collection line pole structures, an operations and maintenance (O&M) building, and the collection substation.[82]

With respect to forests, which is the predominant cover type within the Project area, the Applicant estimates that clearing for all Project components (access roads, collection lines, turbine pads, laydown areas, and the transmission line) will temporarily impact approximately 147.7 acres of forested

[81] Hrg. Ex. 8, App. Ex. 22, pp. 1-2 and Table 22-1.

[82] Hrg. Ex. 8, App. Ex. 22, pp. 7-9.

land.[83] The Applicant also expects that the placement of Project components will permanently remove up to nine forested acres, amounting to a loss of approximately 0.11% of forest land within the Project area.[84] In addition, approximately 47 acres of forest will be converted to successional plant communities resulting from the routine maintenance of cleared land for the life of the Project.[85] Other permanent impacts include habitat fragmentation, which is the fragmentation of forestland caused by edge effects associated with the creation of new peripheral forest areas.[86]

The temporary, permanent, and conversion impacts to the plant communities in the Project area are not expected to result in the complete eradication or significant loss of any of those plant communities.[87] In addition, the Applicant did not identify any State or federally-listed endangered, threatened, candidate, or rare plant species, or any significant ecological communities in the Project area through its database requests, or through on-site observations during its survey operations.[88] The Applicant's research also failed to reveal any significant natural communities or habitats of special concern in the

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[83] Hrg. Ex. 8, App. Ex. 22, p. 9, and Table 22-3. Note that page 33 of Application Exhibit 22 contains information about forestland impacts that differs from the information at pages 2 and 9 and Table 22-3. In its reply brief, the Applicant explains that the information contained on page 33 was based on a preliminary design of the Project area, which encompassed a larger area than the current Project proposal. The discussion on pages 2 and 9 and Table 22-3 provide the correct information for the Project as currently proposed.

[84] Hrg. Ex. 8, App. Ex. 22, p. 9, and Table 22-3.

[85] Hrg. Ex. 8, App. Ex. 22, p. 9.

[86] Hrg. Ex. 8, App. Ex. 22, pp. 9, 32-33.

[87] Hrg. Ex. 8, App. Ex. 22, pp. 10, 29.

[88] Hrg. Ex. 8, App. Ex. 22, p. 60.

Project area.[89] Thus, the Applicant does not anticipate impacts to any federal or State-listed significant natural communities, habitat of special concern, U.S. National Wildlife Area, or United States Fish and Wildlife Service Critical Wildlife Habitat.[90]

Measures proposed by the Applicant to avoid or mitigate impacts to vegetation include siting Project components during the design phase to avoid unnecessary impacts to forestland, active agricultural land, wetlands, and water bodies and, thereby, keep impacts to those features to a minimum; siting Project components to confine disturbances to the smallest area possible; using existing natural and man-made corridors through forestland, existing farm lanes, and logging road; and using open fields for work areas to the extent possible. Measures to avoid or minimize impacts to vegetation during the construction phase of the Project include developing and using a comprehensive erosion and sediment control plan as a part of the Project's stormwater pollution prevention plan, complying with guidance from environmental monitors, maintaining clean work sites, employing best management practices during construction, and demarking and prohibiting access by construction equipment and vehicles to areas that are highly susceptible to adverse disturbances. After completion of the construction phase of the Project, avoidance and mitigation measures involve restoration of temporarily disturbed areas by reestablishing preexisting native vegetative coverage.[91]

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89 Hrg. Ex. 8, App. Ex. 22, p. 12.

90 Id.

91 Id.

Proposed Certificate Conditions that incorporate measures to avoid or mitigate impacts to vegetation are numbered 6, 9, 29, 63, 84, 97, 98, 101, 109, 110, 112, 114, and 135.

i. Agricultural Mitigation Measures and Monitoring

As noted above, the second most common land cover type in the Project Area is active agricultural land.[92] Active agricultural land covers approximately 6,068 acres (39.69%) of the Project area, and includes hay fields, pastureland, and cultivated crops. Most row crops are corn, which is used as feedstock, livestock feed, or for human consumption. Hay fields are used for green chop or open pasture land for grazing dairy cattle.[93]

The Applicant estimates that construction of the Project will result in the temporary disturbance of approximately 299.6 acres of vegetation associated with crops and pastures. The temporary impacts are the result of the siting of underground collection lines and the clearing of vegetation for the placement of various components during the construction phase of the Project. The Applicant further estimates that approximately 19.3 acres of agricultural lands will be permanently impacted as a result of the siting of Project components.[94]

Measures proposed by Eight Point in the application to avoid impacts unique to agricultural lands include locating project components to avoid significant permanent impacts to active agricultural lands to the maximum extent practicable; siting access roads to turbine locations and facility sites

[92] Hrg. Ex. 8, App. Ex. 22, p. 9.

[93] Hrg. Ex. 8, App. Ex. 22, pp. 7, 83.

[94] Hrg. Ex. 8, App. Ex. 22, pp. 9-10, 83, and Table 22-3.

along the edges of active agricultural fields, and scrublands and forests to mitigate impacts to each community type; coordinating with DAM Staff and constructing Project components within agricultural areas in adherence with DAM's Guidelines for Agricultural Mitigation for Wind Power Projects (DAM Guidelines);[95] and using existing farm roads for access to Project components placed within agricultural areas.[96] Measures to mitigate impacts include restoring impacted areas during and after the construction phase of the Project. Top soils will be stockpiled, and replaced and reseeded post construction in areas where new temporary roadways are established and in other areas where top soil is disturbed.[97] All construction activities will be restricted to areas where topsoil has been removed.[98] In proposed Certificate Condition 126, the Applicant also agrees to locate collection lines and other Project components underground in prime agricultural land except where, in consultation with DPS and DAM, the parties agree that subsurface placement is impracticable.

In the application, Eight Point also proposed that during the construction phase of the Project, the Project's environmental monitor would be used to assure that operations strictly adhere to the construction plans and documentation, and the soil protection measures proposed. In pre-filed testimony, however, DAM Staff testified that due to the unique and complex

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95 The July 10, 2013 version of DAM's guidelines is reproduced in Hrg. Ex. 8, App. Appendix 22-13. In pre-filed testimony, DAM staff noted that revised guidelines were issued in April 2018 (see Tr. 714). We take official notice of the guidelines issued April 19, 2018.

96 Hrg. Ex. 8, App. Ex. 22, p. 83.

97 Hrg. Ex. 8, App. Ex. 22, pp. 9-10, 83-84.

98 Hrg. Ex. 8, App. Ex. 22, p. 84.

soil characteristics and drainage issues involved in the Project area, a full-time agricultural monitor was needed in addition to the full-time environmental monitor. Subsequent to the filing of pre-filed testimony, the Applicant and DAM Staff agreed to proposed Certificate Condition 29(a), which provides for a separate full-time agricultural monitor for the Project and its associated Article VII transmission line project. Accordingly, the issue has been resolved.

Other potential impacts to agricultural lands raised by DAM Staff in its pre-filed testimony included the proposed routing of underground collection lines through an existing tree farm; the Project's impact on engineered drainage features such as diversion terraces constructed on agricultural lands; the Project's potential impact to subsurface drain tile systems; and the routing of a proposed access road to turbine T13.[99] The Applicant and DAM Staff subsequently agreed to proposed Certificate Conditions 126 and 127 to resolve these issues. Measures required by those conditions include siting underground collection lines so as to avoid cutting through the tree farm at a diagonal and relocating the permanent access road to T13 to the edge of the agricultural field in which it is located. Proposed Condition 126 also requires compliance with the DAM Guidelines, which includes provisions requiring the restoration of any surface or subsurface drainage structures damaged during construction, and the filing of a drain tile repair plan in the compliance filing.

DAM Staff asserts that proposed Certificate Conditions 96(a), 126 and 127 resolve its concerns, and urges the Board to adopt those conditions.[100]

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[99] Tr. 711-714.

[100] DAM IB, p. 5.

ii. Invasive Species

The introduction and spread of invasive species pose an increasingly significant threat not only to New York's ecology, but to the State's economy as well.[101] An invasive species is defined as a species that is nonnative to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to humans.[102] Invasive species cause environmental and economic harm by out-competing native species, diminishing biological diversity, altering community structures and, in some cases, changing ecosystem processes.[103]

Invasive species may be introduced and spread into an ecosystem by natural dispersal methods.[104] However, human activity, such as construction activity, may also lead to the introduction and spread of invasive species into areas disturbed by that activity.

To respond to this threat, Environmental Conservation Law (ECL) Article 9 empowers DEC to examine projects subject to State review for any risks posed by invasive species to the State's environment, including the detrimental effect on the State's "fresh and tidal wetlands, water bodies and waterways, forests, agricultural lands, meadows and grasslands, and other natural communities and systems" (ECL §9-1701) and, wherever practical, to prohibit and actively eliminate invasive species

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101 See ECL §9-1701.

102 See ECL §9-1703(10).

103 See ECL §9-1701.

104 Hrg. Ex. 10, Supplement to the App. Attachment T, p. 2.

at project sites regulated by the State. ECL §9-1709(2)(iv).[105] To meet the requirements of ECL Article 9, DEC Staff requires that an applicant provide an approvable invasive species prevention and management plan as part of an Article 10 application. 16 NYCRR §1001.22(p).

The Applicant provided a revised draft Invasive Species Control Plan (ISCP) as Attachment T to its Supplement to the Application (Hearing Exhibit 10). The revised draft ISCP addressed 17 invasive plant species listed on DEC's Prohibited and Regulated Invasive Plants list that were observed in low densities throughout the Project area during field investigations.[106] No invasive insect species were observed during field investigations. Nevertheless, because the emerald ash borer (*Agrilus planipennis*) (EAB) is listed as a Priority Invasive of Concern within the region, the revised draft ISCP also addressed the EAB.[107]

Control measures proposed in the revised draft ISCP include inspecting materials used on the Project, such as seed, mulch, topsoil, fill, sand, and stone, for the presence of invasive species; limiting the movement, importation, and stockpiling of these materials; removing or treating invasive species encountered during construction in accordance with DEC regulations; cleaning equipment and clothing prior to arriving and leaving work sites within the Project Area that are known to have invasive species present; restoring disturbed areas as quickly as possible after construction is complete using native

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[105] See also 6 NYCRR §575.3 (restricting the sale, purchase, possession, propagation, introduction, importation, and transportation of invasive species).

[106] Hrg. Ex. 10, Supplement to the App. Attachment T, p. 4; see also Hrg. Ex. 10, Supplement to the App. Attachment R.

[107] Hrg. Ex. 10, Supplement to the App. Attachment T, pp. 8-9.

seed mixes; and complying with the State's requirements regarding the EAB.[108] The revised draft ISCP also provides for construction phase invasive species monitoring, and post-construction phase monitoring and invasive species removal or treatment for a period of no less than five years.[109]

In proposed Certificate Condition 35, the parties agreed that a final ISCP should be submitted in the compliance filing. Condition 35 also required post-construction monitoring for five years to evaluate the ISCP's effectiveness. Other proposed Certificate Conditions relating to the control of terrestrial invasive species include Condition 52, requiring site specific plans for invasive species management; Condition 69, providing for a post-construction remedial plan if needed; Condition 85, prohibiting use of hay bales and requiring seeding of disturbed wetland areas with native seed mix; Condition 91, requiring materials inspection; Condition 98(b) and (d), monitoring of restored areas for invasive species; and Condition 104, measures to control spread of invasive insect species during site clearing and timber removal.

DEC Staff asserts that based upon the draft ISCP and the above proposed Certificate Conditions, the Board may find that the Project will be constructed to minimize or avoid the spread of terrestrial invasive species to the maximum extent practicable and is designed to operate in compliance with applicable State law regarding invasive species.[110] PSL §168(3)(c) and (e).

With respect to aquatic invasive species, no species listed within the Common Aquatic Invasive Species of New York

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[108] Hrg. Ex. 10, Supplement to the App. Attachment T, pp. 9-10.

[109] Hrg. Ex. 10, Supplement to the App. Attachment T, p. 10.

[110] DEC IB, p. 9.

list were documented during on-site survey work.[111] Moreover, the Applicant does not anticipate that construction of the Project will result in any adverse impacts to aquatic biology due to the spread of aquatic invasive species.[112]

Recommendation

In summary, based upon the application materials and the proposed Certificate Conditions, the record supports the conclusion that the adverse environmental impacts to the area ecology from the construction and operation of the Project will be minimized or avoided to the maximum extent practicable. PSL §168(3)(c). In addition, the record supports the conclusion that the Project is designed to operate in compliance with applicable State law regarding invasive species. PSL §168(3)(e). Accordingly, we recommend that the Board impose the relevant Certificate Conditions as proposed and make the above findings.

2. Air

ECL Article 19 and Parts 200 et seq. of 6 NYCRR establish the State's air pollution control program. Article 19 and its regulations implement both the State's air quality control programs, including the recently enacted program targeting reductions in carbon dioxide emissions from new major electric generating facilities (ECL §19-0312), as well as the federally-approved air permit program under the federal Clean Air Act (CAA) (42 USC §7401, et seq.). Under Article 19, owners and operators of air contamination sources with the potential to emit air pollutants over certain thresholds may be required to obtain a title V facility permit, a State air facility permit,

[111] Hrg. Ex. 8, App. Ex. 23, pp. 10, 21.

[112] Hrg. Ex. 8, App. Ex. 23, p. 21.

or a minor facility registration, or obtain coverage under a general permit issued pursuant to Article 19 prior to commencing construction or operation of those sources.

Under Article 10, DEC retains jurisdiction to review applications and issue any permits required under ECL Article 19 for facilities subject to PSL Article 10 (PSL §§169[1][a], 172[1]). DEC administers any required Article 19 permits in separate but concurrent proceedings under ECL Article 70 (Uniform Procedures Act) and its implementing regulations, 6 NYCRR Part 621 (Uniform Procedures) and Part 624 (Permit Hearing Procedures). In addition, before issuing a Certificate pursuant to Article 10, the Board must make explicit findings regarding the probable impacts the construction and operation of a facility will have on air quality, determine that the facility is designed to operate in compliance with applicable State air pollution control laws, and determine that the adverse impacts to air quality from the construction and operation of the facility will be minimized or avoided to the maximum extent practicable (PSL §168[2][a], [3][c] and [e]).

Section 1001.17 of 16 NYCRR requires the submission of information regarding potential air emissions from the construction and operation of a facility including a demonstration of the facility's compliance with applicable federal, State, and local regulatory requirements regarding air emissions; an assessment of existing ambient air quality levels and air quality trends for pollutants in the region surround the facility; a tabulation of emissions by combustion source at the facility; an assessment of the potential impacts to ambient air quality that may result from pollutant emissions from the facility; and an offsite consequence analysis for any ammonia that may be stored at the facility. Information concerning

potential air emissions from the Project are included in Hearing Exhibit 8, Application Exhibit 17.

The Applicant notes that in 2016, the ambient air quality data collected at the DEC Region 8[113] air monitoring stations were within the acceptable levels defined by the CAA's national ambient air quality standards (NAAQS) for the monitored pollutants. The Applicant further notes that no additional local air monitoring data are available to further define air quality in the immediate vicinity of the proposed Project.[114]

The Project's wind turbines will generate electricity without combusting fuel.[115] Accordingly, the Applicant did not provide the tabulation specified by 16 NYCRR 1001.17(c). In addition, because the turbines will not emit air pollutants, the Project does not require a title V permit, a State air facility permit, or a facility registration.[116] There are no applicable local regulatory requirements in the Towns of Greenwood or West Union, or Steuben County pertaining to air emissions.[117] Finally, ammonia will not be stored or used on-site during construction or operation.[118]

i. Mitigation of Construction-related Emissions

The Applicant anticipates that only temporary minor adverse impacts to air quality could result from the operation of construction equipment and vehicles during the construction phase of the Project. These impacts include fugitive dust

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113 The Project is located within DEC's Region 8.

114 Hrg. Ex. 8, App. Ex. 17, pp. 2-3.

115 Hrg. Ex. 8, App. Ex. 17, p. 3.

116 Hrg. Ex. 8, App. Ex. 17, p. 2.

117 Id.

118 Hrg. Ex. 8, App. Ex. 17, p. 6

created during site preparation and travel on newly created access roads and unpaved town roads, and engine exhaust emissions from construction vehicles. The Applicant asserts that fugitive dust and exhaust emissions would be at low levels and for limited durations and would not significantly impact local air quality.[119]

Two additional temporary sources of air emissions during the construction phase of the Project are emissions from on-site concrete batch plants, if they are needed, and fuel-fired generators used to power construction trailers and during wind turbine commissioning.[120]

Measures proposed by the Applicant to mitigate construction-related emissions include submitting in a compliance filing, a dust control procedures plan consistent with the standards and specifications for dust control outlined in the New York State Standards and Specifications for Erosion and Sediment Control.[121] The Applicant will also ensure that functioning mufflers are maintained on all transportation and construction machinery, as required by proposed Certificate Condition 76(b). Although the Applicant does not anticipate that air permits or registrations would be required for any on-site concrete batch plants used for the Project, in proposed Certificate Condition 44(d), the Applicant agrees to supply copies of any necessary permits if a plant is used during construction. Finally, the Applicant indicates that to minimize emissions from generators, contractors will be instructed not to leave generators idling when electricity is not needed.

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[119] Hrg. Ex. 8, App. Ex. 17, p. 3.

[120] Hrg. Ex. 8, App. Ex. 17, p. 3.

[121] See Certificate Condition 50.

Recommendation

No parties disputed the Applicant's analysis of the potential impacts on air emissions associated with the construction phase of the Project or the effectiveness of the Applicant's mitigation measures. We conclude that with some modifications to the proposed Certificate Conditions, the Board can make the required findings. With respect to proposed Certificate Condition 76(b), mufflers primarily mitigate noise impacts. We recommend that Condition 76(b) be modified to require the Applicant to also ensure that all required emission control systems are maintained on all transportation and construction machinery. In addition, we recommend that proposed Certificate Condition 76 include the requirement that generators shall not be left idling when electricity is not needed. To further reduce unnecessary emissions, Condition 76 should also require that diesel engines shall not be left idling when the equipment is not actively being used. With these modifications, the Board may conclude that the construction-related air emissions from the Project will be avoided or mitigated to the maximum extent practicable, and that the Project will be constructed in compliance with all applicable State air pollution control laws.

ii. Expected Emissions Reductions During Operation

With respect to the operational phase of the Project, the Applicant anticipates that almost no operational-related emission impacts will occur.[122] The Applicant contends that only small impacts may occur as a result of indirect or direct emissions, presumably from the use of service vehicles.[123]

[122] Hrg. Ex. 8, App. Ex. 17, p. 4.

[123] Id.

Instead, the Applicant asserts that operation of the Project would displace air emissions from fossil fuel fired power plants, resulting in the improvement of air quality for its entire operational life. For example, the Applicant projects that in 2020, the Project is expected to displace approximately 189,400 tons of carbon dioxide (CO2), 321 tons of nitrous oxides (NOx), and 0.10 tons of sulfur dioxide (SO2) from generation facilities in New York.[124]

Based upon DPS Staff's review of the Applicant's modeling and its own internal modeling, DPS Staff concurs that the operation of the Project will have a positive impact on air quality.[125] DPS Staff's modeling estimates annual reductions of 98,940 tons of CO2, 21 tons of NOx, and 1 ton of SO2.[126]

Recommendation

Accordingly, based upon the record, we conclude that the operational phase of the project will result in no significant adverse air emissions. We recommend that the Board conclude that air emissions will be avoided or minimized to the maximum extent practicable during the operational phase of the Project, and that the Project will be operated in compliance with all applicable State air pollution control laws.

3. Ground and Surface Water Mitigation Measures

PSL §168(2) requires the Board to make explicit findings regarding the probable environmental impacts from the construction and operation of a proposed facility on ground and surface water resources. Before granting an Article 10 Certificate, the Board must further determine that any adverse

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[124] Id.

[125] DPS IB, p. 18; Tr. 609.

[126] Tr. 609.

environmental effects of the construction and operation of the facility on water resources will be minimized or avoided to the maximum extent practicable, and that the facility is designed to operate in compliance with applicable State water pollution control, stream protection, and freshwater wetland protection laws and regulations (PSL §168[3][c] and [e]).

One area of dispute raised by CMORE concerns the Project's potential impact on an artesian spring used for drinking water. Otherwise, issues related to findings of impacts to water resources, and the adequacy of the Applicant's avoidance and mitigation measures, were again undisputed by the parties. Subject to the proposed Certificate Conditions relevant to water resources, DPS Staff and DEC Staff argue that the Board may make the required statutory findings.

i. Groundwater and Wells

Information concerning the Project's potential impacts on groundwater and water supply wells is found in Hearing Exhibit 8, Application Exhibit 23, and Hearing Exhibit 10, Supplement to Application at 33 and Attachment W. The Applicant conducted studies and surveys to identify and map groundwater aquifers and known existing private water wells in the Project Area.[127] The surveys also revealed that residents in the Project Area use wells and sometimes springs as their source of potable water.[128]

The average depth to the water table is 27.89 inches within the Project area and average depth to bedrock is more

[127] Hrg. Ex. 8, App. Ex. 23, pp. 1-3; Hrg. Ex. 10, Supplement to App. Attachment W, Figure 23-1.

[128] Hrg. Ex. 8, App. Ex. 23, p. 2.

than 6.5 feet.[129] The Applicant reports that, based on geotechnical investigations, the average depth to the water table is deeper at the proposed locations of the Project's turbines.[130]

The Project area does not overlay any groundwater aquifers. The nearest sole source aquifer is located approximately 35 miles away from the Project area.[131] The closest primary aquifer is located approximately 20 miles away to the east near the Town of Addison, Steuben County.[132] Two principal aquifers are located approximately one mile to the northeast and southeast, respectively, from Project components.[133] Accordingly, no direct impacts to sole source, primary, or principal aquifers are expected to occur from the construction or operation of the Project.[134]

No permanent impacts to groundwater quality or quantity are expected to result from the Project. Small areas

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[129] Hrg. Ex. 8, App. Ex. 23, p. 1 and Figure 21-3.

[130] Hrg. Ex. 8, App. Ex. 23, p. 1.

[131] Hrg. Ex. 8, App. Ex. 23, p. 3. Sole source aquifers are designated by the United States Environmental Protection Agency as the sole or main source of drinking water for a community, under provisions of the federal Safe Drinking Water Act (see 42 USC §300h-3[e]).

[132] Hrg. Ex. 8, App. Ex. 23, p. 3. A "primary aquifer" is defined as a highly productive aquifer presently being used as a source of water supply by a major municipal water supply system (see Division of Water Technical and Operational Guidance Series [TOGS] 2.1.3, Oct. 23, 1990, at 2).

[133] Hrg. Ex. 8, App. Ex. 23, p. 3; Hrg. Ex. 10, Supplement to Application Attachment W, Figure 23-1. A "principal aquifer" is defined as an aquifer known to be highly productive or whose geology suggests abundant potential water supply, but which is not intensively used as a source of water supply by major municipal systems at the present time (see TOGS 2.1.3, p. 2).

[134] Hrg. Ex. 8, App. Ex. 23, p. 3.

of impervious surfaces associated with the placement of the collection substation, O&M facility, turbine foundations, and access roads will be dispersed throughout the Project area and are expected to have only a negligible effect on groundwater recharge for the local region.[135]

Temporary impacts to groundwater could occur as a result of accidental discharges of petroleum or other chemicals used during the construction, operation, or maintenance phases of the Project.[136] Project construction may also result in temporary localized impacts to groundwater resources and use of those resources by landowners adjacent to Project components including the interruption of groundwater flows down slope of proposed turbine foundations and access roads, alterations to ground water recharge characteristics due to changes in surface water runoff or waterbody flows, and impacts to groundwater discharge and recharge areas.[137] In addition, the curing of concrete used in turbine foundations may cause a temporary and localized increase in the pH of groundwater in the immediate area of the foundation placement.[138]

Proposed Certificate Conditions designed to avoid and minimize impacts to groundwater and water wells include Condition 53, which provides that turbines will not be sited within 100 feet of water wells. Condition 53 further provides for pre- and post-construction water testing should environmental or engineering constraints require the siting of any other Project component within 100 feet of a well, and replacement of the well if necessary.

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[135] Hrg. Ex. 8, App. Ex. 23, p. 4.

[136] Hrg. Ex. 8, App. Ex. 23, p. 4.

[137] Id.

[138] Hrg. Ex. 8, App. Ex. 23, p. 6.

With respect to the siting of turbines, the Applicant contends that impacts to water wells are extremely unlikely because, notwithstanding the above Certificate Conditions, all turbines are sited at least 1,400 feet from a residence, mapped DEC public and private well location data indicates that no water wells are located within 1.5 times (or 897 feet) the turbine height of the proposed turbine locations, and site survey work indicates that no wells are located within 100 feet of Project infrastructure.[139] DPS Staff agrees that a setback of 1.5 times turbine height is adequate mitigation and supports the adoption of Condition 53.[140] DPS Staff also supports the adoption of Condition 28, which includes the 1,400 feet setback for residences and well setbacks from collection lines and access road consistent with DOH requirements.[141]

In briefing, the Applicant states that it plans to notify owners or operators of water wells within one mile of the Project of the commencement of construction, and that residents may use the Complaint Resolution Plan process if they believe construction or operation of the Project adversely impacted their water well.[142] We note, however, that notification to water well owners or operators is not expressly provided for in proposed Certificate Condition 12, and recommend that the Board explicitly include the requirement in that condition.

Other proposed Certificate Conditions designed to avoid and minimize impacts to groundwater and water wells include Condition 54, which requires the Applicant to obtain

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[139] Tr. 329.

[140] Tr. 447-48.

[141] Tr. 449.

[142] Eight Point IB, p. 20; see also Hrg. Ex. 8, App. Ex. 23, p. 6, Ex. 2, pp. 7-8, and Appendix 12-2.

coverage under the DEC State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (General Permit) and prepare and file a Stormwater Pollution Prevention Plan (SWPPP) (discussed further below) as required by the General Permit specifying erosion control measures to minimize impacts to soil resources, thereby protecting groundwater resources, and measures to address accumulations of groundwater or stormwater encountered during Project construction; and Condition 55, which requires the Applicant to file as a compliance filing a final Spill Prevention, Containment and Counter Measures (SPCC) Plan to minimize the potential for unintended releases of petroleum and other hazardous chemicals during facility construction and operation.

In pre-filed testimony, Karl Schneider, a resident in the Project area and a member of CMORE, raised the concern that the construction of the concrete pier for turbine #16 might disrupt the artesian spring on his property that he uses for a drinking water source.[143] CMORE argues that prior to the construction of turbines, the Applicant should conduct water testing on all properties within the Project area at the Applicant's expense.[144]

In response, the Applicant argues that CMORE's recommendation should be rejected. The Applicant contends that no evidence supports the request. The Applicant further notes that DPS Staff and the Applicant addressed the need for the testing of private wells in detail and reached an agreement on

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[143] Tr. 734. CMORE witness Schneider did not specify the distance between his artesian spring and the pier for turbine # 16. In any event, if it is within 100 feet of turbine # 16 then there are measures to address his concern.

[144] CMORE IB, p. 3.

when water testing would be needed and when remedial measures would be implemented. The Applicant reiterates that given the distances turbines will be setback from water wells, adverse impacts to private wells is extremely unlikely.[145]

Recommendation

We agree that CMORE's recommendation should be rejected. Nothing in the record indicates that the measures to avoid and minimize impacts to private wells are inadequate, or that the remedial measures to address any impacts that do occur are insufficient. Accordingly, the record does not support requiring the Applicant to conduct water testing on all properties within the Project area prior to the commencement of construction.

In sum, based upon the hearing record and the proposed Certificate Conditions, as modified above, we conclude impacts to groundwater and water wells have been avoided or minimized to the maximum extent practicable, and urge the Board to make that finding.

ii. Surface Water, Protected Streams, and Wetlands

Information concerning the Project's potential impacts to surface water resources and protected streams is included in Hearing Exhibit 8, Application Exhibit 23, and in Hearing Exhibit 10, Supplement to the Application at 33-34 and Attachment X, Table 23-2. Information concerning the Project's potential impacts on wetlands is included in Hearing Exhibit 8, Application Exhibit 22, and in Hearing Exhibit 13, Second Supplement to the Application at 4-5 and Attachment F, Figure 22-2.

[145] Eight Point RB, pp. 6-7.

The Applicant's initial wetland and stream delineation effort surveyed over 3,000 acres near proposed Project components.[146] In response to the DPS Chair's June 18, 2018 Notice of Deficiency Letter and in accordance with DPS Staff's memorandum entitled "Advice to Applicants on the Wetlands Delineation Requirements of the Article 10 Regulations," the Applicant completed additional on-site delineations of all wetlands and streams located on land that the Applicant has under control and within 500 feet of the limits of disturbance (LOD). The Applicant also approximated or predicted the boundary or location of (1) all wetlands and streams beyond 500 feet of the LOD on land under the Applicant's control, and (2) all wetlands and streams within 500 feet of the LOD located on adjacent properties beyond the Applicant's control.[147] A revised map, Figure 22-2, depicting the results of the Applicant's additional delineation effort of over 5,000 acres[148] is Attachment F to the Applicant's Second Supplement to the Application.[149]

The surveys identified 147 wetlands in the area surveyed that contained portions of emergent, scrub-shrub, and forested cover types, and open water areas.[150] Of the wetlands identified in the study area, three are State-regulated

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146 Hrg. Ex. 8, App. Ex. 22, p. 69.

147 Hrg. Ex. 13, Second Supplement to the App., p 5.

148 See Eight Point IB, p. 22.

149 The Applicant's Second Supplement to the Application is in Hearing Exhibit 13.

150 Hrg. Ex. 8, App. Ex. 22, pp. 70-72.

freshwater wetlands:[151] RX-2 and RX-3, both Class II freshwater wetlands, and RX-5, a Class III wetland.[152]

The surveys also identified 81 waterbodies in the survey area including perennial streams, intermittent streams, and ephemeral streams.[153] Of the streams identified in the study area, two streams are classified C(T) or higher under the State's classification of waters program (see ECL §17-0301) and are protected under ECL Article 15.[154] The protected streams are Bennetts Creek and its tributaries, and Cryder (Marsh) Creek and

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[151] State-regulated freshwater wetlands are wetlands that have an area of at least 12.4 acres or more or, if smaller, have been determined by the DEC Commissioner to have unusual local importance (see ECL §24-0301[1]; see also 6 NYCRR §663.2[p]). Certain disturbances of State-regulated freshwater wetlands and their 100-foot adjacent areas require a permit issued pursuant to ECL Article 24 and 6 NYCRR Part 663. In the case of an Article 10 application, a freshwater wetlands permit would be issued by the Board in the form of Certificate Conditions (see PSL §168[2]).

[152] Hrg. Ex. 8, App. Ex. 22, pp. 76-77 and Appendix 22-2, p. 13; Tr. 699-701. Note that State-regulated wetland RX-4, which is referenced in App. Ex. 22 and the Wetland and Stream Delineation Report (Appendix 22-2), while inside the Project area, is located outside the delineation study area.

[153] Hrg. Ex. 8, App. Ex. 23, p. 9.

[154] Under the State's classification of waters program, DEC has classified waters State-wide with the designations AA, AA(T), A, A(T), B, B(T), C, C(T), and D (6 NYCRR Part 701). Class AA or A waters are waterbodies with the highest water quality. Classifications with the designation (T) indicate that the waters are suitable for trout habitat (6 NYCRR §701.25). Classifications with the designation (TS) indicate that the waters are suitable for trout spawning habitat (id.). Waters classified as AA, AA(T), A, A(T), B, B(T), or C(T) are protected under the State's Protection of Waters program (ECL Article 15, Title 5) and may not be disturbed without a permit pursuant to ECL §15-0501(3) and 6 NYCRR §608.2. In the case of an Article 10 application, the Board issues the ECL Article 15 permit in the form of Certificate Conditions (PSL §168[2]).

its tributaries.[155] In addition, 20 streams in the Project area are classified as Class C.[156]

The Applicant estimates that a total of 4.1 acres of wetlands and 3,870 linear feet of waterbodies will be impacted by the Project.[157] Of those areas, only 0.05 acres of wetlands and 169 linear feet of waterbodies are expected to be permanently impacted as a result of the placement of Project components or the direct placement of fill in wetlands or waterbodies.[158] Temporary direct and indirect impacts to wetlands and waterbodies are expected to occur as a result of the installation of Project components and the use of temporary workspaces during the construction phase of the Project including the direct placement of fill in surface waters to accommodate road crossing, the disturbance of stream banks resulting from buried cable installation, an increase in water temperature and conversion of cover type due to vegetation clearing, and erosion and sedimentation due to excavating, grading and other construction-related activities in the vicinity of wetlands and other waterbodies.[159]

Pursuant to ECL Article 24, certain activities that impact State-regulated wetlands or their 100-foot adjacent areas require State approval (see 6 NYCRR §633.4[a]). By avoiding the siting of Project components in State-regulated wetlands or the 100-foot adjacent areas, the Applicant asserts that State-

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155 Hrg. Ex. 8, App. Ex. 23, p. 9; Tr. 700.

156 Hrg. Ex. 8, App. Ex. 23, p. 8; Tr. 700.

157 Hrg. Ex. 8, App. Ex. 22, p. 78.

158 Hrg. Ex. 8, App. Ex. 22, pp. 78-79.

159 Hrg. Ex. 8, App. Ex. 22, pp. 77-79, App. Ex. 23, pp. 10-17; Tr. 700-701.

regulated wetlands will not be impacted by the Project.[160] DEC Staff agrees. DEC Staff notes that an overhead feeder line will cross regulated areas of freshwater wetlands RX-2 and RX-3, but the line will completely span the wetlands and the poles will be located beyond the regulated adjacent area.[161] DEC Staff also notes that access to construct the line will be via New York Route 248 and, therefore, no clearing or ground disturbance will occur in the regulated wetland areas.[162] Accordingly, no further approval under ECL Article 24 is required.

Notwithstanding the above, the proposed Certificate Conditions contain provisions governing any construction activities that might occur in State-regulated wetlands or their adjacent areas, including Conditions 98, 99, 100, 103, and 111. With the adoption of these conditions, it may be concluded that the Project will be constructed in compliance with ECL Article 24.

With respect to impacts to protected streams, disturbances of streams designated C(T), C(TS), or higher require approval from the State (see 6 NYCRR §608.2[a]). To obtain approval, an applicant must demonstrate that the proposed activity is in the public interest in that (a) the proposal is reasonable and necessary, (b) the proposal will not endanger the health, safety or welfare of the people of the State, and (c) the proposal will not cause unreasonable, uncontrolled, or unnecessary damage to the natural resources of the State, including soil, forests, water, fish, shellfish, crustaceans, and aquatic and land-related environment (see 6 NYCRR §608.8).

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160 Hrg. Ex. 8, App. Ex. 22, p. 79.

161 Tr. 700.

162 Tr. 700.

In determining whether the above standards are met, the following factors are considered:

(a) the environmental impacts of a proposal, including effects on aquatic, wetland, and terrestrial habitats, water quality, hydrology, and watercourse and water body integrity;

(b) the adequacy of design and construction techniques for structures;

(c) operational and maintenance characteristics;

(d) the safe commercial and recreational use of water resources;

(e) the water dependent nature of a use;

(f) the safeguarding of life and property; and

(g) natural resource management objectives and values (see 6 NYCRR §608.7[b]).

To avoid or minimize potential impacts to protected streams, the Applicant proposes to use overhead feeder lines across the Cryder (Marsh) Creek/freshwater wetland RX-2 and Bennetts Creek/freshwater wetland RX-3 complex; horizontal directional drilling (HDD) installation of feeder lines beneath a C(T) tributary to Marsh Creek and a C(TS) tributary to Bennetts Creek; and overhead transmission lines to cross C(T) Fall Creek and C(TS) Rock Creek tributaries to Bennetts Creek.[163] Based on the Project design and proposed Conditions 36, 49, 82-114, 121-22, 131, and 134, DEC Staff concludes that the Part 608 permitting standards have been met.[164]

With respect to potential impacts to water resources from soil erosion and sedimentation caused by construction-

[163] Hrg. Ex. 10, Supplement to App., pp. 33-34 and Attachment X, Table 23-2 (Revised); Tr. 701.

[164] Tr. 701; DEC IB, p. 13.

related activities, DEC requires coverage under the SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) for any "construction activities involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a larger common plan of development or sale that will ultimately disturb one or more acres of land; excluding routine maintenance activity that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility." To obtain coverage under the General Permit, the owner or operator of a construction activity must prepare a Stormwater Pollution Prevention Plan (SWPPP) detailing the erosion and sediment management practices that will be used during construction and the stormwater management practices that will be used to reduce pollutants in stormwater discharges after construction is complete. The final SWPPP is then filed with DEC together with a Notice of Intent (NOI) to seek coverage under the General Permit for DEC's review and approval.[165]

The Applicant submitted a preliminary SWPPP with its Article 10 application.[166] The Applicant also states that it will finalize the SWPPP and submit it with an NOI to DEC for approval.[167] In addition, proposed Certificate Condition 54 requires the Applicant to file the final DEC-approved SWPPP with the Secretary. Accordingly, the Board may conclude that the Project will be constructed and operated in compliance with applicable State water pollution control laws and regulations,

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[165] DEC's General Permit was issued pursuant to federally-approved authority under the federal Clean Water Act. Accordingly, DEC remains the permit issuing authority for the General Permit for Article 10 projects (see PSL §172[1]).

[166] Hrg. Ex. 8, App. Appendix 23-4.

[167] Hrg. Ex. 8, App. Ex. 23, pp. 18-19.

and the impacts to water resources from erosion and sedimentation will be avoided or minimized to the maximum extent practicable.

With respect to avoiding and minimizing impacts to surface water resources, the Applicant designed the Project to avoid impacts to wetlands and streams by placing turbines outside wetlands and waterbodies, and by routing access roads and collection lines around wetlands and waterbodies to the extent practicable.[168] Where access roads and collection lines cross wetlands or waterbodies, the Applicant will use the narrowest or previously disturbed portions for the crossing.[169] Where beneficial and cost effective, the Applicant plans to use HDD for placement of buried collection lines within forested wetlands or along stream channels.[170]

Proposed Certificate Conditions that address potential Project impacts to surface waters, wetlands, and other waterbodies include the filing of final wetland and stream impacts, drawings, site plans, and construction details, and the filing of a final Wetlands Mitigation Plan to address any impacts to federal and State wetlands (Conditions 36 and 37); the filing of a final Spill Prevention, Containment and Counter Measures (SPCC) Plan to minimize the potential for unintended releases of petroleum and other hazardous chemicals during Project construction and operation (Condition 55); the filing of a Stream Crossing Plan (Condition 70); and the filing of a Wetlands Mitigation Remedial Plan if needed (Condition 68). Several other proposed conditions provide detailed avoidance and mitigation measures for potential impacts to surface water

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168 Hrg. Ex. 8, App. Ex. 22, p. 79.

169 Id.

170 Id.

resources resulting from a variety of construction activities on or near wetlands and other waterbodies (see Conditions 82-114, 121-22, and 129-35).

In pre-filed testimony, DPS Staff noted the high number of existing oil and gas wells in the Project Area, some of which are still active.[171] To avoid impacts to existing wells and, consequently, potential releases from them, proposed Certification Condition 28(c) requires a setback of 1.1 times the turbine tip blade height from gas and oil wells (unless waived by the landowner and gas and oil well operator), which DPS Staff agrees adequately minimizes risks of damage to existing wells from construction and operation of the Project.[172] In addition, proposed Certificate Condition 148 provides detailed requirements in the event petroleum-impacted soils, abandoned gas lines, or unplugged wells are encountered during Project construction.

Finally, to ensure compliance with all environmental restrictions on construction, the parties agreed that the Project will provide funding for an independent, third-party environmental monitor (Condition 29[a]). The environmental monitor will be selected based on input from designated representatives of the Towns, will perform daily inspections of construction work sites and, in consultation with DPS Staff, will issue regular reports and compliance audits (id.).

Both DEC Staff and DPS Staff agree that the Project as conditioned by the proposed Certificate Conditions avoids or mitigates impacts to wetlands and streams to the maximum extent

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171 Tr. 450-51; Hrg. Ex. 8, App. Figure 4-2 (Existing Utility Locations).

172 Tr. 452.

practicable.[173] Based upon the foregoing, the record supports that conclusion that the Project is designed to operate in compliance with applicable State water pollution control, stream protection, and freshwater wetland protection laws and regulations, and that any adverse environmental impacts to surface water resources will be minimized or avoided to the maximum extent practicable. Accordingly, we urge the Board to make the requisite findings pursuant to PSL §168(3)(c) and (e).

iii. Water Quality Certification

DEC Staff notes that the Project will require a Section 401 Water Quality Certification (see 6 NYCRR §608.9[a]). Water quality certifications (WQC) for Article 10 projects are issued by the Board (see 16 NYCRR §1000.8). Proposed Certificate Condition 5 provides that prior to the commencement of construction of the Project, the Certificate Holder shall file a request or application for a WQC with the Secretary to the Board concurrently with the permit application filed with the United States Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act.

To obtain a WQC, an applicant must demonstrate compliance with New York State effluent limitations and standards, New York State water quality standards and thermal discharge criteria, New York State new source standards, New York State prohibited discharges, and New York State regulations and criteria that are otherwise applicable (6 NYCRR §608.9[a]). The governing State standards are set forth in 6 NYCRR Parts 701, 702, 703, 704 and applicable provisions of Part 750.

[173] Tr. 566-67, 575-576, 593, 703.

Recommendation

DEC Staff reviewed the Project as proposed and conditioned, and concluded that the standards for issuance of a WQC have been met.[174] No party disagreed with DEC Staff's conclusion. Accordingly, upon a request or application pursuant to proposed Certificate Condition 5, we recommend that the Board issue a WQC for the Project as proposed and as conditioned by the Certificate.

4. Wildlife and Habitat Mitigation Measures

PSL §168(2) requires the Board to make explicit findings regarding the probable environmental impacts from the construction and operation of a proposed facility on wildlife and habitat. Before granting an Article 10 Certificate, the Board must further determine that any adverse environmental effects of the construction and operation of the facility on wildlife and habitat will be minimized or avoided to the maximum extent practicable, and that the facility is designed to operate in compliance with applicable State law protecting wildlife, namely the State Endangered Species Act (ECL §11-0535) and its implementing regulations at 6 NYCRR Part 182 (PSL §168[3][c] and [e]).

Issues related to findings of impacts to wildlife and habitat, the adequacy of the Applicant's avoidance and mitigation measures, and the Project's compliance with Part 182 were again undisputed by the parties. Subject to the proposed Certificate Conditions relevant to wildlife and wildlife habitat, DEC Staff and DPS Staff argue that the Board may make the required statutory findings regarding wildlife and habitat.

[174] Tr. 702-03.

i. Wildlife Other Than Bats and Habitat

Information concerning the Project's potential impacts on wildlife and habitat is found in Application Exhibit 22 (Terrestrial Ecology and Wetlands) and Application Exhibit 23 (Water Resources and Aquatic Biology).[175] Additional information is contained in the April 2018 Supplement to the Application.[176]

Based on desktop analyses and field surveys, the Applicant characterized the terrestrial and aquatic wildlife and their habitat within the Project area.[177] Predominant wildlife habitat types include forestland, successional shrubland, successional old-field, open water, and active agriculture habitats.[178] Wildlife species identified or presumed to occur within the Project area are species typically found in those habitats in New York.[179]

With respect to State and federally listed endangered or threatened species other than bats, based upon Project-specific information received from the New York Natural Heritage Program, DEC, the United States Fish and Wildlife Service (USFWS), and direct on-site observations and studies, Eight Point compiled a list of State and federally listed species that are believed to occur, or have the potential to occur, within the Project area.[180] Eight Point's studies revealed no State or federally listed endangered, threatened, candidate, or rare

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175 Hrg. Ex. 8, App. Ex. 22 and Ex. 23.

176 Hrg. Ex. 10, pp. 19-23.

177 Hrg. Ex. 8, App. Ex. 22, pp. 12-28; Hrg. Ex. 10, Supplement to the App., pp. 26-27 (eagles) and pp. 27-29 (vernal pools).

178 Hrg. Ex. 8, App. Ex. 22, pp. 26-28.

179 See Hrg. Ex. 8, App. Ex. 22, pp. 12-26.

180 Hrg. Ex. 8, App. Ex. 22, pp. 22-24, 51-53, and Table 22-10.

plant species within the Project area.[181] Other than bats, Eight Point's studies revealed no State or federally listed mammal species.[182] With respect to avian species, no federally endangered or threatened species were identified within the Project area.[183] However, several State-listed bird species were documented to potentially occur within the Project area: the golden eagle (endangered), bald eagle (threatened), northern harrier (threatened), Henslow's sparrow (threatened), pied-billed grebe (threatened), and several other bird species of special concern.[184] Finally, two reptile species listed as Species of Greatest Conservation Need were identified in the Project area.[185]

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[181] Hrg. Ex. 8, App. Ex. 22, p. 60. As discussed in greater detail below, the potential "take" of any State-listed threatened or endangered species is regulated by ECL Article 11 and 6 NYCRR Part 182.

[182] Hrg. Ex. 8, App. Ex. 22, pp. 60-61.

[183] Hrg. Ex. 8, App. Ex. 22, p. 61.

[184] Hrg. Ex. 8, App. Ex. 22, pp. 61-63. Species of special concern are native species of fish and wildlife that do not qualify as either endangered or threatened but are at risk of becoming threatened in New York if protection measures are not implemented. See 6 NYCRR §182.2(u).

[185] Hrg. Ex. 8, App. Ex. 22, p. 66. "Species of Greatest Conservation Need" are defined as species experiencing some level of population decline, having identified threats that may put them in jeopardy, and needing conservation actions to maintain stable population levels or sustain recovery. 2015 New York State Wildlife Action Plan, p. 7 [accessed at http://www.dec.ny.gov/animals/7179.html]). The 2015 State Wildlife Action Plan was developed under a federal grant program intended to implement conservation actions before species becomes critically imperiled, in order to avoid any need to list such species as threatened or endangered. 2015 New York State Wildlife Action Plan, p. 2.

Impacts to wildlife during Project construction are expected to be incidental, temporary, and random.[186] Mobile and more mature species will vacate construction areas prior to the commencement of operations.[187] To avoid impacting wildlife during their breeding and habitat occupancy periods in spring and summer months, construction-related tree clearing is proposed to be limited to the winter months (see proposed Certificate Condition 135).

Eight Point did not identify any impacts to or the potential to "take" any State-listed threatened or endangered (TE) species as a result of construction activities. Accordingly, an incidental take permit pursuant to 6 NYCRR Part 182 is not required for those species. In addition, proposed Certification Conditions 78 through 81 establish procedures the Applicant must follow if any federally or State listed TE species are observed, or any dead, injured, or damaged TE species or their parts, eggs, or nests are encountered, during Project construction or operation.

With respect to impacts to habitat, as noted earlier, approximately 477 acres of wildlife habitat are expected to be temporarily impacted during Project construction.[188] Of the acreage temporarily impacted, approximately 299.6 acres consist of active agricultural lands, which provide limited permanent wildlife habitat due to regular human disturbance as a result of agricultural activities.[189] Remaining habitats temporarily impacted include 147.7 acres of forestland, 10 acres of successional scrubland, and 19 acres of successional old-

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[186] Hrg. Ex. 8, App. Ex. 22, p. 29.

[187] Id.

[188] Hrg. Ex. 8, App. Ex. 22, p. 31.

[189] Id.

field.[190] Permanent impacts to habitat resulting from the placement of Project component include the loss of a total of 29.8 acres of wildlife habitat consisting of 19.3 acres of active agricultural lands, 8.6 acres of forestland, 1.3 acres of successional old field, and 0.6 acres of successional scrubland.[191] The Applicant notes that total habitat loss represents only 0.19% of the total Project Area acreage.[192] Eight Point also notes that no direct impacts to open water habitats will occur as a result of the Project.[193]

With respect to operation-related impacts to wildlife other than bats, the most significant impact is bird mortality resulting from collisions with wind turbines and power lines.[194] However, when compared to other human-caused sources of bird mortality, wind turbines account for less than one percent of overall bird mortality caused by human activity.[195] Accordingly, the Applicant concludes that when compared to other human-related sources of bird mortality, the effect of avian mortality at wind energy facilities is very minor.[196] Moreover, the Applicant does not anticipate that mortality at wind facilities in New York is likely to result in population-level impacts to any species of birds.[197]

Measures to avoid and mitigate construction- and operation-related impacts to habitat are described above with

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190 Id.

191 Id.

192 Eight Point IB, p. 26.

193 Hrg. Ex. 8, App. Ex. 22, p. 31.

194 Hrg. Ex. 8, App. Ex. 22, pp. 42-47.

195 Hrg. Ex. 8, App. Ex. 22, p. 43.

196 Id.

197 Hrg. Ex. 8, App. Ex. 22, p. 47.

respect to impacts to vegetation, and impacts to surface waters, wetlands, and other water bodies. Measures to avoid and mitigate impacts to wildlife species other than bats include the placement of collection lines underground as much as possible to avoid collisions by birds, lighting of turbines and other Project components at minimum levels allowed by the Federal Aviation Administration (FAA), evaluating the potential use of radar-activated aviation hazard warning lights to further reduce impacts to wildlife, and the implementation of a Post-Construction Avian and Bat Monitoring and Adaptive Management Plan.[198] Certificate Conditions proposed to avoid or mitigate impacts to wildlife other than bats and wildlife habitat include Conditions 11, 29, 49, 54-55, 58, 63, 70, 78-114, 121-122, and 129-135.

As noted above, several State-listed TE bird species, including the bald and golden eagles, were observed in the Project area. However, the Applicant has sited Project turbines to avoid the preferred habitats of those eagle species.[199] Moreover, no occupied eagle nests were identified within the Project area,[200] and the record contains no other indication that eagles will likely be taken by Project operation. Similarly, nothing indicates that the other TE bird species will likely be taken during project operation. Consequently, an approval pursuant to 6 NYCRR Part 182 is not required at this time for the TE bird species. Moreover, as noted above, proposed Certification Conditions 78 through 81 would establish procedures the Applicant must follow if any federally or State

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[198] Hrg. Ex. 8, App. Ex. 22, pp. 66-68; see also Proposed Certificate Conditions 57(e) and 58.

[199] Hrg. Ex. 8, App. Ex. 22, pp. 61-62.

[200] Hrg. Ex. 8, App. Ex. 22, p. 62.

listed TE species are observed, or any dead, injured, or damaged TE species or their parts, eggs, or nests are encountered during Project construction or operation.

If the proposed Certificate Conditions are adopted, DPS Staff recommends that the Board find that impacts to wildlife and wildlife habitat for non-bat species are reasonable and appropriately mitigated.[201]

Recommendation

In sum, no Party raised any issues related to construction or operational impacts to wildlife other than bats. Based upon the record and with the adoption of the proposed Certificate Conditions, we conclude that the Board may make the required findings with respect to wildlife and wildlife habitat for non-bat species.

ii. Bats

The Applicant's bat surveys revealed the probable presence of several northeastern bat species in the Project area, including the eastern small-footed bat (*Myotis leibii*), little brown bat (*Myotis lucifugus*), big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*), eastern red bat (*Lasiurus borealis*), hoary bat (*Lasiurus cinereus*), and tri-colored bat (*Perimyotis subflavus*).[202] With respect to federally or State listed endangered or threatened species, the surveys indicated the possible presence of the northern long-eared bat (*Myotis septentrionalis*) (NLEB) and the Indiana bat (*Myotis sodalist*).[203] However, because the Project area does not

[201] DPS IB, p. 21.

[202] Hrg. Ex. 8, App. Ex. 22, p. 17; see also App. Appendices 22-5 and 22-7.

[203] Hrg. Ex. 8, App. Ex. 22, p. 17.

overlap the known range of the federally and State endangered Indiana bat, and the presence of that species could not be confirmed in field studies, the Indiana bat was not included in further analysis.[204]

The NLEB is listed as a threatened species under both federal and State law.[205] The small-footed bat is a State-listed species of special concern.[206] The tri-colored and little brown bat are currently under review by federal and State authorities to determine whether they should be given endangered species protection.[207] In addition, DEC Staff testified that all bat species resident in New York, except for the big brown bat, have been designated as species of conservation concern, and are considered Species of Greatest Conservation Need.[208]

Construction-phase impacts to bats consist of the loss of foraging and roosting forest habitat as a result of Project-related tree clearing.[209] However, only a small percentage of existing forested habitat in the Project area will be cleared, and the creation of new corridor and edge habitat will improve foraging for those bat species that prefer those areas.[210] Accordingly, Project construction is not expected to significantly negatively impact foraging or roosting habitat for

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204 Hrg. Ex. 8, App. Ex. 22, pp. 17-18.

205 The NLEB is a federally-listed threatened species by the United States Department of the Interior in 50 CFR §17.11(h) and §17.40(o). Accordingly, the NLEB is also a State-listed threatened species pursuant to 6 NYCRR §182.2(y)(2) and §182.5(b).

206 See 6 NYCRR §182.2(u), §182.5(c).

207 Tr. 656-657.

208 Tr. 656.

209 Hrg. Ex. 8, App. Ex. 22, pp. 38-39.

210 Hrg. Ex. 8, App. Ex. 22, p. 39.

bats, or significantly change the composition of bat species in the Project area.[211]

The operation of the Project, however, poses a significant risk of increased bat mortality due to bat collisions with wind turbines.[212] The Applicant estimates that without adopting measures to minimize potential impacts, the mean mortality rates for bats at the Project would be 356 bats annually, and 10,695 bats over the 30-year life of the Project.[213] The Applicant assumes that migratory tree-roosting bats, including the eastern red bat, the hoary bat, and the silver-haired bat, would account for 78% of all bat fatalities.[214]

DEC Staff testified that wind turbines are the single greatest known source of mortality for several bat species in North America, and the impacts wind energy development are having on all species of bats have been a cause of concern for more than a decade.[215] DEC Staff testified that the current rate of bat mortality resulting from wind energy development is unsustainable and is expected to cause a population decline of 90% for the most commonly killed species, the hoary bat, in the next 50 years.[216] This level of decline may be expected for the other most commonly killed migratory tree bat species as well.[217] DEC Staff predicts that without immediate action to reduce fatalities caused by wind turbines, one or more additional bat

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211 Id.

212 Hrg. Ex. 8, App. Ex. 22, pp. 41-42, 47-50.

213 Hrg. Ex. 8, App. Ex. 22, pp. 47-48 and Table 22-9.

214 Hrg. Ex. 8, App. Ex. 22, p. 48.

215 Tr. 658. See also Hrg. Ex. 8, App. Ex. 22, p. 42, 49.

216 Tr. 658.

217 Tr. 658-659.

species in New York are likely to experience population declines to such a degree that protection under New York's Endangered Species Act (ECL §11-0535) would be warranted.[218]

DEC Staff reports that post-construction fatality studies conducted at wind energy projects in New York State and southern Ontario, Canada, found that the mean bat fatality rate for all species combined is 6.7 bats per Megawatt (MW) of generating capacity per year.[219] Based upon 2018 installed wind energy capacity of 1,899.4 MW, an estimated 12,700 individual bats are killed annually at wind projects in New York.[220] With an estimated 4,000 to 5,900 MW of on-shore wind generating capacity expected to be installed in State by 2030, an estimated 26,800 to 39,500 bats are expected to be killed by wind turbines in New York annually by 2030.[221]

With respect to the NLEB, the species has already suffered a 90% decline in population because of white nose syndrome (WNS), a disease that kills hibernating bats such as the NLEB.[222] As a result of this decline, NLEB was federally listed as a threatened species in 2015 and, therefore, became listed as a threatened species under New York law as well.[223] DEC Staff estimates that based on post-construction reports provided to DEC, the expected fatality rate of NLEB at wind projects is an estimated 2.7 NLEB per 100 MW per year.[224]

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218 Tr. 659.

219 Tr. 660.

220 Tr. 660.

221 Tr. 660. See also Hrg. Ex. 8, App. Ex. 22, p. 48, Table 22-9.

222 Tr. 661.

223 Tr. 661.

224 Tr. 664.

a. NLEB Net Conservation Benefit Plan; Curtailment

The Applicant did not provide specific estimates of Project-related NLEB fatalities ("take") with no minimization measures in place. The Applicant and DEC Staff reached an agreement, however, that the operation of the Project without minimization or mitigation measures would result in the estimated take of 96.2 NLEBs over the 35-year life of the Project (see Proposed Certificate Condition 33). Because the Project may result in the take of a threatened species, ECL §11-0535 and the permitting requirements of 6 NYCRR Part 182 (Incidental Take Permit) apply to the Project.

ECL §11-0535 prohibits, among other things, the "taking" of any threatened or endangered species except under license or permit from the State. "Taking" of wildlife is defined to include killing or capturing wildlife, as well as all lesser acts such as disturbing, harrying, or worrying (see ECL §11-0103[13]; 6 NYCRR 182.2[x]). Under 6 NYCRR §182.11, an incidental take permit is required "for any activity that is likely to result in the take or taking of" any endangered or threatened species.

To obtain an incidental take permit, an applicant must first avoid all impacts to listed species to the extent practicable.[225] If full avoidance, which is one or fewer kills of a listed species every ten years, is achieved, no further minimization or mitigation measures are required.[226]

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[225] Tr. 665.

[226] Tr. 669; see also Case 14-F-0490, Cassadaga Wind LLC, Order Granting Certificate of Environmental Compatibility and Public Need (issued January 17, 2018) (Cassadaga Wind Order), pp. 43, 52.

If, however, an applicant makes a demonstration that full avoidance is impracticable, applicant is required to prepare an endangered or threatened species mitigation plan that will result in a net conservation benefit for the listed species (see 6 NYCRR §182.11[a]).[227] The plan must include measures that first minimize impacts to listed species to the maximum extent practicable, and then fully mitigate any remaining impacts (see 6 NYCRR §182.11[d][1]).[228] All proposed measures must be capable of successful implementation, and shall be legally, technologically, economically, and biologically practicable (see 6 NYCRR §182.11[d][1]). To provide a net conservation benefit, the mitigation measures proposed must either reduce the impacts of an existing threat to the listed species, or proactively increase productivity or abundance of the species or its habitat to a degree greater than if the applicant's proposed activity were not undertaken (see 6 NYCRR §182.2[n]).

Currently, the only effective method to reduce bat mortality at wind energy projects is to curtail turbine operations, usually by "feathering" the blades to reduce rotation, during time periods when most fatalities have been documented to occur.[229] Studies show that with respect to all bat species, fatalities can be reduced by more than 80% when turbines are curtailed until wind speeds reach at least 6.9 meters per second (m/s); up to 82% when turbines are curtailed at wind speeds below 6.5 m/s; about 60% when turbines are curtailed below 6.0 m/s; and between 50-70% when turbines are curtailed below 5.5 m/s.[230] In addition, studies show that 83%

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[227] Tr. 665, 673.

[228] Tr. 673.

[229] Tr. 665.

[230] Tr. 665-666.

of all bat fatalities occurred between July 1 and October 1 during night time hours.[231]

To constitute full avoidance for the NLEB, a curtailment regime must curtail all turbines at a wind power facility from 30 minutes before sunset to 30 minutes after sunrise, every day during the period from July 1 through October 1 when ambient temperatures are above 50 degrees Fahrenheit and when local wind speed as measured at hub height is equal to or greater than 6.9 m/s.[232] This assumes that the facility is not located within 1.5 miles of a known NLEB maternity roost or within 5 miles of a known winter hibernaculum, that female NLEB have not been captured within 1.5 miles of the project area during maternity season, or that NLEB have not been demonstrated to be present during the spring or summer in the project area.[233]

In this matter, DEC Staff and the remaining parties except CMORE have agreed, however, that the Applicant has demonstrated that a 6.9 m/s curtailment regime is not feasible for this Project and, therefore, full avoidance of impacts to NLEB cannot be achieved (see Proposed Certificate Condition 33). Accordingly, because the Project has the potential to take NLEB, the Applicant agreed to submit a Net Conservation Benefit Plan (NCBP) to DEC no later than March 15, 2019, for DEC's approval (see Proposed Certificate Condition 34). The Applicant also agreed to implement a curtailment regime during the period from July 1 through October 1 in which it would curtail turbine operations 30 minutes prior to sunset through 30 minutes after sunrise, when ambient air temperature is 50 degrees Fahrenheit or greater and when wind speed is equal to or less than 5.5 m/s

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[231] Tr. 666.

[232] Tr. 672. See also Cassadaga Wind Order, p. 53.

[233] Tr. 672.

(see Proposed Certificate Condition 34[i]). The parties agreed that the 5.5 m/s curtailment regime will result in the take of 15.43 NLEB over the life of the Project and, accordingly, the NCBP would include mitigation measures that will result in a positive benefit to NLEB species, and not just an offset for the take of approximately 15 individuals (see Proposed Certificate Condition 34[a]). Measures to be included in the NCBP include mist-netting and radio-telemetry tracking operations to identify previously unknown maternity roost trees or hibernacula or gating of known hibernacula (see Proposed Certificate Condition 34).

Other measures included in the proposed Certificate Conditions to avoid or minimize impacts to NLEB include scheduling tree-cutting operations during the NLEB's hibernation season of November 1 through April 1; avoiding tree clearing activities within 150 feet of any known, identified maternity roost tree; conducting tree clearing outside the 150-foot buffer zone for known, identified maternity roost trees but within one mile of that buffer zone only during the period from November 1 through April 1; reducing to the maximum extent practicable, the amount of forested habitat that needs to be removed; and moving any necessary forest clearing as far away from known, identified maternity roost sites or hibernacula, to the maximum extent practicable (see Proposed Certificate Condition 33). Finally, post-construction monitoring for NLEB will be conducted as part of the Applicant's Post Construction Avian and Bat Monitoring and Adaptive Management Plan (see Proposed Certificate Condition 58).

DEC Staff supports proposed Conditions 33 and 34, Conditions 78 through 81, which address threatened and endangered species generally, and Condition 58, and concludes that the Project as so conditioned will meet the requirements of

the State Endangered Species Act (ECL Article 11) and Part 182.[234] DPS Staff concurs with DEC's recommendation. No other parties dispute DEC's recommendation.

Recommendation

We recommend that the Board determine that the Project will be operated in compliance with State law governing threatened and endangered species (see PSL §168[3][e]). We note, however, that proposed Certificate Condition 34 contains time frames for submission and DEC review of the NCBP that have already occurred. Accordingly, we recommend that the Board approve the procedures provided for in Condition 34, notwithstanding the specific time frames stated therein. In addition, the Board should consider requiring submission of the final NCBP as a compliance filing.

b. Bats Other Than NLEB

For bat species other than NLEB, the Board must conclude that impacts to those species will be avoided or minimized to the maximum extent practicable before a Certificate may be issued (see PSL §168[3][c]).[235] With respect to the proposed 5.5 m/s curtailment regime, DPS Staff cautions that because migratory tree bats fly at higher wind speeds than other bat species, lower wind speed curtailment regimes are not as protective for migratory tree bats.[236] DPS Staff also cautioned that a NCBP designed to protect NLEB, such as telemetry studies on Long Island as occurred in Cassadaga Wind LLC, will not

[234] Tr. 679-680.

[235] See also Cassadaga Wind Order, p. 55.

[236] Tr. 588.

necessarily provide any benefits to migratory tree bat species.[237]

Nevertheless, DPS Staff asserts that the 5.5 m/s curtailment regime represents an incremental benefit for migratory tree bats over the 5.0 m/s regime that was adopted by the Board in the Cassadaga Wind Order and a step towards more sustainable wind facilities with lower bat fatalities.[238] DPS Staff also supports other Certificate Conditions designed to protect bat species, including a requirement that on a recurring basis, the Applicant report on and potentially implement any new, commercially available technologies that are designed to reduce migratory bat mortality beyond the 5.5 m/s curtailment protocol (Condition 58); and a requirement that the Applicant evaluate the feasibility of installing radar-activated aviation hazard warning lights (Condition 57[e]).

Recommendation

Based upon the above conditions, both DPS Staff and DEC Staff conclude that the Project as conditioned will avoid or minimize impacts to all bat species to the maximum extent practicable.[239] Accordingly, we conclude that the Board may make the required statutory findings regarding impacts to all bat species.

5. Public Health and Safety

PSL Article 10 requires the Board to make explicit findings regarding the nature of the probable environmental impacts of the construction and operation of the facility, including impacts on public health and safety. Public health

[237] Tr. 585.

[238] Tr. 590.

[239] DPS IB, p. 23; DEC IB, p. 14.

considerations are potentially implicated by several aspect of the Eight Point Wind Project. Exhibit 15 to the Application identifies and discusses all potential significant adverse impact of the Project on the environment and public health, including any such impacts that cannot be avoided.

In this case, Application Exhibit 15 identifies blade throw/tower collapse, audible noise, low frequency noise/infrasound, ice throw, and shadow flicker as the most common areas of public health concern in relation to wind turbines.[240] In this section, we discuss impacts relating to shadow flicker, noise, electric and magnetic fields, and potential impacts on dairy operations.

i. Shadow Flicker

Shadow flicker refers to intermittent changes in light intensity in a given location due to a wind turbine's interaction with the sun.[241] Shadow flicker typically occurs for a limited number of hours a year at a home due to the fact that the sun must be in a particular location in the sky, the sun and the turbine must be aligned relative to the home, there must be sufficient wind for the turbine blades to be spinning, and clouds must not obscure the sun at the relevant times.[242] The regulations, 16 NYCRR §1001.15(e) and 1001.24(a)(9), require an applicant to address impacts due to shadow flicker, and to provide an analysis and description of related operational effects of the facility such as visible plumes, shading, glare, and shadow flicker.

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[240] Hrg. Ex. 8, App. Exh. 15, p. 3.

[241] Hrg. Ex. 8, App. Appendix 15-1, p. 5-1.

[242] Hrg. Ex. 8, App. Ex. 15 at 38. Shadow flicker usually occurs in the morning and evening close to sunrise and sunset when shadows are the longest. Id.

The Application includes a discussion of the potential health impacts of shadow flicker, based on a search conducted by Eight Point of "the primary scientific literature and the Internet."[243] Eight Point states that the main health concern associated with shadow flicker is the potential risk of seizures in people having photosensitive epilepsy. Eight Point cites an informal poll in 2012 of the members of the Epilepsy Society in the United Kingdom, for its finding that "no one had experienced an epileptic seizure living or being in proximity to a wind farm from shadow flicker."[244]

Eight Point also cites two studies[245] that investigated the relationship between photosensitive epilepsy and wind farm shadow flicker, and reached findings suggesting that turbine shadow flicker at frequencies greater than 3 Hertz (Hz) pose "a negligible potential risk of inducing photosensitive seizures."[246] Eight Point asserts that, for turbines having three blades, this translates to a maximum speed of rotation of 60 revolutions per minute (rpm), and modern turbines commonly spin at rates well below this threshold, typically below 20 rpm. Eight Point notes that the turbines proposed for this project, the General Electric (GE) 3.43-137 and GE 2.3-116, have a maximum rotational speed of 15.7 rpm. Based on this, Eight Point asserts shadow flicker in this case would not trigger epileptic seizures.[247] Eight Point also cites to a 2011 consultant's report, issued by the Department of Energy and Climate Change (United Kingdom), and a Wind Turbine Health Impact Study, issued

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[243] Hrg. Exh. 8, App. Ex. 15, p. 38.

[244] Hrg. Exh. 8, App. Ex. 15, p. 39.

[245] Harding et al. (2008) and Smedley et al. (2010).

[246] Id.

[247] Hrg. Ex. 8, App. Ex. 15, p. 39-40.

by an expert panel in Massachusetts in 2012, that each concluded that the frequency of shadow flicker from wind turbines does not pose a risk for eliciting seizures.

Eight Point's shadow flicker report is contained in Application Appendix 15-1 and its shadow flicker analysis is discussed in Application Exhibit 24.[248] Eight Point's study modeled shadow flicker contours in the Project area and led to estimates on the number of hours per year the residences may experience shadow flicker.[249] The modeling analysis conservatively included the 31 proposed and the four alternate wind turbines for the Project. Eight Point modeled "worst case" shadow flicker in the area surrounding the wind turbines, assuming the sun is always shining during daylight hours and that the wind turbine is always operating.[250] The modeling was based on data inputs that included the location of the wind turbines, the location of discrete modeling points, wind turbine dimensions, flicker calculation limits, and terrain data.[251] Based on these data, the model was able to incorporate the appropriate sun angle and maximum daily sunlight for this latitude into the calculations.

Because there are no applicable federal, State, or local laws or regulations establishing quantitative shadow flicker limits, Eight Point employed the methodology specified

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248 Hrg. Ex. 8, App. Ex. 15, Appendix 15-1, and App. Ex. 24, p. 21.

249 The duration of shadow flicker was calculated at 763 discrete modeling points, and isolines were generated from a grid encompassing the area surrounding the wind turbines. Hrg. Ex. 8, App. Ex. 24, p. 21.

250 Hrg. Ex. 8, App. Ex. 15, p. 39.

251 Hrg. Ex. 8, App. Ex. 15, p. 38. Shadow flicker calculations were limited to 1.25 miles (2,012 m) from each proposed wind turbine. Hrg. Ex. 7, Final Stipulations, p. 101.

in the Stipulations.[252] The Stipulations require Eight Point's shadow flicker study to evaluate the predicted annual shadow flicker relative to a design goal of 30 hours per year.[253] This goal was based on Eight Point's survey of shadow flicker design goals in the United States which indicated that, where ordinances or state requirements for shadow flicker exist, they set a standard of 30 hours per year for non-participating homes.[254]

In addition to the agreed upon 30-hour annual limit for shadow flicker for non-participating homes, DPS Staff witness Davis recommended a shadow flicker limit of 30 minutes per day at any non-participating landowner residence. This recommendation is based on a study conducted on behalf of the National Association of Regulatory Commissioners in 2012 (2012 NARUC Study), which concluded that exposure to wind turbine shadow flicker has been characterized as an annoyance where it exceeds 30 minutes daily or 30 hours annually.[255] DPS Staff witness Davis testified that the facility will have the potential to affect use and enjoyment of residential dwellings, given that shadow flicker expected at thirty-eight identified non-participating residences may exceed 30 minutes per day.[256]

In rebuttal testimony, Eight Point notes that 30 hours represents less than 0.5% of the daylight hours in a year and argues that a 30-hour limit for shadow flicker at non-participating homes is appropriate to limit annoyance.[257] Eight

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[252] Hrg. Ex. 7, Final Stipulations, p. 101.

[253] Hrg. Ex. 8, App. Ex. 15, pp. 41-42.

[254] Hrg. Ex. 8, App. Ex. 15, p. 42.

[255] Tr. 413.

[256] Tr. 411-12.

[257] Hrg. Ex. 8, App. Ex. 15, p. 42.

Point points to the Board's decision, based on DPS Staff's recommendation, to adopt a 30-hour annual limit in the Cassadaga Wind LLC proceeding. Since then, Eight Point argues, no new science has developed supporting a 30-minute daily standard. Eight Point asserts that the 2012 NARUC Study relied upon by DPS Staff witness Davis does not support a 30-minute limit because the two references relied upon in that study do not support a 30-minute daily limit. The first reference, Eight Point says, is to a German guideline based on a laboratory experiment, not actual field conditions. The second reference, Eight Point argues, presented a range of standards in regulation but identified 30 hours per year as the typical criteria used in evaluating shadow flicker impacts.

Citing a Danish Wind Industry Association report, Eight Point also argues that a German court has ruled that 30 hours of actual shadow flicker per year was acceptable at a neighbor's property and decided that a German guideline of only 8 hours per year was invalid. Eight Point argues that, in this decision, the German court effectively allowed more than 30 minutes of shadow flicker per day. Eight Point also notes that Connecticut, Maine, and Ohio have adopted a 30-hour per year limit, but not the more stringent 30-minute per day limit.

Eight Point testified that the Community Noise and Health Study conducted and published by Health Canada in 2016, concluded that, when evaluated alone without any other variable, shadow flicker's predictive strength for estimating high annoyance was only approximately 10 percent. Acknowledging that in this case, a number of homes could experience more than 30 minutes of shadow flicker on a given day, Eight Point argues that the Health Canada study did not find a link between those reported to be highly annoyed and the duration of a given shadow

flicker event.[258] Therefore, Eight Point argues, this most recent study does not support a 30-minute daily limit in this case. Eight Point testified that, since the issuance of the Cassadaga Wind Order, there have been no additional peer-reviewed studies aside from the Health Canada Study.[259]

Eight Point also points out in its rebuttal testimony that the shadow modeling has severe limitations with respect to estimating daily minutes of shadow flicker because the calculation assumes: the wind is blowing during all daylight hours at a speed sufficient for the turbines to spin, every day of the year is sunny (no cloudy days, rainy days or snowy days), and the turbines are oriented so as to produce shadow flicker on the subject structure 100% of the time. Eight Point argues that, because the actual number of minutes of daily flicker will depend on variables not reflected in the modeling, the actual amount of daily flicker may be less than what is modeled as worst-case.[260] In contrast, Eight Point argues, the expected annual hourly estimate of shadow flicker accounts for blade orientation, sun, and wind, and is therefore the far more accurate predictor of shadow flicker.

To resolve this dispute over whether a 30-minute per day limit necessary, Eight Point agreed to treat all shadow flicker complaints through the Complaint Resolution Process that is described in Condition 56, including nonparticipating homes exposed to less than 30 hours of shadow flicker annually.[261] Eight Point has effectively agreed to provide, at its expense,

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[258] Hrg. Ex. 8, App. Ex. 15, p. 42.

[259] Tr. 305-06.

[260] Tr. 307.

[261] Eight Point's rebuttal testimony, Tr. 360, references initially proposed Condition 55, which became Condition 56 in the Final Proposed Certificate Conditions.

blocking measures (such as landscape plantings and window treatments) if the Complain Resolution Process leads to a finding that mitigation measures are needed.[262] DPS Staff agrees that this is a reasonable approach because homes impacted by shadow flicker will be protected even if they experience less than 30-hours of shadow flicker annually.[263] Accordingly, DPS Staff recommends that the Board adopt proposed Certificate Condition 56 to support the necessary findings and determinations under PSL 168§(3)(c) regarding shadow flicker.[264]

a. Receptor Locations

In its initial post-hearing brief, CMORE asserts that the Donald Lewis residence will experience shadow flicker from turbines 26 and 27 for greater than 50 minutes per day.[265] Eight Point asserts that CMORE is incorrect on this point. Eight Point notes that the shadow flicker modeling analysis included a modeling receptor for the Donald Lewis farm, Number 535.[266] Eight Point then explains that the worst-case daily modeling results for this receptor showed a maximum of 27 minutes of shadow flicker during the course of a single day.[267] Eight Point also points out that the Donald Lewis farm is modeled to experience 20.5 hours of shadow flicker annually,

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262 Tr. 359-360. See Condition 31(e).

263 DPS IB, pp. 24-25.

264 DPS IB, pp. 24-25. DPS Staff's brief cites Condition 55, but this became Condition 56 in the Final Proposed Certificate Conditions.

265 CMORE IB, p. 3, citing Map 6-2 [sic], Map 18 of 21.

266 Eight Point RB, p. 7, citing Hrg. Ex. 8, App. Appendix 15-1, Figure 6-2, Map 18.

267 Eight Point, p. 7, citing Hrg. Exh. 8, App. Appendix 15-1, Appendix D, p. 13.

which Eight Point characterizes as "well below" the recommended annual shadow flicker standard of 30 hours per year.[268]

Eight Point argues that it is undisputed that the modeling is conservative and that actual experienced flicker should be less than modeled. Eight Point also notes that CMORE introduced no scientific evidence to undermine the adequacy of the 30-hour annual standard. Finally, Eight Point maintains that the evidentiary record squarely supports the conclusion there will be no adverse health impacts from shadow flicker.[269]

Recommendation

Based on the above, we recommend that the Board find no basis for CMORE's objection to Eight Point's analysis of potential shadow flicker impacts on the Donald Lewis residence. We recommend that the Board find that shadow flicker from the Project will not cause adverse health impacts.

ii. Application Requirements Regarding Noise Limits, Compliance Protocols and Mitigation Measures

Article 10 applications must include a study of the noise impacts of the construction and operation of the proposed generating facility, related facilities and ancillary equipment.[270] The study must include (a) a map of the study area showing the location of sensitive sound receptors (including residences, outdoor public facilities and areas, hospitals, schools and other noise-sensitive receptors) in relation to the facility, related facilities and ancillary equipment (including any related substations); (b) an evaluation of ambient pre-construction baseline noise conditions, filtered to exclude

[268] Eight Point RB, p. 7.

[269] Eight Point RB, p. 7, citing Hrg. Exh. 8, App. Ex. 15, p. 40.

[270] See 16 NYCRR §1001.19 and App. Ex. 19.

seasonal and intermittent noise; (c) an evaluation of future noise levels during construction of the facility and related facilities at potentially impacted and representative noise receptors; (d) an estimate of the noise levels to be produced by operation of the facility, related facilities and ancillary equipment; and (e) an evaluation of future noise levels during operation of the facility, related facilities and ancillary equipment at potentially impacted and representative noise receptors and an analysis of whether the facility will produce significant levels of low frequency noise or infrasound.

An application must include a statement, in tabular form, of the A-weighted/dBA sound levels as indicated by measurements and computer noise modeling at the representative external property boundary lines of the facility and related facilities and ancillary equipment sites, and at the representative nearest and average noise receptors, under the following scenarios: (1) daytime ambient noise level; (2) summer nighttime ambient noise level; (3) a winter nighttime ambient noise level; (4) worst case future daytime noise level; (5) worst case future summer nighttime noise level; (6) worst case future winter nighttime noise level; (7) daytime ambient average noise level; (8) typical facility noise level; and (9) typical future daytime noise level.[271]

Each application must include a description of the noise standards (including any local requirements) applicable to the facility; noise design goals for the facility at representative potentially impacted noise receptors, including residences, outdoor public facilities and areas, hospitals, schools, other noise-sensitive receptors, and at representative external property boundary lines of the facility and related

[271] 16 NYCRR §§1001.19(f)(1)-(9).

facilities and ancillary equipment sites; a comparison, in tabular form, of applicable noise standards and the degree of compliance indicated by noise modeling at the representative external property boundary lines of the facility and related facilities, and at the representative nearest and average noise receptors; and an identification and evaluation of reasonable noise abatement measures for construction activities, including a description of a complaint-handling procedure to be provided during the construction period.[272] The applicant must also identify and evaluate reasonable noise abatement measures for the final design and operation of the facility and evaluate the following potential community noise impacts: hearing damage (as addressed by applicable Occupational Safety and Health Administration standards); indoor and outdoor speech interference; interference in the use of outdoor public facilities and areas; community complaint potential; the potential for structural damage; and the potential for interference with technological, industrial or medical activities that are sensitive to vibration or infrasound.[273] Each application must describe the post-construction noise evaluation studies that must be performed to establish conformance with operational noise design goals and identify practicable post-construction operational controls and other mitigation measures that will be available to address reasonable complaints, including a description of a complaint-handling procedure that must be provided during periods of operation.[274]

The regulations also require that the applicant's computer noise modeling account for the particular

[272] 16 NYCRR §1001.19 (g), (h) and (i).

[273] 16 NYCRR §1001.19(j) and (k).

[274] 16 NYCRR §1001.19 (l) and (m).

characteristic of each proposal. Thus, the computer noise modeling values used for the major noise-producing components of a proposed facility shall fairly match the unique operational noise characteristics of the particular equipment models and configurations proposed for the facility.[275] To ensure meaningful review of such modeling, the regulations require an applicant to provide the software input parameters, assumptions, and associated data used for the computer noise modeling.[276]

DPS Staff reports that, in accordance with the terms and conditions described in the Stipulations, Eight Point has provided the studies described above.[277] DPS Staff witness Moreno-Caballero testified that, as originally proposed, the Project would likely comply with the most relevant thresholds and criteria for minimizing noise impacts at most receptors, but not all.[278] DPS Staff witness Moreno-Caballero disagreed with some of the assumptions the Applicant made, such as interpreting the sound modeling results as maximum 1-hour sound levels, introducing corrections to the Conservation of Clean Air and Water in Europe (CONCAWE) calculations,[279] and evaluating sound levels at 1.5 meters exclusively, which DPS Staff witness Moreno-Caballero asserts may not be appropriate for residences having two or more stories.

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[275] 16 NYCRR §1001.19(n).

[276] 16 NYCRR §1001.19(n).

[277] DPS IB, p. 27.

[278] Tr. 496-497.

[279] Because Eight Point considered certain of the CONCAWE modeled results to be "overly conservative," it substituted values derived from the ISO 9613-2 standard. Hrg. Ex. 8, App. Ex. 19 at 12. This resulted in adjustments to the CONCAWE modeled sound levels, in amounts ranging from 0 to 7 dBA. Hrg. Ex. 8, App. Ex. 19, p. 12. DPS Staff objected to this approach.

Eight Point's Noise Impact Assessment used the methodology and procedures set out in the Stipulations and modeled future noise conditions at the receptors specified in those Stipulations. Eight Point contends that the modeling method employed is conservative in that it predicts worst-case, short-term levels.[280] Sound pressure levels were modeled at 763 discrete receptors and throughout a large grid of receptor points.[281] Expected sound levels from the proposed transformer in the on-site collector substation were also modeled.[282]

For the worst-case $L_{eq\text{-}1\text{-}hour}$ sound level, the modeling showed that no non-participating land owners are expected to experience sound levels in excess of 44 dBA.[283] With one exception, all participating landowners would experience sound levels 45 dBA or lower.[284] Eight Point maintains that, because

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[280] Eight Point IB, p. 32, citing Hrg. Ex. 8, App. Ex. 19, pp. 9, 11–12.

[281] Eight Point IB, p. 32, citing Hrg. Exh. 8, App. Ex. 19, p. 10. Results calculated with these parameters represent the highest 1-hour equivalent average sound level ($L_{eq\text{-}1\text{-}hour}$) that will be emitted by the Facility. Hrg. Ex. 8, App. Ex. 19, p. 10.

[282] Eight Point IB, p. 32, citing Hrg. Exh. 8, App. Ex. 19, p. 11.

[283] Eight Point IB, pp. 32-33, citing Hrg. Exh. 8, App. Ex. 19, p. 13. The NIA is in Application Appendix 19-1. NIA Appendix E includes the A-weighted and octave band modeled sound levels (Table E-1).

[284] The maximum sound level presented in Table E-1 in Appendix E of the NIA is 48 dBA (ID #332). Although this sound level exceeds the 45 dBA guideline value, this sound level is modeled at a hunting cabin, and the owner is a Participant in the Project. Participating landowners have signed contracts that include an easement for effects including sound. Hrg. Ex. 8, App. Ex. 19 at 19. The highest sound level at a non-participating receptor is 44 dBA. Therefore, Eight Point notes, the Project meets the 45 dBA guideline.

the Board in Cassadaga Wind LLC found 45 dBA $L_{eq\text{-}8\text{-}hour}$ for non-participants to be acceptable,[285] the modeled expected sound levels for non-participating landowners are consistent with that decision.[286]

iii. Compliance with Stipulations Noise Limits

The World Health Organization issued revised guidelines in October 2018 (WHO-2018), subsequent to the filing of Eight Point's Application. The WHO-2018 guidelines withdrew the WHO-1999 outdoor short-term recommendation for a nighttime maximum sound level of 45 dBA L_{eq} (8-hour).[287] DPS Staff witness Moreno-Caballero testified that the WHO-1999 standard was the basis for the Board's adoption of the 45 dBA short-term limit for any non-participating residence in the Cassadaga Wind Order.[288] DPS Staff witness Moreno-Caballero recommended that the short term 45 dBA-L_{eq} (8-hour) is not the most protective, and that a lower short-term limit, on the order of 42 dBA, should be adopted in order to minimize the potential adverse noise effects from the facility.[289] DPS Staff witness Moreno-

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285 Eight Point IB, pp. 32-33, citing the Cassadaga Wind Order, p. 70.

286 Eight Point also asserts that the modeled levels will be reduced even further based upon the noise limits imposed by the Recommended Certificate Conditions.

287 In acoustics, L_{eq} is the preferred method to describe sound levels that vary over time, resulting in a single decibel value that takes into account the total sound energy over the period of time of interest. Thus, $L_{eq\text{-}8\text{-}hour}$ indicates that the sound pressure equivalent measure was measured over an 8-hour period. For example, to comply with a 45 dBA $L_{eq\text{-}8\text{-}hour}$ standard, the measured equivalent sound over 8 hours from a source should be 45 dBA or less. Cassadaga Wind Order, p. 59, n. 106.

288 Tr. 498; See Case 14-F-0490, Cassadaga Wind Order, pp. 59 and 70.

289 Tr. 499.

Caballero proposed changes to various Certificate Conditions and a different post-construction noise monitoring protocol that, in his view, would provide better protection than those proposed by the Applicant.[290]

Eight Point originally took issue with DPS Staff witness Moreno-Caballero's positions on all issues. Ultimately, as a result of settlement negotiations, Eight Point, DPS Staff and others agreed to a 42 dBA $L_{eq\text{-}8\text{-}hour}$ limit outside the homes of non-participating landowners and a limit of 52 dBA $L_{eq\text{-}8\text{-}hour}$ for participating landowners.[291] The 52 dBA $L_{eq\text{-}8\text{-}hour}$ limit for participating landowners reflected DPS Staff's litigation position. In his testimony, Staff witness Moreno-Caballero recommended reducing the limit for participating receptors, from 55 dBA in the Cassadaga Wind Order to 52 dBA-Leq-8-hour, on the ground that the actual differences between short-term and long-term noise limits may be as low as 2 dBA, and not 5 dBA as assumed in the Cassadaga Wind LLC case.[292] His recommendation was also based on an identified threshold of 50 dBA $L_{eq\text{-}night}$ in WHO-2009 to achieve zero risk of cardiovascular disease.[293]

Eight Point stresses that the 42-dBA $L_{eq\text{-}8\text{-}hour}$ standard is unprecedented and is 3 dBA below the limit set in the Cassadaga Wind Order. Eight Point also points out that the 42 dBA limit is below all standards to which Project sound levels

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290 Tr. 540.

291 Certificate Condition 73 would require that noise levels from all noise sources from the Facility, related facilities, and ancillary equipment shall comply with a maximum noise limit of 42 dBA $L_{eq\text{-}8\text{-}hour}$ at any permanent or seasonal non-participant residence existing as of the issuance date of the Certificate, and 52 dBA $L_{eq\text{-}8\text{-}hour}$ for any participant residence existing as of the issuance date of the Certificate.

292 Tr. 515.

293 Id.

are required to be compared in order to satisfy the Article 10 minimization standard.[294] DPS Staff notes that the 42 dBA short-term limit will also be protective of potential long-term noise effects.[295]

To conserve noise reducing operations (NROs) for use in performing any mitigation that may be required after operation commences, DPS Staff and Eight Point have agreed that Eight Point will first use best efforts to enter into agreements with nonparticipating homeowners who would experience sound levels above the 42 dBA $L_{eq\text{-}8\text{-}hour}$ limit. DPS Staff also agreed that Eight Point can resort to the elimination of turbine ALT-3 and the use of Alternate Turbines 1, 2, and 4 as needed, provided they meet the 42 dBA $L_{eq\text{-}8\text{-}hour}$ limit applicable to all nonparticipating residents.[296]

DPS Staff argues that the Applicant's commitments and the Proposed Certificate Conditions 64-67 (requiring the submission of site plans, limiting sound power levels at turbine at hub height, requiring revised sound modeling, and requiring post-construction monitoring and compliance testing); 73-77 (setting noise standards for construction and operation, requiring the resolution of noise complaints and detailing the changes regarding Alternate Turbines); and 120 (limiting work hours to minimize noise impacts during construction) support a finding that the adverse environmental effects from noise and vibration have been minimized in the most recent design to the maximum extent practicable. For this reason, DPS Staff argues, the Board need not reach the disagreements articulated in the

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294 Eight Point IB, pp. 34-35.

295 DPS IB, p. 28.

296 DPS IB, p. 28, citing Tr. 358-359; Eight Point IB, p. 35; Certificate Condition 64(c)(ii).

direct testimony of DPS Staff witness Moreno-Caballero and in the Eight Point Rebuttal Panel. DPS Staff maintains that the proposed Certificate Conditions and the protocols agreed to in conjunction with contingency mitigation options will ensure that adverse environmental effects from noise and vibration, if any, will be offset or minimized to the maximum extent practicable during the duration of the Certificate using verifiable measures and that the Project will comply with relevant local laws regarding noise.[297]

iv. CMORE/DAM Comments on Dairy Farm Operations

At the October 17, 2018, Public Statement Hearing in this matter, members of the Lewis family, who are owners and operators of a dairy farm in the Project Area and members of CMORE, raised concerns over the potential impacts of turbine noise and shadow flicker on their dairy operations and production. Members of the Lewis family also raised these concerns in written comments.

In response, by email dated January 25, 2019, Examiner Mullany requested that DAM Staff respond to the Lewis family's comments and describe what DAM has done to investigate the potential impacts of the proposed wind turbines on dairy operations within the Project Area. Examiner Mullany also inquired whether DAM has made any findings or reached any conclusions based upon its investigations and, if so, requested that DAM describe is findings and conclusions, and their bases.

[297] Despite agreeing in this case to the Final Proposed Certificate Conditions, Post-Construction Monitoring Protocol and Complaint Handling Process, DPS Staff still believes the focus in WHO-2018 has merit. DPS Staff notes that, in other cases, it may again assert its litigation positions regarding interpreting noise modeling results, specifying the methods for noise data collection, and the proper use of NROs.

By letter dated February 15, 2019, DAM Staff reported that it searched for potential responsive data pertaining to the impacts of noise, shadow, or flicker from the operation of commercial wind turbines on cattle and dairy production, but was unable to locate any peer reviewed or non-reviewed research or studies, active or complete, that persuasively supported an allegation that noise, shadow, or flicker from such operations impact farm animals or dairy production.[298] In addition, DAM reported that it had not received any "complaints, inquiries, or otherwise been contacted pertaining to grazing of livestock, domestic animal health and/or production relating to the operation of commercial wind turbines, besides those submitted by the Lewis Family."[299]

In pre-filed testimony, several CMORE witnesses again raised concerns about the potential adverse impacts of Project-related noise, pressure, vibrations, and shadow flicker on dairy operations and production.[300] In their closing brief, CMORE argued that because no studies concerning the impacts of noise or shadow flicker from wind turbines on dairy cattle have been conducted, a peer-reviewed study should be completed.[301]

In response, the Applicant asserts that there is neither an explicit requirement in the Article 10 statute or regulations, nor an evidentiary basis in the record, to require the Applicant to conduct the study proposed by CMORE.[302]

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298 Hrg. Ex. 55.

299 Hrg. Ex. 55.

300 Tr. 721-731, 779-780.

301 CMORE IB, p. 2.

302 Eight Point RB, p. 6.

Recommendation

Based on the Application and the proposed Certificate Conditions, we find that there is substantial evidence in the record to support a finding by the Board that any adverse environmental effects due to noise and vibration from the Project will be offset or minimized to the maximum extent practicable.

With respect to potential impacts on dairy farming operations, we agree with the Applicant that no additional study should be required. While CMORE has voiced concerns about potential impacts on dairy operations, it has not offered any evidence that would tend to support or corroborate the concerns that CMORE has raised. On the other hand, DAM Staff investigated the issue and reported that it had found no research or studies that persuasively support a conclusion that wind turbines adversely impact livestock or dairy operations. Moreover, DAM Staff reported that it has not received any complaints about adverse impacts from the operation of commercial wind turbines on livestock or dairy operations. Accordingly, we recommend that the Board make a finding that there is no substantial evidentiary basis for requiring Applicant to conduct the study CMORE has requested.

v. Electric and Magnetic Fields

Electromagnetic fields (EMFs) are generated by the operation of facility components such as the turbine generator, electrical collection lines, and transformers. Eight Point states the Project will comply with the EMF Guidelines established by the Commission with respect to the strength of electric and magnetic fields. Under Commission guidelines electric fields are limited to 1.6 kV/m at the edge of the ROW, as measured one meter (3.28 feet) above ground level with the

line at the rated voltage. Magnetic fields are limited to 200 milligauss (mG) at the edge of the ROW, as measured one meter (3.28 feet) above grade.[303]

The Applicant provided details on EMFs generated by the Facility in Hearing Exhibit 8, Application Exhibit 35, as well as in the original EMF study included as Appendix 35-1 and a subsequent revision included as Attachment AA.[304] The Applicant hired an engineering firm to perform an EMF study on the proposed Project. While EMFs are generated by the substation transformer and the turbine generators, the effects are assumed to be negligible due to adequate separation from the public and wildlife. Therefore, only EMF levels for segments of the 115 kV transmission circuit and 34.5 kV underground and overhead circuits were estimated by the consultant.[305]

The proposed Facility consists of buried 34.5 kV collection lines, above ground 34.5 kV collection lines and a portion of the 115-kV generator lead transmission line that is contained in the Project area. The EMF study modeled the strength and locations of electric and magnetic fields for six unique right-of-way segments defined by unique circuit configurations and spacing requirements. The maximum calculated electric field strength was 0.555 kilovolts per meter (kV/m) measured at the edge of the 100-foot right-of-way for the segment consisting of the 115-kV generator transmission lead line.[306] The maximum calculated magnetic field strength was

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[303] Hrg. Ex. 8, App. Ex. 35, p. 1.

[304] Tr. 615.

[305] Tr. 616.

[306] Tr. 617 (DPS Staff Engineering Panel); Hrg. Ex. 10, Supplement to the App. Attachment AA, p. 13 (Sargent & Lundy, NextEra Energy Resources, LLC, Electric and Magnetic Field (EMF) Calculation (Rev. C 2/16/2018)) (Sargent & Lundy).

103.55 mG measured at the edge of the 100-foot right-of-way for the segment consisting of the overhead 115 kV transmission line with wood HH-frames.[307]

The Applicant's engineering consultant concluded that the results of the study show that the calculated electric and magnetic fields are acceptable when compared to the electric fields requirement of 1.6 kV/m at one meter (3.28 ft.) above ground level with the line at the rated voltage, and the magnetic field strength requirement of 200 mG measured at one meter (3.28 ft.) above grade at the edge of ROW.[308]

DPS Staff concurs with the Applicant and recommends that the Board find that the Facility will be operated well within the EMF limits established by the Commission and that the strength of the EMFs generated by the operation of Project's components will not be significant at any of the measurement locations required by the PSL Article 10 regulations.[309]

Recommendation

Based on the above, we recommend that the Board find that the Project will not have any significant adverse impacts on public health due to electric or magnetic fields.

6. Cultural, Historic, and Recreational Resources

The record contains Eight Point's study of the impacts of the construction and operation of the Facility, interconnections, and related facilities on archeological resources and historic resources, as required by 16 NYCRR §1001.20.[310] There are no disputes among the parties regarding

[307] Tr. 617.

[308] Sargent & Lundy at 13.

[309] DPS IB, pp. 31-32, citing Tr. 615-618.

[310] Hrg. Ex. 8, App. Ex. 20.

the Applicant's assessment of the probable environmental impacts from the construction and operation of the facility on cultural and historic resources. Moreover, assuming the Board adopts Certificate Condition 32, there also are no disputes as to the sufficiency of the measures recommended to mitigate them.

Two historic archaeological sites, one prehistoric archaeological, seven isolated finds, and one geodetic marker were identified in the Project area. Proposed Certificate Condition 32 sets forth the measures that will be used to avoid these resources throughout the design and construction of the Project.[311]

Several historic properties, eligible for listing in the National Register of Historic Places, were identified in the Project area. Eight Point states that since the Project will not alter the identified properties, there will be no adverse effect that requires avoidance, minimization or mitigation measures.[312] DPS Staff however testified that the State Historic Preservation Office (SHPO) will likely determine that there is an adverse effect on historic resources based on the size of the turbines and the visual changes to the rural landscape of the host settings.[313] Accordingly, DPS Staff recommends, and Eight Point agrees, that the Board should adopt, as Certificate conditions, standard resource protection measures including, for example, presentation of a final offset mitigation plan for adverse effects on the landscapes comprising the broad settings

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311 Eight Point IB, pp. 38-39.

312 Eight Point IB, p. 38; Hrg. Ex. 8, App. Ex. 20, p. 20. A 5-mile area of potential effect was used for the Historic Architecture Reconnaissance Survey.

313 Tr. 419.

of historic architectural resources.[314] This recommendation has been incorporated into proposed Certificate Condition 32.

There are disputes regarding the sufficiency of the Applicant's study of visual impacts of the Project and its proposals regarding mitigation of the same. The Applicant asserts that the visual contrasts that will be created by the Project are typical and have been minimized to the maximum extent practicable.[315] DPS Staff testifies that the visual impact assessment (VIA) presents a reasonable depiction and characterization of the likely appearance of the proposed generating facility from a range of viewpoints.[316] If proposed Certificate Conditions 72 (establishing a visual impact minimization plan) and 77 are adopted, DPS Staff asserts that the Board should find that the visual impacts related to the construction and operation of the Facility will be avoided, minimized or mitigated to the maximum extent practicable.[317] CMORE argues that the Certificate request should be denied because the wind turbines do not fit within the landscape and because nothing can mitigate the turbines' scale and size. We will briefly summarize the VIA and will address CMORE's concerns related thereto, below.

Visual Assessment and Mitigation

The record contains Eight Point's VIA, as required by 16 NYCRR §1001.24.[318] The VIA, which determines the extent and

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[314] Tr. 420.

[315] Eight Point IB, p. 41.

[316] Tr. 426.

[317] DPS IB, pp. 33-34.

[318] Hrg. Ex. 8, mainly, App. Ex. 24 and App. Appendix 24-1.

assesses the significance of facility visibility, must include a viewshed analysis component, conducted as prescribed in 16 NYCRR §1001.24. Eight Point conducted a VIA that described the character of the affected area, performed viewshed mapping that depicted the extent of the Project's visibility throughout the visual study area (VSA), and presented photo-simulations that demonstrated the Project's anticipated appearance from multiple representative views throughout the VSA.[319] Both 5-mile and 10-mile VSAs were used.[320]

Eight Point's VIA shows that there are no landmark landscapes; no State-designated wild, scenic, or recreational rivers; no federal or State forest preserves; no federal or State designated scenic by-ways or State designated scenic roads or districts; no Scenic Areas of Statewide Significance, and no State parks managed by the Office of Parks, Recreation and Historic Preservation.[321] Accordingly, Eight Point concludes there will be no adverse impacts on any of these resources.[322]

Several areas, some of which are often high-use public areas, were identified as scenic easements, public parks or recreational areas located within the 10-mile VSA. These include two local county designated scenic drives (Mid-County and Sky Tour Scenic Drives) in Alleghany County, State Bikeways #17 and 19 in the western section of the 10-mile VSA, several DEC public fishing easements located along Marsh and Cryder Creeks, numerous snowmobile trails, the Wag Trail (a 9-mile multi-use recreational trail and historic transportation corridor in

[319] Hrg. Ex. 8, App. Ex. 24, p. 3; Eight Point IB, p. 37.

[320] Hrg. Ex. 8, App. Ex. 24 and App. Appendix 24-1; Tr. 308.

[321] Hrg. Ex. 8, App. Ex. 24, p. 27; Eight Point IB, p. 38.

[322] Eight Point IB, p. 38.

Allegany County) and five State forests (Greenwood, Rock Creek, Turkey Ridge, Vandermark, and Phillips Creek State Forests). About half of these were listed as potentially having no expected turbine visibility while the other half potentially might have nacelle views.[323]

A substantial portion of the 5-mile VSA shows significant visibility when considering the effects of topography only.[324] When examining the 10-mile VSA, visibility is more influenced by terrain and accordingly decreases. Eight Point's general conclusions are that there will be some areas where the Project would be prominently in view and others where it would not.[325]

Noting that wind turbines typically need to be placed in higher elevations for maximum wind power, Eight Point acknowledges the difficulty of mitigating their visual impacts. However, it proposes to implement several measures, adopted from a general industry consensus of best management practices, to help moderate the Project's visual impacts, including, but not limited to, using non-linear configurations that are better suited to the rolling terrain of this VSA; keeping similar turbines types together and separate from dissimilar models; downsizing the Facility; using non-reflective paints and coatings to reduce glare; strategically placing turbines and

[323] Hrg. Ex. 8, App. Ex. 24, pp. 27-29.

[324] Hrg. Ex. 8, App. Ex. 24, p. 6.

[325] Hrg. Ex. 8, App. Ex. 24, p. 20.

other facilities behind existing trees; and minimizing lighting to the maximum extent possible consistent with FAA guidelines.[326]

DPS Staff concludes that the Application materials represent the probable change in setting and effect the Project would have on the landscape. DPS Staff acknowledges the limited range of mitigation measures available to avoid or further reduce visual impacts related to nearly 600-foot-tall wind turbines. DPS Staff's recommendations for mitigating the visual impacts related to other Facility components, which include for example, exterior lighting design and controls and alternative design considerations for overhead electric collection lines, generally align with the Applicant's mitigation proposals.[327]

However, with respect to the visual impacts to recreational resources, DPS Staff recommends the elimination of turbine T-15 located south of NY Route 248, because it "will loom large above a wide lake-like location on Marsh Creek, creating a stark visual contrast with the existing landscape, due to the height of the turbine and the repetitive rotational motion of the turbine blades above the predominantly static landscape." Despite its disagreement with DPS Staff's assessment of the visual impact of T-15, Eight Point has agreed to use one of the Alternate Turbines (1, 2, or 4) instead of T-15; to reclassify T-15 as a new Alternate 3; and to use the new Alternate 3 only after the other alternates are first considered.[328]

Moreover, if new Alternate 3 is needed, Eight Point would make a Compliance Filing that justifies its use; addresses

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[326] Hrg. Ex. 8, App. Ex. 24, pp. 21-22.

[327] DPS IB, pp. 32-33.

[328] DPS IB, pp. 32-34.

the extent to which T-15 could be moved south-southeast on participating landowner property, without violating noise restrictions, setback requirements, or other constraints, to minimize visibility from Marsh Creek; and proposes a mitigation plan that explores ways to improve access to Marsh Creek for fishing or provides for sponsorship of recreational events at Marsh Creek, at Eight Point's expense. This agreement is reflected in proposed Certificate Condition 77. Thus, provided that proposed Certificate Conditions 32 (establishing a visual impact minimization plan) and 77 are adopted, DPS Staff recommends that the Board should find that the visual impacts related to the construction and operation of the Facility will be avoided, minimized or mitigated to the maximum extent practicable.[329]

CMORE contests the sufficiency of the Applicant's VIA and its proposed mitigation. CMORE witness Lawrence testified that the VIA "lacks the information necessary to properly evaluate aesthetic impact" and that the VIA and Application fail to set forth any plan for mitigating the major aesthetic impact that the Project will create.[330] CMORE witness Lawrence asserts that the photos and photographic simulations are "incomplete" which in turn resulted in the failure to provide an adequate and comprehensive description of the "area's scenic character and beauty."[331] Related to its claim that the proposed 1,400-foot setbacks are too close to homes and farms, CMORE contends that the photos provided by Eight Point grossly misrepresent the reality of the visual impacts of those living only "1500 feet from proposed turbines" because "16 of the 20 photos do not

[329] Id.

[330] Tr. 746-747.

[331] Tr. 746, 749.

include buildings or residences."[332] CMORE witness Lawrence asserts that his report and photographic exhibits, entered into the record of this proceeding as Hearing Exhibits 61 and 62, contain information that the Board needs to make an informed decision regarding the visual impacts of Eight Point Wind.[333]

CMORE witness Lawrence also disagrees with DPS Staff's assessment of the VIA, claiming that it didn't fully consider the effect that "a large industrial installation" will have on an area that the VIA describes as "bucolic."[334] Finally, CMORE states that several of its members and witnesses will have full or partial views of at least one and up to three turbines from their residences.[335]

With respect to the proposed mitigation measures, CMORE witness Lawrence testifies that none of the measures proposed by the Applicant mitigate the Project's enormous scale, which he states is "completely disproportionate and incongruent with the trees, houses and barns" located in the rural landscape

[332] CMORE IB, pp. 4-5.

[333] Tr. 750-751.

[334] Tr. 782-783.

[335] CMORE IB, p. 4.

that would host the Project.[336] CMORE recommends that, if the Project receives a Certificate, Eight Point should be required to provide a "more accurate visual impact study."[337] CMORE however asserts that until a peer-reviewed study of turbines of this stature on land is completed, Eight Point's Certificate request should be denied.[338]

Eight Point notes that the 1,400-foot setback that CMORE asserts is "too close" is required by and consistent with the Towns of Greenwood and West Union wind laws.[339] With respect to CMORE's arguments that the VIA's photo simulations should have included buildings and residences, Eight Point responds that representative photos are required by the regulations, the viewpoints were selected as part of a collaborative process governed by the Stipulations, and the viewpoints represent a range of landscape settings, distance zones, and landscape positions occurring throughout the 10-mile VSA. Eight Point

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336 Tr. 746, 749. CMORE witness Lawrence agrees with the DPS Staff recommendation to eliminate the turbine (T-15) in viewpoint (VP) 17 but says it falls short because the same line of reasoning would support the elimination of turbines in VP 12. CMORE fails to cite any record support for this statement. Record evidence, on the other hand, indicates that the reasons cited by DPS Staff for eliminating the turbine in VP 17 include the presence of a "the only sizable water body in the VSA," the waterbody comprises the majority of the area included in a "Open Water zone," the recreational use of that waterbody by the public pursuant to DEC Public Fishing Rights (which in turns could lead to an increased number and duration of the views that could be experienced by the public at VP 17) (Tr. 427-428). None of these characteristics accurately describe VP 12.

337 CMORE IB, p. 5.

338 CMORE IB, p. 6.

339 Eight Point RB, p. 8.

highlights DPS Staff's testimony that the VIA accurately depicted the VSA's settings, zones, and positions.[340]

With respect to CMORE's assertions regarding the distance of the turbines that could be viewed by CMORE member witnesses Donald, Julia, and Michael Lewis, Tracey Pickering, and Karl Schneider, Eight Point contends that the alleged distances are (1) from property lines, not residences, and (2) are not accurate. According to Eight Point, the distances of the turbines at issue, when measured from the residences at issue, range from 2,124 feet 7,336 feet away. Eight Point also asserts that due to intervening trees or topography, these individuals would have partial, not full, turbine views from their residences.

Recommendation

Based on the information provided in the record and summarized above, we conclude that the record in this case, when coupled with proposed conditions, including, but not necessarily limited to Certificate Conditions 32 and 77, provide adequate support for the Board to make the requisite findings as to the nature of the probable environmental impacts from the construction and operation of the Facility on cultural, historic, and recreational resources. We further conclude that the record provides adequate support for the Board to determine that any adverse impacts have been avoided or minimized to the maximum extent practicable after considering other relevant factors such the state of available technology, consistency with

[340] Eight Point RB, pp. 8-9.

State energy policies and plans, and visual and other aesthetic considerations deemed pertinent by the Board.

CMORE's claims regarding the proximity of several of the proposed turbines should be rejected because the distances provided by CMORE in brief generally were not measured from the exterior of off-Site residences to the turbine, as specified in the Towns' laws, and because, it appears that when such distances are measured from the exterior of an off-Site residence, the measurements fail to demonstrate any violation of the required 1,400-foot setback.[341] Also, CMORE argues that the Towns' laws should not be waived. Thus, CMORE's claim concerning the adequacy of the setback distance is inconsistent with its position the Towns' laws should be applied and not be waived.

With respect to CMORE's assertions that that Eight Point did not include enough representative photos and did not include enough such photos with residences or buildings, the regulations require, in relevant part, "representative views (photographic overlays) of the facility." We conclude that the focus of this regulation is on insuring the substantive and qualitative aspects of such photos, not a specific quantity of such photos. Moreover, with respect to the representative viewpoint selection, both the regulations and the Stipulations identify the parties and persons that will be consulted and set forth the criteria that will be used. There is no evidence that

[341] The relevant local laws define a "Site" as the parcel(s) of land where a Wind Energy Facility is to be placed and state that any property that has a Wind Energy Facility or has entered an agreement for said Facility or setback agreement shall not be considered off-Site. See Hrg. Ex. 8, App. Appendices 31-1 and 31-2.

these requirements were not followed by Eight Point in this case.

The record contains different assessments of the nature of the visual impacts that will be experienced due to the operation of this Project. Eight Point assesses the scenic resources of local, Statewide, or national significance that may have potential visibility in the VSAs as "not exceedingly unique or natural landmark landscapes that are high destination type locales visited by the public," and concludes that "the Project does not always appear as a dominant feature in the region and should not interfere with the general enjoyment of recreational resources in the area."[342] CMORE disagrees, asserting that viewshed maps clearly demonstrate that the facilities will be visible in hundreds of places and thousands of acres over a wide geographical area, adding that highly visible large industrial wind turbines will drastically and adversely impact the beauty and peacefulness of this rural area[343] and result in significant visual impact and visual impairment at several CMORE members' residences. CMORE's assessment, however, is a product of its focus on more immediate visual impacts (which it defines as within a mile), to the exclusion of the more expansive VSA criteria established in the Article 10 regulations. Because of this, we find that CMORE's assessment of the nature of the impacts is less balanced than the assessment provided by Eight Point. We therefore recommend that the Board reject CMORE's claims that the record provides inadequate support for the Board

[342] Hrg. Ex. 8, App. Ex. 24, p. 20.

[343] Tr. 783.

to make the necessary findings regarding the nature of the visual impacts due to the operation of this Project.

With respect to the proposals to avoid or minimize any adverse environmental effects, CMORE claims that no amount of mitigation can address "extremely high (534 ft.-585 ft.) structures in the landscape." The VIA notes that the proposed turbines are very large, will have visual impacts, and will in some instances be prominently in view and will appear in the viewshed of some residents. Both Eight Point and DPS Staff acknowledge that, under such circumstances, available mitigation measures are limited. The limited availability and efficacy of such measures however does not mean that such measures cannot be demonstrated to meet the relevant statutory criteria. Because CMORE's evaluative approach ignores the relevant statutory criteria, and instead focuses solely on whether the proposed mitigation measures would succeed in hiding the wind turbines, its related claim that the proposed mitigation measures are insufficient must be rejected.

Clearly, there will be visual impacts due to the significant height of the proposed wind turbines. The relevant question is whether there is an adequate record upon which the Board may make its finding regarding the nature of such impacts and, where such impacts are adverse, determine whether they have been mitigated to the maximum extent practicable. As we noted at the outset of this discussion section, we find that Hearing Exhibit 8 (specifically, Application Exhibits 20 and 24 along with related appendices, figures, tables, and supplements thereto) contains sufficient information for the Board to make the requisite factual findings regarding the Project's probable environmental impacts on cultural, historic, and recreational resources. We also find that this information, when coupled

with the proposed Certificate Conditions, provide sufficient bases for the Board to determine that any adverse environmental effects of the construction and operation of the facility on cultural, historic, and recreational resources will be minimized or avoided to the maximum extent practicable, considering the state of available technology and the nature and economics of reasonable alternatives. We recommend that the Board make the necessary findings and determinations regarding the probable environmental impacts to and minimization and avoidance of any such impacts on cultural, historic, and recreational resources.

We also recommend that the proposed Certificate Conditions include a new provision, numbered 57(f), that would require the Applicant to provide shielding or blocking measures (such as landscape plantings and window treatments) for receptor locations that submit complaints for exposures to lighting of the wind turbine nacelles implemented as per the current requirements of the Federal Aviation Administration (FAA) and which complaints are not resolved through the Complaint Resolution Process required by Certificate Condition 56. In their initial briefs on exceptions, the Applicant, DPS Staff, and CMORE should indicate whether they support or oppose this recommendation.

7. Infrastructure

i. Transportation

Exhibit 25 to the Application describes the impacts of the Project on transportation. Eight Point performed a Turbine Delivery Route Analysis and a Public Road Study to identify potential constraints along planned haul routes. Exhibit 25 identifies the intersections that could require improvements for oversize or overweight vehicles and three bridges that may

require reinforcement. Many of the intersections already have established radius improvements, thereby reducing the amount of work necessary in the area.[344]

Exhibit 25 states that all bridges within the Project area appear to have sufficient width; however, three bridges within the Project area along County Road 98 were identified by Steuben County as of concern because they are constructed with timber decks. Preliminary Project planning includes reinforcing these bridges with dunnage and steel plates during turbine delivery, if necessary. However, the Application indicates that, based on initial analysis of the delivery and construction route and further consultation with the Towns and County, these bridges may be avoidable.[345] If these intersections and bridges are used, the Applicant will perform the improvements and reinforcements in coordination with local highway departments.[346]

Delivery of Project components and construction equipment will require the use of several different large vehicles.[347] This traffic will be limited to daylight hours, likely during off-peak hours, and days of the week agreed upon by the Towns and Eight Point.[348] These vehicles will also leave construction sites unloaded and, in many cases, smaller because some trailers are able to expand and contract as needed.[349]

Eight Point intends to execute road use agreements with the Towns and will file these agreements with the Secretary. These road use agreements will memorialize, in

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[344] Hrg. Ex. 8, App. Ex. 25, pp. 1-2.

[345] Id.

[346] Eight Point IB, p. 43.

[347] Hrg. Ex. 8, App. Ex. 25, pp. 5-6; App. Appendix 25-5.

[348] Hrg. Ex. 8, App. Ex. 25, App. Ex. 25, pp. 5, 7.

[349] Hrg. Ex. 8, App. Ex. 25, p. 7.

relevant part, Eight Point's rights and obligations regarding road use and repair.[350] The road use agreements will contain provisions designed to mitigate any damage that may occur to local roads as a result of Eight Point using them. Qualified engineers will survey roads before construction so that the roads are restored to at least their pre-existing conditions after construction. Eight Point requests that the Board not supplant these municipal procedural requirements and instead, pursuant to PSL §172, authorize the Towns or any other appropriate municipality to approve the listed road or highway work permits.[351]

Prior to construction, Eight Point or its contractors will obtain all necessary transportation and road permits from affected State, county, and town agencies. For example, very large vehicles could require a superload permit from the New York State Department of Transportation ("NYSDOT"). Highway work permits from the NYSDOT and municipalities will be required for roadway improvements.[352] All such permits will be filed with the Secretary.[353] As noted in proposed Certificate Condition 27, both Eight Point and DPS Staff recommend that the Board, pursuant to PSL §172, delegate to NYSDOT the authority to issue all approvals, permits, and so on within NYSDOT's jurisdiction, for the construction and operation of the Project.

Eight Point has and will continue to coordinate with emergency service providers throughout Project development and construction.[354] Eight Point will develop an Emergency Action

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350 See Hrg. Ex. 8, App. Ex. 25, p. 19.

351 Id.

352 Id.

353 Hrg. Ex. 24, Certificate Condition 123.

354 Hrg. Ex. 8, App. Ex. 25, p. 4.

Plan to share with local emergency responders and respond to any comments they may have.[355] Local emergency responders will be kept informed of any road closures that may affect emergency responses.[356] Eight Point will coordinate on an ongoing basis with schools and first responders to avoid or minimize any possible disruptions.[357]

To determine impacts to traffic during construction, Eight Point calculated the level of service for several roads in the Project area and then added information about construction vehicle trips.[358] Using a worst-case scenario (i.e., assuming all 31 turbines accessed from NY Route 248 would be built at the same time), Eight Point determined that only NY Route 248 would experience a lower level of service during the peak hour.[359] Eight Point describes this scenario as highly unlikely.[360] Eight Point states that, realistically, there will be no impacts to the traveling public and if there were impacts, travelers would only experience minimal impacts during peak periods and will not experience any impacts during off-peak periods.[361]

Eight Point's traffic analysis indicated that no new traffic control devices or capacity improvements to any roads are required to accommodate construction. With respect to the planned temporary widening of roads at intersections, as required to enable delivery vehicle turns, the widened areas

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355 Id.

356 Id.

357 Hrg. Ex. 8, App. Ex. 25, pp. 17–18.

358 Hrg. Ex. 8, App. Ex. 25, pp. 14–16.

359 Hrg. Ex. 8, App. Ex. 25, p. 16.

360 Id.

361 Hrg. Ex. 8, App. Ex. 25, p. 18.

will be removed and restored to pre-existing conditions after construction.[362]

Following construction, the Project will have no significant adverse impacts on traffic. Maintenance visits only require one or two pick-up trucks.[363]

With respect to air transportation impacts, the Applicant has filed Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration, for each of the proposed turbine locations. Aeronautical studies have been initiated by the FAA. Proposed Certificate Condition 38 requires that all FAA permits and approval documentation be filed with the Secretary. Proposed Certificate Condition 38(b) requires Compliance Filings with the Secretary if relevant Project plans require modifications due to results of the FAA studies and Determinations.

Recommendation

Based on the Application materials and the proposed Certificate Conditions, we find adequate support in the record to support the conclusion that adverse impacts on transportation from the construction and operation of the Project will be minimized or avoided to the maximum extent practicable.

ii. Communication

The Article 10 regulations require the Applicant to identify all existing communication sources within a two-mile radius of the Project site. Communication sources reviewed included AM/FM radio, television, telephone, microwave transmission, emergency services, municipal/school district services, public utility services, Doppler/weather radar, air

[362] Id.

[363] Hrg. Ex. 8, App. Ex. 25, p. 11.

traffic control, armed forces, GPS, LORAN and amateur radio. Exhibit 26 to the Application describes the review and analysis undertaken by the Applicant with regard to potential impacts on communications.[364]

Eight Point's consultant Comsearch reported that, while an AM radio station may experience interference if it is within 1.9 miles (3 kilometers) of wind turbines, a review of FCC records showed that the closest AM station is 10.5 miles (16.9 kilometers) from the nearest turbine. Therefore, operation of the Facility is not expected to interfere with any identified AM radio broadcast stations.[365] Comsearch also reported that the coverage of FM stations is generally not susceptible to interference caused by wind turbines. Comsearch found that the nearest FM radio station is 6.28 miles from the closest turbine and that, at this distance, there should be adequate separation to avoid radiation pattern distortion. Therefore, Comsearch found that the Project would not interfere with FM radio transmissions.[366]

Comsearch found that six of the full power television stations identified may experience some reception disruption, but modern digital TV receivers will likely be able to mitigate the effects of any signal scattering that occurs. Comsearch also noted that, when digital receivers are used in combination with a directional antenna, it becomes even less likely that signal scattering from wind turbines will cause interference to digital TV reception. Based on this, Comsearch concluded that Project operation will not cause any adverse impacts to television broadcasts.

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[364] Hrg. Ex. 8, App. Ex. 26; Tr. 105-106.

[365] Hrg. Ex. 8, App. Ex. 26, p. 1.

[366] Id.

Microwave transmissions provide long-distance and local telephone services, backhaul for cellular and personal communication services, and interconnects data for mainframe computers and the internet. These transmissions also provide network controls for utilities and railroads across the county, as well as various video services. Based on its study of local non-federal government microwave systems in the vicinity of the proposed Facility, Comsearch identified five microwave paths that intersect the Facility. Because the frequencies of operation for these wireless services allow signals to propagate through wind turbines, Comsearch concluded that little, if any, change in microwave coverage should occur due to Project operation.[367]

No significant impacts to emergency services communications coverage upon installation of the Project are anticipated. The Applicant has and will continue to work with Steuben County Emergency Services and address any questions or issues that arise.[368]

No significant impacts are anticipated as a result of Facility operation to either municipal/school district services or Doppler/weather radar.[369]

Additionally, Eight Point sent written notification to the National Telecommunications and Information Administration (NTIA). The NTIA provided plans to the federal agencies represented in the Interdepartment Radio Advisory Committee, which includes the Department of Homeland Security, the United States Airforce, United States Army, United States Navy, United States Coast Guard, and the Department of Veteran Affairs. NTIA

[367] Hrg. Ex. 8, App. Ex. 26, pp. 3-4.

[368] Hrg. Ex. 8, App. Ex. 26, p. 4.

[369] Hrg. Ex. 8, App. Ex. 26, pp. 7-8.

provided a response indicating that none of the agencies had communications-related issues with the proposed turbine placements in the area of the Project.[370] The April 10, 2017, NTIA response letter is included in Appendix 26-7 to the Application.

Finally, Comsearch identified all amateur radio licenses registered to users within a 2-mile radius of the Facility. There are no anticipated Project impacts to the registered users of these amateur radio licenses.[371]

Based on these findings, DPS Staff has determined that the Applicant has adequately addressed the requirements of PSL Article 10 with regard to evaluating the Project's effects on communications. Furthermore, DPS Staff agrees that the Project is not expected to have any significant adverse impacts on communications systems.[372] In the event that there is significant adverse effect to communications systems post construction, however, the issues will be resolved through the Complaint Resolution process, as detailed in proposed Certificate Condition 56.

Recommendation

Based on the application materials and DPS Staff's recommendations, we find that the record includes substantial evidence to support a finding by the Board that the Project will not have any significant adverse impacts on communications systems.

[370] Hrg. Ex. 8, App. Ex. 26, p. 8.

[371] Hrg. Ex. 8, App. Ex. 26, pp. 9-10.

[372] Tr. 612-613.

iii. Related Utilities

The DPS Staff Policy Panel recommended that DPS Staff's Site Engineering and Environmental Plan (SEEP) specifications (as modified pursuant to the testimonies of DPS Staff witnesses Moreno-Caballero and Davis) be attached as an appendix to the proposed Certificate Conditions.[373] The DPS Staff Policy Panel explained that the purpose of the SEEP specifications is to establish a single filing that would satisfy the requirements of numerous individual compliance filings needed for construction, and to create a single package of plans and details for contractors and regulatory agencies.[374] DPS Staff's Policy Panel recommended that the Board include the SEEP specifications as a part of any Certificate.[375]

The SEEP specifications include provisions regarding protection of existing utilities. Additionally, proposed Certificate Conditions 9 (incorporating the American National Standards Institute (ANSI) standards), 22 and 25 (regarding protections for gas pipelines), 115-117 (incorporating DPS Safety regulations and IEEE standards), 124 (requiring agreements with utilities to accommodate oversized vehicles), and 140 (requiring coordination with New York State Electric and Gas Corp. (NYSEG) regarding the substation), require notification and protection regarding existing utilities during construction. As required by the SEEP specifications, an American Land Title Association (ALTA) survey will be provided and will show the locations of existing utility infrastructure.[376]

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[373] Tr. 573 (referencing Hrg. Ex. 29).

[374] Tr. 754.

[375] Tr. 557-558.

[376] Hrg. Ex. 29, p. 2.

Recommendation

If the Board adopts DPS Staff's SEEP Specifications (as modified pursuant to the testimonies of DPS Staff witnesses Moreno-Caballero and Davis) and based on the application materials and the proposed Certificate Conditions, we find there is adequate support in the record to conclude that the Project will not have any significant adverse impacts on related utilities.

D. State and Local Laws - PSL §168(3)(e)

Pursuant to 16 NYCRR §1001.32, an Article 10 applicant must identify all procedural and substantive State legal requirements that apply to a project. Eight Point's compliance with applicable State laws and regulation are addressed in those sections above that involve such State laws and regulations.

Pursuant to 16 NYCRR §1001.31(a), an Article 10 applicant must identify all procedural local legal requirements such as ordinances, laws, resolutions, regulations, and standards, that would be applicable to the construction or operation of the proposed major electric generating facility. Article 10 preempts any procedural provisions so identified unless the Board expressly authorizes the enacting authority to exercise such requirement.

Under 16 NYCRR §1001.31(d), an Article 10 applicant must identify all substantive local legal requirements. Once such requirements are identified, the applicant must provide a statement to the Board that the proposed facility will comply with such substantive requirements or make a request to the Board for a waiver. To demonstrate that a waiver is in the public interest, the requesting applicant must explain why the specific requirement is "unreasonably burdensome in view of the existing technology or the needs of or costs to ratepayers

whether located inside or outside of such municipality." Any Article 10 applicant requesting waiver of a substantive local law bears the burden of justifying its waiver requests.[377] Eight Point's application includes the required lists of relevant procedural and substantive laws.[378]

1. Compliance with Substantive Provisions of Applicable Local Laws

With two exceptions, discussed *infra*, Eight Point states that the entirety of the record demonstrates that the Project will comply with applicable, substantive municipal requirements.[379]

2. Request to Board Not to Apply Local Substantive Law

As part of its rebuttal testimony, Eight Point requests that the Board not apply the local construction time-of-day limits contained in the local wind energy facility laws of the Town of Greenwood and the Town of West Union.[380] Eight Point notes that the Town of Greenwood's local wind law effectively limits construction of wind energy facilities to daylight hours, while the Town of West Union's wind law limits construction of wind energy facilities to 7 a.m. to 7 p.m., except for certain activities that require cooler temperatures than possible during the day, subject to approval by the Town.[381] Eight Point further notes that, as reflected in proposed Certificate Conditions 7 and 120, the Towns, DPS Staff, and

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377 16 NYCRR §1001.31(e).

378 Hrg. Ex. 8, App. Ex. 31 and 32.

379 Eight Point IB, p. 49.

380 Eight Point IB, p. 50; DPS IB, p. 40; Hrg. Ex. 20, Eight Point Rebuttal Ex. 3, pp. 3-6.

381 Eight Point IB, pp. 50-51.

other signatories to the recommended Certificate Conditions have agreed that the construction time limits in the Towns' laws are unreasonably burdensome and accordingly are proposing revised construction time limits. Eight Point states that the revised time limits will protect the public while allowing it to construct the Project efficiently.[382]

Eight Point asserts that the Towns' construction time limits impose a considerable burden, especially since the Town of Greenwood's daylight limitation is inconsistent throughout the year and therefore could result in unnecessary difficulties for construction planning, such as reducing the amount of available construction hours during cooler months when it is more efficient to engage in certain construction activities. With respect to the local wind energy laws of the Town of West Union, Eight Point observes that its "cooler temperatures" exemption does not provide enough flexibility to potentially continue construction activities beyond 7 p.m. when required.

Eight Point also contends that the Towns' construction time limits will unnecessarily extend the Project's total construction period, thus causing the Towns and their residents to endure a longer construction period. It adds that consumers generally would be adversely affected because an extended construction period would delay the achievement of the State's renewable energy goals. In contrast, Eight Point asserts that the incremental impacts to the community that would result from granting this request are negligible to non-existent because the construction time limits in West Union would remain the same, while in Greenwood, construction time limits would increase in the winter but would also be reduced during the summer. Eight

[382] Eight Point IB, pp. 49-52.

Point notes that any impacts from extra-hours construction would be mitigated to the maximum extent practicable.

CMORE states that no waivers should be granted. CMORE, however, was unaware of Eight Point's request for waiver of these two municipal requirements, and thus provides no specific reasons why these limited waivers should not be granted.[383]

Recommendation

Except for the two Town laws concerning construction time limits, which we agree should be waived in the limited fashion discussed here, we find adequate record support for the Board to find that Eight Point will comply with all other local law substantive provisions. With respect to the requested waiver of the two specified Town laws, we conclude that there is adequate support in this record for the Board to find that imposing these two provisions would be unreasonably burdensome given the state of the available technology and needs of and costs to ratepayers, especially since, absent the waiver, the Towns and their residents could needlessly endure a longer construction period and the achievement of several State energy goals could be unnecessarily delayed. We recommend that the Board approve the revised construction time limits, proposed by the Towns, the Applicant, and the State agency parties, as part of the recommended Certificate Conditions.

IV. MISCELLANEOUS

Decommissioning and Restoration

Each Article 10 application must contain a statement of the performance criteria proposed for site restoration in the event the facility cannot be completed and for decommissioning

[383] CMORE IB, p. 5; Eight Point RB, p. 11.

of the facility, including a discussion of why the performance criteria are appropriate. This information is required by 16 NYCRR §1001.29. The record contains the required information, including a Decommissioning Plan that outlines the methods and means to decommission the Project at the end of its useful life.[384]

Proposed Certificate Conditions (21 and 72) also address decommissioning, requiring, among other things: a Final Decommissioning Plan and proof of financial security, to be included in the Compliance Filing; consultation between the Towns' representatives and the Certificate Holder concerning the decommissioning estimate; periodic updating of the Decommissioning Plan's decommissioning estimate by a qualified, licensed engineer; the provision of letters of credit by the Certificate Holder, for the full decommissioning estimate amount, to be held by the Towns; and that Eight Point work with DPS Staff and the Towns of Greenwood and West Union to develop acceptable letter(s) of credit.

There are no disputes regarding these provisions, and no party disputes the sufficiency of the record with respect to site restoration and decommissioning. In fact, we note that the plans to create a decommissioning fund were favorably cited on this record in relation to addressing public safety and health impacts and responding to visual impact concerns.[385] The plans also respond to public comments regarding the need for an assured future source of funding for decommissioning and site restoration. However, to ensure that the letters of credit provide the anticipated benefits of, for example, protecting

[384] Hrg. Ex 8, App. Ex. 29 and App. Ex. 29.

[385] See Tr. 313 and 625.

against future potential public hazards[386] and returning the Facility site/landscape to "as close to pre-construction condition as is practicable,"[387] we recommend that the Board specify that an acceptable form of letter of credit would expressly state that the letter of credit is for the benefit of the Towns and that, in the event of bankruptcy by the Certificate Holder, the letter of credit does not become subject to claims of secured and other creditors of the Certificate Holder.

V. CONCLUSION

Based on the extensive record in this proceeding, we recommend that the Board adopt the proposed Certificate Conditions as modified by the Examiners set forth in Attachment A, and issue a Certificate, subject to those conditions, that authorizes Eight Point Wind to construct and operate the Project. Adoption of the recommended Certificate Conditions in Attachment A are designed to ensure that the Project's impacts, identified in this RD, are minimized and avoided to the maximum extent practicable, that the Project will be constructed and operated in compliance with all applicable State and local environmental and public health and safety laws and regulations, and that other necessary consents and approvals are secured by the Certificate Holder prior to the commencement of the Project's construction.

386 See DPS IB, p. 23.

387 Tr. 313-314.

ATTACHMENT A

RECOMMENDED CERTIFICATE CONDITIONS

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FINAL RECOMMENDED,

AS REVISED BY

EXAMINERS

Eight Point Wind Certificate Conditions

MAY 2019

I. Project Authorization

1. The Certificate Holder is authorized to construct and operate the Facility (or the Project), as described in the Application by Eight Point Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 of the New York State Public Service Law (PSL) (the Application) and clarified by the Certificate Holder's supplemental filings, updates and replies to discovery data requests, additional exhibits, and the Siting Board's Order Granting Certificate.

2. The Certificate Holder is responsible for obtaining all necessary permits and any other approvals (including those pursuant to PSL §§68, 69, 70, and 121, if applicable), land easements, and rights-of-way that may be required for this Facility and which the New York State Board on Electric Generation Siting and the Environment (Siting Board) is not empowered to provide or has expressly authorized. In addition, the Siting Board expressly authorizes the Public Service Commission (Commission) to require approvals, consents, permits, certificates or other conditions for the construction or operation of the Facility under PSL §§68, 69 & 70, with the understanding that the Commission will not duplicate any issue already addressed by the Siting Board and will instead only act on its police power functions related to the entity as described in the body of this Article 10 certificate.

3. If the Certificate Holder believes that any action taken, or determination made, by a State or local agency or their respective staffs, in furtherance of such agency's review of any applicable regulatory permits or approvals, or actions or the lack thereof by a utility subject to the Public Service Commission's jurisdiction, is unreasonable or unreasonably delayed, conditioned or withheld, the Certificate Holder may petition the Siting Board or the Commission, as the case may be, upon reasonable notice to that agency, to seek a determination of any such unreasonable or unreasonably delayed, conditioned or withheld, action or determination. The permitting agency, agency staff or utility, as the case may be, may respond to the petition, within ten days, to address the reasonableness of its action or determination.

4. Facility construction is authorized for up to 31 wind turbines (including pad-mounted transformers and metering equipment) in the Towns of Greenwood and West Union, Steuben County, access roads, above and underground 34.5 kilovolt (kV) collection lines and the collection substation, two permanent turbine-hub-height meteorological towers, one operations and maintenance building, and up to six temporary staging/laydown areas. The Facility is proposed to connect with the New York State Electric & Gas (NYSEG) existing 115 kV Bennett Substation in Hornellsville, New York, north of the Project Area via an approximately 16.5-mile 115 kV overhead transmission line that is being permitted through the Article VII process. The total generating capacity of the Facility shall not exceed 101.8 megawatts (MWs).

II. General Conditions

5. Prior to the commencement of construction of the Facility the Certificate Holder shall file a request/application for a Clean Water Act Section 401 Water Quality Certification with the Secretary to the Siting Board (Secretary), which shall be filed and served and noticed pursuant to 16 New York Codes, Rules and Regulations (NYCRR) 1000.8(8). This request shall be filed concurrently with the permit application filed with the United States Army Corps of Engineers pursuant to Section 404 of the Clean Water Act. Upon receipt of any and all permits, the Certificate Holder shall file notice of receipt of the permit(s) with the Secretary as soon as practical. Should any permits be denied, the Certificate Holder shall file with the Secretary documentation demonstrating the reasons for the denial and how it plans to proceed with its Project plans in light of the denial.

6. The Certificate Holder shall implement the minimization and mitigation measures as described in the Application and clarified by the Certificate Holder's supplemental filings, updates and replies to discovery data requests or additional exhibits, and the Siting Board's Order Granting Certificate.

7. The Certificate Holder shall construct and operate the Facility in accordance with the substantive provisions of the applicable local laws as identified in Exhibit 31 of the Application and as such Application has been further clarified and supplemented in the evidentiary record of this proceeding by the Certificate Holder, except for the construction time limits and hours contained in the respective Section 12(N) of both the Town of Greenwood Amended Wind Energy Law (Local Law No.1 of 2017) and the Town of West Union Wind Energy Facility Law (Local Law No.1 of 2017) that the Siting Board refuses to apply as unreasonably burdensome in this proceeding. Certificate Conditions contained herein impose reasonable construction time/hour limits.

8. The Certificate Holder shall construct the collection facilities, including the 115 kV transmission line within the collection substation in accordance with the latest edition of American National Standards Institute (ANSI) C-2 for operation at 212 degrees Fahrenheit. The Certificate Holder shall construct the collector lines in accordance to the latest edition of ANSI C-2.

9. The Certificate Holder shall incorporate and implement as appropriate, in all compliance filings and construction activities, the ANSI standards and measures for engineering design, construction, inspection, maintenance and operation of its authorized Facility, including features for facility security and public safety, utility system protection, plans for quality assurance and control measures for facility design and construction, utility notification and coordination plans for work in close proximity to other utility transmission and distribution facilities, vegetation and facility maintenance standards and practices, emergency response plans for

construction and operational phases, and complaint resolution measures.

10. The Certificate Holder shall work with NYSEG, and any successor Transmission Owner (as defined in the New York Independent System Operator (NYISO) Agreement)), so that, with the addition of the Facility (as defined in the Interconnection Agreement between the Certificate Holder, NYISO and NYSEG), the Facility will have power system relay protection and appropriate communication capabilities so that operation of the NYSEG transmission system is adequate under Northeast Power Coordinating Council (NPCC) standards, and meets the protection requirements at all times of the North American Electric Reliability Corporation (NERC), NPCC, New York State Reliability Council (NYSRC), NYISO, and NYSEG, and any successor Transmission Owner (as defined in the NYISO Agreement). Certificate Holder shall demonstrate compliance with applicable NPCC criteria and shall be responsible for the costs to verify that the relay protection system is in compliance with applicable NPCC, NYISO, NYSRC and NYSEG criteria.

11. The authority granted in the Certificate and any subsequent Order(s) in this proceeding is subject to the following conditions necessary to ensure adherence with such Order(s):

a) Sixty (60) days prior to commencement of construction, as defined in Condition 12, the Certificate Holder shall provide, pursuant to 16 NYCRR 1002.4, an information report to DPS Staff, with a copy to the Siting Board, that identifies the Certificate Holder's construction organizational structure, contact list, and protocol for communication between parties. The contents of this report will be subject to consultation with DPS Staff after the report is filed;

b) The Certificate Holder shall regard the Department of Public Service Staff (Staff or DPS Staff) representatives, authorized pursuant to PSL §66(8), as the Siting Board's representatives in the field and, after the Siting Board's jurisdiction has ceased, as the Commission's representatives in the field. In the event of any emergency resulting from the specific construction or maintenance activities that violate, or may violate, the terms of the Certificate, Compliance Filings, or any other order in this proceeding; such DPS Staff representatives may issue a stop work order for that location or activity;

c) A stop work order shall expire 24 hours after being issued unless confirmed by the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased including by Order issued by the Chair of the Siting Board or by one Commissioner of the Commission. DPS Staff shall give the Certificate Holder notice by electronic mail of any application to the Siting Board or Commissioner to have a stop work order confirmed. If a stop work order is confirmed, Certificate Holder may seek reconsideration from the confirming Commissioner, Siting Board or the whole Commission. If the emergency prompting the issuance

of a stop work order is resolved to the satisfaction of the DPS Staff field representative, the stop work order will be lifted. If the emergency has not been satisfactorily resolved, the stop work order will remain in effect;

d) Stop work authority will be exercised sparingly and with due regard to potential environmental impact, economic costs involved, possible impact on construction activities, and whether an applicable statute or regulation is violated. Before exercising such authority, DPS Staff representatives will consult wherever practicable with the Certificate Holder's representative(s) possessing comparable authority. Within reasonable time constraints, all attempts will be made to address any issue and resolve any dispute in the field. In the event the dispute cannot be resolved, the matter will be brought immediately to the attention of the Certificate Holder's Project Managers and the Director of the DPS Office of Electric, Gas and Water. In the event that a DPS Staff representative issues a stop work order, neither the Certificate Holder nor the Contractor will be prevented from undertaking any safety-related activities as they deem necessary and appropriate under the circumstances. The issuance of a stop work order, or the implementation of measures as described below, may be directed at the sole discretion of the DPS Staff representative during these discussions;

e) If a DPS Staff representative discovers a specific activity that represents a significant environmental threat that is, or immediately may become, a violation of the Certificate, Compliance Filings, or any other Order in this proceeding, the DPS Staff representative may -- in the absence of responsible Certificate Holder supervisory personnel, or in the presence of such personnel who, after consultation with the DPS Staff representative, refuse to take appropriate action -- direct the field crews to stop the specific potentially harmful activity immediately. If responsible Certificate Holder personnel are not on site, the DPS Staff representative will immediately thereafter inform the Certificate Holder's Construction Inspector(s) and/or Environmental Monitor(s) of the action taken. The stop work order may be lifted by the DPS Staff Representative if the situation prompting its issuance is resolved;

f) If the DPS Staff representative determines that a significant threat exists such that protection of the public or the environment at a particular location requires the immediate implementation of specific measures, the DPS Staff representative may, in the absence of responsible Certificate Holder supervisory personnel, or in the presence of such personnel who, after consultation with the DPS Staff representative, refuse to take appropriate action, direct the Certificate Holder or the relevant Contractors to implement the corrective measures identified in the approved Certificate or Compliance Filings. However, all directives must follow the protocol established for communication between parties as required by subpart (a) above. The field crews shall immediately comply

with the DPS Staff representative's directive as provided through the communication protocol. The DPS Staff representative will immediately thereafter inform that Certificate Holder's Construction Inspector(s) and/or Environmental Monitor(s) of the action taken. DPS Staff will promptly notify the New York State Department of Environmental Conservation (DEC), Division of Environmental Permits, Chief, Major Project Management Unit, 625 Broadway, Albany, NY 12233-1750 and the Natural Resource Supervisor for Region 8 (Region 8 NRS), of any activity that involves a violation of a permit issued by the DEC for the Project pursuant to federally delegated or approved authority, as required by PSL §172.1; and

g) The Certificate Holder shall construct and operate the Facility in a manner that conforms to all substantive State requirements as identified in Exhibit 32 of the Application.

III. Notifications

12. At least 14 days prior to the Certificate Holder's commencement of construction date, defined as the anticipated beginning of unlimited and continuous construction of the Facility but not including tree-clearing activities relating to testing or surveying (such as geotechnical drilling and meteorological testing), together with such testing, surveying drilling and similar pre-construction activities to determine the adequacy of the site for construction and the preparation of the Compliance Filing, the Certificate Holder shall notify the public as follows:

a) Provide notice by mail to host and adjacent landowners within 500 feet of the final layout, and persons who reside on such property (if different from the landowner);

b) Provide notice by mail to owners and operators of water wells within one mile of the final layout;

c) Provide notice to local Town and County officials and emergency personnel;

d) Publish notice in the local newspapers of record for dissemination;

e) Provide notice for display in public places, which will include but not be limited to the Town Halls of the host communities, at least one library in each host community, at least one post office in each host community, the Facility website, the Facility Office in Greenwood, and the Facility construction trailers/offices; and

f) File notice with the Secretary for posting on the DPS Document and Matter Management website.

13. The Certificate Holder shall write the notice(s) required in Condition 12 in language reasonably understandable to the average person and shall ensure that the notice(s) contain:

    a) A map of the Project;

    b) A brief description of the Project;

    c) The construction schedule and transportation routes;

    d) The name, mailing address, local or toll-free telephone number, and email address of the Project Development Manager and Construction Manager;

    e) The procedure and contact information for registering a complaint; and

    f) Contact information for the Secretary to the Siting Board and Commission.

14. Upon distribution, and prior to commencement of construction, the Certificate Holder shall notify the Town Boards of all areas where information regarding the Project, Project activities, and Project contact information have been posted.

15. The Certificate Holder shall file with the Secretary, at least seven (7) business days prior to commencement of construction, an affirmation that it has provided the notifications required by this Section III and include a copy of the notice(s) under this Section as well as a distribution list.

16. Prior to the end of construction, the Certificate Holder shall notify the entities identified in Condition 12(a) and 12(b) with the contact name, telephone number, and address of the Operations Manager, and shall file the same with the Secretary.

17. The Certificate Holder shall file a written notice with the Secretary within 14 days of the completion of construction and provide an anticipated date of commencement of commercial operation of the Facility.

18. The Certificate Holder shall file compliance filings, and other filings, in accordance with 16 NYCRR Part 1002 et. seq, as provided herein. The Certificate Holder will make reasonable efforts to consolidate compliance filings directly related to topics, in which the Towns of Greenwood and West Union (the Towns) have expressed an interest herein, into one filing in order to facilitate the Towns' review.

19. Consistent with 16 NYCRR Part 1002.2, the Certificate Holder may not commence construction of all or any portion of the facility or interconnections for which the Board has required approval of a compliance filing as a condition precedent to such construction until the Certificate Holder has submitted the required compliance filing for that portion of the facility and received approval of it by the Board, or by

the Commission after the Board's jurisdiction has ceased.

a) For the purposes of preparing compliance filings, the Certificate Holder is authorized to conduct such testing in the Project Area as may be necessary, including without limitation, geotechnical and soil testing, prior to the submission and approval of any compliance filing. In order to gain required access for vehicles and /or testing equipment to conduct such testing, the Certificate Holder is authorized to conduct limited tree clearing.

b) The Certificate Holder is also authorized to file with the Secretary, on or about May 31, 2019, a proposed plan for tree clearing, commencing November 1, 2019, and ending March 31, 2020 (the "Tree Clearing Plan") with the goal of having the DPS Staff approve the Tree Clearing Plan when the Board issues a certificate for the Project. A copy will also be provided to DEC staff. The Tree Clearing Plan shall comply with all applicable Certificate Conditions and shall also include sufficient information regarding how proposed clearing activities are directly tied to facility layout so that, including facility design drawings as necessary, to ensure clearing is limited to what will be required for Project construction

20. The Certificate Holder shall submit in the Compliance Filing documentation demonstrating that the final Facility design meets or exceeds the turbine setback requirements set forth in the local laws and/or land use regulations for the Towns of Greenwood and West Union, unless written consent has been obtained from affected property owners. Proofs of consent shall be provided, redacted to protect confidential information, and indicated on the final design drawings.

21. A Final Decommissioning Plan and proof of financial security shall be filed in the Compliance Filing that contains the requirements of the Decommissioning Plan filed as Exhibit 29-1 of the Application and the information contained in this paragraph. The Certificate Holder agrees to consult with the Towns' representative concerning the decommissioning estimate to obtain their input before the Compliance Filing is made and will provide to the Towns the cost basis for said estimate. The Compliance Filing will be redacted to eliminate information proprietary to the Certificate Holder, which information in its unredacted form will be subject to examination by the DPS and Towns pursuant to the applicable Protective Order previously issued in Case 16-F-0062. The Decommissioning Plan shall also include (i) the anticipated life of the wind turbines; (ii) the estimate of decommissioning in current dollars; (ii) the method of ensuring that funds will be available for decommissioning and restoration as provide in the Plan; (iv) the method that the decommissioning estimate will be kept current; and (v) the manner in which the Project will be decommissioned and the site restored. In response to certain aforementioned requirements herein, the decommissioning estimate contained in the Plan shall be updated by a qualified independent engineer licensed to practice engineering in the State of New York to

reflect inflation and any other changes after one year of Facility operation, and every fifth year thereafter. No offset for projected salvage value is permitted in the calculation of the estimate. The Applicant shall work with DPS Staff and the Towns of Greenwood and West Union on an acceptable form of letter or letters of credit. The Applicant shall also file with the Secretary, with a copy to the Towns of Greenwood and West Union, proof that the letter or letters of credit have been obtained in the decommissioning estimate amount, as calculated pursuant to the Siting Board's direction. The letter or letters of credit should remain active for the life of the Facility, until it is decommissioned, as adjusted every fifth year in consultation with the Towns and DPS Staff. The Towns of Greenwood and West Union shall hold the letters of credit with each letter representing that portion of the respective Town's decommissioning cost. The Applicant shall execute decommissioning agreements with the respective Towns establishing a right for them to draw on the letters of credit if the Applicant defaults on its' decommissioning obligations. Without relinquishing the authority granted to the Siting Board, and the PSC under PSL 168.7, the Towns of Greenwood and West Union are hereby delegated the authority, pursuant to PSL 172.1 to enforce the approved Decommissioning Plan subject to the provisions of Condition 3 herein.

Health and Safety

22. A Final Emergency Action Plan that shall be implemented during Facility construction, operation, and decommissioning shall be submitted as part of the Compliance Filing. It shall address, amongst other potential contingencies, provisions for the notification of pipeline operators/owners in the event of damage to an existing pipeline. Training drills with emergency responders shall occur at least once per year. Copies of the final plan shall be provided to DPS Staff, the NYS Division of Homeland Security and Emergency Services, and local emergency responders that serve the Facility.

23. The Final Site Security Plan for Facility Operations. Copies of the final plan shall be provided to the DPS Staff, NYS Division of Homeland Security and Emergency Services and local emergency responders that serve the Facility.

24. A Final Health and Safety Plan shall be implemented during Facility construction, operation, and decommissioning.

25. The Certificate Holder shall contact all known pipeline operators within the Project Area and land owners, if necessary, on which Project facilities are to be located or whose property lines are within the zone of safe siting clearance, if any, and shall reach an agreement with each operator to provide that the collection system will not damage any identified pipeline's cathodic protection system or produce damage to the pipeline, either with fault current or from a direct strike of lightning to the collection system, specifically addressing 16 NYCRR § 255.467(g) (External corrosion

control; electrical isolation), subject to the provisions of Condition 3 herein. A copy of any agreements so entered shall be provided to the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary.

26. A final site-specific construction Quality Assurance and Quality Control Plan (QA/QC Plan), to be developed in coordination with the selected Balance of Plant (BOP) contractor.

Transportation

27. The Board hereby delegates to the New York State Department of Transportation (NYSDOT) the authority, pursuant to PSL 172, to issue all approvals, consents, licenses and permits, within NYSDOT's jurisdiction, for the construction and operation of the Project.

Plans, Profiles, and Detail Drawings

28. Maps, site plans and profile figures, and construction details for the Facility to be constructed. Shapefile data shall be provided to DPS Staff for the locations of turbines, collection lines, transmission lines, designated construction and laydown areas, access ways, and other Project facilities. Final design drawings, site plans, and construction details will include setback dimensions that adhere to the following requirements for turbine locations:

a) 1.5 times the turbine tip blade height from the substation;

b) 1.5 times the turbine tip blade height from the 115 kV generator lead line;

c) 1.1 times the turbine tip blade height from gas and oil wells (unless waived by landowner and gas and oil well operator);

d) 1.2 times the turbine height from public roads;

e) 550 feet from State lands;

f) 1.5 times turbine height from non-residential structures;

g) 1,400 feet from non-participating residences;

h) 1,400 feet from participating residences;

i) 1.2 times turbine height from non-participating parcels; and

j) 100 feet from State jurisdictional wetlands, unless otherwise permitted pursuant to this Certificate.

Environmental

29. An Environmental Compliance Program Plan shall be included in the Compliance Filing including:

a) Establishment of funding for an independent, third-party environmental monitor ("Environmental Monitor") to oversee compliance with environmental commitments and permit requirements. The Certificate Holder will solicit input from the designated representative of the Towns with respect to the selection of the Environmental Monitor. The Environmental Monitor shall perform daily inspections of construction work sites and, in consultation with DPS Staff, issue regular reporting and compliance audits. When soliciting input from the DPS Staff and the Towns, the Certificate Holder shall identify one or more candidates and provide qualifications and contact information for the Environmental Monitor. There shall also be an independent, third party agricultural monitor ("Agricultural Monitor") approved by the Department of Agriculture and Markets (DAM), which Agricultural Monitor need not be onsite full time and who shall also serve as the Agricultural Monitor for the construction of the Article VII transmission line; provided however, there will be periods during Project and transmission line construction, and the subsequent restoration, when the Agricultural Monitor will be onsite full-time.

b) A Final Environmental Compliance Manual, which will serve as the basis for contractor training. The manual will identify construction organizational structure, contact list, and protocol for communication between parties;

c) Mandatory training requirements for all contractors and subcontractors;

d) Pre-construction coordination; and

e) Construction and restoration inspection standards.

30. A Final Detailed Geotechnical Engineering Report shall be submitted in the Compliance Filing verifying subsurface conditions at each turbine location, and horizontal directional drilling locations. The report shall identify appropriate mitigation measures required in locations of highly corrosive soils or soils with a high frost risk and confirm whether blasting operations will be required in areas of shallow bedrock.

31. Shadow Flicker Impacts Analysis, Control, Minimization and Mitigation Plan. Shadow flicker caused by wind turbine operations shall be limited to a maximum of 30 hours annually at any nonparticipating residential receptor. The Shadow Flicker Impacts Minimization and Mitigation Plan shall include:

a) Updated modeling analysis of realistic and receptor-specific predicted flicker based on the as built coordinates of the wind turbines;

b) A protocol for monitoring operational conditions and potential flicker exposure at the wind turbine locations identified in the updated analysis, based on meteorological conditions;

c) Details of the shadow detection and prevention technology, if available and determined by the Certificate Holder to be feasible, that will be adopted for real-time meteorological monitoring and operational control of turbines;

d) Potential temporary turbine shutdowns during periods that produce flicker that exceed the aforementioned 30 hours maximum for two consecutive years and for which complaints are received from the affected residence existing as of the date this Article 10 certificate is issued and which complaints are not resolved through the Complaint Resolution Process required by Certificate Condition 56; and

e) Shielding or blocking measures (such as landscape plantings and window treatments) for receptor locations that submit complaints for exposures that are not subject to the 30-hour annual limit and which complaints are not resolved through the Complaint Resolution Process required by Certificate Condition 56. Details of flicker control, minimization and mitigation measures shall be indicated on final design drawings and standards, and site plans as appropriate.

32. Cultural Resources Protection Measures shall be submitted in the Compliance Filing and contain the following:

a) Plans to avoid or minimize impacts to archaeological and historic resources to the extent practicable. Construction, including site preparation, clearing or other disturbance, shall not be allowed in any areas that have not been evaluated or inventoried and assessed by the Certificate Holder for the presence of historic properties. The Certificate Holder shall indicate on final Site Engineering and Environmental Plans measures for avoidance of archaeological sites identified within the Facility site. The mapped locations of all identified archaeological sites within 100 feet (31 meters) of proposed Facility-related impacts shall be identified as “Environmentally Sensitive Areas” or similar on the final Facility construction drawings and marked in the field by construction fencing with signs that restrict access.

b) Final Unanticipated Discovery Plan, establishing procedures in the event that resources of cultural, historical, or archaeological importance are encountered during Facility construction. The plan will include a provision for immediate work stoppage of all ground-disturbing construction-related activities within 100 feet (31 meters) of the discovery of possible archaeological or human remains. Evaluation

of such discoveries, if warranted, shall be conducted by a professional archaeologist, qualified according to New York Archaeological Council Standards. Work shall not resume in the area of the discovery of such remains until written permission is received from the NYSOPRHP.

c) If complete avoidance of archaeological sites is not possible, the Certificate Holder shall consult with the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) and DPS Staff to determine if Phase II investigations or mitigation is warranted. The results of any Phase II investigations and/or identification of mitigation measures will be included in the plans.

d) Final C*ultural Resources Mitigation and Offset Plan*, either as adopted by a federal permitting agency in a subsequent National Historic Preservation Act (NHPA) §106 review, or as proposed in the Application and as revised in further consultation with SHPO in the event that the NHPA §106 review does not require that the mitigation plan be implemented, or as further supplemented pending any negotiations among parties. Proof of mitigation funding awards for offset project implementation to be provided within two years of the start of construction of the Facility shall be included.

33. The Signatory Parties agree that the Certificate Holder has demonstrated that 6.9 m/s is not feasible for this Project and therefore full avoidance of impacts on NLEB cannot be achieved. As such, the Facility will implement the minimization measures outlined below and herein. The operation of the Project will result in the estimated take of 96.2 NLEBs over the life of the Project and as a result will implement minimization and mitigation measures contained in this Certificate that meet the requirement of 6 NYCRR Part 182 (Incidental Take Permit).

a) Unless otherwise agreed to between the Certificate Holder and the NYSDEC, the Facility will avoid the potential for direct take of bats during construction by scheduling activities having a significant risk of impact (i.e., tree cutting) during the hibernation season (November 1 until April 1);

b) Unless otherwise agreed to between the Certificate Holder and the NYSDEC, the Facility shall avoid the direct take of occupied NLEB habitat by ensuring that no tree clearing activities occur within 150 feet of any known, identified maternity roost tree and any tree clearing outside the aforementioned 150-feet buffer zone for the known, identified maternity roost tree, within 1.5 miles of said tree, shall take place only between November 1 and April 1;

c) Reducing, to the maximum extent practicable, the amount of forested habitat that needs to be removed; and

d) Moving any necessary forest clearing as far away from known, identified maternity

roost sites or hibernacula, to the maximum extent practicable.

34. After prior consultation with DEC, the Certificate Holder will have submitted to DEC, no later than March 15, 2019, for DEC review, a Net Conservation Benefit Plan (NCBP) that mitigates the total calculated take of 15.43 NLEB over the life of the Project. DEC review and response will occur by no later than May 1, 2019. As provided in subsection (g) below, the NCB Plan shall comprise the following:

a) A demonstration that the mitigation actions described in the NCBP will result in a positive benefit to NLEB species, and not just an offset for take of individuals;

b) Detailed net benefit calculations based on the actual location and type of minimization measures to be taken;

c) Full source information use as inputs to the net benefit calculations;

d) An appropriate monitoring program to determine the effectiveness of the mitigation;

e) adaptive management options and next steps to be implemented (except for additional curtailment) in the event that the authorized level of take stated herein (15.43 over the life of the Project) is actually exceeded by operation of the Project;

f) A letter of credit evidencing the Applicant's ability to fund and execute such management, maintenance, and monitoring for the 35-year life of the Project;

g) Eight Point Wind LLC, the applicant in this proceeding and the eventual Certificate Holder (referred to in this paragraph as the "Certificate Holder") shall conduct, while this Article 10 proceeding is ongoing, NLEB mist-netting and radio-telemetry tracking operations, or hibernacula gating operations as provided in the next paragraph,, during the period May 15 and August 15, 2019 to assist in the identification of previously unknown maternity roost trees and/or NLEB hibernacula. The mist-netting surveys shall be conducted first, at the Certificate Holder's election, as provided herein, in Suffolk County, Long island, on public lands with no-cost access to the Certificate Holder, or on privately-owned lands. Alternatively, at Certificate Holder's election, the mist netting surveys may be first conducted on lands adjacent to the Project Area, property which the Certificate Holder owns or to which it has the necessary property rights, which total approximately 350 acres (formerly owned by Chesapeake, (the "Chesapeake Property"). Survey efforts will comprise at least 20 net-nights (10 calendar nights, 2 nets per night) to capture, tag and radio track reproductive female and juvenile NLEB. The goal is to locate maternity roost sites to offset the estimated lifetime take of 15.43 NLEB. The identification of a new maternity roost tree will then allow the DEC to take steps to protect the identified site from disturbance and as such, offset the loss of up to five (5) NLEBs per new maternity roost tree identified on Long

Island. New roosts are defined as any previously unidentified roost that is located greater than 150 feet from an already identified roost, i.e., roosts must be more than 150 feet apart to be counted as separate locations. If the Certificate Holder is unable to identify enough new maternity roost trees to offset its entire Project life NLEB take estimate of 15.43 NLEB bats in Suffolk County, Long Island, the Certificate Holder will be credited the appropriate number of NLEBs per new maternity roost tree identified, and then the Certificate Holder will conduct NLEB mist-netting and radio-telemetry tracking operations on the Chesapeake Property to identify the remaining quantity of new maternity roost trees required to offset the remainder of the aforementioned NLEB take estimate. If a roost tree is found on Long Island it equals 5 NLEBs, if roost tree is found on Chesapeake property, within 1.5 miles of project component, it equals 4 NLEBs. Nothing herein shall preclude the Certificate Holder from performing additional mist netting and tracking surveys at other properties. If, together with the gating of hibernacula, as provided in the next paragraph, a sufficient amount of roost trees is identified as a result of these aforementioned netting and tracking operations to offset the estimated take of 15.43 NLEB over the life of the Project, then Certificate Holder's obligations herein under the NCB Plan shall be deemed satisfied. Notwithstanding anything herein, the Certificate Holder may implement the gating, netting and tracking operations in any sequence it deems reasonable. The results of the mist netting survey/gating operations shall be reported in the Compliance Filing. If all reasonable efforts to identify new maternity roost trees on the Chesapeake Property, and on the public lands and private lands identified by DEC in Suffolk County, Long Island, have been exhausted, and the Certificate Holder has not identified enough new maternity roost trees to offset the entire aforementioned NLEB take estimate, or the Certificate Holder has not gated a sufficient number of hibernacula pursuant to the next paragraph, the Certificate Holder will report that in the Compliance Filing and thereafter consult with DEC, prior to the commencement of commercial operation, on further NLEB mitigation to be implemented during operation of the Facility, except that additional curtailment shall not be considered as an option for further NLEB mitigation.

h) Based upon the information provided by DEC, the Certificate Holder shall investigate opportunities to obtain the necessary property rights to install physical gating of the identified bat hibernacula at locations that are deemed appropriate after consultation with DEC. Each hibernacula that is gated will equate to 50% of the estimated number of resident NLEB estimated by DEC in the hibernacula towards offsetting the Project's lifetime 15.43 NLEB estimate, discussed in the preceding paragraph. The Certificate Holder is not required to enter the hibernacula to verify the presence or number of NLEB.

i) In addition to the above components of the NCBP, the Certificate Holder shall implement a curtailment regime during the period July 1 through October 1

requiring a minimum curtailment 30 minutes prior to sunset through 30 minutes after sunrise, when ambient air temperature is 50 degrees Fahrenheit or greater and when wind speed is equal to or less than 5.5 m/s. This regime will be implemented at all turbines for the life of the project.

j) No additional curtailment or mitigation is required to mitigate impacts specifically related to migratory tree bats.

35. A final Invasive Species Control Plan (ISCP) shall be submitted in the Compliance Filing. Control measures shall include construction materials inspection and sanitation, invasive species treatment and removal, and site restoration in accordance with the Facility's final approved Storm Water Pollution Prevention Plan (SWPPP). A post-construction monitoring program (MP) shall be conduction in year 1, year 3, and year 5 following completion of construction and restoration. The MP shall collect information to facilitate evaluation of ISCP effectiveness. At the conclusion of the MP, a report shall be submitted to DPS Staff, DEC, and DAM, and filed with the Secretary, that assesses how well the goal of no net increase of invasive species per the recommendation of the Invasive Plant Species Survey Baseline Report (Baseline Species Report), due to the construction of the Facility, is achieved. In the event that the report concludes that ISCP goals are not met, and there is an increase of invasive species due to Facility construction, the Certificate Holder, DPS, DEC and DAM will meet to consider why initial control measures were ineffective and the probability of successful additional treatment measures without the need for perpetual treatments. As appropriate, additional control or removal measures may be necessary to meet ISCP goals that were not achieved.

36. Final wetland and stream impact drawings, site plans, and construction details shall be submitted in the Compliance Filing and incorporate and accurately depict methods for minimization of impacts to each wetland and stream. The plan shall include a table that identifies all wetlands and streams within the Project area and provides the following information for each individual resource:

a) Wetland delineation types and DEC stream classifications;

b) Identification and assessment of methods to minimize impacts, including crossing methods and identification of any time of year restrictions, as applicable; and

c) References to the location of each resource where shown in the final design drawings, site plans, and construction details.

37. A final Wetlands Mitigation Plan, if required, addressing impacts to federal and State wetlands shall be developed in coordination with DEC, DPS Staff, and the Corps to satisfy applicable federal and State regulations and be filed in the Compliance Filing.

38. The following shall be filed with the Secretary regarding Federal Aviation

Administration (FAA) permits and required approval documentation, as applicable:

a) Final FAA Determinations or Determinations with conditions shall be submitted to the Secretary prior to construction;

b) Certificate Holder shall provide any updated material as Compliance Filings if relevant Project plans require modifications due to results of FAA studies and Determinations;

c) If any Determinations of No Hazard to Air Navigation for the Project's wind turbines are extended, revised, or terminated by the issuing office, documentation or verification detailing the actions shall be filed with the Secretary within 10 days of issuance;

d) All material related to the FAA approval of lighting systems to be installed on wind turbines (and any associated equipment), including Aircraft Detection Lighting Systems and non-Aircraft Detection Lighting Systems, shall be filed to the Secretary prior to construction; and

e) A copy (or verification of filing to the FAA) of the FAA Form 7460-2, Notice of Actual Construction or Alteration shall be filed with the Secretary within 30 days of completion of construction of the Project.

39. Copies of any discretionary local or state permits and/or approvals required for construction and operation of the Facility if such approvals were authorized by the Siting Board shall be filed with the Secretary.

40. Documentation demonstrating that all necessary agreements are in place for use of the Facility Site for construction and operation (e.g., redacted landowner agreements, easements, or "good neighbor" agreements) shall be filed with the Secretary.

41. A copy of the Interconnection Agreement between NYISO, NYSEG, and the Certificate Holder shall be filed with the Secretary. Any updates or revisions to the Interconnection Agreement shall be submitted to the Secretary throughout the life of the Project. Additionally, except in the event of an emergency, if any equipment or control system with different characteristics is installed throughout the life of the Project, the Certificate Holder shall, at least three months before any such change is made, provide information regarding the need for, and the nature of, the change to NYSEG and file such information with the Secretary.

42. All Facilities Studies issued by NYSEG and the NYISO and any updated facilities agreements will also be filed with the Secretary throughout the life of the Facility.

43. Any System Reliability Impact Study (SRIS) performed in accordance with the NYISO Open Access Transmission Tariff (OATT) approved by the Federal Energy Regulatory

Commission, and all appendices thereto, reflecting the interconnection of the Facility shall be filed with the Secretary.

44. The following information shall be filed in the Compliance Filing:

a) Details and specifications of the selected turbine model (including cut sheets, and blade details (including length and thickness; pad-mounted transformers and metering equipment), including third-party certification documenting that the turbine model meets international design standards and certification showing turbines are compatible with existing Project conditions); the technical/safety manual for the turbine; foundation drawings (including plan, elevation, and section details); and manufacturer spec sheet and warranty that the selected turbine model does not exceed the total height and sound level output of the turbines presented in the Application;

b) Description of the wind turbine blade installation process, identifying the anticipated installation method for each wind turbine and indicating which wind turbine site locations will require the use of the entire rotor laydown area. Details showing typical laydown space required for installation will be provided;

c) Maps showing the location for the selected operations and maintenance building. If an existing building is not utilized, the Certificate Holder shall provide the final operations and maintenance building details and construction drawings; and

d) If an on-site concrete batch plant is to be utilized during construction, the Certificate Holder shall provide:

(i) Final details of the concrete batch plant layout, location, and access;

(ii) Temporary lighting that avoids offsite light trespass;

(iii) Copies of required permits; and

(iv) Initial concrete batch plant set-up plan with references of conformance to ACI (American Concrete Institute), ASTM (American Society for Testing and Materials); and

(v) Plan or description of the Certificate Holder's monitoring and testing of concrete in conformance with the Building Code of New York State, ACI, ASTM, and any other applicable specifications;

45. Final plan for the collection substation and collection line circuits' configuration and location map, indicating locations of overhead and underground installations and the number of required circuits per circuit-run shall be submitted in the Compliance Filing. A breakdown of the number of miles per installation shall be included as a legend

(including installation distances for single, double, triple, etc.).

46. Final details of any single and multiple-circuit overhead 34.5 kV electric collection line layouts shall be submitted in the Compliance Filing. Each Project circuit layout (single, double, triple, etc.) shall include, if applicable, the following drawings:

a) "Right-of-Way Clearing Diagram";

b) "Riser Dead-End Structure Diagram";

c) "Tangent Structure Diagram";

d) "Angle Structure Detail"; and

e) "Clearing Diagram-Adjacent to Roadway Detail". The above listed drawings shall include final layout details of any required guy support systems.

47. For the final design and details of single and multiple electric circuit underground collection lines to be submitted in the Compliance Filing, each Project circuit layout (single, double, triple, etc.) shall include a cross-section and clearing and ROW widths needed for accommodating circuit installations.

48. Maps showing all locations where anticipated alternative installation methods (i.e., alternative to the "rip" method, including subsurface bores/horizontal directional drilling) shall be utilized during construction of underground collection lines; alternative methods will be identified in the plans. To the extent the contractor determines, during construction activities, that installation methods should differ from that which is depicted on the maps, such change shall be permitted following on-site consultation with, and verbal approval by, the DPS Staff representative and the Environmental Monitor. Such changes must be consistent with federal and State regulations and will be subject to filing a notification of change with the Secretary within 48 hours from the agreement to make the change in installation method.

Environmental

49. A Frac-Out Risk Assessment and Contingency Plan shall be submitted in the Compliance Filing if and where horizontal directional drilling is proposed. Biodegradable drilling solutions shall be used for horizontal directional drilling (HDD) to minimize harm to aquatic species in the event of a drilling frac-out. Exit and entry points shall be located a minimum of 50 feet from the edge of the stream or wetland to minimize disturbance to the extent practicable. At a minimum, the plan shall include procedures to address inadvertent surface returns (frac-out), a response procedure, and a list of spill response equipment to be maintained on-site. All equipment and provisions of the plan shall be readily accessible at the locations where HDD technology is used during construction. If

inadvertent drilling fluid surface returns occur in wetlands or streams, the NYSDEC's Division of Environmental Permits, Chief of the Major Project Management Unit and DPS Staff shall be notified within 2 hours or as soon practicable, considering internet and cell phone coverage in the area and a written monitoring report describing the location, estimated volume, and cleanup efforts shall be submitted within 24 hours of the occurrence.

50. Dust Control Procedures Plan for minimizing the amount of dust generated by construction activities, consistent with the Standards and Specifications for Dust Control, as outlined in the *New York State Standards and Specifications for Erosion and Sediment Controls*, shall be submitted in the Compliance Filing.

51. A final Unanticipated Discovery Plan, establishing procedures in the event that resources of cultural, historical, or archaeological importance are encountered during Facility construction shall be submitted in the Compliance Filing. The plan will include a provision for immediate work stoppage upon the discovery of possible archaeological or human remains. Evaluation of such discoveries, if warranted, shall be conducted by a professional archaeologist, qualified according to New York Archaeological Council Standards. Work shall not resume in the area of such remains until written permission is received from the NYSOPRHP, subject to the provisions of Condition 3 herein.

52. Site-specific plans for management of priority invasive species within the Project Area (including autumn olive, Canada thistle, ragweed, Japanese knotweed, and common reed) identified in the Invasive Species Control Plan shall be included in the Final ISCP to be submitted in the Compliance Filing.

53. The Certificate Holder shall file with the Secretary a notice confirming that no wind turbine is sited within 100 feet of an existing water supply well, and identifying any instances where environmental or engineering constraints require siting of any other Project facilities within 100 feet of an existing water supply well. For those wells so identified, the Certificate Holder shall perform pre- and post-construction testing of the potability of water wells within 100 feet of construction disturbance before commencement of construction and after completion of construction shall be performed by a qualified third party, to ensure the wells are not impacted. Should the third party conclude that the Facility Construction has an impact on the potability of a water well based on the test results, the Certificate Holder shall cause a new water well to be constructed, more than 100 feet from a collection line or access road.

54. A final DEC-approved Storm Water Pollution Prevention Plan (SWPPP) shall be filed with the Secretary. Impacts to soil resources shall be minimized by adherence to best management practices that are designed to avoid or control erosion and sedimentation and stabilize disturbed areas. Erosion and sedimentation impacts during construction shall be minimized by the implementation of an erosion and sedimentation control plan developed as part of the State Pollution Discharge Elimination System General Permit

for the Facility. Erosion and sediment control measures shall be constructed and implemented in accordance with the SWPPP.

55. A final Spill Prevention, Containment and Counter Measures (SPCC) Plan to minimize the potential for unintended releases of petroleum and other hazardous chemicals during Facility construction and operation shall be filed in the Compliance Filing. The SPCC Plan shall be applied to all relevant construction activities and contain information about water bodies, procedures for loading and unloading of oil, discharge or drainage controls, procedures in the event of discharge discovery, a discharge response procedure, a list of spill response equipment to be maintained on-site (including a fire extinguisher, shovel, tank patch kit, and oil-absorbent materials), methods of disposal of contaminated materials in the event of a discharge, and spill reporting information. Any spills shall be reported in accordance with State and/or federal regulations.

56. A Final Complaint Resolution Plan for both construction and operation phases (a separate plan will be submitted for operational noise), which shall be developed in consultation with the Towns and submitted to the Towns as part of the Compliance Filing. A copy of the Final Complaint Resolution Plan shall be submitted to the Towns and filed at the Facility document repositories. The plan shall address complaint reporting and resolution procedures for all construction and operation issues. The plan shall include protocols for:

a) Registering a complaint;

b) Notifying the public of the complaint procedures;

c) Notifying Town officials of complaints as they are received and responded to, and informing Town officials of the manner of response and actions taken;

d) Responding to and resolving complaints in a consistent and respectful manner;

e) Logging and tracking of all complaints received and resolutions achieved;

f) Reporting to the Towns and DPS Staff any complaints not resolved within 60 days of receipt;

g) Complaints not resolved within 60 days may be brought by the complainant to the PSC and will be subject to PSC complaint resolution procedures;

h) Providing an annual report of complaint resolution tracking to DPS Staff that shall also be filed with the Secretary; and

i) If the Complaint Resolution process determines that Facility operation has resulted in impacts to existing off-air television coverage, the Certificate Holder shall address each individual problem by investigating methods of improving the television

reception system. Should this prove ineffective, cable television hookups shall, at the Certificate Holder's expense, be provided (in areas where cable service is available), or in areas where cable service is not available or not practical, direct broadcast satellite reception systems to any affected resident so desiring this compensation.

Miscellaneous

57. A detailed Facility Exterior Lighting Plan shall be filed in the Compliance Filing. The Lighting Plan shall address:

a) Security lighting needs at the collection substation and the facility Operations and Maintenance building site;

b) Plan and profile figures to demonstrate the lighting area needs and proposed lighting arrangement at the substation;

c) Lighting should be designed to provide safe working conditions at appropriate locations; and

d) Exterior lighting design shall be specified to avoid off- site lighting effects, by:

(i) Use of task lighting as appropriate to perform specific tasks; task lighting shall be designed to be capable of manual or auto-shut off switch activation rather than motion detection;

(ii) For lighting other than turbine door safety lighting, if any, full cutoff fixtures, with no drop- down optical elements (that can spread illumination and create glare), shall be required for permanent exterior lighting; and

(iii) Manufacturer's cut sheets of all proposed lighting fixtures shall be provided.

e) Lighting of the wind turbine nacelles shall be implemented as per the current requirements of the Federal Aviation Administration (FAA) Advisory Circular 70/7460- IL, Chapter 13 (Marking and Lighting Wind Turbines) or as updated, as of the time of Compliance Filing submittal. Revised Determinations of No Hazard to Air Navigation addressing final facility design shall be provided as supporting documentation. The Certificate Holder shall include in the Compliance Filing an evaluation of the feasibility of installing Radar-activated aviation hazard warning lights as a possible measure to further minimize visual and wildlife impacts to the maximum extent practicable.

f) The Certificate Holder shall provide shielding or blocking measures (such as landscape plantings or window treatments) for receptor locations that submit complaints for exposures to the turbine nacelle lighting that is implemented as required by the FAA, as discussed in the preceding subparagraph, and which

complaints are not resolved through the Complaint Resolution Process required by Certificate Condition 56.

58. Post-construction wildlife monitoring will be conducted and include direct impact fatality studies, habituation/avoidance studies, and breeding bird surveys. A Post Construction Avian and Bat Monitoring and Adaptive Management Plan shall be filed in the Compliance Filing. The details of the post-construction studies (i.e., the start date, number and frequency of turbine searches, search area, bat monitoring, duration and scope of monitoring, methods for observational surveys, reporting requirements, etc.), will be described in the Post-construction Avian and Bat Monitoring and Adaptive Management Plan and based in part on NYSDEC's June 2016 *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects.* The Guidelines will be adapted as needed to design a work plan for surveys capable of adequately detecting rare events and impacts to listed species. The work plan will be developed, through consultation between the Certificate Holder, USFWS, and NYSDEC, and a final plan will be approved by NYSDEC and be in place prior to the start of Project operation. As the Project will be permitted to directly or indirectly impact state-listed threatened and endangered species, post-construction monitoring must be properly designed to evaluate mortality and displacement impacts, and, therefore monitoring shall be conducted for three (3) non-consecutive years during the first ten (10) years of operation of the Project at intervals to be determined in the Post Construction Avian and Bat Monitoring and Adaptive Management Plan. In years 8, 16 and 25 following commencement of commercial operation of the Project, the Certificate Holder shall submit to DPS Staff a status report on any new, commercially available technologies, that are designed to reduce migratory bat mortality beyond the curtailment required in this Certificate, that in the sole judgment of Certificate Holder, would be feasible and cost effective to install at the Project, and would not be more expensive to Certificate Holder than the mitigation and curtailment regime required in Conditions 32-33 of this Certificate.

59. The Certificate Holder shall file with the Secretary within 60 days of the commercial operation date a certification that the collector lines were constructed to the latest editions of ANSI standards. The Facility's electrical collection system shall be designed in accordance with applicable standards, codes, and guidelines as specified in Exhibit 5 of the Application.

60. The Certificate Holder shall file in the Compliance Filing an Operation and Maintenance Plan(s) for the Facility, including emergency procedures and list of emergency contacts. The Certificate Holder shall file annually with the Secretary an updated copy of its emergency procedures and list of emergency contacts and with documentation of any modifications.

61. Should the final Facility design require a Special Protection System, the Certificate Holder shall file a report with the Secretary regarding implementation of such system,

which is designed to avoid possible overloads from certain transmission outages, as well as copies of all studies that support the design of such a system. In addition, Certificate Holder shall provide all documentation for the design of special protection system relays, with a complete description of all components and logic diagrams. Prior to commencement of operations, Certificate Holder shall demonstrate through appropriate plans and procedural requirements that the relevant components of the Special Protection System will provide effective protection.

62. As-built drawings in both hard and electronic copies shall be filed with the Secretary within six months following the commercial operation date of the Facility. Drawings will include final locations of all Project components, final grading, elevation plan of switchyard and collection substation, and a profile of the final collection line locations.

63. A Vegetative Management Plan shall be prepared, filed in the Compliance Filing and shall address specific standards, protocols, procedures and specifications for the vegetative management of onsite overhead collection systems, access roads and turbine sites:

a) Vegetation management recommendations based on on-site surveys of vegetation cover types and growth habits of undesirable vegetation species;
b) Herbicide use and limitations, specifications and control measures;
c) Wire Security Clearance Zone specifications, indicating applicable safety, reliability and operational criteria;
d) Inspection and target treatment schedules and exceptions;
e) Standards and practices for inspection of facilities easements for erosion hazard, failure of drainage facilities, hazardous conditions after storm events or other incidents;
f) Review and response procedures to avoid conflicts with future use encroachment or infrastructure development;
g) Wetland and stream protection areas, principles and practices; and
h) Landowner notification procedures.

64. The Certificate Holder shall file in the Compliance Filing:

a) Final drawings and details of the Wind Generating Facility, including pad mounted transformers and metering equipment, as well as final construction drawings incorporating any appropriate changes to the design and details, including:

(i) Location of the turbines identified with Geographic Information System (GIS) coordinates and GIS files;

(ii) Turbine dimensions to include hub height and diameter of tip blades rotation; and

(iii) proposed grading and turbine ground elevations.

b) Site plan and elevation details of substations as related to the location of all relevant noise sources (transformers, emergency generator, reactors, if any), any identified mitigations, specifications, and appropriate clearances for sound walls, barriers, mufflers, silencers, and enclosures, if any. Sound information from the manufacturers for all relevant noise sources shall also be presented; and

c) Sound Power levels from the turbines by following these provisions:

(i) Sound Power levels from the turbines selected for the project shall be documented with information from the manufacturers based on tests that determined sound power levels following the International Electrotechnical Commission (IEC) TS 61400-11 standard, and Technical Specification TS61400-14- 2005-1st Edition), if available. Sound Power Information will be reported associated with wind speed magnitudes, angular speed of the rotor, and rated power to the extent this information is available. The Sound Power Information will include specifications for Noise Reduced Operations or Low-Noise Trailing Edges if these are available or required to meet the noise conditions of this Certificate;

(ii) Sound Power levels from the turbines at any wind speed at hub height shall not exceed 106.0 dBA overall (108.0 dBA with the 2 dBA uncertainty factor), 122 dBZ at the 16 Hz full octave band, 119 dBZ at the 31.5 Hz full octave band, and 117 dBZ at the 63 Hz full octave band, and measured with the IEC 61400-11 Standard plus a 2-dB uncertainty factor. Noise reduction operations (NROs') may be applied at any turbine, including the alternate turbines, in the Certificate Holder's sole judgment; provided, however, Alternative Turbine 3 is eliminated from the final design. The Certificate Holder shall exercise reasonable efforts to obtain timely agreements from non-participating landowners that will include them as participating land owners in the Project on terms equivalent to existing participating landowner agreements. NROs' would be used in the Compliance Filing analyses only if the Certificate Holder could not obtain the aforementioned agreements, with the goal of preserving NROs' for any mitigation that may be required after operation commences. Turbine 15 is converted to alternative status re-designated as New Alternative Turbine 3. Alternative Turbines 1,2and 4 are available for use in the Certificate Holder's sole judgment. New Alternative Turbine 3 is available for use subject to the provisions of Certificate Condition 73. The Certificate Holder will test at locations where NROs' were applied in the Compliance Filing at the most impacted receptor(s) to determine whether lower, same or greater NROs' should be used during operation to comply with applicable Certificate Conditions. The testing will follow applicable Certificate Conditions and the Sound Testing Compliance Protocol, appended hereto as Appendix A, after operation has commenced. These tested locations shall be counted towards the

total number of the locations specified in said Protocol.

d) Revised sound modeling using the same or a more conservative methodology as in the Application but with the specifications of the wind turbine model selected for construction to demonstrate that the project is modeled to meet the substantive provisions of the Local Laws on Noise for the Towns of Greenwood and West Union and the regulatory limits of Conditions 73(a), 73(b), 73(c), 73(d) and 73(f). The revised sound modeling will also show conformance with the design goals listed below. Conformance with items i, ii, and iii below will be demonstrated utilizing updated sound modeling and sound contours:

(i) 40 dBA L (night-outside), annual equivalent continuous average sound level from the Facility outside any existing permanent or seasonal non-participating residence;

(ii) 50 dBA L(night-outside), annual equivalent continuous average sound level from the Facility outside any existing participating residence;

(iii) 55 dBA L-8-hour across any portion of a non-participating property except for portions delineated as wet lands; and

(iv) 65 dBZ L (1-hour), maximum 1-hour equivalent continuous average sound level from the Facility at the 16 Hz, 31.5 Hz, and 63 Hz full octave bands outside any existing non- participating residence.

65. Compliance with Certificate Conditions for the Facility shall be evaluated by the Certificate Holder by following the provisions and procedures for post construction noise performance evaluations indicated in the Sound Testing Compliance Protocol (Appendix A, appended hereto).

66. At least two sound compliance tests conforming to the compliance protocol required by the Certificate Conditions shall be performed by the Certificate Holder after the commercial operation date of the Facility: One during the “leaf-off” season and one during the “leaf- on” season.

a) Within the first seven (7) months of the commercial operations date of the Facility, the Certificate Holder shall perform and complete the first Sound Compliance Test and the results shall be submitted to the Board, or the Commission after the Siting Board’s jurisdiction has ceased, by filing with the Secretary a report from an independent acoustical or noise consultant, no later than eight (8) months after the commercial operations date, specifying whether or not the Facility is found in compliance with all Certificate Conditions on noise of this Certificate during the “leaf-on” or “leaf-off” season as applicable; and

b) The second Sound Compliance Test shall be performed and results shall be submitted to the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary subject to the same conditions contained in sub-condition 67(a), but no later than thirteen (13) months after the commencement of operations of the Facility.

67. If the results of the first or the second Sound Compliance Tests, or any subsequent Compliance test performed by the Certificate Holder or any tests performed by DPS, in compliance with the Sound Testing Compliance Protocol, or any test performed by the Certificate Holder or DPS , or any test performed by DPS or the Certificate Holder in response to complaints , all in compliance with said Protocol, upon reasonable notice to the Certificate Holder, and after a reasonable period has elapsed for discussions between DPS and the Certificate Holder's acoustical consultant has elapsed, , indicate that the Facility, related facilities and ancillary equipment do not comply with all Certificate Conditions on noise contained in this Certificate, the Certificate Holders shall:

a) Present minimization options to the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary within 60 days after the filing of a noncompliance test result or the finding of a non-compliance or violation of Certificate Conditions on noise of this Certificate:

1. operational minimization options related to noise or vibrations caused by the wind turbines that shall be considered including, at a minimum, modifying or reducing time of turbine operation, incorporating noise reduced operations, shutting down relevant turbines, and modifying operational conditions of the turbines;

2. physical minimization options related to noise or vibration caused by the wind turbines that shall be considered, including installation of serrated edge trails on the turbine blades, replacement or maintenance of noisy components of the equipment, and any other measures as feasible and appropriate; and
3. if applicable, any minimization measures related to noise from transformers (such as walls or barriers) and emergency generators (such as installation of noise walls or barriers, adding or replacing enclosures or silencers to the emergency generator) if any, or any other mitigation measures as appropriate.

b. Implement any operational noise mitigation measures within 90 calendar days after the finding of a non-compliance or violation situation, as necessary to achieve compliance;

c. Implement any physical noise mitigation measures within 150 days after the finding of a non-compliance or violation situation, as necessary to achieve compliance;

d. Not operate the turbines of the Facility that caused the violation if the minimization measures are not implemented within the schedules specified in this certificate condition, and not operate the turbines without the operational or physical minimization measures that are presented and approved by the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased after they are implemented as specified in these Certificate Conditions; and

e. Test, document, and present to the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary results of any minimization measures and compliance with all Certificate Conditions on noise of this Certificate, no later than 90 days after the minimization measures are implemented.

68. If, after five years, post-construction, all wetland performance standards have not been achieved, the Certificate Holder must evaluate the likely reasons for these results in consultation with NYDEC and submit a "Wetland Mitigation Remedial Plan" to the Secretary for approval. The "Wetland Mitigation Remedial Plan" must describe the likely reasons for not achieving performance standards, describe the actions necessary to correct the situation to ensure a successful mitigation, and the schedule for conducting the remedial work. Once approved, the "Wetland Mitigation Remedial Plan" will be implemented according to the approved schedule.

69. If, after five years, post-construction, all invasive species control requirements have not been achieved, the Certificate Holder must evaluate the likely reasons for these results in consultation with NYDEC and submit an "Invasive Species Remedial Plan" to the Secretary for approval. The "Invasive Species Remedial Plan" must describe the likely reasons for not achieving NYDEC requirements, describe the actions necessary to correct the situation, and the schedule for conducting the remedial work. Once approved, the "Invasive Species Remedial Plan" will be implemented according to the approved schedule.

70. Prior to installation of any permanent road/stream crossings, a site specific "Stream Crossing Plan" shall be submitted in the Compliance Filing. The "Stream Crossing Plan" must include detailed site-specific plans that describe and illustrate the layout and alignment of each crossing, and the proposed crossing method. At a minimum, the plan must include:

a) The alignment of roads, bridges, and culverts;

b) The location, quantity, and type of any fill associated with construction;

c) The location and installation details of any dewatering measures; and

d) A description of the dry crossing methods that will be used to install the crossing.

71. The Certificate Holder shall file with the Secretary, within one year after the Project becomes operational, a tracking report of the actual number of direct jobs created during the construction and operational phases of the Project, as well as the actual tax payments to local jurisdictions made during the Project.

IV. Requirements Prior to Operation

72. The final Facility design shall incorporate the following measures for Visual Impact minimization:

a. Advertisements, conspicuous lettering, or logos identifying the Facility owner, turbine manufacturer, or any other entity on the turbines shall not be allowed;

b. White or off-white color of wind turbines, towers and blades (as required by the FAA to avoid the need for daytime aviation hazard lighting) shall be utilized; and non-reflective finishes used on wind turbines to minimize reflected glare;

c. Medium-intensity red strobe lights on turbines for aviation hazard marking, and the extent of lighting will be minimized to the extent allowable by the FAA; this condition is subject to the Board's decision concerning the evaluation of the feasibility to install RADAR-activated aviation warning lights, addressed in a condition herein, which evaluation is to be submitted in the Compliance Filing);

d. Lighting controls at substations, turbines and turbine sites shall be maintained;

e. Non-specular conductors shall be used for overhead portions of the electric collection system; and

f. Facility decommissioning program funds shall be established to assure removal of visible components;

V. Noise and Vibration

73. Noise levels from all noise sources from the Wind Generating Facility, related facilities and ancillary equipment shall:

a. Comply with a maximum noise limit of 42 (dBA) Leq (8-hour) at any permanent or seasonal non-participant residence existing as of the issuance date of this Certificate and 52 dBA Leq (8-hour) for any participant residence existing as of the issuance date of this Certificate;

b. Not produce any audible prominent tones, as defined under ANSI S12.9 Part 4-2005 Annex C at any non-participant residences existing as of the issuance date of this Certificate. Should a prominent tone occur, the broadband overall (dBA) noise level

at the evaluated position shall be increased by 5 dBA for evaluation of compliance with sub-condition 73(a);

c. Comply with a maximum noise limit of 65 dB L_{eq} at the full octave frequency bands of 16, 31.5, and 63 Hertz outside of any non-participant residence existing as of the issuance date of this Certificate in accordance with Annex D of ANSI standard S12.9-2005/Part 4 Section D.2(1) (Sounds with strong low-frequency content);

d. Not produce human perceptible vibrations inside any non- participant residence existing as of the issuance date of this Certificate that exceed the limits for residential use recommended in ANSI Standard S2.71-1983 (August 6, 2012) "Guide of evaluation of human exposure to vibration in Buildings;" and

e. Comply with a limit of 40 dBA L_{eq}(1-hour) at the outside of any non-participating residence from the collector substation equipment, if subject to the tonal penalties of sub-condition 73(b). Emergency situations are exempt from any of these limits in (a) – (e).

74. The Certificate Holder shall adhere to the following condition regarding Complaints:

a. The Certificate Holder is required to maintain a log of complaints received relating to noise and vibrations caused by the operation of the Facility, related facilities and ancillary equipment. The log shall include name and contact information of the person that lodges the complaint, name of the property owner(s), address of the residence where the complaint was originated, the date and time of the day underlying the event complained of, and a summary of the complaint;

b. The Certificate Holder shall provide the Towns of Greenwood and West Union with a phone number, email address and mailing address where complaints can be notified, along with a form to report complaints designed according to the details required in subsection (a) of this condition;

c. As with complaints about other issues that are being processed through the Complaint Resolution Plan, the Towns' designated representatives shall be notified of noise- related complaints as they are received and responded to, and informed as to the manner of response and actions taken;

d. All complaints received shall be reported to the Siting Board, or the Commission after the Board's jurisdiction has ceased, monthly during the first three years of commercial operation and quarterly thereafter, by filing with the Secretary during the first 10 calendar days of each month,(or the first 10 calendar days of each quarter after three years) copies of the complaints and if available, a description of the probable cause (e.g., outdoor or indoor noise, tones, low frequency noise, amplitude modulation, vibrations, rumbles, rattles, etc., if known); the status of the

investigation, summary of findings and whether the Facility has been tested and found in compliance with applicable noise Certificate Conditions or minimization measures have been implemented. If no noise or vibration complaints are received, the Certificate Holder shall submit a letter to the Secretary indicating that no complaints were received during the reporting period.

e. The Certificate Holder shall investigate all other noise and vibration complaints by following the appended Complaint Resolution Plan (Appendix B, hereto) and, consistent with the limits imposed by, these Certificate Conditions.

75. The Certificate Holder is required to maintain a log of operational conditions of all the turbines with a 10-minute time interval to include at a minimum wind velocity and wind direction at the hub heights, angular speed of the rotors and generated power and notes indicating operational conditions that could affect the noise levels (e.g., maintenance, shutdown, etc.). A schedule and log of Noise Reduced Operations for individual turbines shall also be kept and updated as necessary. These records shall be maintained for five years from occurrence.

76. The Certificate Holder shall comply with the following conditions regarding construction noise and air emissions:

a. Comply with the substantive provisions of all local laws regulating construction noise except for the construction time/hour limits which the Board is refusing to apply, as provided in Condition 7 herein;

b. Maintain functioning mufflers and all required emission control systems on all transportation and construction machinery;

c. Require that contractors not leave generators idling when electricity is not needed and not leave diesel engines idling when equipment is not actively being used; and

d. Respond to noise and vibration complaints according to the Complaint Resolution Plan established herein.

77. The Certificate Holder shall designate in a Compliance Filing which of the four alternate turbine locations will be employed in the following order of preference, Alternate Turbine 1, Alternate Turbine 4, Alternate Turbine 2 and New Alternate Turbine 3. If an alternate turbine location is deemed necessary, the Certificate Holder will select Alternate Turbine locations 1 and/or 4, then 2 and as a last resort ,New Alternate Turbine 3.In the event New Alternate Turbine 3 is selected, the Certificate Holder will also submit in the Compliance Filing justification for using New Alternative Turbine 3 and demonstrate the extent New Alternative Turbine 3 could be moved south-southeast on participating landowner property, without violating noise restrictions, setback requirements, or other constraints, to minimize visibility from Marsh Creek. If

the aforementioned move south-southeast is not acceptable to DPS Staff, the Certificate Holder will submit in a Compliance Filing proposed improvements or sponsorship opportunities at Marsh Creek, to promote fishing activities there, at the Certificate Holder's expense.

VI. Threatened and Endangered Species

78. Excluding bald eagles (*Haliaeetus leucocephalus*), northern harriers (*Circus* h*udsonius*), short-eared owls (*Asio Flammeus*), and upland sandpipers (*Bartramia* l*ongicauda*), if at any time during the life of the Project a nest of any federally, or State, listed threatened or endangered bird species is discovered within areas of active construction, ground clearing, grading, or maintenance of the site, the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, 625 Broadway, Albany and the NYSDEC Region 8 Natural Resource Supervisor (NRS) will be notified within twenty-four (24) hours of discovery, and the nest site will be marked. An area at least five hundred (500) feet in radius around the nest will be posted and avoided until notice to continue construction, ground clearing, grading, maintenance or restoration activities at that site is authorized by the Region 8 NRS.

79. If at any time during the life of the Project a nest of a northern harrier, short-eared owl or upland sandpiper is located, or if any of these species are observed in the Project area exhibiting breeding behavior, the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, Albany, NY and the Region 8 NRS will be notified within twenty- four (24) hours of discovery or observation, and the nest site will be marked. An area of at least six hundred sixty (660) feet in radius from the nest(s) of northern harrier, short-eared owl and upland sandpiper, will be posted and avoided until notice to continue construction, ground clearing, grading maintenance or restoration activities at that site is authorized by the Region 8 NRS. The nest(s) or nest tree(s) will not be approached under any circumstances unless authorized by the Region 8 NRS.

80. If at any time during the life of the Project, including construction, a nest of a bald eagle is located, the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, 625 Broadway, Albany, NY 12233-1750 and the NYSDEC Region 8 NRS will be notified within twenty-four (24) hours of discovery, and the nest will be marked. An area of one quarter (1/4) mile in radius from the nest will be posted and avoided if no visual buffer exists between the nest and the construction activity, until notice to continue construction, ground clearing, grading, maintenance or restoration activities at that site is authorized by the Region 8 NRS. If a visual buffer exists between the construction activity and the nest, an area of at least six hundred sixty (660) feet in radius from the nest shall be posted and avoided, until notice to continue construction, ground clearing, grading, maintenance at that site is authorized by the Region 8 NRS. The nest(s) or nest tree(s) will not be approached under any circumstances unless authorized by the Region 8 NRS.

81. During construction, maintenance, and operation of the Facility, the Certificate Holder shall maintain a record of all observations of New York State threatened or endangered (TE) species as follows:

a. Construction: During construction the onsite environmental monitors and environmental compliance manager identified in the Environmental Compliance Manual shall be responsible for recording all occurrences of TE species. All occurrences shall be reported in the bi- weekly monitoring report submitted to the NYS DPS and DEC and shall include the information described below. If a TE avian species is demonstrating breeding behavior it should be reported to the Natural Resources Supervisor and the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, 625 Broadway, Albany within twenty-four (24) hours;

b. Post-construction: During post-construction wildlife monitoring inspections, the environmental contractor shall be responsible for recording all occurrences of TE species. Occurrences of TE during wildlife surveys shall be reported as required in the construction monitoring and adaptive management plan;

c. Operation and Maintenance: During operations and maintenance the Certificate Holder shall be responsible for training operations and maintenance staff to focus on identifying the following bird species: bald eagle, golden eagle (*Aquila chrysaetos*), short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*) and upland sandpiper (*Bartramia longicauda*). The Certificate Holder shall report all occurrences to the Region 8 NRS, NYS DPS and NYSDEC Division of Environmental Permits, Chief of the Major Project Management Unit in Albany within one week of the event;

d. Reporting Requirements: All reports of TE species shall include the following information: species, observation date(s) and time(s); GPS coordinates of each individual observed (if operations and maintenance staff do not have GPS available the report should include the nearest turbine number and cross roads location); behavior(s) observed; identification and contact information of the observer(s); and the nature of and distance to any project construction or maintenance activity; and

e. If at any time during the life of the Project any dead, injured or damaged federally or State-listed TE species, or their parts, eggs, or nests are discovered within the Project Area (defined for the purpose of this condition as leased land or property parcels containing Project components) by the Certificate Holder, its designated agents, or a third party that reports to the Certificate Holder, the certificate holder shall immediately (within twenty-four (24) hours) contact the Region 8 NRS (and United States Fish and Wildlife Service (USFWS), if federally listed species) to arrange for recovery and transfer of the specimen(s). The following information

pertaining to the find shall be recorded:

species, the date of discover of the animal or nest; condition of the carcass or state of the animal, if live; the GPS coordinates of the location(s) of discovery, the name(s) and contact information of the person(s) involved with the incident(s) and find(s); weather conditions for the previous forty-eight (48) hours; photographs, including scale, of sufficient quality to allow for the later identification of the animal or nest; and, if known, an explanation of how the mortality/injury/damage occurred. Each record shall be kept with the container holding the specimen(s) and given to the NYSDEC or USFWS at the time of transfer. If the discovery is followed by a non-business day, the Certificate Holder shall ensure all the information listed above is properly documented and stored with the specimen(s). Unless otherwise directed by NYSDEC or USFWS, after all information has been collected in the field, the specimen(s) will be placed in a freezer, or in a cooler on ice until transported to a freezer, until it can be retrieved by the proper authorities.

f. All temporary disturbance or modification of grassland habitat that occurs as a result of construction activities will be restored to preexisting grassland habitat conditions by re- grading and re-seeding with an appropriate native seed mix after construction activities are completed. These areas shall include, but are not limited to temporary roads, material and equipment staging and lay-down areas, crane and turbine pads, and electric line ROWs.

VII. Wetlands and Streams, Vegetation and Invasive Species

82. All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the Project.

83. The Certificate Holder shall submit a Notice of Intent to Commence Work to the Region 8 Supervisor of Natural Resources, DEC Region 8 Headquarters, 6274 E. Avon-Lima Road, Avon, NY 14414-9519, the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, 625 Broadway, Albany , and NYS DPS at least 72 hours in advance of the commencement of construction and shall also notify them within 10 business days in writing of the completion of work.

84. All construction activity, including operation of machinery, excavation, filling, grading, clearing of vegetation, disposal of waste, street paving, and stockpiling of material, is to occur within the Project site as depicted on Project plans. No construction activity is authorized to occur within areas to be left in a natural condition or areas not specifically designated by this certificate. Staking and/or flagging construction limits (i.e., ROW, off-ROW access roads, and extra work areas) shall occur prior to any ground disturbance.

85. During construction, erosion control devices including but not limited to straw bales or silt fences shall be installed to prevent erosion of excavated material or disturbed soil along with other measures as described in the SWPPP. All erosion control devices, shall be installed in accordance with construction techniques described in 2016 New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), including placing the straw bales and silt fence in a shallow trench, backfilling the toe of the silt fence and securing the straw bales with stakes. All erosion and sediment control practices shall be installed prior to any grading or filling operations, or other ground disturbance, to the extent practicable. They shall remain in place until construction is completed and the area is completely restored to pre-existing conditions. Use of hay bales is strictly prohibited to minimize the risk of introduction of invasive species. All disturbed soils within regulated freshwater wetlands and the associated adjacent areas must be seeded with a native seed mix.

86. All equipment and machinery shall be stored and safely contained more than 100 feet landward of any regulated wetland or water body at the end of each work day. This will serve to avoid the inadvertent leakage of deleterious substances into the regulated area.

87. Fuel or other chemical storage tanks shall be contained and located at all times in an area more than 300 feet landward of any regulated wetland or waterbody. If the above requirement cannot be met by the Certificate Holder, then the storage areas must be designed to completely contain any and all potential leakage. Such a containment system must be approved by DEC staff in writing prior to equipment, machinery or tank storage.

88. All mobile equipment, excluding dewatering pumps, must be fueled in locations that are a minimum of 100 feet from the top of stream bank, wetland, or other waterbody. Dewatering pumps operated closer than 100 feet from the stream bank, wetland, or waterbody, must be on an impervious surface with absorbents capable of containing any leakage of petroleum products.

89. Spillage of fuels, waste oils, other petroleum products or hazardous materials shall be reported to the NYS DPS and DEC's Spill Hotline (1-800-457-7362) within two hours according to the DEC Spill Reporting and Initial Notification Requirements Technical Field Guidance. In an emergency situation, the contractor will work (to the extent practicable) to contain the impacted material until appropriate emergency spill response services arrive.

90. All equipment used within bed or banks of streams or in regulated wetlands and 100-foot adjacent areas must be inspected daily for leaks of petroleum, other fluids, or contaminants; equipment may only enter a stream channel if found to be free of any leakage. A spill kit must be on hand at the immediate work site and any equipment observed to be leaking must be removed from the work site, and leaks must be

contained, stopped and cleaned up immediately.

91. All fill material shall consist of clean soil, sand and/or gravel that is free of the following substances: asphalt, slag, fly ash, broken concrete, demolition debris, garbage, household refuse, tires, woody materials including tree or landscape debris, metal objects, and all invasive species. The introduction of materials toxic to aquatic life is expressly prohibited.

92. Trenchless methods for installing buried cables through wetlands will be considered where practicable. Where trenchless methods are not practicable, trench construction through unprotected streams and wetlands will include excavating for installation purposes and backfilling in one continuous operation. Detailed trenching operations are outlined below:

    a. Before trenching occurs, upland sections of the trench shall be backfilled or plugged to prevent drainage of possible turbid trench water from entering the stream or wetland;

    b. Trench breakers/plugs shall be used at the edges of wetlands as needed to prevent wetland draining during construction;

    c. If there is an inadvertent puncturing of a hydrologic control for a wetland, then the puncture shall be immediately sealed, and no further activity shall take place until DPS and DEC are notified and a remediation plan to restore the wetland and prevent future dewatering of the wetland has been approved by the agency staffs;

    d. Only the excavated wetland topsoil and subsoil shall be utilized as backfill;

    e. In wetland areas, the topsoil shall be removed and stored separate from subsoil; and

    f. When backfilling occurs, the subsoil shall be replaced as needed, and then covered with the top soil, such that the restored top soil is the same depth as prior to disturbance.

93. Turbid water resulting from dewatering operations, including water that has infiltrated the construction site, shall not be discharged directly to or allowed to enter any wetland, stream or water body within the Project area. Turbid water resulting from dewatering operations shall be baffled or otherwise discharged directly to settling basins, filter bags, or other approved device or to an upland vegetated area prior to discharge to any wetland, stream or other water body within the Project area. All other necessary measures shall be implemented to prevent erosion and any visible increase in turbidity or sedimentation downstream of the work site.

94. Visibly turbid discharges from blasting, land clearing, grading or excavation and

construction activities, or dredging operations shall not enter any surface water body. All necessary measures shall be implemented to prevent any visible increase in turbidity or sedimentation downstream of the work site, including but not limited to the use of:

a. Appropriately maintained upland settling basins;

b. Crushed stone, sand, straw bales, or silt screening (maximum opening size of U.S. Sieve Number 20) to filter turbid waters;

c. "Silt-bags" or similar pre-constructed structure designed to remove silt and sediment particles before they are discharged, or;

d. Grassy upland areas at a sufficient distance from the receiving water body to prevent a visually discernible turbid discharge to the receiving water.

95. Markers used to delineate/define the boundary of regulated freshwater wetlands and streams, and also the demarcated limits of disturbance for the Project shall be left in place and remain undisturbed until completion of construction activities and restoration of the impacted area.

96. All areas of temporary disturbance to regulated freshwater wetlands and their 100-foot adjacent areas, as applicable, must be restored and appropriately graded upon completion of temporary work items.

97. A minimum of 85% vegetative cover across all disturbed soil areas must be established by the end of the first full growing season following construction.

98. All regulated freshwater wetlands, and associated State regulated 100-foot adjacent areas, as applicable, disturbed due to construction activities shall be restored to pre-existing conditions and documented cover type to the extent practicable and in accordance with the following requirements:

a. Restoration to pre-construction contours must be completed within 48 hours of final backfilling of the trench within regulated freshwater wetland boundaries and any State regulated 100-foot adjacent area boundaries, as applicable. Immediately upon completion of grading, the area shall be seeded with native vegetation at densities as existed prior to construction. Seeding with an appropriate native wetland species mix such as an Ernst Wetland Mix (OBL-FACW Perennial Wetland Mix, OBL Wetland Mix, Specialized Wetland Mix for Shaded OBL-FACW, or equivalent) shall be completed to help stabilize the soils;

b. Restored areas shall be monitored for the longer of 5 years or until an 85% cover of native species has been reestablished over all portions of the replanted area, unless the invasive species baseline survey indicates a smaller percentage of native species

existed prior to construction;

c. In areas dominated by trees and shrubs, monitoring for woody vegetation establishment will take place during the growing season and over a 5-year period. Random sample points will be established within temporarily disturbed, regulated freshwater wetlands and State regulated 100-foot adjacent areas, as applicable. At each sample point, absolute cover for each plant species present within a one-by-one-meter plot will be visually estimated and recorded. Cover estimates for woody species will then be totaled for each sample plot. Cover data collected at these sample plots will be averaged and extrapolated to the entire area of temporary disturbance within a given regulated freshwater wetland and State regulated 100-foot adjacent area, as applicable. Vegetation reestablishment will be considered successful if impacted areas are restored to substantially the same amount of cover of woody species that existed prior to Project construction activities. If at the end of the fifth year the aforementioned reestablishment goal is not achieved, then the Certificate Holder must evaluate the reasons for these results and submit an approvable "Wetland Planting Remedial Plan" for NYS DPS and DEC approval. The "Wetland Planting Remedial Plan" must describe the reasons for not achieving the goal, describe the actions necessary to correct the situation to ensure a successful restoration, and the schedule for conducting the remedial work. Once approved by the agencies, the "Wetland Planting Remedial Plan" will be implemented according to the approved schedule;

d. These replanted areas shall also be monitored for invasive species to ensure there is zero percent net increase (or other "reasonable definition" as agreed upon following the baseline survey) in areal coverage of invasive species compared with pre- construction conditions. If at any time during the monitoring the invasive species criteria above are not met, the Certificate Holder shall take immediate action to ensure control of the invasive species. Such actions shall be part of an invasive species control plan approved by the PSC after consultation and approval by the DEC; and

e. If at the end of five years the restored areas do not meet the above criteria for success, then monitoring and corrective action shall continue until the criteria are met.

99. Overhead interconnects located in NYS-regulated freshwater wetlands or regulated 100-foot adjacent areas, as applicable, shall be constructed in accordance with the following requirements:

a. Swamp mats must be used in any regulated freshwater wetlands for construction activities;

b. Prior to installation in NYS-regulated freshwater wetlands and regulated 100-foot

adjacent areas, as applicable, swamp mats must be cleaned of invasive species following protocols described in the final "Invasive Species Monitoring and Control Plan";

c. Swamp mat removal must be conducted from adjacent mats (i.e., removal equipment always stationed on a mat) as soon as practicable, but no later than four months following installation of the overhead line. The Environmental Monitor shall provide notification to the DEC Region 8 Natural Resources Supervisor and the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, 625 Broadway, Albany, NY when compliance with this condition has been achieved.

d. Disturbed areas will be monitored for 5 years following the installation of overhead lines or interconnects to assure an 85% cover of native species, unless the invasive species baseline survey indicates a smaller percentage of native species exists prior to construction. If after one complete growing season the pre-construction percentage of native species is not achieved, the Certificate Holder must, consult with DEC and evaluate the reasons for these results, obtain DEC's approval for remediation steps, and submit a "Wetland Planting Remedial Plan" to the Secretary for review and approval. The "Wetland Planting Remedial Plan" must describe the reasons for the achieved level of survival, describe the actions necessary to correct the situation to ensure a successful restoration, and the schedule for conducting the remedial work. Once approved, the "Wetland Planting Remedial Plan" will be implemented according to the approved schedule.

100. Any construction debris (e.g., building materials, excess sediment, refuse from the work site) from the Project shall be completely removed prior to completion of restoration from the regulated freshwater wetland and State regulated 100-foot adjacent area (upland), as applicable, and disposed of at a permitted waste disposal facility authorized to receive such material. No debris shall remain in regulated freshwater wetlands and/or State regulated 100-foot adjacent areas.

101. Cleared vegetation and slash from regulated freshwater wetlands and NYS-regulated 100-foot adjacent areas will not be burned or buried within the regulated freshwater wetland and any applicable regulated 100-foot adjacent areas. Logs and large branches cannot be deposited into regulated freshwater wetland and any applicable NYS-regulated 100-foot adjacent areas from outside of the regulated 100-foot adjacent area, however, small branches (slash) that are cut in a drop and lop method or piled within wetland and adjacent areas may be left in place.

102. Permanent alteration of wetland hydrology is prohibited.

103. Disturbance to NYS-regulated freshwater wetlands and/or regulated 100-foot adjacent areas is prohibited until the "Wetland Mitigation Plan" has been approved by the Board

in a Compliance Filing. All measures and requirements included in the approved "Wetland Mitigation Plan" shall be enforceable conditions of the Certificate.

104. To control the spread of invasive insects during facility site clearing and timber removal, the Certificate Holder will:

a. Pursuant to a Timber Salvage Plan to be submitted in the Compliance Filing, which will include, subject to landowner preferences coordinating with logging contractors for sale and use of the merchantable timber; and provide unmerchantable timber as firewood to landowners or the general public pursuant to the DEC's firewood restrictions to protect forests from invasive species found in 6 NYCRR Part 192.5; and

b. Make sure crews are trained to identify the Asian Longhorned Beetle and the Emerald Ash Borer and any other insects that the DEC identifies as a potential problem in accordance with 6 NYCRR Part 575, Prohibited and Regulated Invasive Species. If these insects are found, they must be reported to the DEC regional forester.

105. On-site waste concrete containment from concrete truck clean out activity and/or any wash water from trucks, equipment or tools, must be contained in a manner that will prevent it from escaping into water-bodies, water channels, streams, and wetlands. If a discharge occurs, DEC Region 8 Supervisor of Natural Resources shall be contacted within 2 hours. Disposal of waste concrete or wash water is prohibited within 100 feet from any waterbody or wetland or to any area that drains to a waterbody or wetland.

106. If a one-time crossing of a stream occurs as part of an installation of a temporary bridge (if not spanning the bed and banks), the following restrictions apply:

a. The temporary bridge must follow the contour of the streambed and allow for a low flow channel and not change the flow path of the streambed; and

b. The temporary bridge shall be removed immediately after the equipment crossing occurs.

107. In-stream work shall only occur in dry conditions or by trenchless methods or dewatering measures (e.g., dam and pump or flume) must be used. If approved measures fail to divert all flow around the work area, in-stream work must immediately stop until dewatering measures are in place and properly functioning again.

108. The restored stream channel shall be equal in width, depth, gradient, length and character as the pre-existing stream channel and tie in smoothly to profile of the stream channel upstream and downstream of the project area. The planform of any stream shall not be changed.

109. If any trees and shrubs growing within 50 feet of streams need to be cut in the process

of constructing overhead power line crossings, they shall be cut off with at least two feet of the stump remaining. Stumps and root systems shall not be damaged to facilitate stump sprouting. Trees shall not be felled into any stream or onto the immediate stream bank. All trees and shrubs cut within the 50 feet of the stream shall be left on the ground.

110. Clearing of natural vegetation shall be limited to that material which poses a hazard or hindrance to the construction activity. Snags which provide shelter in streams for fish shall not be disturbed unless they cause serious obstructions, scouring or erosion. Trees shall not be felled into any stream or onto the immediate stream bank.

111. Installation of buried cables under streams with water quality classifications of C(T/TS) or above must be conducted using trenchless crossing methods, such as horizontal directional drilling (HDD), to avoid impacts on water quality, habitat, and stream bed stability. If trenchless methods are not constructible or not feasible, the Certificate Holder shall file in the Compliance Filing a "Site-Specific Constructability Assessment." The "Site-Specific Constructability Assessment" shall be conducted by an experienced and qualified, professional engineer licensed in New York State and shall include a detailed analysis of the site-specific conditions that lead to the conclusion that all trenchless crossing methods are not constructible or not feasible at the particular stream crossing. If, based on results of the "Site-Specific Constructability Assessment," the Board approves stream crossings using trenched methods, all stream crossings shall be done in the dry. Trenches shall be opened for the installation and backfilled in one continuous operation. Before trenching through stream banks occurs, upland sections of the trench shall be backfilled or plugged to prevent drainage of possible turbid trench water from entering the stream. Intermittent and ephemeral streams must be crossed during times of no flow, while perennial streams must be crossed using a temporary water control device such as a dam and pump or cofferdam to isolate the work area and redirect the water around the work site. Temporary water control devices/cofferdams for perennial streams must adhere to the following:

a. Specifications: Any temporary cofferdam shall be constructed of clean materials such as sheet piling, jersey barriers, inflatable dams, or sandbags that will not contribute to turbidity or siltation of the waterbody or wetland, and non- erodible materials, so that failure will not occur at Q2 or higher flow conditions. Where practicable, an upstream or interior membrane shall be installed to control percolation and erosion. Sandbags shall be of the filter fabric type, double bagged and individually tied to prevent sand leakage and only clean sand (e.g. free of debris, silt, fine particles or other foreign substance) shall be used as fill. They shall be placed and removed manually to prevent spillage. Straw bale sediment control basins are prohibited;

b. Fill materials must not come from the waterbody or wetland;

c. The water control structure/cofferdam shall not impair downstream water flow in the waterbody or water flow into and/or out of a wetland;

d. If exposed for an extended period of time, excavated or temporarily stockpiled soils or other materials should be covered and protected to reduce runoff of fines which may cause a turbidity problem and to prevent rainwater from soaking the materials and rendering them unsuitable for backfill;

e. The work area shall remain isolated from the rest of the stream or wetland until all work in the streambed or bank, or wetland is completed, concrete is thoroughly set and the water clarity in the coffered area matches that of the open water;

f. If a dam and pump diversion is used as part of a dry open-cut crossing, the pump and diversion must be monitored continuously from time of installation until crossing is completed, streambed restored, and diversion is removed;

g. Dewatered sections of stream cannot exceed 50 linear feet (measured from the inside edges of the cofferdams) for each stream crossing unless the Certificate Holder has prior written approval from the DEC Region 8 Supervisor of Natural Resources, which approval shall not be unreasonably delayed, conditioned or withheld and shall be subject to the terms of the dispute resolution procedures contained in Condition 3 herein;

h. All temporary water control structures shall be removed in their entirety upon completion;

i. All fish trapped within the cofferdam shall be netted and returned, alive and unharmed, to the water outside the confines of the cofferdam, in the same stream, before the dewatering process;

j. Dewatering within the coffer(s) shall be performed so as to minimize siltation and turbidity. Water taken from the coffered area will be passed through settling basins, filter bag, or well-vegetated upland areas more than 100 feet from the stream bank to prevent the discharge of turbid water into any wetland, stream or river. The pump discharge must be directed against a solid object (concrete slab, stone or steel container), or other effective method to prevent erosion by dissipating energy;

k. Depth of buried cables must be sufficient to prevent exposure during future high flow events. A Vertical Adjustment Potential (VAP) analysis, or similar analysis, shall be performed on each stream crossing and submitted in the Compliance Filing to determine the appropriate site-specific depth for installation of buried cables under the stream;

l. Erosion and sediment control will be used at the point of Horizontal Directional

Drilling (HDD), so that drilling fluid shall not escape the drill site and enter streams or wetlands. The disturbed area will be restored to original grade and reseeded upon completion of directional drilling;

m. Drilling fluid circulation for HDD installations shall be maintained to the extent practical. If inadvertent surface returns occur in upland areas, the fluids shall be immediately contained and collected. If the amount is not enough to allow practical collection, the affected area will be diluted with freshwater and allowed to dry and dissipate naturally. If the amount of surface return exceeds that which can be collected using small pumps, drilling operations shall be suspended until surface volumes can be brought under control. If inadvertent drilling fluids surface returns occur in an environmentally sensitive area (i.e. wetlands and water bodies) the returns shall be monitored and documented as described in the Frac-Out Risk Assessment and Contingency Plan. Drilling operations must be suspended if the surface returns pose a threat to the resource or to public health and safety. Removal of released fluids from environmentally sensitive areas will take place only if the removal does not cause additional adverse impacts to the resource. If inadvertent drilling fluids surface returns occur in an environmentally sensitive area the DEC Region 8 Supervisor of Natural Resources shall be notified immediately and a monitoring report summarizing the location of surface returns, estimated quantity of fluid and summary of cleanup efforts shall be submitted within 48 hours of the occurrence; and

n. While conducting HDD operations under wetlands, 100-foot adjacent areas, and streams, the Certificate Holder will maintain close monitoring for possible "frac-outs" that would result in the release of drilling fluids to sensitive areas as described in the Frac-Out Risk Assessment and Contingency Plan. The Certificate Holder will maintain a HDD spill response plan and the necessary response equipment will be kept on-site for the duration of the drilling. All releases of drilling fluids to sensitive areas (e.g., wetlands, State regulated 100-foot adjacent areas, waterbodies) shall be reported to the DEC Region 8 Supervisor of Natural Resources and DPS Staff within 2 hours or as soon as practicable considering internet and cell phone coverage in the area.

112. To reduce thermal impacts to exposed streams, native woody plants will be planted at stream crossings. Plant cover will be restored to its pre-construction condition. For stream crossings that are disturbed by construction activities that have, pre-construction, a 50% woody plant cover, a minimum of 50% woody plant cover will be established on such stream banks disturbed by Project construction by the end of the two full growing seasons following construction. Planting may be done at top of bank and/or among rocks along toe of slope. Restoration of these select riparian areas will be monitored along the same time frames as the Invasive Species Control Plan by the appointed Environmental Monitor to document the proper establishment of cover,

survivorship of species, and mitigate any unforeseen issues with the revegetation effort.

113. During periods of work activity, flow immediately downstream of the work site shall equal flow immediately upstream of the work site.

114. All disturbed stream banks below the normal high water elevation must be graded no steeper than 1 vertical to 2 horizontal slope, or to the original grade as appropriate, and adequately stabilized. All other areas of soil disturbance above the ordinary high water elevation, or elsewhere, shall be stabilized with natural fiber matting, seeded with an appropriate perennial native conservation seed mix, and mulched with straw within two (2) days of final grading. Mulch shall be maintained until suitable vegetation cover is established. Destroyed bank vegetation shall be replaced with shrub willow or silky dogwood planting, native trees, or other suitable species.

VIII. Facility Construction

115. At least 60 days prior to the start of construction, the Certificate Holder shall become a member of Dig Safely New York. The Certificate Holder shall require all contractors, excavators, and operators associated with its facilities to comply with the requirements of the Commission's regulations regarding the protection of underground facilities (16 NYCRR Part 753).

116. The Certificate Holder shall design, install and maintain ground grids for the wind turbines, coordinating them with the gas transmission pipelines, plastic pipe locator wires and gas wells. Such grounding is to be in full conformance with Institute of Electrical and Electronics Engineers (IEEE) 80 and IEEE 100, unless after consultation with DPS Office of Electric, Gas and Water staff, the Applicant receives affirmative confirmation in writing that DPS Staff has reviewed the turbine manufacturer's grounding requirements and that it accepts such requirements as a suitable substitution for the IEEE standards.

117. The Certificate Holder shall require all contractors, excavators, and operators associated with its facilities to comply with all requirements of the Commission's regulations regarding identification and numbering of above ground utility poles (16 NYCRR Part 217). The Certificate Holder shall be responsible for contractually enforcing such compliance.

118. At least 14 days before the commencement of construction, the Certificate Holder shall hold a pre-construction meeting with DPS Staff, DAM, New York State Department of Transportation (DOT), Town Supervisors and Highway Superintendents, and DEC; NYSEG shall be invited to such meeting. The BOP construction contractor and the environmental compliance monitor shall be required to attend the preconstruction meeting.

119. At least 14 days before the commencement of construction activities affecting facilities owned or to be owned by NYSEG, the Certificate Holder shall hold a pre-construction meeting with NYSEG, and the Certificate Holder's construction contractor and the environmental compliance monitor shall be required to attend such meeting:

a) An agenda, the location, and an attendee list shall be agreed upon between DPS Staff and the Certificate Holder prior to the meeting;

b) Maps showing designated travel routes, construction worker parking and access road locations and a general project schedule will be available at the meeting for the attendees;

c) The Certificate Holder shall supply draft minutes from this meeting to a representative of DPS Staff, DAM, DOT, Towns and the DEC for corrections or comments, and thereafter the Certificate Holder shall issue the finalized meeting minutes to all attendees;

d) If, for any reason, the Certificate Holder's contractor cannot finish the construction of the Project, and one or more new Certificate Holder's contractors are needed, there shall be another preconstruction meeting with the same format as outlined above; and

e) Throughout construction, the Environmental Compliance Monitor will notify the NYSDEC Chief of the Major Project Management, Division of Environmental Permits, 625 Broadway, Albany, NY and the DEC Regional Natural Resource Supervisor of any refinements in the schedule of construction activities in federal and/or NYS-regulated wetlands and NYS-regulated 100-foot adjacent areas as they are identified.

120. Construction work hours shall be limited to 7:00 a.m. to 7:00 p.m. Monday through Sunday, with the exception of wind turbine construction activities which may need to occur during extended hours beyond this schedule on an as-needed basis to address unusual circumstances. Construction work hour limits apply to facility construction, and to construction-related activities including the delivery and unloading of materials, and maintenance and repairs of construction equipment at outdoor locations, since these activities can result in extensive noise, large vehicles idling for extended periods at roadside locations, and related disturbances:

a) The Certificate Holder shall alert the Town and On-Site Monitor when wind turbine construction activities will be required to occur past 7:00 p.m. DPS Staff shall be notified if such extensions are being considered prior to extending construction work hours; and

b) Notice of planned extra-hours construction shall be provided to residents of areas

that may be affected by the noise, traffic or other aspects of construction, and appropriate measures taken to avoid, minimize and mitigate such impacts. Thirty days prior to the commencement of construction, the Certificate Holder shall compile a list cellphone numbers/electronic mail addresses/home phone numbers and addresses, to the extent reasonably available, of residents within 500 feet of the Project boundary lines and will contact the Towns' representative, and affected residents ,assuming the aforementioned contact information has been provided to the Certificate Holder, as soon as practicable before the extended hour construction activity is to take place. This list shall not be filed with the Secretary nor in the Compliance Filing nor publicized in any manner except for the use of the Certificate Holder, its employees, its contractors and their respective employees, to implement the requirements of this Condition.

121. Construction in streams protected under Environmental Conservation Law (ECL) Article 15 shall comply with work period restrictions established in consultations with DEC that are protective of fish spawning and migration. In protected streams with the standard of supporting trout species, all instream work, as well as any work that may result in the suspension of sediment, is prohibited during the trout spawning and incubation period commencing October 1 and ending May 31, unless the Certificate Holder receives prior approval from the DEC Region 8 Supervisor of Natural Resources, which approval shall not be unreasonably delayed, conditioned or withheld, shall be subject to the dispute resolution procedures contained herein and shall be finally approved through the Compliance Filing Process.

122. Dates for the seasonal work period restrictions on in-stream work during Facility construction, shall be included in the plans filed in the Compliance Filing and noted on final construction detail drawings.

123. At least 10 days before construction commences, copies of all necessary transportation permits from the affected State, County, and Town agencies shall be submitted to the Secretary. Such permits shall include, but not be limited to: Highway Work Permit to Work Within Right-of-Way (ROW), Highway Utility Permit to Work Within ROW, Permit to Exceed Posted Weight Limit Roads, Traffic Signal Permit to Work Within ROW, Special Haul Permit for Oversized/Overweight Vehicles, and Divisible Load Overweight Permit.

124. At least 10 days before construction commences, copies of all necessary agreements with local utility companies for raising overhead wires where necessary to accommodate the oversized/overweight delivery vehicles shall be submitted to the Secretary

125. The Certificate Holder will provide DPS Staff copies of all applicable local code requirements for any applicable building permit or certificate of occupancy for the operations and maintenance building, together with the final plans conforming to such

design requirements, at least 10 days before construction commences.

126. The Applicant shall plan, construct and mitigate the Facility consistent with the DAM *Guidelines for Agricultural Mitigation for Wind Power Projects*, dated April 19, 2018, to the maximum extent practicable. This condition also requires the Certificate Holder to locate collection wires and facility components underground in prime agricultural land except where, in consultation with DPS and DAM, the parties agree that subsurface placement is impracticable. The Certificate Holder and/or Environmental Monitor will consult with DAM and DPS Staff during construction when deviation from the Guidelines is necessary. Mitigation measures shall include full restoration of temporarily disturbed agricultural land. Certificate Holder shall file in the Compliance Filing a Drain Tile Repair Plan. The proposed layout for the access road to Turbine 13 is acceptable for construction purposes only but the permanent access road should curl around the edge of the agricultural field so as not to sever the field into two smaller fields. The Certificate Holder shall consult the landowner on the proposed final layout of the permanent access road. The Certificate Holder also agrees to avoid cutting through the existing tree farm at a diagonal.

127. Post-construction monitoring and remediation of agricultural land impacted by the Facility will be conducted for a period of no less than two years following completion of initial restoration. The monitoring and remediation phase shall be used to identify lingering agricultural impacts associated with construction requiring mitigation and/or follow-up restoration.

128. Impacts to archeological and historic resources shall be avoided or minimized to the extent practicable. Construction, including site clearing or other disturbance, shall not be allowed in any areas that have not been reviewed and approved for the presence of cultural resources. The Certificate Holder shall indicate on final Site Engineering and Environmental Plans measures for avoidance of archaeological sites identified within the Facility site. The mapped locations of all identified archaeological sites within 100 feet (31 meters) of proposed Facility-related impacts shall be identified as "Environmentally Sensitive Areas" or similar on the final Facility construction drawings, and marked in the field by construction fencing with signs that restrict access. If complete avoidance of archaeological sites is not possible, the Certificate Holder shall consult with the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) and DPS Staff to determine if Phase II investigations or mitigation is warranted. The results of any Phase II investigations and/or identification of mitigation measures will be included in the plans.

129. Except where crossed by permitted access roads or through use of temporary matting, streams shall be designated "No Equipment Access" or similar on the final Facility construction drawings and ROW clearing plans and marked in the field. The use of motorized equipment shall be prohibited in these areas.

130. A buffer zone of 100 feet, referred to as "Restricted Activities Area" or similar on the final Facility construction drawings and ROW clearing plans, shall be established where Facility construction traverses streams, wetlands and other bodies of water. Restricted Activities Areas shall be marked in the field. Restrictions will include: no deposition of slash within or adjacent to a waterbody; no accumulation of construction debris within the area; herbicide restrictions within 100 feet of a stream or wetland (or as required per manufacturer's instructions); no degradation of stream banks; no equipment washing or refueling within the area; no storage of any petroleum or chemical material; and no disposal of excess concrete or concrete wash water.

131. In stream work or restoration authorized by the Certificate, including the installation of structures and bed materials, shall not result in an impediment to passage of native aquatic organisms, including fish, or cause a significant hydraulic restriction. Any in-stream work (excluding dewatering practices associated with dry trench crossings) and restoration shall be constructed in a manner which maintains low flow conditions and preserves water depths and velocities similar to undisturbed upstream and downstream reaches necessary to sustain the movement of native aquatic organisms. Plans for the creation, modification or improvement of any permanent road/stream crossing shall be included in a Compliance Filing and must meet the following requirements:

a) Culvert pipes shall be designed to safely pass the 2% annual chance storm event;

b) Culvert pipes must be embedded a minimum of 20% of the diameter of the culvert beneath the existing grade of the stream channel;

c) Width of the structure must be a minimum of 1.25 times (1.25X) width of the mean high water channel; and

d) The culvert slope shall remain consistent with the slope of the adjacent stream channel. For slopes greater than 3%, an open bottom culvert must be used.

132. Legible "protected area" signs, exclusionary fencing, colored flagging, and/or erosion controls pursuant to the approved Storm Water Pollution Prevention Plan (SWPPP) shall be installed along the approved work area to protect and clearly identify the boundaries of non-work areas associated with wetlands, waterbodies, and wetland/waterbody setbacks (e.g., Additional Temporary Work Space setbacks, refueling restrictions, etc.). This shall be done prior to any disturbance or vehicular traffic through such areas. Signs, fencing, and silt fence must be removed following completion of the project and after all disturbed areas are appropriately stabilized and planted as described in the SWPPP and in Certificate Conditions.

133. Where underground collection lines will be installed in wetlands by open trenching, the top 12 inches of wetland top soil shall be removed first and temporarily placed onto a

geo- textile blanket running parallel to the trench, if necessary. Wide-track or amphibious excavators shall be used for wetland installations. Subsoil dug from the trench shall be sidecast on the opposite side of the trench on another geo-textile blanket running parallel to the trench, if necessary. The length of the trench to be opened shall not exceed the length that can be completed in one day. This length of trench generally should not exceed 1,500 feet in a wetland. Trench shall be backfilled with the wetland subsoil and the wetland top soil shall be placed back on top. All excess materials shall be completely removed to upland areas more than 100 feet from the wetland and suitably stabilized.

134. Where any temporary or permanent access roads are to be constructed through wetlands, a layer of geotextile fabric shall be placed across the wetland after removal of vegetation and before any backfilling occurs. The final road surface shall be covered with a minimum 1-inch depth of gravel in the area of the wetland crossing.

135. Tree and vegetation clearing shall be limited to the minimum necessary for Facility construction. Surrounding trees and vegetation will not be cut down on any property solely to reduce turbulence or increase wind flow to the Facility. To reduce mortality to nesting/roosting birds and bats, all tree clearing activities (except for hazard tree removal) shall be conducted between November 1 and April 1 and does not include trees less than or equal to 3 inches in diameter at breast height (DBH).

IX. Facility Operation

136. The Certificate Holder shall operate the Facility in accordance with the Interconnection Agreement, approved tariffs and applicable rules and protocols of NYSEG, NYISO, NYSRC, NPCC, NERC and successor organizations.

137. The Certificate Holder shall operate the Facility in full compliance with the applicable reliability criteria of NYSEG, NYISO, NPCC, NYSRC, NERC and successors. If it fails to meet the reliability criteria at any time, the Certificate Holder shall notify the NYISO immediately, in accordance with NYISO requirements, and shall simultaneously provide the Board, or the Commission after the Board's jurisdiction has ceased, by filing with the Secretary and NYSEG with a copy of the NYISO notice.

138. The Certificate Holder shall obey unit commitment and dispatch instructions issued by NYISO, or its successor, in order to maintain the reliability of the transmission system. In the event that the NYISO System Operator encounters communication difficulties, the Certificate Holder shall obey dispatch instructions issued by the NYSEG Control Center, or its successor, in order to maintain the reliability of the transmission system.

139. For purposes of this condition, Good Utility Practice shall mean any of the applicable acts, practices or methods engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods

and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability and safety. Good Utility Practice is not intended to be limited to the optimum practice, method, or act, to the exclusion of all others, but rather to be acceptable practices, methods, or acts generally accepted in the region in which the Company is located. Good Utility Practice shall include, but not be limited to, NERC criteria, rules, guidelines and standards, NPCC criteria, rules, guidelines and standards, NYSRC criteria, rules, guidelines and standards, and NYISO criteria, rules, guidelines and standards, where applicable, as they may be amended from time to time (including the rules, guidelines and criteria of any successor organization to the foregoing entities). When applied to the Certificate Holder, the term Good Utility Practice shall also include standards applicable to an independent power producer connecting to the distribution or transmission facilities or system of a utility. Except for periods during which the authorized facilities are unable to safely and reliably convey electrical energy to the New York transmission system (e.g., because of problems with the authorized facilities themselves or upstream electrical equipment) the Facility shall be exclusively connected to the New York transmission system via the facilities identified and authorized in these conditions.

140. The Certificate Holder shall work with NYSEG engineers and safety personnel on testing and energizing equipment in the authorized collection substation. A testing protocol shall be developed and provided to NYSEG for review and acceptance subject to the provisions of Condition 3 herein. The Certificate Holder shall file with the Secretary a copy of the final testing design protocol within 30 days of NYSEG acceptance.

141. The Certificate Holder shall call the Bulk Electric System Section within one hour to report any transmission related incident that affects the operation of the Facility. The Certificate Holder shall file with the Secretary a report on any such incident within seven days and provide a copy of said report to NYSEG. The report shall contain, when available, copies of applicable drawings, descriptions of the equipment involved, a description of the incident and a discussion of how future occurrences will be prevented. The Certificate Holder shall work cooperatively with NYSEG, NYISO, NYSRC, NERC and the NPCC to prevent any future occurrences.

142. If NYSEG or the NYISO bring concerns to the Commission, the Certificate Holder shall be obligated to address those concerns and shall make any necessary modifications to its Interconnection Facility if the Certificate Holder, NYISO and NYSEG agree that such facilities are causing, or have caused, reliability problems to the New York State Transmission System subject to the provisions of Condition 3 herein.

143. If, subsequent to the completion of construction and testing of the Facility, no electric power is generated and transferred out of such plant for a period of more than a year, the Commission may consider advising the Siting Board that the amendment,

revocation or suspension of the Certificate may be appropriate.

144. In the event that a malfunction of the Facility causes a significant reduction in the capability of such Facility to deliver power, the Certificate Holder shall promptly file with the Secretary and provide to NYSEG copies of all notices, filings, and other substantive written communications with the NYISO as to such reduction, any plans for making repairs to remedy the reduction, and the schedule for any such repairs. The Certificate Holder shall provide monthly reports to the Secretary and NYSEG on the progress of any repairs. If such equipment failure is not completely repaired within nine months of its occurrence, the Certificate Holder shall provide a detailed report to the Secretary, within nine months and two weeks after the equipment failure, setting forth the progress on the repairs and indicating whether the repairs will be completed within three months; if the repairs will not be completed within three months, the Certificate Holder shall explain the circumstances contributing to the delay and demonstrate why the repairs should continue to be pursued.

145. In the event of a blade failure, fire or other catastrophic event involving a wind turbine and its associated equipment, the DPS' Chief of Bulk Electric Systems, the Towns' designated representative, and local emergency agencies/responders shall be notified no later than 12 hours following such an event.

146. The Certificate Holder shall conduct yearly ground testing of all wind turbine ground grids that are within 600 feet of gas lines or gas wells. The Certificate Holder shall provide the test results to the Secretary and the gas line operator. If the test results show that a repair is necessary, the Certificate Holder shall take all reasonable steps to address the situation and will file a report with the Secretary within 15 business days of the repair.

147. The Certificate Holder shall file a Contamination Reporting Plan in the Compliance Filing. The Certificate Holder agrees to seek DEC staff input on the draft plan to assure it is consistent with the requirements of this Certificate before the plan is filed with Secretary. Any DEC staff input shall be provided in writing within 10 days of receipt of the draft Plan.

148. In the event that petroleum-impacted soil is encountered during construction activities (i.e., identified through staining, discoloration, odor, etc.) at the site, the following procedures will be implemented:

a) The Certificate Holder's contractor will immediately suspend ground intrusive work in the vicinity of the impacted material and notify the Certificate Holder Project Supervisor;

b) The Certificate Holder will notify the property owner as soon as practicable;

c) The Certificate Holder will notify the DEC Region 8 Spill Response Engineer and DPS

of the impacted material should the property owner not be located in a timely manner (i.e., within 2 hours of the discovery) or if conditions exist at the site which are determined to be immediately dangerous to public safety, health or the environment. In an emergency situation, the Certificate Holder will work (to the extent practicable) to contain the impacted material until appropriate emergency spill response services arrive;

d) In non-emergency situations and under the direction of the Project Supervisor, the excavated impacted material will be segregated and temporarily stored on the site until the material can be delivered to the disposal facility. Stockpiles will be placed on 20-mil polyethylene sheeting and will be covered with heavy-duty tarps specifically manufactured for this purpose and secured with heavy sand bags. All impacted material will be managed and transported in accordance with applicable laws and regulations, including but not limited to, 6 NYCRR Part 360 and Part 364;

e) Construction equipment which comes in contact with the impacted material will be washed with potable water and a detergent and rinsed with potable water (as necessary) to remove impacted material adhered to the tires, tracks, undercarriage, and other parts of vehicle exteriors. The wash water and solids from the decontamination activities will be collected, contained, tested, removed from the site, and ultimately properly disposed of at a licensed and approved facility. Decontamination will be performed on a decontamination pad specifically set up for that purpose. The pad will be curbed and lined with an impermeable membrane to contain the used cleaning solution, including any overspray, and any impacted debris removed during the cleaning process;

f) Cleaning solution and impacted materials will be collected and transported by a waste hauler with a valid 6 NYCRR Part 364 Waste Transporter Permit;

g) To the extent practicable, the Applicant and Project engineer will adjust ground intrusive construction activities at the site to avoid working within the limits of impacted material discovered during construction. If the limits of impacted material cannot be avoided, the project owner, in consultation with the property owner, will evaluate options for planning and implementing remediation activities, which may be required, including identification or adequate staging areas where impacts soils would be temporarily stockpiled. If the Project owner elects to undertake the remediation activities, the work will be performed under an approved plan with the DEC Region 8 Division of Materials Management;

h) The Applicant and its contractors shall have a decontamination pad in the event that oil or gas infrastructure is encountered;

i) The Certificate Holder shall consult with the DPS Gas Safety Staff if abandoned gas lines are identified as soon as practicable, considering cell coverage and internet

service availability in the field. The Certificate Holder will file a report in the Compliance Filing summarizing the drone survey it performed to locate underground gas and oil wells and steps it has taken to avoid any such wells in siting Project facilities, if applicable; and

j) Performance of any site clean-up, including containment or remediation of any existing contamination, to cap, plug, remove or otherwise contain any existing wells or pipelines that it might discover is subject to all applicable laws. Certificate Holder agrees to notify the affected landowner and NYSDEC Region 8 Minerals Manager of the discovery of any unplugged oil or gas well as soon as practicable considering cell coverage and internet service in the field. GPS coordinates for, and access to the newly discovered well location, will be provided by the Certificate Holder, to the DEC Region 8 Minerals Chief Manager, and NYSDEC Division of Environmental Permits, Chief, Major Project Management Unit, subject to the requirements of this Certificate.

149. The Certificate Holder has not demonstrated that the feasibility of the Project relies in any way upon the Certificate Holder exercising the power of eminent domain to acquire permanent or temporary real property rights in specific, identified parcels of land for the Facility or for any of the access roads, construction staging areas or interconnections necessary to service the Facility. By granting this Certificate to the Certificate Holder, the Siting Board is not making a finding of public need for any particular parcel of land such that a condemnor would be entitled to an exemption from the provisions of Article 2 of the New York State Eminent Domain Procedure Law ("EDPL") pursuant to Section 206 of the EDPL. As a condition of this Certificate, the Certificate Holder shall not commence any proceedings or cause any other entity having the power of eminent domain to commence any proceedings under the EDPL to acquire permanent or temporary real property rights for the Facility or for any of the access roads or construction staging areas necessary to service the Facility without an express amendment to this Certificate granted by the Siting Board finding a public need for such acquisition.

150. This Certificate will automatically expire in seven years from the date of issuance of this Certificate (the "Expiration Date") unless the Certificate Holder has completed construction and commenced commercial operation of the Facility prior to said Expiration Date.

APPENDIX A to ATTACHMENT A

EIGHT POINT WIND

NY PSC CASE 16-F-0062

SOUND TESTING COMPLIANCE PROTOCOL

Dated: April 1, 2019

As Revised by Examiners May 2019

1) SOUND INSTRUMENTATION

a) Sound Level Meters (SLMs): All sound level measurements will be conducted using Type-1 integrating SLMs that meet the requirements of ANSI S1.43-1997(R 2007) “Specifications for Integrating- Averaging Sound Level Meters”. Where noted, Type-2 SLMs complying with ANSI/ASA S 1.4-1983(R 2006) or ANSI S1.43-1997(R 2007) can be used. Alternatively, sound level measurements will be conducted using Type-1 integrating SLMs that meet the requirements of ANSI/ASA S1.4-2014 / Part 1 / IEC 61672-1-2013.

b) One-Third Octave Band Analyzers: The instruments will have Class-1, One-third octave- band analyzers that meet ANSI S1.11-2004 (R2009) “Specification for Octave- Band and Fractional-Octave-Band Analog and Digital Filters”. Alternatively, the instruments will have Class-1, One-third octave-band analyzers that meet ANSI S1.11-2014/ Part 1 / IEC 61260-1: 2014.

c) Acoustical/field Calibrators (Sensitivity checkers): Any acoustical calibrator will be a Type-1 precision calibrator that meets the requirements of ANSI S1.40-2006 (R2011) “Specifications and Verification Procedures for Sound Calibrators”. Where noted, Type- 2 precision calibrators can be used.

d) Windscreens: The windscreens, when used, should be clean, dry, in good condition, and of a type recommended by the manufacturer of the meter. The manufacturer's instructions for installation of the windscreen around the microphone should be followed closely. The insertion loss caused by the windscreen as stated by the manufacturer shall not exceed 2 dB at any frequency of interest specified in section 4 (c) of this protocol for sound incidence angles from 0° to ±180°. Measured sound levels will be automatically corrected by the SLMs or manually corrected as relevant for the insertion loss caused by the windscreen. Insertion losses for windscreens will be documented and included as an appendix to the report as specified in section 12(b) of this protocol. 7” diameter wind foam screens or equivalent are preferred.

e) Sound Floor: SLMs will have a sound floor or self-generated noise (combined - electrical and thermal- microphone and preamplifier noise) at least 5 dB below the sound pressure levels that are intended to be measured at each one-third frequency band of interest as specified in section 4(c) of this protocol. Alternatively, SLMs will have self-generated noise levels (Combined-electrical and thermal-microphone and preamplifier noise levels) lower than or equal to 22 decibels for broadband descriptors and lower than or equal to 10 decibels for all one-third frequency bands of interest. Sound floor characteristics should be documented with information from the manufacturer. When this is not available, sound floor characteristics may be documented with the most recent certificates of calibrations, provided the information was obtained and reported by an independent qualified laboratory. If this information is also unavailable, sound floor may be estimated by measuring sound levels with the SLM running in a very quiet condition such as inside an SLM hard case or inside the calibrator with the calibration tone “off,” at an indoor quiet location such as inside a quiet room or a car turned off.

f) Dynamic range: The dynamic range of SLMs will be properly selected (manually or automatically) to avoid any noise floor and overload issues.

g) Temperature and Humidity: SLMs will have operating temperature and relative humidity ranges that comply with the standard listed in section 3(a) of this protocol and are expected to cover the estimated temperature and relative humidity conditions of the site during testing. When this is not possible, testing days and times with forecasted temperature and relative humidity values within the range of the SLMs may be selected. SLMs temperature and humidity ranges as reported by the manufacturer will be reported.

h) Tripods: SLMs will be mounted on tripods. Operators will be as far as possible from the sound microphones during testing, at least 1.5 meters (5 feet) away.

2) NOISE DESCRIPTORS, WEIGHTING, RESPONSE, ANDOTHER SETTINGS

a) Broadband Descriptors: The sound levels of the Leq, Lmax, L10, L90 and Lmin broadband descriptors at the residential positions shall be recorded and reported in 10 min. intervals.

b) One-Third Octave Band Descriptors: The Leq, Lpeak, Lmax, L10, L90 and Lmin noise descriptors shall also be recorded at selected residential positions for the One-Third Octave Bands of interest (as specified in section 4(c) of this protocol) and included in the sound compliance test report in 10 min. intervals.

c) Frequency Ranges of Interest: All one-third octave band measurements will include the frequencies from 12.5 Hz through 10,000 Hz. Any full octave band measurements will include the frequencies from 16 Hz through 8,000 Hz.

d) Weighting: Broadband sound levels shall be reported by using the A-weighting scale in the frequency range of interest. Full Octave Bands and One-third Octave Band levels shall be reported by using the Z, Linear or un-weighted scale.

e) Statistical Noise Descriptors Response: The response for determination of any statistical noise descriptors will be set to “Fast”.

f) Settings: All SLM settings will be reported.

3) CALIBRATION REQUIREMENTS

a) Laboratory Calibration: Each SLM and calibrator will have undergone laboratory calibration within two years prior to its use for any sound compliance test. Copies of the calibration certificates will be included as an appendix to the sound compliance test report.

b) Field Calibration: The SLMs will be acoustically calibrated (sensitivity check) in the field at a minimum immediately before the operational sound testing period, and before and after any background sound testing period, according to the

procedures given in the SLM instruction manual.

c) Field calibration differences:

i) If the calibration level after a sound collection differs from the previous calibration level by ±0.5 dB or less, all measurements made with that system shall be adjusted by one-half of the difference. Differences lower than or equal to 0.2 dB are exempt.

ii) Collected data with a difference between the initial and the final calibration exceeding ±0.5 dB will not be used, and sound collections performed showing such difference will be repeated. In such cases, equipment shall be checked.

iii) Any difference between the acoustical calibrator reference sound level and the SLM calibration reading will be reduced to zero by adjusting the SLM sensitivity in the field, prior to any sound collection.

iv) The calibration sound level results will be documented and reported.

4) WEATHER AND TESTING CONDITIONS

a) Wind conditions will be documented with information from the meteorological tower(s). Wind speed at hub heights will be documented.

b) Sky cover and solar radiation or cloud height will be documented with weather information from the most representative (as related to those conditions at the Facility site) National Weather Station or airport’s weather advisory service.

c) All meteorological parameters of wind speed, wind direction, temperature, relative humidity, precipitation and atmospheric pressure (optional) will be evaluated at 2 meters +-0.20 meters above the ground at the locations to be tested. A portable weather station will be provided for at a minimum each pair of evaluated positions.

d) Each weather station will be located at the most representative location of each pair of measurement locations as related to wind speed on the ground.

e) Portable weather stations will be located close to the sound microphones, far from any wind obstructions or vegetation that may affect the wind speed measurements.

f) Reasonable efforts will be made to schedule sound tests during a period of time when representative wind conditions (as related to the noise descriptors that need to be evaluated) are forecasted but, in all cases, such tests shall be performed during the weather conditions described in this Protocol.

g) Evaluation of maximum short-term noise limits will be conducted under the worst operational noise emissions (maximum sound power levels) and the most favorable propagation weather conditions including but not limited to downwind conditions and temperature inversions.

h) Evaluation of any long-term noise limits will be conducted under a wide range of operation noise emissions (sound power levels and wind speed at hub height) and weather conditions (downwind, crosswind and upwind), for all time frames of the day (daytime, evening time, nighttime) and for different ranges of wind magnitude and wind direction.

i) Sound testing will not be conducted during adverse weather conditions such as rain, thunderstorms in the vicinity, snow fall, or under wet road conditions. Any data collected under these conditions will be discarded.

5) TESTING POSITIONS

a) Sound testing will be conducted at a minimum at the six (6) most potentially impacted positions: four non-participating and two participating residential positions (on private or public space as applicable) considering anticipated sound impacts from computer noise modeling results, any preliminary measurements and complaints, if any.

b) Three positions to be tested will be selected by the Applicant within 30 days after the start of commercial operations and approved by DPS Staff within 60 days after the start of commercial operations. Remaining positions will be selected by DPS Staff within 60 days after the start of commercial operations.

c) Sound microphones will be located at a height of 1.5 meters above the ground.

d) Final sound measurement positions will be selected to:

i) Minimize the influence of traffic noise from local roads. Measurement positions should be no closer than 15 meters (50 ft.) from the center of any roadway, unless it is not possible to obtain permission from property owner(s) to collect sound information within the private property. In this case, measurement positions can be adjacent to the road, in public rights-of-way.

ii) Avoid or minimize the influence of any mechanical or electrical noise sources from any private or public spaces such as air conditioners, air condensers, heaters, boilers, fans, pumps, transformers, lighting, etc.

iii) Avoid or minimize the influence of sounds from water streams.

iv) Provide a clear sight view of the turbines where possible and minimize the effect of any sound obstruction.

v) Minimize the influence of reflections of any buildings and other small reflective surfaces as follows:

(1) Sound microphones shall not be located closer than 7.5 meters. (25 ft.) from any reflective surface.

(2) Sound microphones shall not be located closer than 1.5 meters. (5 ft.) from any reflecting object

with small dimensions such as small trees, posts, bushes, etc.

(3) The sound level microphone height will be 1.5 ± 0.10 meters above ground elevation.

e) Positions proposed by the Certificate Holders will be identified with satellite pictures and coordinates and forwarded to DPS for review. Upon approval by DPS Staff of residential positions to be tested, the Certificate Holders will contact the landowner(s)/tenants(s) to request permission to collect outdoor sound readings close to their residences within the private properties. If permission is not granted or obtained, sound measurements can be taken on public space or an alternate proximal residential position, with the approval of DPS Staff.

f) At its discretion, DPS Staff can conduct or request the Certificate Holders to conduct sound testing at any existing residential location, prior to or during the test subject to the Certificate Holders' ability to obtain landowner consent (if applicable), and subject to equipment and personnel availability if DPS Staff's request is made during the test.

6) SEASONS AND TESTING TIMES

a) Pursuant to Certificate Condition 67 of the Order at least two sound compliance tests conforming to the compliance protocol required by the Certificate Conditions shall be performed by the Certificate Holders after the commercial operations date of the Facility: One during the "leaf-off" season and one during the "leaf-on" season.

b) Within the first seven (7) months of the commercial operations date of the Facility, the Certificate Holders shall perform and complete the first Sound Compliance Test and the results shall be submitted to the Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary a report from an independent acoustical or noise consultant, no later than eight (8) months after the commercial operations date, specifying whether or not the Facility is found in compliance with all Certificate Conditions on noise of this

Certificate during the “leaf-on” or “leaf-off” season as applicable.

c) The second Sound Compliance Test shall be performed, and results shall be submitted to the Siting Board, or the Commission after the Siting Board’s jurisdiction has ceased, by filing with the Secretary subject to the same conditions contained in sub-condition 67 (a), but no later than thirteen (13) months after the commencement of operations of the Facility.

7) MEASUREMENT PROCEDURES: Procedures will be as follows:

a) Data Collection Procedure for Operational Sound Testing (All Noise Sources Turned ON plus background sounds)[1]:

i) Check SLMs calibration. Set any difference to zero at the beginning of the sound survey.

ii) Verify that all wind turbines from the Wind Generating Facility are turned “ON” and in continuous operation as described in this protocol.

iii) Report the time that the measurement is started. If operators are present external transient background sounds can be excluded by inhibiting data collection as stated in this section. Sound collections can be restarted or continued after the transient sound ceases.

iv) Complete one 10-minute cumulative collection. Record and report the time at which each measurement is concluded.

v) Continue with another 10-minute collection until at least six acceptable 10-min samples are collected (1-hour).

vi) Proceed with testing the facility turned off.

b) Data Collection procedures for background sound test (with All Wind Generating Facility Noise Sources Turned OFF)[2]:

i) Check SLMs calibration. Set any difference to zero.

ii) Verify that all wind turbines from the Wind Generating Facility within a 1.5-mile radius of any position to be tested are turned OFF.

iii) Complete two 10-minute sound collections at each evaluated position within the hour following the end of the operational sound tests (Wind Generating Facility Noise Sources “ON” plus background sounds).

iv) Record and report the time at which each measurement collection is stopped.

v) If operators are present, check SLMs calibration at the end of the measurements. Record results and set any difference to zero.

c) Time and duration of measurements in a day:

Measurements of sound levels during

i) the daytime will be collected between 7:00 a.m. and 6:00 p.m. EST;

ii) the evening time will be collected between 6:00 p.m. and 10:00 p.m. EST; and

iii) the nighttime will be collected between 10:00 p.m. and 7:00 a.m. the next day EST.

d) Duration of measurements per season:

i) Measurements for evaluation of short-time noise descriptors (Leq-8-hour, Leq-1-h at 16 Hz, 31.5 Hz, 63 Hz.) will be collected for at a minimum 48 hours so that all receptors are evaluated at maximum sound power levels from the turbines and downwind conditions;

1 Operation sound testing will be conducted 1-hour before and after a shutdown event. The wind generating facility can continue operating as needed until the next shutdown occurs.

2 Shutdown events can continue as needed but in all cases background sounds will be measured within the first and last 1-hour of a shutdown if it exceeds two-hours.

e) Transient Sounds

i) Transient Sounds: Exclusion of transient sounds is limited to external sound sources other than wind and wind turbine's noise. Transient noises produced within the Wind Generating Facility site will not be inhibited at the time of testing.

ii) Transient sounds can be excluded by operators present or by post processing of the data.

iii) For the purposes of this testing, the following sounds will be considered transient:

(1) Sounds caused by cars, trucks, motorcycles, planes and any means of transportation.

(2) Any sounds caused by human activity (e.g. conversations, shouting, music, use of any sound or mechanical equipment).

(3) Any sounds caused by animals such as dogs, birds, peepers and insects. When animal sounds are unavoidable (such as insect sounds during the summer) instruments may not need to be paused, provided the sounds can be filtered by post-processing as specified in this protocol.

(4) Transient sounds inhibited during operational sound testing will also be inhibited during background sound testing should they occur. SLMs will have means to inhibit data collection whenever a transient background sound occurs. Operators will pause or hold the sound collection while transient sounds occur and reset or continue the measurement after the transient sound has ceased.

iv) If operators are present, trigger cables are preferred so that operator's sounds and reflections are

minimized.

v) SLMs with “delete-back” capabilities are also preferred. If SLMs with “delete-back” capabilities are used, the SLMs can be set up to a maximum deletion of a 10- second sound reading interval.

vi) Sound collection can be restarted or continued after the transient sound ceases.

vii) If operators are present, the Certificate Holder will ensure that personnel are qualified and properly trained to exclude transient events as specified in this protocol so that the need for post- processing is avoided or minimized.

8) BACKGROUND CORRECTIONS AND ANALYSIS OF RESULTS

No corrections for background sounds (noise sources OFF) are necessary if operational sound test results (with the noise sources ON plus the background sounds) comply with Certificate Conditions in the Order (See Section 2 of this protocol and the Order).

a) SHORT-TERM NOISE LEVELS AT RESIDENTIAL POSITIONS.

i) The single broadband Leq(A) 10-minute background sound level will be logarithmically subtracted from the single broadband Leq(A) 10-minute operational sound level (Wind Generating Facility sound sources ON plus background) for each measurement position in order to determine the Wind Generating Facility contribution to the total A-weighted sound levels. The “exact equation” (Equation 8), as contained in Note 2 of section 6.9 of ANSI/ASA S12.9-2013/Part 3, will be used and applied to the (A) 10-minute operational sound levels. If insect, bird, animal and/or leaf rustle sounds were present, they can be excluded from the measurements by correcting the applicable one-third frequency band sound levels at the frequencies where they occurred as appropriate. Overall corrected Leq (A) 10-minute background and operational sound levels will then be recalculated to obtain both background and operational overall Leq (A) 10- minute corrected sound levels. Both raw and corrected data will

be reported with explanations.

ii) If the arithmetic difference between the operational sound levels (Wind Generating Facility noise sources turned ON plus background sounds) and the background sound levels (after turning the Wind Generating Facility noise sources OFF) is less than 3 dB, the calculated result will be reported and a “n/a” note will be added.

iii) Leq-1-h levels will be calculated as the energy-based average of six Leq-10-min consecutive samples in one-hour period.

iv) Leq-8-h levels will be calculated as the energy-based average of eight Leq-1-h consecutive samples in an eight-hour period.

v) Operational noise levels from the Wind Generating Facility only (Leq 8-h), at the selected residential positions (after background corrections are applied), will then be evaluated for compliance with Certificate Condition 74(a) of the Order.

b) PROMINENT TONES:

i) Prominent tones will be defined as follows: A prominent discrete tone is identified as present if:

(1) The time-average sound pressure level (Leq) in the one-third-octave band of interest exceeds the threshold of hearing (as indicated in Table 1 of this protocol); and,

(2) The time-average sound pressure level (Leq) in the one-third-octave band of interest exceeds the arithmetic average of the time-average sound pressure level (Leq) for the two adjacent one-third- octave bands by any of the following constant level differences:

(a) 15 dB in low-frequency one-third-octave bands (from 25 up to 125 Hz);

(b) 8 dB in middle-frequency one-third-octave bands (from 160 up to 400 Hz); or,

(c) 5 dB in high-frequency one-third-octave bands (from 500 up to 10,000 Hz).

ii) Prominent tones will be evaluated by using the Leq-1-min sound level results (linear, Z or un- weighted). All collected data will be reported.

(1) The one-third octave band operational sound levels measured at each residential position will be evaluated, to determine if any prominent tones as defined herein were present during testing and caused by operation of the Wind Generating Facility.

(a) Initially, no correction for background sounds will be applied to the operational sound results for this evaluation.

(b) If any prominent tones are found, the operational sound pressure levels of the 1/3-octave bands containing the tones will be evaluated to determine if they exceed the values listed as hearing thresholds in Table 1 of this protocol for the respective frequencies. If they exceed the values, the prominent tones will be denoted as audible and the opposite will be denoted as inaudible. Operational prominent tones that are found being inaudible will be reported as such and may not require further analysis.

(c) If any prominent tones are found to be audible:

(i) The background sound levels Leq (With all Wind Generating Facility sound sources OFF) will be evaluated to determine if the prominent tone was caused by other sound sources in the background rather than noise sources from the Wind Generating Facility. The results of this evaluation will be reported.

(ii) The operational sound levels will then be corrected by using the exact equation listed in note 2 of section 6.9 (equation 8) of ANSI/ASA S12.9-2013/Part 3 to determine operational sound levels from the Wind Generating Facility sources only (Operational sound levels minus background sound levels). If the difference between an

uncorrected operational sound level (Wind Generating Facility sound sources ON plus background sounds) and a background sound level is lower than 3 dB the operational sound level from the Wind Generating Facility sources only (background corrected) will be set equal to -99 dB for subsequent calculations (as recommended by section 6.9 d. 1 of ANSI/ASA S12.9-2013/Part 3) and reported with an “n/a” note. Operational noise levels from the Wind Generating Facility noise sources only (background corrected) will then be evaluated for prominent tones. Results will be reported.

(iii) If any prominent tones are found, the operational sound levels from the Wind Generating Facility sources only (background corrected), will then be re- evaluated to determine whether or not the prominent tones are caused by the application of background corrections. In this case, the operational sound level from the Wind Generating Facility noise sources only (Background corrected) at each one-third frequency band of interest will be evaluated for audibility (as specified in section 11.b.3.ii of this protocol) and if found audible, it will be compared to the arithmetic average of the uncorrected operational noise levels (sources ON plus background sounds) of the two adjacent one third octave bands. Results will be reported.

(2) If any audible prominent tones are found at any evaluated residential positions and if they are found to be produced by the operation of the Wind Generating Facility, broadband Wind Generating Facility operational noise level results for that/those position(s) (Leq (A) -10 minute) will be evaluated for compliance with Certificate Condition 74(c) of the Order.

(3) Comments about whether or not the Wind Generating Facility is found in compliance with the audible prominent tone condition of the Order (Condition 74

(c)) will be included in the report.

c) LOW FREQUENCY NOISE

i) Operational and background low frequency sound level measurements will be conducted at the selected residential testing positions as specified in this protocol. Sound levels at these positions will either be reported as extracted from the SLMs for the 16, 31.5 and 63 Hz full octave bands or calculated based on the sound levels from the 12.5 to 80 Hz one-third octave bands as appropriate and applicable.

ii) The Leq-10-min operational sound levels at the 16 Hz, 31.5 Hz and 63 Hz full- octave bands measured at the selected residential positions will be evaluated to determine if the low frequency noise levels from operation of the Wind Generating Facility (under testing operational conditions) in combination with natural environmental background sounds exceed 65 dB. Initially, no background sound corrections will be made. If operational sound levels (without any background corrections) comply with Certificate Condition 74 (d) further analysis may not be needed.

iii) If other sound sources, not related to Wind Generating Facility operation, created or exacerbated low frequency sound levels during the test, measured background Leq-10-min sound levels (Wind Generating Facility noise sources OFF) can be subtracted from the measured operational sound levels (All Wind Generating Facility noise sources ON plus background sounds) at the same specific one- third octave bands where they occurred in order to determine the Wind Generating Facility contribution to low frequency sounds at those bands. Background noise sources will be identified and described as feasible. The full octave band sound levels will then be recalculated as the energy based of Leq-10-min samples for each one-hour period. The full octave-band results will be reported. Both raw and corrected data will be reported.

iv) Compliance with, or exceedance of, the 65-dB

requirement at 16, 31.5 and 63 Hz full octave bands of Certificate Condition 64 (d) at selected residential positions and under tested operational conditions, will be evaluated and reported for all Leq-1-h results.

9) ADDITIONAL TESTING:

This protocol reflects the minimum requirements for the leaf-on and leaf-off compliance sound tests required by the Order. If additional testing is required those tests will be performed by following all the provisions of this protocol except as follows:

a) Testing Positions:

b) If a violation or non-compliance situation is found at any residences not previously evaluated, those positions will be added to the tests.

c) Seasons and testing times: If a violation or non-compliance situation is found in a specific time frame any retest may need to be conducted to cover approximately the times that the violation or non-compliance situation was found.

d) Scenarios to be tested: The Wind Generating Facility will be retested at approximately the same operational and weather conditions where the non-compliance situation or violation was found.

10) ADDITIONALPROVISIONS:

a) A test plan will be developed as recommended by section 9.1.4 of ANSI S1.13-2005, prior to the test.

b) A final testing schedule will be provided to DPS Staff after the Wind Generating Facility equipment is set up and conditions are evaluated. DPS Staff will be notified of any changes to test procedures prior to or during the test, if they occur.

c) To avoid sound interruptions during testing, if communication equipment is used, it will not be operated on speaker/loudspeaker settings and will preferably be set with freehand earphones/microphones. All staff members and

personnel will take proper actions to ensure that conversations and communications will not affect the sound collections.

d) All clocks, including any SLMs and weather station meter clocks will be synchronized with the Wind Generating Facility operational time. Any difference between the Wind Generating Facility operational time and the official Eastern Standard Time will be noted and reported.

e) Sound testing will be conducted at each selected residential position over consecutive 10-minute periods at each position, for the operational sound tests and the background sound tests.

11) WITNESSING AND NOTIFICATIONS.

a) At the discretion of DPS, DPS Staff representatives may be assigned to witness any sound test.

b) At the discretion of the DPS, sound collections can be performed by DPS Staff with DPS instrumentation at any time, location and operational condition but must adhere to the same testing protocol as employed by the Certificate Holder, this Sound Testing Compliance Protocol. DPS at its discretion can collect any information related to sounds from the facility and the environment, and weather conditions, including but not limited to any sound levels by using any metric or sound descriptor.

c) If DPS Staff desires to conduct testing of the Wind Generating Facility at a specific operational condition that would require the Certificate Holders to modify the operation of any Wind Generating Facility equipment or setting any Wind Generating Facility equipment online or offline, DPS Staff shall coordinate with the Certificate Holders at least five (5) business days in advance of such testing. This advanced notice and coordination is required so the Certificate Holders can, among other things, ensure: Wind Generating Facility and operational conditions are in-order for testing; that any impact to its customers will be minimal; and that the Certificate Holders, and its customers, can properly staff to accommodate the service

interruption, and subsequent restoration, if any. If DPS Staff desire to conduct sound or vibration testing from the Wind Generating Facility and no modification to operational conditions of Wind Generating Facility equipment are required, no prior coordination is required.

d) The Certificate Holders will coordinate with DPS Staff at least five (5) office days in advance of a tentative date for any sound tests.

e) The Certificate Holders will coordinate with DPS Staff on a final date at least two (2) office days prior to any sound tests.

f) The Certificate Holders will notify the Towns' officials and applicable residents about the final dates and times of the compliance tests.

12) REPORTING ANDDOCUMENTATION

A report will be prepared that includes at least the following analyses and documentation:

a) A listing of make and model for each SLM, acoustical calibrator, weather station, weather hand held meter and anemometers (with corresponding serial numbers), and identifying which positions each instrument was used at, along with copies of laboratory calibration certificates for SLMs and calibrators, and any field calibration results (Sensitivity checks). SLMs specifications including type, sound floors, humidity and temperature ranges and settings will be included in the report along with a statement about whether the SLMs and calibrators had undergone laboratory calibration within two years prior to its use in the test. Accuracy for portable weather stations, hand held meters and/or anemometers will be documented along with a statement about whether the portable weather station and the hand-held meters or anemometers used for the tests comply with the accuracy requirements specified in this protocol;

b) The insertion loss of the windscreen as stated by the manufacturer or accredited independent laboratory, for the fractional bands of interest specified in section 4(c) of

this protocol, and whether or not the insertion loss values in dB have been automatically or manually applied to the reported data;

c) The names and qualifications of all personnel who conducted and/or provided direct oversight during the testing. Operators shall be knowledgeable with respect to the operation, performance capabilities and limitations of sound and weather instrumentation, and the specifics of this protocol;

d) All logged A-Weighted (dBA) broadband Leq data measurements and results including an appendix setting forth the Lmax, L10, L90, Lmin values. If results are corrected, filtered or post-processed, both raw and corrected data will be reported;

e) All logged one-third octave band data and full octave band results for the Leq

f) including an appendix setting forth the Lpeak, Lmax, L10, L90 and Lmin sound descriptors (Linear, Z, or Un-Weighted). If results are corrected, filtered or post- processed, both raw and corrected data will be reported;

g) All measured and logged data will be reported in tabular format to the nearest tenth of a decibel, and in graphical format. In addition, database or spreadsheet files will be provided to DPS Staff in storage media or by electronic means upon request;

h) Sound measurements and calculations of sound levels shall be reported to the nearest 1/10 of a dB;

i) Field data sheets and notes;

j) Meteorological conditions during testing: The report shall include the continuous log of all measurements of meteorological conditions collected including average wind speed, average wind direction, ambient air temperature, relative humidity, barometric pressure (Optional) and rain fall (Precipitation). Sky cover and general weather conditions will be reported;

k) Broadband and fractional band results and corresponding wind data;

l) Evaluated residential and any sound monitor positions including GPS coordinates and approximate distances to the closest five turbines along with photos and a description of the state of vegetation and whether or not the closest wind turbines are visible from the sound microphone positions;

m) Height of sound microphones as related to the ground along with photos of the residential locations being evaluated and an identification of the number of stories.

n) Figures depicting the sound testing positions in relation to the Wind Generating Facility, property lines, roads and the existing residences as of the date of the Order that were evaluated with the test. Other existing non-residential buildings will be included for reference only.

o) A complete log of the operational load and operational conditions of the Wind Generating Facility and all its noise sources during testing periods. Statements about whether the operational conditions during testing comply with the requirements of this protocol will be included. Any difference between Wind Generating Facility's and Eastern standard time will be reported; and

p)

q) An analysis of results including overall sound levels, prominent tones and low frequency noise levels and whether they were found to comply or exceed the applicable Certificate Conditions of the Order at any selected residential position and whether or not additional mitigation measures are necessary to comply with Certificate Conditions of the Order.

13) TERMS AND DEFINITIONS

a) Sound and Noise: "Noise" is usually defined as unwanted sound. If "Sound" comprises noises and other sounds, "sound" may be a broader designation. Sound sources within the Wind Generating Facility may be referred as both "noise"

and/or “sound”. Some animal sounds may be more properly referred to as “sounds” rather than “noise”. For the purposes of this protocol the words “sound” or “noise” may be used interchangeably.

b) Background sound: all-encompassing sound associated with a given environment without contributions from the source or sources of interest as specified in this protocol.
c) Continuous background sound: background sound measured during a measurement period, after excluding the contribution of transient background sounds by inhibiting the collection or post-processing. For the purposes of this protocol the term “background sound(s)” is used for both “background sound(s)” and “continuous background sound(s)”, interchangeably.
d) Operational sound: Sound that includes both Wind Generating Facility noise sources and background sound unless otherwise noted.
e) Wind Generating Facility sound only: All sounds originated from the Wind Generating Facility without contributions of background sounds as specified in this protocol.
f) Transient background sound: background sound associated with one or more sound events which occur infrequently during the basic measurement period, a measurement interval with or without the source operating, as specified in this protocol.
g) Protocol: Refers to this document, unless otherwise noted.

14) REFERENCES. (References listed in this section are for information purposes only).

a) ANSI S1.4-1983 (R 2006) American National Standard Specification for Sound Level Meters; and Amendment No. 1 in ANSI S1.4A-1985
b) ANSI/ASA S1.11-2004 (R 2009) American National Standard Specification for Octave-Band and Fractional-Octave-Band Analog and Digital Filters
c) ANSI/ASA S1.40-2006 (R 2011) American National Standard Specifications and Verification Procedures for Sound Calibrators
d) ANSI/ASA S1.43-1997 (R 2012) American National Standard Specifications for Integrating-Averaging Sound Level Meters
e) ANSI/ASA S12.9-2013/Part 3 (Quantities and Procedures for Description and Measurement of Environmental Sound. Part 3:

Short-Term Measurements with an Observer Present)

f) ANSI/ASA S12.9-2005/Part 4 (Quantities and Procedures for Description and Measurement of Environmental Sound – Part 4: Noise Assessment and Prediction of Long-term Community Response).

g) ANSI/ASA S12.18-1994 (R 2009) American National Standard Procedures for Outdoor Measurement of Sound Pressure Level.

h) ISO 226: 2003, Acoustics – Normal equal-loudness contours.

Table 1: Thresholds of human hearing for evaluation of audibility of tones

1/3 Octave Band Center Frequency [Hz]	Threshold of Hearing [dB] (most sensitive 95 % of population)
20	68.5
25	58.7
31.5	47.3
40	40.4
50	33.9
63	28.6
80	24.0
100	19.9
125	15.9
160	11.7
200	8.1
250	5.1
315	2.4
400	0.3
500	-1.4
630	-3.0
800	-4.2
1,000	-4.7
1,250	-4.2
1,600	-6.5
2,000	-9.7
2,500	-12.5
3,150	-14.0
4,000	-13.4
5,000	-9.8
6,300	-2.8
8,000	3.1
10,000	3.6

The threshold levels are intended to account for the hearing threshold of 95% of the public. Values from 31.5 Hz to 10,000 Hz inclusive are taken from P05 in Table 2 of Kenji Kurakata, Tazu Mizunami, and Kazuma Matsushita, Percentiles of normal hearing-threshold distribution under free-field listening conditions in numerical form, Acoustical Science and Technology Journal (published by Acoustical Society of Japan) Volume 26, Number 5 (2005), pp. 447-449. At 25 Hz the threshold level is 10 dB below the ISO 226:2003 median value and is also believed to account for the hearing threshold of 95% of the public.

FINAL RECOMMENDED,

AS REVISED BY

EXAMINERS

Eight Point Wind Certificate Conditions

APPENDIX B

EIGHT POINT WIND, LLC

Complaint Resolution Plan, Including Noise Complaint and Resolution Plan

Eight Point Wind, LLC
Eight Point Wind Energy Center
Steuben County, New York
Dated: April 1, 2019

COMPLAINT RESOLUTION PLAN

Eight Point Wind, LLC (the Applicant), a subsidiary of NextEra Energy Resources, LLC (NextEra) has prepared this Complaint Resolution Plan (the Plan) to establish a consistent method and procedure by which the Applicant will address public complaints during the construction and the operation of the Eight Point Wind Energy Center Project (the Project). All activities will adhere to the requirements of appropriate governing authorities, and will be in accordance with all applicable federal, state and local rules, regulations and agreements.

PROCEDURE FOR FILING COMPLAINTS

Complaints can be made by following any of the following procedures.

1. Call the Applicant at its local office or its headquarters, or call the Construction Manager during construction or the Site Manager once the Project is operational,

2. Meet with local Eight Point Wind employees in person at the local office, the temporary construction office, or at the Operations & Maintenance (O&M) building once the Project is operational,

3. Submit a complaint in writing by mailing a detailed complaint or dropping off a detailed complaint at the local office, or

4. Submit a complaint in writing by emailing a detailed complaint to the Construction Manager during construction or the Site Manager once the Project is operational.

In order for the Applicant to properly and sufficiently address a complaint, the complaint should be as detailed as possible and include the information below.

- Name of complainant
- Date of complaint
- Phone number
- Address
- Location of issue
- Detailed description of complaint (if possible, include date and time the issue occurred, exact location of issue, duration, and any other details that can help pinpoint the issue)

Included in this Plan is a Complaint Resolution Form that can be used to submit a complaint by mail or dropped off at a local office. These forms will also be available at the Applicant's local office, at the temporary construction office and at the O&M building.

The Applicant encourages complainants to submit complaints directly to Eight Point Wind in order to be able to address such complaints in a timely manner. Complaints submitted to local governmental agencies, emergency service providers, NY state agencies or other third parties may not be communicated to the Applicant and therefore may not get addressed.

In circumstances whereby a third party receives a complaint about the Project, the Applicant requests that the third party refer the complainant to the Complaint Resolution Plan on the Applicant's website and, if possible, forward the complaint to the Applicant within seven (7) business days. The Applicant will communicate this request to local governmental agencies, emergency service providers, NY state agencies and other third parties that may receive complaints about the Project.

RESOLUTION OF COMPLAINTS

The Applicant will work in good faith to address and/or resolve reasonable complaints as soon as is practicable, however, some complaints will take time to evaluate and determine proper resolution and some complaints cannot reasonably be resolved. Safety and good community relations are among the highest priorities of the Applicant; as such, speedy resolution of legitimate complaints is imperative.

Upon receiving a complaint, the Applicant will enter the complaint into a complaint log, documenting the details and will determine a plan of action to resolve the complaint, if possible to resolve. If necessary, the Applicant will contact the complainant as quickly as possible and in all cases within 72 hours to gather additional information and/or discuss a resolution plan. The Applicant will work in good faith to address and/or resolve complaints as soon as is reasonably practicable and commits to resolving complaints within sixty (60) days, unless circumstances dictate that more time is necessary for evaluation or resolution and the Applicant is working toward a resolution. In instances where resolution will take longer than 60 days, the Applicant will contact the complainant to explain why resolution will take or is taking longer and will provide a timeframe for resolution that is as soon as is practicable.

DISPUTE RESOLUTION AND UNRESOLVED COMPLAINTS

In some instances, the Applicant and a complainant (the parties) may not agree on a resolution to a complaint. In such instances, the Applicant will consult New York State Department of Public Service (DPS) then, if necessary, refer the complaint to a neutral third party, for example, a dispute resolution professional or a retired judge. The recommendation of the neutral third party would be provided to the parties and to the DPS and the recommendation would be implemented, unless arbitrary and capricious.

In other instances, the Applicant may determine that a complaint does not have a reasonable resolution. For such complaints (for example a complaint regarding the aesthetic value of wind turbines or a complaint about the value of wind energy), the Applicant will add the complaint to the complaint log, notify the complainant that no resolution is feasible and recommend the complainant contact the DPS if he or she disagrees. If the DPS suggests that further action is necessary on the part of the Applicant, the Applicant will refer the complaint to a neutral third party and the procedure outlined above be followed.

DOCUMENTATION OF COMPLAINTS

During construction and operation of the Project, the Applicant will keep a complaint log, recording complaints that it receives. The complaint log will include, if available, the date of the complaint, the name of the complainant, contact information for the complainant including address, and a description of the complaint. It will also include a description of the complaint resolution, if resolution is feasible.

The complaint log will be maintained by the Applicant and will be made available to the DPS. Upon request by the DPS, the Applicant will send the complaint log via email within seven (7) business days.

PUBLIC NOTIFICATION OF COMPLAINT PROCESS

No less than two (2) weeks prior to the commencement of construction, the Applicant will publish a summary of the Complaint Resolution Plan in such newspapers, including local community and general circulation newspapers, as will serve substantially to inform the public of such Complaint Resolution Plan. The summary will include contact information including phone numbers, email and physical addresses. The Plan will be provided to the Greenwood Township and the West Union Township Town Boards. The Plan will also be posted on the Applicant's website and will be available to the public at the Applicant's local office, temporary construction offices and at the O&M building.

COMPLAINT FORM

Name: _____

Date: _____

Phone #: _____

Address: _____

Description of Complaint:*

_____

_____

_____

_____

_____

_____

_____

_____

_____

*If possible, include date and time the issue occurred, exact location of issue, duration, weather conditions and any other details that can help pinpoint the issue.

NOISE COMPLAINT AND RESOLUTION PLAN

The steps outlined in this noise complaint resolution plan ensure that the community has a method to register their noise complaints or concerns in a timely manner, and also provide checks so the process is not abused. This plan is in effect upon commencement of construction and will be in effect for the life of the project.

Complaint Response – Construction

If the Sound Complaint location is more than one (1) mile from active construction activity, the complaint will be logged but no action will be taken.

If the Sound Complaint is less than one (1) mile from active construction activity, the following steps will be taken:

- A representative from the construction firm will visit the site of the complaint during construction activity to listen and observe.
- Construction personnel will try to determine if any equipment is not functioning properly and thus creating unusual sound. If so, this equipment will be repaired or replaced as soon as practical.

Complaint Response – Operations

If the Sound Complaint represents a residence within one mile of any turbine, and based on monitoring and/or modeling, there appears to be a reasonable possibility that the sound levels induced by the Project exceed any Certificate Condition of the Order or are within 5 dBA of any applicable noise limit specified in a Certificate Condition at the complainant's location, and the sound is not related to Project maintenance or abnormal operational conditions, then Eight Point Wind will investigate the incident as follows:

- Determine whether the sound level at the complaint location is likely to be greater than any limit specified in the applicable Certificate Conditions of the Order or are within 5 dBA of any applicable noise limit by reviewing the pre-construction sound modeling or any preliminary readings.
- Eight Point Wind is not required to conduct sound testing if:
  - the modeled sound level is ~~l~~ower than 5 dBA below any applicable noise limit.
  - the complaint has occurred as a result of abnormal operation. In this case, Eight Point Wind shall make necessary repairs.

Eight Point Wind shall conduct sound monitoring if:

- The complaint location is further than 0.5 miles from any post-construction sound compliance monitoring locations, or the location is closer than 0.5 miles of a previously evaluated monitoring location, and the modeled or measured sound levels are higher or expected to be higher than the positions previously evaluated.
- If there is a reasonable possibility that conditions have changed that affect wind turbine sound levels, or
- The issue is different than the one previously evaluated, or
- The last sound monitoring was conducted more than three years ago.

Eight Point Wind will not, as a result of additional complaints, repeat sound monitoring in a previously evaluated location during any three-year period following the first monitoring for that receptor, unless changes in system operation or turbine maintenance can be reasonably assumed to have resulted in higher turbine sound levels.

Sound monitoring in response to complaints will be addressed as part of the relevant and applicable portions of the Sound Monitoring Protocol, Appendix A, appended to the Certificate Conditions.

Eight Point Wind may request that a Complainant maintain a written log of potentially offending sound

events over some reasonable period of time, in order to assist in identifying influences that may affect the sound from the turbines. If the identified factors demonstrate that follow-up sound monitoring is warranted, Eight Point Wind shall make reasonable efforts to conduct such monitoring under conditions similar to those existing at the time the complaint arose. Eight Point Wind may have access to a sound level meter within 24 hours of request. This meter may be used to perform "spot checks" of sound levels at the area of complaint.

Eight Point Wind shall inform a resident when it intends to conduct any exterior sound monitoring and cooperate with the resident to determine an appropriate location for the monitoring equipment. If Eight Point Wind determines that a Sound Complaint is the same and not valid for two separate instances at the same location, then any future complaint, beyond the first two, may requires that complainant to pay the cost of sound testing.

Reporting

If any complaint-based sound monitoring is conducted by Eight Point Wind, the results of the testing shall be submitted in a report within 45 days of the completion of that monitoring. This report shall go to the complainant, NYS DPS as specified in the Order, and if requested, to the Town Clerk of West Union, Town Clerk of Greenwood. The report shall include the following information during the monitoring period:

- Ground-level wind speed and direction
- Operational status of the wind turbines (including wind speed, wind direction, power and NRO if applied)
- Summary of sound levels, and
- Raw sound level data as logged by the sound level meter during the program.

If, as the result of a complaint resolution, it is determined that the sound level at any non-participating residence, attributable to the Project, does not comply with any Certificate Condition of the Order, Eight Point Wind will proceed with subsequent steps as specified in the Order.

This protocol will be updated to address the final Order and Certificate Conditions. This protocol shall not be used to request an amendment of the Certificate. Any change that should in fact be a request for amendment to a Certificate will be addressed as specified in Part 1002 of Article 10 regulations (Compliance Filings).