NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

CASE 14-F-0490 - Application of Cassadaga Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

ORDER GRANTING CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED, WITH CONDITIONS

Issued and Effective: January 17, 2018

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NEW YORK STATE BOARD ON ELECTRIC
GENERATION SITING AND THE ENVIRONMENT

At a session of the New York State Board on Electric Generation Siting and the Environment held in the City of Albany on January 17, 2018

BOARD MEMBERS PRESENT:

John B. Rhodes, Chair
New York State Public Service Commission

Vincent Ravaschiere, Alternate for
Howard Zemsky, Commissioner, President & CEO
New York State Empire State Development

Louis Alexander, Alternate for
Basil Seggos, Commissioner
New York State Department of Environmental Conservation

John Williams, Alternate for
Richard L. Kauffman, Chair
New York State Energy Research and Development Authority

Dr. Elizabeth Lewis-Michl, Alternate for
Howard A. Zucker, M.D., J.D., Commissioner
New York State Department of Health

Gregory B. Gane, Ad Hoc Member

Karl Kelling, Ad Hoc Member

CASE 14-F-0490 - Application of Cassadaga Wind LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

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(Issued and Effective January 17, 2018)

BY THE BOARD:

INTRODUCTION

By this order, we grant to Cassadaga Wind LLC (Cassadaga Wind or the Applicant) a certificate of environmental compatibility and public need to construct and operate a wind farm generating facility in Chautauqua County, New York. With the extensive conditions attached to and made a part of this order, we determine the wind farm will meet all the statutory requirements for certification under Article 10 of the Public Service Law (PSL). Our decision is supported by the extensive evidentiary record compiled through hearings before the Presiding Examiner appointed by the Department of Public Service and the Associate Examiner appointed by the Department of Environmental Conservation, who summarized the record and made proposed factual findings and ultimate determinations in a Recommended Decision (RD) issued previously in this case. We base our decision on the evidentiary record, post-hearing briefs, RD, briefs of the parties on exception to the RD and opposing exceptions, public comments, and all applicable law and policy, particularly as advised by the constituent members of the New York State Board on Electric Generation Siting and the Environment.

BACKGROUND

Description of the Project

The proposed wind farm will consist of 48 wind turbines capable of producing up to 126 megawatts (MW) (the Project or the Facility). Wind turbines will be located in the Towns of Cherry Creek, Charlotte, and Arkwright. Turbine heights would be limited to 500 feet in "tip" height, measured in a straight line from the base of the turbine tower through

the hub to the blade tip. Cassadaga Wind has not yet selected the specific make and model for the actual turbines to be installed, awaiting our approval and our Project restrictions and Certificate conditions.

The RD's recommendations allow for the construction of approximately 16.6 miles of access roads to access the turbine locations and approximately 29.2 miles of overhead and underground 34.5 kV collection lines interconnecting the turbines. The Project also includes plans for the construction of a 5.5-mile above ground 115 kV generator lead line, a collection substation, a point of interconnection with the New York State electric grid through facilities owned and operated by Niagara Mohawk Power Corporation d/b/a National Grid, two permanent meteorological towers, two temporary staging/laydown yards for construction, and an Operations and Maintenance (O&M) building. One relatively short section of generator lead line and a point of interconnect substation are to be located in the Town of Stockton. The majority of Facility components will be located on private land, except a portion of the collection line located on State-owned land in the Boutwell Hill State Forest pursuant to an easement granted by the State legislature.[1]

Procedural History

On November 5, 2014, Cassadaga Wind, a subsidiary of EverPower Wind Holdings, Inc., submitted a letter to the Secretary of the Siting Board,[2] indicating its intent to apply for an Article 10 certificate for a proposed 126 MW wind energy project located in parts of the towns of Charlotte, Cherry

[1] See Hrg. Ex. 53 (ACD-5) (containing a copy of New York Chapter 481 of the Laws of 2016).

[2] Under 16 NYCRR §1000.2(am), the Secretary to the Public Service Commission (PSC) serves as the Secretary to the Siting Board.

Creek, Arkwright, and Stockton. The November 5, 2014, letter also served as a formal submittal, pursuant to §1000.4 of part 16 of the New York Code of Rules and Regulations (NYCRR), of the Applicant's Public Involvement Plan (PIP).[3] After amendment and revision pursuant to DPS review,[4] the Applicant filed its final PIP on January 5, 2015.

On September 3, 2015, the Applicant submitted its Preliminary Scoping Statement (PSS) for a planned commercial-scale wind power project consisting of up to 62 wind turbines with approximately 34 miles of associated collection lines and other supporting temporary and permanent supporting infrastructure. Cassadaga Wind also indicated that the

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[3] 16 NYCRR §1000.4 "Public Involvement" requires Article 10 applicants to submit a proposed Public Involvement Program plan to DPS for review as to its adequacy at least 150 days prior to the submittal of any preliminary scoping statement. Section 1000.4(a) states that the Public Involvement Process is intended "to ensure throughout the Article 10 process that the Siting Board is fully aware of the concerns of stakeholders and that the Siting Board's consideration of an application is not delayed." Thus, 16 NYCRR §1000.4(a) requires "applicants to actively seek public participation throughout the planning, pre-application, certification, compliance, and implementation process" and "to encourage stakeholders to participate at the earliest opportunity in the review of the applicant's proposal so that their input can be considered."

[4] Under 16 NYCRR §4.3(d) DPS counsel must submit a list of trial staff to the hearing officers. Pursuant to 16 NYCRR §1.2, persons so designated serve as an independent arm of DPS to prosecute a matter before the Commission. Generally, in the pre-application stage of an Article 10 matter, no trial staff is designated. Thus, during that stage, any actions taken by DPS may properly be considered actions of the entire Department. However, the trial staff team that is designated after an application is filed acts as any other party to the proceeding. In this RD, "DPS Staff" refers to positions taken by trial staff, as opposed to DPS in general. We are using the same convention for other state agencies to note the same distinction.

Project's output would interconnect with National Grid's existing Dunkirk-Moon 115 kV transmission line. As designed in the Applicant's PSS, the Project would have a nameplate capacity of up to 126 MW with an expected annual net capacity factor of approximately 36 percent.

The PSS is part of the pre-application procedures prescribed by the Siting Board in 16 NYCRR §1000.5. During the pre-application scoping phase, the project applicant, DPS, other statutory parties, and interested participants determine the 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,[5] determine what information is necessary for a project applicant to 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. The provisions of 16 NYCRR Part 1001, detailing the required contents of an Article 10 application, contain the Siting Board's general guidance for the stakeholders in fashioning the specifics of the stipulations. When the application is submitted, the stipulations are used in conjunction with 16 NYCRR Part 1001 to determine whether the application is in compliance with PSL §164.[6]

After receiving an extension of the time to file, on October 5, 2015, the stakeholders provided their respective

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[5] See 16 NYCRR §1000.5(j)&(k).

[6] A determination by the Chair that an Article 10 application is compliant with PSL §164, requires that the Siting Board make its final decision on that application within twelve months unless extended by the applicant. PSL §165(4)(a).

comments on Cassadaga Wind's PSS.[7] Cassadaga Wind responded to the stakeholder comments on October 26, 2015. After conducting several meetings with the State agencies and the Joint Towns[8] to negotiate stipulations concerning the studies necessary to complete its application, Cassadaga Wind filed drafts of the stipulations, with the exception of a stipulation concerning noise and vibration, on March 2, 2016. After receiving comment on the draft stipulations,[9] on April 19, 2016, Cassadaga Wind filed its final, fully executed stipulations, again with the exception of a stipulation on noise and vibration, which was handled on a separate track.[10]

By letter dated April 27, 2016, Cassadaga Wind filed its draft stipulation on noise and vibration. The stipulation, numbered 19 to correspond with the PSS exhibit number for noise and vibration,[11] was issued for comment. The final, fully executed Stipulation 19 was filed on July 13, 2016.[12]

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7 Contemporaneously with the PSS and stipulations process, the hearing examiners considered pre-application requests for intervenor funding. See PSL §163(4). Three of the towns affected by Cassadaga Wind's proposal, Arkwright, Charlotte, and Cherry Creek (the Joint Towns), represented jointly, submitted the only pre-application request for funds. By ruling dated November 23, 2015, the Joint Towns' request for pre-application intervenor funding was granted in total in the amount of $44,100.

8 The Concerned Citizens of the Cassadaga Wind Project (Concerned Citizens) was not created until January 2017 and, therefore, did not participate in negotiating stipulations.

9 See 16 NYCRR §1000.5(j)(3).

10 Hrg. Ex. 136.

11 The PSS designations followed the Siting Board's regulations in 16 NYCRR Part 1001. For example, 16 NYCRR §1001.19 contains the requirements for an application's noise and vibration information. This convention allows for easy comparison between the regulations, the stipulations, the PSS, and the application's exhibits.

12 Hrg. Ex. 137.

By letter dated May 27, 2016, Cassadaga Wind began the process of filing and supplementing its formal application for the Project.[13] On June 2, 2016, the Secretary issued a Notice indicating the availability of the intervenor funds for the post-application phase of the proceeding.[14]

In addition to its initial application materials, Cassadaga Wind filed supplements on October 7, 2016, and on October 28, 2016.[15] Thereafter, by letter dated November 28, 2016, the Chair sent formal notice to the Applicant that its application was deemed compliant with the requirements of PSL §164.[16] In accordance with PSL §165(1), the Chair set January 9, 2017 as the date for commencement of the public hearings.

On January 9, 2017, the Examiners held a public statement hearing in Sinclairville, New York, centrally located to the Project area. At the hearing, 21 members of the public

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[13] Hrg. Ex. 99.

[14] Initially, only the Joint Towns requested funds. A second Notice was issued seeking further applications on November 30, 2016, when the examiners became aware of local residents wishing to intervene in the matter. Two local residents timely filed an application for funding. Eventually, other local residents joined them and they consolidated representation into Concerned Citizens. By rulings issued January 26, 2017 and February 6, 2017, we awarded funding for both the Joint Towns, in the amount of $69,000, and Concerned Citizens, in the amount of $57,000, thereby allocating all available intervenor funding.

[15] Hrg. Exs. 100 and 101. Additionally, the Applicant filed several updates between January and June 2017. See Hearing Exhibits 102 through 106.

[16] PSL §165(1) states that "After the receipt of an application filed pursuant to section one hundred sixty-four of this article, the chair of the board shall, within sixty days of such receipt, determine whether the application complies with such section and upon finding that the application so complies, fix a date for the commencement of a public hearing."

spoke, 14 against and 6 in favor with one not taking a firm position for or against. On January 10, 2016, the Examiners conducted a procedural conference, also held in Sinclairville, to identify interested parties, identify issues for adjudication, and establish a schedule for the filing of testimony and exhibits and the evidentiary hearings.

On May 12, 2017, DPS Staff, DEC Staff, Department of Health (DOH) Staff, Department of Agriculture and Markets (DAM) Staff, and Concerned Citizens filed direct testimony and exhibits concerning the Project.[17] On June 9, 2017, Cassadaga Wind and Concerned Citizens filed rebuttal testimony and exhibits.

The Examiners held evidentiary hearings in Sinclairville on July 17 through 21, 2017, and on July 26 and 27, 2017. The evidentiary record includes more than 2,700 pages of hearing transcripts and 146 exhibits, many of which are multipart. Cassadaga Wind, DPS Staff, DEC Staff, DOH Staff, DAM Staff, and Concerned Citizens filed their initial post-hearing briefs on September 8, 2017, and their reply briefs on September 22, 2017.

The Secretary issued the Examiners' RD on November 8, 2017, as well as a Notice Seeking Comment on the RD. On November 28, 2017, Cassadaga Wind, DPS Staff, Concerned Citizens and Niagara Mohawk Power Corporation d/b/a National Grid filed Briefs on Exceptions to the RD. DOH filed a letter in lieu of a brief seeking a clarification to one certificate condition regarding noise restrictions. Four individuals filed public

[17] PSL §166 lists the statutory parties to an Article 10 proceeding. Despite being listed therein, no appearance was made by the Department of Economic Development, the New York State Energy Research and Development Authority, the Department of State, or the Office of Parks, Recreation and Historic Preservation.

comments. On December 13, 2017, Cassadaga Wind, DPS Staff, DEC Staff and Concerned Citizens filed Briefs Opposing Exceptions to the RD.

Public Involvement and Comment

The Article 10 process requires applicants to create a Public Involvement Program (PIP) Plan in consultation with State agencies and stakeholders. The PIP is designed to encourage local participation from affected local, State and federal agencies to learn concerns about proposed projects. Public involvement is invited throughout the Article 10 process.

As noted in the RD, Cassadaga Wind submitted a proposed PIP to the DPS in November 2015. A revised version was submitted in January 2016 after Cassadaga Wind incorporated suggestions from the DPS and interested parties. The DPS approved the revised PIP.

Cassadaga Wind attended local town, zoning and school board meetings, hosted four open houses for the public between January 2015 and August 2016 and engaged various stakeholders by letter and email. Notices of local meetings and Project milestone filings were published in local newspapers to garner public input.

Despite the Cassadaga Wind's efforts, DPS Staff raised concerns that the stakeholder list was not used adequately to ensure that affected and interested parties in the Project area were informed during the pre-application phase. Several landowners stated in the Public Statement Hearing that they were not aware of the Project during this phase. The Applicant published notices in local newspapers and insisted it followed the notification requirements in the PIP. However, proof of service to the stakeholder list was not included and so Cassadaga Wind was required to provide an affidavit of publication with an attached mailing list. The Examiners

determined that public participation during the post-application phases was not diminished.

Although DPS Staff did not point to a certain section of the PIP that it believed Cassadaga Wind violated, the Examiners recommended that the Siting Board adopt DPS Staff's proposed certificate conditions regarding outreach efforts and future mailings. Their recommendations for certificate conditions are contained in Appendix A, conditions 13, 14 and 15. We adopt the recommended conditions. Conditions 13 and 14 compel the Certificate Holder to notify various categories of interested persons and specify the precise information required for such notice. Condition 15 requires the Certificate Holder to provide information concerning the location of posted Project information to affected Town Boards. Future Article 10 applicants should take notice of these conditions and work to ensure that the public involvement process works as completely and efficiently as possible at all stages of a proposal.

Comments were received at the Public Statement Hearing held in Sinclairville on January 9, 2017, and many other comments were submitted in writing to the public case filed maintained on the Department of Public Service website through its Document and Matter Management (DMM) system. The Examiners noted and summarized 67 public comments filed in DMM as of the time the RD was issued; some in support and some in opposition. An additional 93 public comments were posted on DMM since the RD was filed; again, some in support and some in opposition. Many of these comments reiterated the sentiments of the first 67 comments.

Comments in support of the Project, filed since the RD was issued, stated that the desirable economic benefits of the Project outweigh the minimal environmental impacts. The International Brotherhood of Electrical Workers support the

Project as it will supply many jobs to skilled workers. The Alliance for Clean Energy New York and the American Wind Energy Association support the Project because it will help New York reach its renewable and clean energy goals. These groups assert that the State and local communities will benefit. Comments generally in support of the project discuss how sound should be conditioned based on reasonable standards, renewable energy projects can support New York agriculture, full avoidance of impacts to bats should not be required in all cases, the Siting Board does not need to issue local law waivers if the municipality has already waived local laws, and mitigation requirements should be weighed against specific avoided impacts and costs to the Applicant.

Comments opposing the Project, filed since the RD was issued, questioned the suitability of the Project for the area and its population and the distances of setbacks in relation to homes and recreational areas. They assert that wind power is intermittent and unreliable. Comments in opposition also raised concerns about impacts on the nearby Amish community and on local tourism, including effects on recreation trails, lakes, scenic areas, grape vineyards, cross country ski trails and equestrian trails. The effects on horses, increased injury risks to riders and the dangers of ice throw in these heavily trafficked tourist areas during winter were mentioned. Opposing commenters stated that this area depends on tourism and the Project will negatively affect the above-mentioned activities. Some stated that the area would turn into an industrial location if the Project is built.

Additional criticisms focused on potential interruptions to television and radio signals as well as to weather and military radar. Commenters discussed how disruptions to these systems could hinder emergency services,

notifications to the community and jeopardize public safety. Others suggested that, due to wind towers, helicopters may not have a direct flight pattern to access trauma centers.

Some of the opposing comments discussed problems relating to discord within communities and amongst neighbors, increased flooding, mud covered roads and residents moving out of state. Public notification was addressed multiple times and some were unsure how to voice concerns if they did not have access to a computer. Lastly, commenters expressed concern that State agencies will not be able to keep up with compliance problems that may arise over the life of the Project.

FINDINGS AND DETERMINATIONS

Article 10 Standards

Between 1992 and 2003, the process applicable to siting major electric generating facilities in New York was contained in PSL Article X. Article X expired on January 1, 2003, subjecting proposed siting projects to decision-making and permitting under the State Environmental Quality Review Act (SEQRA). On August 4, 2011, Governor Andrew Cuomo signed into law the Power NY Act of 2011 creating a new PSL Article 10.[18]

The updated Article 10 recreates the New York State Board on Electric Generation Siting and the Environment charged with establishing rules and regulations relating to the procedures to be used in certifying major electric generating facilities. Recognizing the multi-disciplinary breadth of such

[18] 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."

a charge, the Siting Board is comprised of five permanent members: the Chair of the DPS, who also serves as Chair for the Siting Board; the Commissioner of the DEC; the Commissioner of the DOH; the Chair of the New York State Energy Research and Development Authority; and the Commissioner of the Department of Economic Development. To include local input into the Siting Board's decisions, Article 10 also establishes two *ad hoc* Siting 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.[19]

Article 10 charges the Siting Board to make specific findings before issuing a certificate. Specifically, PSL §168(2) requires that the Siting Board, in any decision on an application, make explicit factual findings as to the probable environmental impacts of the construction and operation of the facility, including impacts on (a) ecology, air, ground and

[19] NY PSL §160(4). Pursuant to PSL § 161(2), after receiving Cassadaga Wind's final Public Involvement Plan, the Secretary sent requests, dated January 23, 2015, to the municipal chief executive officers in the Project area seeking their nominations for ad hoc Siting Board members. After receipt of the Applicant's Preliminary Scoping Statement, the Secretary, via letters dated September 9, 2015, requested that the president pro tem and the speaker of the assembly each appoint an ad hoc Siting Board member from the lists of nominees that had been submitted by the municipal chief executive officers. On October 19, 2015, the president *pro tem* of the Senate initially appointed Jason R. Johnson, but, when Mr. Johnson became ineligible, appointed Karl Kelling by letter dated May 10, 2016. When the Speaker of the Assembly failed to appoint a Siting Board member within 30 days of receiving the list of nominees, Governor Andrew Cuomo, in accordance with PSL §168(2), appointed Greg Gane by letter dated February 5, 2016 (filed with the Secretary on February 8, 2016). Both Mr. Kelling and Mr. Gane have actively participated in this proceeding, attending most of the conferences and the hearing.

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 Siting Board's 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.[20]

Section 168(3) prohibits the Siting Board from issuing a certificate "unless the Board 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 Siting Board must also determine that the facility is designed to operate in compliance with applicable State and local laws and regulations. To assist the Siting Board in its local law determination, PSL §168(3) requires that the Siting 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 Siting 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.

[20] PSL §168(2)(d).

Pursuant to PSL §168(4), the Siting 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 Siting Board's PSL §168(2) findings on the project's 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 Siting 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 making our PSL §168(3) determinations.

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

PSL §168(3)(a) and PSL §168(4) require a finding that the Facility will be a beneficial addition to the electric generation capacity of the State, taking into consideration whether the proposals are consistent with the State's energy policy and planning objectives. The Examiners found, based on Hearing Exhibits 52, 99 and 104, that the Facility will be a beneficial addition to the electric generation capacity of the State, and is consistent with the State's energy policy and planning objectives.

The 2015 State Energy Plan (SEP) and the Clean Energy Standard adopted by the Public Service Commission in PSC Case 15-E-0302 emphasize the importance of renewable electric generation, which will be provided by the Facility. The Facility will also serve the goals of improving fuel diversity, grid reliability, and modernization of grid infrastructure.

As the Examiners demonstrated, the goals of the SEP are not restricted to renewable electricity consumed within the state, but are also oriented toward national and international goals of reducing carbon and transforming the energy industry. For that reason, the Examiners' finding was not changed by the fact that the output of the Facility is contracted for out-of-state purchase. This conclusion is bolstered by the decision of the Appellate Decision in a previous Article X proceeding that production of electricity within the state is beneficial irrespective of the contract path of the output.[21] No party took exception to the RD's proposed findings and determinations on this issue, and we adopt them.

Environmental Impacts - PSL §168(2) & §168(3)(c)

PSL §168(2) requires the Siting Board to make explicit findings regarding the probable environmental impacts from the construction and operation of a proposed facility. Among the environmental impacts the Siting 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 Siting 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

[21] Case 97-F-1563, Athens Generating Company LP – Application to Construct and Operate a 1,080-Megawatt Natural Gas-Fired Combined Cycle Combustion Turbine Generating Facility in the Town of Athens, Greene County, Order Granting Certificate of Environmental Compatibility and Public Need (issued June 15, 2000) (Athens Generating Order).

Article 10 certificate. In addition, PSL §168(3)(e) requires the Siting Board to determine that the facility is designed to operate in compliance with applicable State environmental, and public health and safety laws. In making its determinations, the Siting Board may impose, and monitor compliance with, any terms and conditions it deems necessary.[22]

The following sections summarize the probable environmental impacts associated with the Project identified by the Examiners, the Examiners' recommendations regarding the findings the Siting Board is required to make, the objections to the Examiners' recommendations, if any, and our findings and determinations with respect to the impacts identified.

Ecology

The Examiners noted that the Project area's predominant land types are forestland and agriculture. Based upon their review of the record, the Examiners found that the impacts to ecology largely consist of the temporary and permanent disturbance to plants, vegetation, and forests for construction of turbine locations, access roads, collection lines, the 115 kV generator lead line, and substations.[23] Post-construction operational impacts to vegetation are expected to be limited, consisting mostly of disturbances to vegetation resulting from routine maintenance and occasional repairs.[24] The Examiners also noted that Cassadaga Wind did not identify any threatened, endangered, candidate, or rare plant species, or significant ecological communities through its database

[22] PSL §§162 and 168(5).

[23] RD at 24.

[24] RD at 25-26.

requests, or through on-site observations during its ecological surveys.[25]

Based on their conclusion that the Project will not result in any extirpation or significant reduction to any existing plant community, the Examiners recommended that the Siting Board find that Project construction and operation will not result in likely adverse impacts to protected plants or to significant ecological communities.[26] To minimize any impacts to vegetation, the Examiners recommended that the Siting Board adopt proposed certificate conditions 9, 69, 89, 105, 108, 117, 123, and 147 as set forth in Appendix A of the RD.[27]

No party raised exceptions to the Examiners' recommendations with respect the Project's impacts to the area's ecology, as a general matter, except as discussed more particularly below. Accordingly, the Examiners' recommendations are adopted. Based upon the record of the proceeding, and proposed certificate conditions 9, 69, 89, 105, 108, 117, 123, and 147, we conclude that the adverse environmental effects of the Project's construction and operation on the area's ecology will be minimized or avoided to the maximum extent practicable.

Invasive Species

Environmental Conservation Law (ECL) Article 9, Title 17, requires that projects subject to State review be examined for any risks posed by invasive species to the State's environment, including the detrimental effect upon the State's "fresh and tidal wetlands, water bodies and waterways, forests, agricultural lands, meadows and grasslands, and other natural

[25] RD at 25-26.

[26] RD at 26.

[27] RD at 26.

communities and systems" (ECL §9-1701), and that wherever practical, invasive species be prohibited and actively eliminated at project sites regulated by the State. ECL §9-1709(2)(b)(iv).[28] The Examiners examined the record on the Project's potential impacts from invasive species, including Applicant's vascular plant species inventory, its Invasive Plant Species Survey Baseline Report (Baseline Species Report) (Cassadaga Wind's Second Supplemental Response to DPS-2, Hearing Exhibit 133), and its Invasive Species Control Plan (Application Appendix FF, Hearing Exhibit 99), which identified potential impacts as a result of construction phase soil disturbance.[29] Based upon the control measures detailed in the Baseline Species Report and the Invasive Species Control Plan, and the imposition of the certificate conditions 53 and 54 attached to the RD, the Examiners recommended that the Siting Board determine that the Project's impacts from invasive species have been minimized or avoided to the maximum extent practicable.[30] The Examiners also concluded that Cassadaga Wind will construct and operate the Project consistent with applicable State environmental laws.[31]

No party raised any exceptions to the Examiners' conclusions and recommendations regarding the Project's potential impacts on invasive species. Accordingly, the Examiners' conclusions and recommendations are affirmed and adopted. Based upon the record of the proceeding and proposed certificate conditions 34 and 56, we conclude that with respect

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[28] The ECL defines an invasive species as a species that is non-native to the ecosystem under consideration, and whose introduction causes or is likely to cause economic or environmental harm or harm to human health. ECL §9-1703(10); see also 6 NYCRR §575.2(s).

[29] RD at 26-28.

[30] RD at 28-39.

[31] RD at 134.

to invasive species, the Project is designed to operate in compliance with applicable State environmental law, and that the adverse environmental effects of the construction and operation of the Project related to invasive species will be minimized or avoided to the maximum extent practicable (PSL §168[3][c], [e]).

Forest Fragmentation

In response to DPS Staff concerns that the loss of forest land could cause forest fragmentation, Cassadaga Wind eliminated two turbines from the Project that created the most adverse impact.[32] The Project recommended by the Examiners consists of 48 turbines and will result in permanent loss of 46.4 acres of forested land. The Examiners considered Cassadaga Wind's analysis of potential impacts to interior forest conditions and the Applicant's efforts to minimize and avoid forest fragmentation. The Examiners recommended that the Siting Board find that the Project has the potential to exacerbate existing forest fragmentation,[33] but that Cassadaga Wind has sufficiently minimized and avoided impacts to forests.[34] No party raised exceptions to the Examiners' findings and recommendations regarding forest impacts, and we adopt them.

Soil, Cut and Fill & Steep Slopes

The Examiners also considered and addressed DPS Staff's concerns about grading and earthwork required for some construction of certain turbines, including its assertion that the slopes for three turbines were steeper than any other wind farm in New York. Based upon their review of the record, including the Applicant's supplemental rebuttal reflecting that

[32] RD at 30, 34.

[33] RD at 32.

[34] RD at 34.

the slopes were consistent with other turbines in New York, the Examiners recommended that the Siting Board find that the slopes do not create any disproportionate or adverse environmental impact[35] and that the Applicant has sufficiently minimized and avoided impacts.[36] The Examiners therefore recommended that the certificate allow construction of turbines T22, T36, and T42.

On exception, DPS Staff argues that turbine locations T22, T36 and T42 should be eliminated because other, less environmentally disruptive locations exist within the Project area. DPS Staff is concerned that the proposed location of those three turbines on slopes that are steeper than the locations of the other turbines on the Project site will create unnecessary and extensive cuts and fills due to grading as well as increased forest clearing to erect and maintain these turbines [Tr. 392-3]. DPS Staff cites exhibits in the record [Hrg. Ex. 9, Sheets NE-109, SE-106 & NE-107] for the propositions that turbine T-42 is proposed to be located just 300 feet from preferable slopes of only a 3-5% grade, and instead is located on slopes 4 to 5 times steeper and 20-25 feet lower in elevation than the preferable flatter land nearby; that turbines T-22 and T-36, while sited on gentler slopes, will require removing soil to a depth of up to 12 feet along 600-plus feet of new access road; that such cut and fill will create slopes of 33% along the road shoulders for up to 60 feet from the road edge; and that the width of earthwork will span up to 140 feet along the access to these towers. DPS Staff brief on exceptions at 29.

In response, Cassadaga Wind asserts that DPS Staff's argument for removal of the three turbines is not supported in

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[35] RD at 32.

[36] RD at 34.

the record and provided Hearing Exhibit 139 (construction drawings for the Hardscrabble and Howard wind facilities) as evidence that the slopes and grading required for the proposed turbines T22, T36, and T42 were not unique to the Project [Tr. 2395-9]. Cassadaga Wind challenges the calculation of a 140-foot wide span of earthwork as incorrect and offers that its engineer's post-hearing brief calculation is that these specific areas would require a maximum 115-foot wide span of earthwork. Cassadaga Wind also asserts that the depth of cut along the 600-plus feet of access road is not the full depth of 12 feet along the entire road. See Applicant brief opposing exceptions at 17-18. Cassadaga Wind states that the 33% slopes along the road to which DPS Staff refers represent "standard engineering practice and generally refers to slopes that do not need additional sediment control measures to prevent erosion because such slopes are generally considered stable." Id. Cassadaga Wind also notes that DPS Staff did not demonstrate that other environmental impacts would not occur by moving the turbines to the "less environmentally disruptive locations" it vaguely described.

Neither of the contesting parties has done an adequate job of making its case. The Siting Board regulations at 16 NYCRR, Section 1001.21 require Exhibit 21 to contain, among other things:

> A study of the geology, seismology, and soils impacts of the facility consisting of the identification and mapping of existing conditions, an impact analysis, and proposed impact avoidance and mitigation measures, including:
>
> (a) a map delineating existing slopes (0-3%, 3-8%, 8-15%, 15-25%, 25-35%, 35% and over) on and within the drainage area potentially influenced by the facility site and interconnections;

(b) a proposed site plan showing existing and proposed contours at two-foot intervals, for the facility site and interconnections, at a scale sufficient to show all proposed buildings, structures, paved and vegetative areas, and construction areas;

(c) a description and preliminary calculation of the quantity of cut and fill necessary to construct the facility, including separate calculations for topsoil, sub-soil and rock, and including a plan to identify the presence of invasive species in spoil material and to prevent the introduction and/or spread of invasive species by the transport of fill material to or from the site of the facility or interconnections;

(d) a description and preliminary calculation of the amount of fill, gravel, asphalt, and surface treatment material to be brought in to the facility site and interconnections;

(e) a description and preliminary calculation of the proposed type and amount of cut material or spoil to be removed from the facility site and interconnections;

(f) a description of excavation techniques to be employed;

(g) a delineation of temporary cut or fill storage areas to be employed;

(h) a description of the characteristics and suitability for construction purposes of the material excavated for the facility and of the deposits found at foundation level, including factors such as soil corrosivity, bedrock competence, and subsurface hydrologic characteristics;

...

(o) a map delineating soil types on the facility and interconnections sites;

(p) a description of the characteristics and suitability for construction purposes of each soil

type identified above, including a description of the soil structure, texture, percentage of organic matter, and recharge/infiltration capacity of each soil type and a discussion of any de-watering that may be necessary during construction and whether the facility shall contain any facilities below grade that would require continuous de-watering;

(q) maps, figures, and analyses delineating depth to bedrock and underlying bedrock types, including vertical profiles showing soils, bedrock, water table, seasonal high groundwater, and typical foundation depths on the facility site, and any area to be disturbed for roadways to be constructed and all off-site interconnections required to serve the facility, including an evaluation for potential impacts due to facility construction and operation, including any on-site wastewater disposal system, based on information to be obtained from available published maps and scientific literature, review of technical studies conducted on and in the vicinity of the facility, and on-site field observations, test pits and/or borings as available;

It is universally accepted that soil is one of the basic natural resources upon which we depend for existence. Lack of consideration about soils when planning construction can lead to erosion, the clogging of streams, waterbodies and wetlands (silting), vegetation and habitat loss, drainage failures, slope failures (slides), structure failures, property damage and personal injury. Each soil type has its own inherent properties and use limitations including, among many factors, erodibility, drainage capacity, and shrink-swell potential. Soil use limitations can be considered slight where the proposed use is feasible with few or no corrective measures. Such limitations can be considered moderate where the proposed use is feasible with some corrective or preventative measures that can be readily applied to overcome site limitations. Soil use limitations can be considered severe where the proposed use

is feasible only with extensive corrective or preventative measures that may be difficult to apply and may not completely overcome the site limitations, or where the proposed use is completely infeasible. Slope has a significant effect on the inherent properties and use limitations of soil, and steep slopes have a profound effect across all soil types. Slopes that are too steep are highly erodible and require extensive cut and fill to fashion shaped platforms suitable for roads and structures. Slopes that are very steep and have disturbed soils can create situations that are very dangerous.

The Hardscrabble and Howard wind facilities were not reviewed under Article 10 and not before the Siting Board. Given our concerns, discussed hereafter, regarding the potential issues related to the steepness of the slopes involved in this Project in the record before us, we determine that due consideration of other potential sites for these particular wind turbines is necessary and required by Article 10. Some of the slopes depicted in Hearing Exhibit 9 are clearly very steep, and the extensive cross-slope access road depicted is hardly a model, in our view, for best practices. Slopes of 33% are extremely steep such that an average person would have difficulty climbing them. We also do not accept that slopes of 33% along road shoulders represent "standard engineering practice" or "generally refers to slopes that do not need additional sediment control measures to prevent erosion because such slopes are generally considered stable." As we view the record, questions remain as to the constitution and stability of the ground where the cut and fill is to be made, as to whether construction and modification of the slopes will hamper drainage, and whether tree removal might

be minimized by locating the turbines where level access road might be constructed. As a general matter, cut and fill should be minimized to the degree possible and creating deep or wide land scars to accommodate access roads to squeeze in a few more turbines is not a practice the Siting Board wants to promote.

A good case has also not been made for the remedy proposed by DPS Staff. Outright elimination of the turbines in question appears to be too draconian a remedy when it is likely that, with a more careful design, they could be relocated within the Project area without unusual environmental impacts. We shall not outright eliminate turbine locations T-22, T-36, and T-42, but instead we shall require the Applicant to present a new plan as a compliance filing, prepared in consultation with DPS and DEC, redesigning its proposed layout within the Project area in the vicinity of turbine locations T-22, T-36, and T-42 to better avoid construction on slopes and to minimize cut and fill and its attendant environmental impacts. In the new plan, the Applicant will consider, among other things, whether the choice of turbine type creates an opportunity to further reduce the number of turbines while achieving the overall design megawatts, which may create an opportunity that benefits the aims of the new plan. In the new plan, the Applicant will also provide an engineering analysis by and under the signature and seal of a Professional Engineer licensed and registered in New York State providing the study information required by the language of 16 NYCRR, Section 1001.21 quoted above as to the new plan, except that the information will be provided at a final design level rather than on a preliminary design basis and will be based on actual soil borings, soil tests

and similar activities. The engineer shall also certify whether slopes in the plan require stabilization measures, retaining walls, drainage facilities or other measures, as appropriate to the field conditions; whether the turbine locations are suitable for the construction, operation and maintenance of turbines; and whether the access road are suitable for access to construct and operate the turbines and related facilities. No site preparation or construction shall commence in the vicinity of turbine locations T-22, T-36, and T-42 until the compliance filing is approved.

Agricultural Land

The Examiners found there were adverse impacts to agricultural land, because one turbine, an access road and a portion of the overhead collection system, consisting of approximately six poles, were proposed to be sited within active agricultural fields on either side of Boutwell Hill Road in the Town of Cherry Creek (referred to collectively in the RD and here as the Boutwell Hill Road Property). The field to the south of Boutwell Hill Road is rotation cropland, while the field to the north appears to be composed of grass hay.[37] The agricultural land adjacent to Boutwell Hill Road has been designated by the State of New York as prime agricultural land of Statewide significance, indicating that the soil on this particular land produces high yields of crops.[38] This property is in the southeastern portion of the Project area, with the collection lines spanning the area between proposed turbines T31 and T12.[39]

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[37] Id. RD p.35.

[38] Tr. 1257. RD p.35.

[39] Tr. 1240, 1290. RD p.35.

The RD recommended the Siting Board condition the certificate on a requirement that the collection lines on the Boutwell Hill Road Property be buried in the agricultural fields. The Examiners based their recommendation on their finding that, absent such a requirement, the Project would result in a permanent conversion of some farmland to a non-agricultural use.[40] As proposed, the Project would have placed both poles and guy wires in active croplands. The record shows that approximately 10 square feet of clearing would be needed for a single stand-alone pole, while clearing of approximately 30 square feet would be needed for a single guyed pole.[41] In addition to requiring the conversion of land for clearing, placement of such poles would restrict the maneuverability of modern mechanized farming equipment.[42] Therefore, the Examiners found, placement of utility structures and other infrastructure in agricultural fields can result in a loss of productive acreage and a decrease in field operation efficiency, particularly due to the potential need for guy wires, both of which may be significant impacts disproportionate to the cost savings achieved by the Certificate Holder.[43] Such impacts may be exacerbated if numerous collection line poles are staggered across the field, creating obstacles that significantly decrease the tillable acreage and farming efficiency. These impacts could result in the land being taken out of agricultural production permanently.[44]

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[40] Tr. 1286. RD p.36.

[41] Tr. 1241-42. RD p.36.

[42] Tr. 1291, see Tr. 1286. RD p.36.

[43] Tr. 1287. RD p.37

[44] Tr. 1288. RD pp.37-38.

Consequently, the Examiners recommended that, only with the undergrounding of the collection lines in the Boutwell Hill Road Property, the Siting Board determine that impacts to agricultural land have been minimized or avoided to the maximum extent practicable.[45] They wrote that Cassadaga Wind did not credibly establish that subsurface placement of these particular collection lines is not practicable. Also, they noted that subsurface installation of the electrical collection system in agricultural fields exists for almost all New York wind projects, consistent with DAM guidelines, even in areas with steep slopes.[46] They found that the additional cost that would be imposed on the Applicant would not render the Project uneconomic, preventing it from being constructed. They concluded that the undergrounding was practicable and the costs were outweighed by the societal policy in favor of preservation of farmland.[47]

Although the Examiners noted that the affected landowner did not object to poles on the property, they relied on DAM Staff's position that the State of New York's policy should overrule a landowner's expressed preferences where those wishes conflict with the ability "to sustain the state's valuable farm economy and the land base associated with it."[48]

However, the Examiners noted that the record was not fully developed regarding an option, raised only late in the case at the hearings, that poles could be located closer to the road to minimize the above-surface impacts. They posed as an

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[45] RD p.42. Their recommended certificate condition to minimize this impact is in Appendix A, condition 135.

[46] Tr. 1287, ll. 15-20; 1288, ll. 3-5.

[47] See Hrg. Ex. 71. RD pp.40-41.

[48] RD p.41, citing A&ML §321. See also A&ML §322; NY State Constitution, Article XIV, §4.

alternative that the Siting Board could include in its certificate a condition that, if DAM, the agricultural monitor and DPS consented, the line be underground through the agricultural field but could be brought above ground to cross the road.[49]

As to other agricultural lands not containing prime soils, the Examiners recommended that the Siting Board find that Cassadaga Wind appropriately worked with participating landowners to shift Project components close to forest edges where possible to try to maintain existing farming operations.

On exceptions, Cassadaga Wind objects to the RD's requirement that it must place the lines underground in the prime soil parcels on either side of Boutwell Hill Road. CW's BOE at 31. Noting the Examiners' statement that they were striking a balance between 240 square feet of prime agricultural land versus increased costs to Cassadaga Wind, the Applicant argues that the correct number for the agricultural land impacted is only 180 square feet, which could be further reduced to 60 square feet through use of self-supporting poles without guy wires. CW's BOE at 32. Cassadaga Wind argues that such a small amount of land to be saved cannot justify the cost to bury the lines, which it says is five times the cost of an overhead line and, in this instance, a total of an additional $500,000. Id. DPS Staff supports burying the lines, DPS Brief on exceptions at 25; no other party takes exception. Opposing the Applicant's exceptions, Concerned Citizens notes that the local laws of Cherry Creek and Charlotte variously require undergrounding or prohibit the use of guy wires. Concerned Citizens Brief opposing exceptions, Page 20.

[49] RD p. 40.

Based on our review of the record and the exceptions briefs, we affirm the Examiners' recommendation that the lines be buried for the short distance necessary to avoid the placement of poles in the identified fields bordering Boutwell Hill Road, south of Turbine 31. On the record before us, we find that Cassadaga Wind's calculation of the amount of affected land understates the problem, as it takes into account only the specific loss of land taken up by either poles supported by guy wires or self-supporting poles. Similarly, the Examiners' attempt to calculate the amount of land affected seems to understate the problem. As the testimony of the Department of Agriculture and Markets' witness demonstrates, the larger issue is the placement of poles in an irregular pattern across the land, such that it disrupts the use of modern agricultural equipment and could render the entire property undesirable for continued farming. See RD at 36-38. As the Examiners noted, the witness expressed his concern that the impacts created by using poles and guy wires could result in land being taken out of agricultural production permanently. Given that concern in the record, we agree that the relevant impacts are those to the entire property so far as it consists of prime agricultural land. We also note that while the record includes the landowner's statement regarding overhead lines that he is "fine with that," he does not express a preference for overhead lines. Transcript pages 1243-44. Consequently, we do not view this is a case where the landowner is being disadvantaged by our decision to require undergrounding of the lines under his fields.

DPS Staff also takes exception to the RD's failure to address protection of agricultural fields through which the 115 kV generator lead line passes at the western edge of the Project area. DPS BOE at 26. These properties do not contain prime soils but are in active agricultural use. DPS Staff notes that,

in its testimony, it had identified some locations where alternative structures should be required to avoid guy wires and anchors on the generator lead line. It urges the Siting Board to condition Cassadaga Wind's certificate on the use of such alternative structures for that line. Cassadaga Wind opposes this additional requirement. It says it will work with landowners to confirm that the locations of poles and guy wires do not adversely impacted their existing land uses. Consequently, it argues, there is no reason to require alternative design structures. CW's Brief opposing exceptions at 16. Concerned Citizens supports the DPS Staff position, referring again to the various local laws of the Towns of Cherry Creek and Charlotte, which show preferences for undergrounding if practicable and discourage the use of guy wires.

We grant DPS Staff's exception. We agree with the Examiners and the Department of Agriculture and Markets that it is important to support, where possible, the preservation of agriculture in New York State. Cassadaga Wind has already indicated a willingness to alter the designs included in its application to meet the needs of affected landowners. Consequently, it does not appear to be a hardship to include requirements in our certificate that will ensure that the land is not unduly burdened by guy wires, where they can be avoided through use of alternative structures.

In reaching this decision, we note that the State's interest in preserving agricultural land can be accommodated without impairing the energy capacity of the Project. With appropriate certificate conditions requiring the placement of lines underground in the agricultural fields containing prime soils and the use of alternative structures to avoid the use of guy wires to support the115 kV generator lead line, we conclude

that the Project minimizes or avoids adverse impacts on agricultural land to the maximum extent practicable.

Agricultural and Environmental Monitoring

The Examiners recommended that, to protect the agricultural resources and ensure that the impacts have been minimized or avoided to the maximum extent practicable, the Siting Board impose condition 28,[50] which requires the Certificate Holder to employ an independent third-party agricultural monitor for post-construction and operational monitoring.

No party raised exceptions to the Examiners' recommendations with respect to agricultural and environmental monitoring. Accordingly, the Examiners' recommendations are adopted. Based upon the record of the proceeding, and proposed certificate condition 28, the employment of monitors for post-construction and operational monitoring will ensure that impacts on agricultural resources will be minimized or avoided to the maximum extent practicable.

Air

Environmental Conservation Law (ECL) Article 19 and Parts 200 et seq. of Title 6 of the New York Compilation of Codes, Rules and Regulations (6 NYCRR) establish the State's air quality standards. The Examiners found that the record with respect to the Project is devoid of any evidence that the project will have a significant negative impact on air quality.[51]

During the one-year construction phase, there will be minor adverse air impacts resulting from vehicle emissions, a temporary on-site concrete batch plant and fuel-fired generators

[50] RD, Appendix A, Condition 44.

[51] RD at 42-43.

(characterized by the Examiners as creating "minimal" impacts), and the generation of airborne dust and debris from earth moving and travel on unpaved roads. The Examiners also found that, during project operation, there will be "insignificant" impacts from service vehicle emissions.[52]

The Examiners recommended that the Siting Board determine that the Project's impacts to air quality have been minimized or avoided to the maximum extent practicable, and that the Project will operate in compliance with applicable state environmental law.[53]

In its brief on exceptions, Concerned Citizens argues, in its discussion of balancing benefits and burdens in the public interest analysis, that the Project will require the addition of 108 MW of non-renewable generation capacity to maintain reliability.[54] According to Concerned Citizens, the combined utilization of the wind farm and the necessary backup single-cycle natural gas power plants will cause more emissions than simply using combined cycle gas-fired power plants. Concerned Citizens brief on exceptions at 5-6.

In its brief opposing exceptions, Cassadaga Wind states that the NYISO position cited by Concerned Citizens relates to protecting the availability of conventional generation during the transition to renewables, not the construction of new conventional generation. Applicant brief opposing exceptions at 24-25. Cassadaga Wind also states that the mere availability of backup power sources – necessary to ensure system reliability – does not itself result in carbon

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52 RD at 43.

53 RD at 44.

54 No other parties raised exceptions to the Examiners' recommendations with respect the Project's impacts to air quality.

emissions. Id. at 25 n.28. Finally, Cassadaga Wind cites the NYISO's acknowledgment that any increased capacity requirement "will be largely met by the additional capacity contribution of the proposed renewable resources." Id. at 27 (citing NYISO Supplemental Comments to Case 15-E-0302 (July 8, 2016), at 10).

We are not persuaded by Concerned Citizens' argument. Concerned Citizens cites no evidence in the record of this proceeding to support its claim that the Project will necessitate the construction of 108 MW of new non-renewable capacity. Moreover, as the Applicant notes, maintaining system reliability does not itself create emissions.

We adopt the Examiners' recommendations, and find that the Project's impacts to air quality have been minimized or avoided to the maximum extent practicable, and that the Project is designed to operate in compliance with the State's air quality standards as set forth in ECL Article 19 and 6 NYCRR Parts 200 et seq.

Ground and Surface Water

Groundwater and Wells

ECL Article 17, and 6 NYCRR Parts 700 et seq. establish the State's water quality standards. Based upon the record, the Examiners found that the Project is not expected to result in significant impacts to groundwater quality or quantity or to any drinking water supplies.[55] There may be short-term, localized minor adverse impacts to groundwater resulting from construction, operation and maintenance activities. [56]

No public wells are located within 100 feet of any Project facilities. Concerns were raised, however, regarding

[55] RD at 44.

[56] RD at 44-45.

potential impacts to the potability of water in three private water wells located within 100 feet of certain Project facilities.[57] As the Examiners noted, Cassadaga Wind has proposed to meet with the owners of the private wells prior to construction, and to test water samples collected from confirmed drinking water wells both prior to and after construction. Cassadaga Wind has committed to install a new drinking water supply well if construction activities damage an existing drinking water supply well.[58] The Examiners incorporated Cassadaga Wind's commitments into recommended certificate condition 57.[59]

The Examiners recommended that, with the conditions set forth in Appendix A to the RD, the Siting Board determine that the impacts to groundwater and wells have been minimized or avoided to the maximum extent practicable, and that the Project will operate in compliance with applicable state environmental law.

No party raised any exceptions to the Examiners' conclusions and recommendations regarding the Project's potential impacts to groundwater quality or quantity or to any drinking water supplies. Accordingly, the Examiners' conclusions and recommendations are adopted. Based upon the record of the proceeding and proposed certificate conditions in Appendix A to the RD, we conclude that with respect to ground and surface water, the Project is designed to operate in compliance with the State's water quality standards established by ECL Article 17, and 6 NYCRR Parts 700 et seq., and that the adverse environmental effects of the construction and operation

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[57] RD at 44.

[58] RD at 46.

[59] RD Appendix A, at 19.

of the Project on ground and surface water will be minimized or avoided to the maximum extent practicable.

Freshwater Wetlands and Streams

Specific State environmental laws governing the disturbance of State freshwater wetlands and their adjacent areas are codified in ECL Article 24 and DEC's regulations at 6 NYCRR Parts 663 and 664. State laws governing the disturbance of protected streams are codified in ECL Article 15 and DEC's regulations at 6 NYCRR Part 608. In general, State protected wetlands and their adjacent areas, and protected streams may not be disturbed without approval from the State. See ECL §24-0701; ECL §15-0501; ECL §15-0505.

Investigations by Cassadaga Wind's consultant and DEC Staff resulted in the delineation of wetlands and streams located within a 200-foot-wide corridor centered around the proposed location of Project facilities. DEC Staff determined that the Project area contains eight State-regulated wetlands: five mapped and three unmapped wetlands. Construction of the Project will impact 8.09 acres of wetlands, 2.46 acres will be temporarily impacted and 5.63 acres will be permanently impacted. Permanent impacts to freshwater wetland adjacent areas, those areas within 100 feet of DEC-regulated wetlands, will affect 11.47 acres.

The Examiners concluded that during construction, potential direct or indirect impacts to wetlands and surface waters may occur as a result of: the installation of access roads and wind turbine foundations; the installation of overhead or buried electrical interconnects; the development and use of temporary workspaces around the turbine sites; the installation of the overhead 115 kV generator lead line; and, the use of

temporary workspaces around substations.[60] Direct impacts include: an increase in water temperature and conversion of cover type due to clearing of vegetation; siltation and sedimentation due to earthwork, such as excavating and grading activities; disturbance of stream banks or substrates resulting from buried cable installation; and, the direct placement of fill in wetlands and surface waters to accommodate road crossings. The Project's indirect wetland and water impacts include sedimentation and erosion caused by construction activities such as the removal of vegetation and disturbance of the soil.

Negotiations between Cassadaga Wind and DEC Staff resulted in the development of certificate conditions Staff asserted will assure the Project's compliance with all applicable State statutory and regulatory requirements.[61] Based upon certificate conditions 56 and 82 through 124 proposed in the RD, the Examiners recommended that the Siting Board determine that Cassadaga Wind has minimized or avoided the adverse environmental impacts related to wetlands and streams to the maximum extent practicable.[62] The Examiners also concluded that the Project will meet all applicable State statutory and regulatory standards.[63]

No party raised any exceptions to the Examiners' conclusions regarding the Project's impacts to freshwater wetlands and protected streams. Accordingly, based upon the record of this proceeding and proposed certification conditions 36, 74-76, and 89-126, we conclude that the Project is designed

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[60] RD at 48.

[61] RD at 49-50.

[62] RD at 52.

[63] RD at 134.

to operate in compliance with applicable State environmental laws and regulations governing freshwater wetlands and protected streams, and that the adverse environmental effects of the construction and operation of the Project on freshwater wetlands and protected streams will be minimized or avoided to the maximum extent practicable (PSL §168[3][c], [e]).

Wildlife

Wildlife Other Than Bats

The Examiners considered the Project's potential adverse impacts to wildlife and habitat with respect to bats, birds and other wildlife. With respect to wildlife other than bats, the Examiners considered and discussed the potential risk of impacts associated with construction and operational activities relating to the Project.

The Examiners considered potential impacts of construction activities including incidental injury and mortality due to building activities and vehicular movement, silt and sedimentation impacts on aquatic organisms, habitat disturbance or loss associated with clearing and earth-moving activities and displacement of wildlife due to increased noise and human activities. The Examiners found that none of the construction impacts will be significant enough to affect local populations of any resident or migratory wildlife species.[64]

With respect to operational activities, the Examiners considered potential avian mortality resulting from collision with operating turbines, habitat loss and degradation, and disturbance or displacement due to presence of wind turbines.[65] The Examiners found that, although project operation is expected

[64] RD at 56.

[65] RD at 57.

to result in approximately 245 bird fatalities per year, some of which could be State-listed threatened species bald and golden eagles or other species of concern, there is no evidence that existing wind energy facilities have caused any population-level impacts to bird species.[66] Moreover, cumulative impacts of future wind energy facilities in New York State, including bird collisions with operating turbines and reduction of habitat, are not expected to result in any population-level declines to avian species. The Examiners noted the parties' stipulations designed to minimize impacts to birds, and the Project's inclusion of an ongoing risk assessment of eagles during Project operation.[67] The Examiners' recommended conditions adopt DEC staff's language, and specifically address eagles and threatened species.

With respect to loss of habitat, the Examiners recommended that the Siting Board find that the small area of lost or converted natural communities is not significant.

The Examiners recommended that, with the conditions set forth in Appendix A to the RD, the Siting Board determine that the impacts to wildlife other than bats have been minimized or avoided to the maximum extent practicable.[68]

No party raised any exceptions to the Examiners' conclusions and recommendations regarding the Project's potential impacts to wildlife other than bats. Accordingly, the Examiners' recommendations are adopted. Based upon the record of the proceeding, and conditions 84-86, we conclude that the adverse environmental effects of the Project's construction and

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[66] RD at 57.

[67] RD at 58-59.

[68] RD at 59.

operation on wildlife other than bats will be minimized or avoided to the maximum extent practicable.

Bats

Cassadaga Wind conducted multiple seasonal surveys to detect bat activity in the Project area. The surveys revealed the presence of several bat species including the big brown/silver-haired bat, eastern red bat, tri-colored bat, hoary bat, and at least one species within the genus myotis.[69] Although its presence could not be confirmed, for determining potential Project impacts, Cassadaga Wind assumed the presence of northern long-eared bat (NLEB), a species in the genus myotis, in the area during fall migration periods.[70]

The NLEB is listed as a threatened species under both federal and State law.[71] In addition, DEC Staff noted that all New York resident bat species, except for the big brown bat, have been designated as species of concern.[72]

Based upon the record, the Examiners concluded that the Project can be expected to, at a minimum, kill 516 bats annually and 15,480 bats over the 30-year operational life of the Project. In addition, siting of Project facilities could

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[69] Although Cassadaga Wind was not able to further identify the bats in the genus myotis beyond the genus level, it reports that the genus includes four species: Indiana bat (myotis sodalis); eastern small-footed bat (myotis leibii); little brown bat (myotis lucifugus); and northern long-eared bat (myotis septentrionalis).

[70] RD at 60-61.

[71] See 6 NYCRR §182.2(y)(2), §182.5(b). The NLEB is a federally-listed threatened species by the USFWS under 50 CFR §17.11(h) and §17.40(o).

[72] See 6 NYCRR §182.2(u), §182.5(c).

permanently eliminate up to 77.3 acres of habitat and roosting areas from the Project area, including that used by bats.[73]

With respect to NLEB, based on the widespread nature of the distribution of NLEB in New York during both winter and summer, and the demonstrated susceptibility of the species to be "taken" at wind turbine facilities, the Examiners agreed with DEC Staff's opinion that all on-shore wind turbine facilities in New York pose a threat to NLEB because operation of turbines is likely to result in a taking of NLEB.[74] Accordingly, the Examiners concluded that ECL Article 11 and the corresponding permitting provisions of 6 NYCRR Part 182 apply to the Project.[75]

ECL §11-0535 prohibits, among other things, the "taking" of any threatened or endangered species except under license or permit from the State.[76] Under 6 NYCRR §182.11, an incidental take permit is required "for any activity that is likely to result in the take or a taking of" any endangered or threatened species. DEC Staff explained that pursuant to its interpretation of the take permit program, §182.11 requires an applicant to first avoid any take at all of the NLEB if possible and not overly burdensome. Only when an applicant cannot completely avoid a taking does 6 NYCRR §182.11(c) require that the applicant prepare a plan with mitigation measures that will result in a net conservation benefit to the species.

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[73] RD at 64-65.

[74] RD at 64.

[75] RD at 64.

[76] "Taking" 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).

The Examiners agreed with DEC Staff's interpretation of the take permit.[77] They also agreed that Cassadaga Wind did not demonstrate that full avoidance – that is one or fewer kills of a listed species every ten years – is practicable for the Project. Accordingly, the Examiners evaluated the parties' various proposals to curtail wind turbine operations to significantly reduce or avoid bat fatalities.[78]

Based upon their review of the record, the Examiners concluded that DEC Staff's proposed curtailment will reduce the risk of a NLEB take to a negligible amount and will reduce fatalities to other bat species by more than 80 percent.[79] Under DEC Staff's proposal, Cassadaga Wind would be required to keep the turbine blades motionless until the wind reaches a certain speed. To fully avoid direct impacts to NLEB, DEC Staff recommended that operations be curtailed from 30 minutes before sunset to 30 minutes after sunrise, every day during the period from July 1 through October 1 when the ambient air temperature is 50 degrees Fahrenheit or greater and when the wind speed is less than 6.9 meters per second (m/s).

Accordingly, the Examiners recommended that the Siting Board condition any Article 10 certificate issued in this case on a curtailment program that requires a wind cut-in speed at hub height of 6.9 m/s, consistent with DEC Staff's position that such requirement is necessary to achieve full avoidance of direct impacts to the NLEB.[80] In making this recommendation, the Examiners acknowledged Cassadaga Wind's concern over potential power losses and its opinion that such losses do not

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77 RD at 65-66.

78 RD at 66.

79 RD at 66-67.

80 RD at 73.

economically balance against what it considers to be a marginally more effective protection against NLEB take. The Examiners agreed with DEC Staff, DPS Staff, and Concerned Citizens, however, that where a threatened or endangered species is involved, such economic concerns are outweighed in a proper balancing test. The Examiners also noted that the record contained no evidence that DEC Staff's curtailment proposal would render the Project uneconomic.[81]

With respect to non-curtailment minimization measures, the Examiner noted that the parties have committed to working on collaborative consensus for those measures. Cassadaga Wind's proposed minimization includes some combination of protecting known hibernation habitat and roosts, and mitigation through the provision of funding for white nose syndrome (WNS) treatments. Cassadaga Wind agreed to the imposition of a certificate condition that requires it to consult with DEC and DPS on measures to be included in its Net Conservation Benefit Plan that must be submitted at least 60 days prior to the Project operation. As to the other certificate conditions related to the minimization and avoidance of impacts on wildlife and habitat, the Examiners did not find any significant dispute and, therefore, recommended that they be adopted. The Examiners' recommended certificate condition for curtailment was included in Appendix A to the RD as condition 78. With these conditions, including required curtailment, the Examiners recommended that the Siting Board determine that the impacts to bats have been minimized or avoided to the maximum extent practicable and that the Project will operate in compliance with applicable State environmental law.[82]

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[81] RD at 73.

[82] RD at 73-74.

In its brief on exceptions, Cassadaga Wind takes exception to the Examiners' conclusions regarding bat impact minimization and mitigation, particularly with respect to impacts to the NLEB, and the recommendation that Cassadaga Wind curtail turbine operation to DEC's recommended avoidance level of 6.9 m/s. As an initial matter, Cassadaga Wind challenges the interpretation of the incidental take permit regulations by DEC staff and the Examiners. Cassadaga Wind argues that nothing in ECL article 11 or 6 NYCRR §182.11 requires an applicant to demonstrate that complete avoidance of the taking of a threatened or endangered species is not possible before an applicant can be granted an incidental take permit.[83] Cassadaga Wind further argues that if it is required to curtail operations below wind speeds of 6.9 m/s in order to entirely avoid a taking of NLEB, no basis exists for requiring the implementation of additional non-curtailment minimization or mitigation measures.[84]

On the merits, Cassadaga Wind first challenges the Examiners' conclusion that its pre-application studies demonstrated "fairly extensive bat activity." To the contrary, Cassadaga Wind asserts that its reports demonstrated that overall bat activity was low throughout most of the survey period, and that the reports showed nothing remarkable about the Project's location in terms of its proximity to known bat hibernaculum or other potential risk factors for impacts to bats.[85]

Second, Cassadaga Wind contends that the record in this proceeding supports the determination that its proposed curtailment level of 5.0 m/s together with its proposed

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[83] Cassadaga Wind LLC Brief on Exceptions at 18.

[84] Id. at 6, 19-20.

[85] Id. at 9.

mitigation measures adequately minimize or avoid impacts to bats to the maximum extent practicable. Cassadaga Wind argues that curtailment above 5.0 m/s will have a significant impact on energy production, landowner payments, and the Project's economics and, therefore, is not practicable. Cassadaga Wind asserts that its proposed curtailment results in an estimated 4,673 MW-hours of lost energy production annually, whereas DEC staff's 6.9 m/s level results in an estimated 19,209 MW-hours of lost energy production. Thus, the difference between Cassadaga Wind's 5.0 m/s and DEC staff's 6.9 m/s equals "a loss of an estimated 14,536 MW-hours of renewable energy production, and considerable lost emissions reductions, undermining State renewable energy goals and revenue, which substantially effects the economics" of the Project.[86]

Moreover, Cassadaga Wind contends that it is undisputed that its curtailment level of 5.0 m/s is estimated to reduce all bat impacts by 60 percent and NLEB impacts by a "conservative estimate" of 80 percent.[87] In addition, Cassadaga Wind argues that DEC staff recognizes that its proposed mitigation measures for NLEB will have positive impacts to NLEB.[88] Accordingly, Cassadaga Wind asserts that the Siting Board can conclude that its proposed curtailment and mitigation meets the standard for permit issuance under ECL article 11, and

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[86] Id. at 5; see also id. at 19. Having examined the parties' dispute in the context of the RD's discussion, Article 10 applicants are reminded that the burden of proof on the degree of economic impact any condition will have on a proposal lies with the applicant and that the record is best served with a robust and specific examination of projected energy and economic losses.

[87] Id. at 5, 15-16.

[88] Id. at 5-6.

adequately minimizes impacts to all bats to the maximum extent practicable as required by PSL §168.

With respect to the 6.9 m/s curtailment level, Cassadaga Wind argues that the conclusion that this level "avoids" impacts to NLEB is speculative and not based on any statutory or regulatory standard. Moreover, Cassadaga Wind asserts that the 6.9 m/s level is inconsistent with the Public Service Commission's Final Supplement Environmental Impact Statement (FSEIS) and SEQRA Findings Statement underlying the State Clean Energy Standard (CES).[89] Finally, based on its interpretation of section 182.11, Cassadaga Wind argues that if it is required to "avoid" NLEB taking through imposition of the 6.9 m/s curtailment level, no basis exists for requiring Cassadaga Wind to implement any additional mitigation measures. Cassadaga Wind contends that the loss of the proposed mitigation measures will therefore result in the loss of net conservation benefits to the NLEB. Accordingly, Cassadaga Wind urges the Siting Board to adopt Cassadaga Wind's proposed certificate condition imposing a curtailment regime of 5.0 m/s.[90]

Finally, Cassadaga Wind notes that the Examiners accepted DEC Staff's proposed curtailment period as running from July 1 through October 1. Therefore, Cassadaga Wind argues that Condition 78, which specified a curtailment period running from June 1, should be corrected.[91]

In its brief opposing exceptions, DEC Staff opposes some of Cassadaga Wind's exceptions to the RD's recommendations regarding NLEB. DEC Staff confirms that Staff's proposed 6.9 m/s curtailment regime constitutes full avoidance of any NLEB

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89 Id. at 10-13.

90 Id. at 6-7, 19-20.

91 Id. at 20.

take and that imposition of the 6.9 m/s curtailment regime would obviate the need for any minimization or mitigation measures implemented through a net conservation benefit plan. Accordingly, DEC Staff asserts that if the Siting Board adopts the Examiners' recommendations on the subject, including a minimum curtailment of 6.9 m/s during the recommended times of day and year, recommended Certificate Condition 52 could be revised to remove any reference to a Net Conservation Benefit Plan.

If, however, the Siting Board adopts a lower curtailment regime, the regime would not constitute full avoidance of any NLEB take. DEC Staff asserts that, accordingly, a Net Conservation Benefit Plan, developed by Cassadaga Wind in consultation with and accepted by DEC Staff and DPS Staff using DEC's methodology for calculating the effectiveness of the mitigation measures, would be required as currently set forth in the RD's recommended Certificate Condition 52.

With respect to Cassadaga Wind's claims regarding the impacts DEC Staff's 6.9 m/s curtailment regime would have on the Project's energy production and economics when compared to Cassadaga Wind's 5.0 m/s curtailment regime, however, Staff argues that the Applicant offered no evidence, testimony, or expert witnesses to support its claims, and the Applicant's methodology for estimating the impacts was not subject to cross-examination. DEC Staff contends that Cassadaga Wind has the burden of substantiating claims of impracticability with tangible record evidence upon which DEC can rely when considering cut-in speeds below 6.9 m/s. As noted by the Examiners, DEC Staff asserts that Cassadaga Wind did not carry its burden based on the record in this case.

Nevertheless, DEC Staff indicates that it is amenable to considering curtailment regimes below complete avoidance together with appropriate mitigation. However, Staff is unable to evaluate Cassadaga Wind's current proposal based on the current record. DEC Staff states that if the Siting Board ultimately adopts a curtailment regime below Staff's recommended full avoidance, it is amenable to discussing Cassadaga Wind's proposal in more detail to determine if it is feasible. In the alternative, DEC Staff suggests that Cassadaga Wind could use the procedures at 16 NYCRR §1000.16 to seek a revision to its Certificate, and that Cassadaga Wind's proposal could be evaluated at that time.

DEC Staff also objects to Cassadaga Wind's claim that DEC Staff's determination that the 6.9 m/s curtailment regime constitutes full avoidance is arbitrary and unsupported by the record. DEC Staff contends that its methodology for reaching that determination is laid out in and fully supported by the record, and that Cassadaga Wind offers no new arguments supporting reliance on Cassadaga Wind's take calculation over DEC's.

In its brief opposing exceptions, DPS Staff takes issue with Cassadaga Wind's argument that the RD is inconsistent with the CES FSEIS. DPS Staff argues that Cassadaga Wind inappropriately relies on the CES FSEIS's conclusion that minimization measures are adequate to address the potential impacts to bats to support its assertion that the RD's proposed 6.9 m/s curtailment regime is inconsistent with the CES FSEIS. DPS Staff asserts that Cassadaga Wind mischaracterizes the legal context and content of the FSEIS and the Commissioner's Finding Statement. DPS Staff points out that the FSEIS was developed to support the Commission's approval of the CES program, and does not replace the project-specific analysis of impacts and

avoidance and mitigation measures required by Article 10. Moreover, DPS Staff asserts that Cassadaga Wind mischaracterizes the content of the CES in several aspects. DPS Staff also points out that on the issue of curtailment, information in this record concerning the magnitude and severity of impacts to migratory tree bats was published after the FSEIS was released. Accordingly, basing conclusions solely on the FSEIS would fail to take this current information into account.

DPS Staff also notes that Cassadaga Wind's claims regarding the impacts of the recommended 6.9 m/s curtailment regime on energy production and the Project's economics lacks an evidentiary basis in this record, and is not analyzed in the appropriate context. When placed in the context of total energy consumption in New York State, DPS Staff asserts that the decrease in energy production from the proposed curtailment regime is minimal when compared to the impacts to bat populations.

With respect to Cassadaga Wind's proposed curtailment regime, DPS Staff criticizes the Applicant's proposal for failing to address impacts to non-endangered or threatened bats species and for mischaracterizing the requirements for minimizing impact to bats species other than the NLEB. DPS Staff further criticizes Cassadaga Wind for mischaracterizing studies it claims support its curtailment regime and ignoring other more recent and relevant studies that do not.

Finally, DPS Staff notes that its recommended 6.0 m/s curtailment regime included the adoption of a plan to evaluate bat populations, minimization efforts, and potential modifications to operations. Accordingly, DPS Staff also asserts that if the Siting Board does not accept the proposed 6.9 m/s curtailment regime, mitigation measures such as those

proposed by DPS Staff in Condition 54,[92] or other measures not identified in the record, could be considered if they prove to be more protective than the 6.9 m/s regime.

In its brief opposing exceptions, Concerned Citizens also takes issue with Cassadaga Wind's objections to the proposed curtailment regime. Concerned Citizen argues that Cassadaga Wind neglects the important ecological benefits provided by bats and is unable to justify a lesser curtailment regime under the Athens[93] public interest balancing test. Concerned Citizens also notes that Cassadaga Wind provided no basis for the emissions consequences it asserts will result from the recommended curtailment. Concerned Citizens further argues that the carcass counts upon which Cassadaga Wind relies substantially underestimate bat fatalities, that Cassadaga Wind unduly diminishes the important adverse environmental impacts of killing bats, and that Cassadaga Wind's assertion that no population level impacts on bats would occur should be rejected. Concerned Citizens argue that contrary to Cassadaga Wind's assertions, its bat expert testified that current levels of bat mortality attributed to wind energy in conjunction with known declines and added stressors on populations, such as WNS, are unsustainable. Concerned Citizens argues that these conclusions are consistent with DEC's view that only the recommended curtailment regime can achieve a net conservation benefit.

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[92] Proposed Condition 54 addressed the management of Japanese knotweed and common reed, and areas with high concentrations of invasive species. Apparently, DPS Staff intended to reference proposed Condition 52.

[93] Case 97-F-1563, Athens Generating Company LP – Application to Construct and Operate a 1,080-Megawatt Natural Gas-Fired Combined Cycle Combustion Turbine Generating Facility in the Town of Athens, Greene County, Order Granting Certificate of Environmental Compatibility and Public Need (issued June 15, 2000).

We agree that where, as here, the construction or operation of a project is likely to result in the taking of a threatened or endangered species, an incidental take permit is required from the State (see 6 NYCRR §182.11). The parties do not dispute that absent minimization measures, the Project is likely to take the threatened NLEB. Accordingly, an incidental take permit in the form of Certificate conditions is required for Cassadaga Wind's project before we can conclude that the Project will operate in compliance with applicable State environmental laws (see PSL §168[3][e]).

When an incidental take permit is required, as explained by DEC Staff, the State's policy preference is to require minimization measures that will result in the avoidance of all significant impacts to the listed resource.[94] Where full avoidance measures are implemented, no further minimization or mitigation will be required.

If, however, an applicant demonstrates that full avoidance is impracticable, minimization and mitigation measures that will result in a net conservation benefit to the threatened or endangered species must be implemented through a Net Conservation Benefit Plan approved by the State (see 6 NYCRR §182.11[a], [d]). To provide a net conservation benefit, the mitigation measures implemented through the Plan must either reduce the impact of an existing threat to the listed species, or proactively increase productivity or abundance of the species or its habitat.[95] An applicant bears the burden of establishing that full avoidance is impracticable, and demonstrating the effectiveness of any minimization and mitigation measures proposed to reach a net conservation benefit for the species.

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[94] Transcript at 591.

[95] Id. at 596.

Here, the record supports the finding that DEC Staff's proposed 6.9 m/s curtailment regime constitutes full avoidance of impacts to the NLEB. The weight of record evidence supports the conclusion that the 6.9 m/s curtailment regime will result in the taking of one or fewer NLEB every ten years which, according to DEC Staff, constitutes full avoidance. Accordingly, the 6.9 m/s curtailment regime may be authorized without the imposition of any further mitigation measures for NLEBs.

In contrast, Cassadaga Wind has not established that its proposed 5.0 m/s curtailment regime will result in full avoidance of impacts to NLRBs. According to Cassadaga Wind's estimates, the take of NLEB under a 5.0 m/s curtailment regime would be greater than under the 6.9 m/s curtailment regime. Therefore, the 5.0 m/s regime without further mitigation does not constitute full avoidance, and may only be considered reasonable with the addition of specific mitigation measures designed to result in a net conservation benefit.

To the extent Cassadaga Wind proposes the 5.0 m/s curtailment regime as part of a net conservation benefit plan, Cassadaga Wind has not carried its burden of establishing an approvable plan on this record. Cassadaga Wind has established the estimated loss in energy production associated with both the 6.9 m/s and 5.0 m/s curtailment regimes. From those estimates, the associated lost carbon emission reductions may be inferred. It may also be inferred that the reduction in energy production would reduce the societal benefits of the Project. However, Cassadaga Wind did not quantify the 6.9 m/s curtailment regime's effects on project economics, including the associated loss of landowner payments and, therefore, did not establish on this record that the 6.9 m/s curtailment is impracticable from a project economics standpoint.

Cassadaga Wind did not quantify the effectiveness of the mitigation measures it proposes because the plan it submitted for the record lacked specificity. For example, the plan did not identify specific areas to be conserved, or specific sites of hibernacula proposed for gating. Without more specificity, the net benefits to the species from the plan could not be determined. Accordingly, the Siting Board cannot make the finding on this record that Cassadaga Wind's proposed mitigation plan can result in a net conservation benefit to the threatened species.[96]

Notwithstanding the above, both DEC and DPS Staff have indicated a willingness to evaluate and potentially approve a Net Conservation Benefit Plan using the 5.0 m/s curtailment regime together with other mitigation measures to offset the potential taking of NLEB associated with the Project. Moreover, record evidence supports the conclusion that effective mitigation measures can be designed and implemented that will result in a substantial net benefit to the species.[97] For example, for gating known hibernacula subject to a high level of threat due to human disturbance, DEC Staff testified that it would accept a calculated conservation benefit equal to 50 percent of the estimated number of resident NLEB.[98]

Accordingly, the previously proposed Certificate Conditions have been modified to allow Cassadaga Wind to operate in accordance with a 5.0 m/s curtailment regime, provided,

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[96] Given the importance of a full record examination on the issues of the economic impact of any required curtailment and the expected benefit from clearly defined mitigation proposals, such information should be included in future applications with as much specificity as possible, particularly where a threatened or endangered species is a concern.

[97] See e.g. Tr. 595-600.

[98] See Tr. 597.

however, that Cassadaga Wind submits a final Net Conservation Benefit Plan developed in conjunction with and approved by DEC and DPS Staff that incorporates that regime.[99] Accordingly, based upon Certificate Condition 33 attached hereto, we conclude that the Project will be operated in compliance with applicable State environmental law (see PSL §168[3][e]).

With respect to bat species that are not listed as threatened or endangered, we are required to find that impacts to those species will be minimized or avoided to the maximum extent practicable (see PSL §168[2][a], [3][c]). A final Net Conservation Benefit Plan designed for NLEB will also benefit non-NLEB bat species. Based upon this, together with the proposed construction phase Certificate conditions designed to avoid impacts to all species of bats, we find that impacts to all bat species will be minimized or avoided to the maximum extent practicable.

Public Health and Safety

PSL §168(2)(b) requires examination of probable adverse impacts to public health and safety. The Examiners found that the kinds of health risks associated with the combustion of carbon-based fuels are not associated with wind-generated power.

Collapse, Blade Throw and Operational Risks

With respect to other sorts of potential impacts, the Examiners found that there are no known instances of a member of the general public being injured at an operating wind farm in the United States from operational malfunctions or ice throw.

[99] We note that the applicable curtail period is July 1 through October 1, not June 1 through October 1 as indicated in the RD.

International engineering standards and industry standard setback requirements have been demonstrated to protect the public from harm. The Applicant also proposed an emergency response plan to address any reasonably anticipated scenario. The Examiners proposed certificate conditions to assure construction and operation of the Facility in a safe manner, relying on Hearing Exhibits 12, 99, and 100 and Application Exhibits 15, 19, and 24 and Appendices U and Z in support of their findings. No party excepts to the RD findings.

Shadow Flicker

Shadow flicker results from shadows cast when the sun's light is intermittently blocked by a spinning turbine. The examiners found that residents in other communities hosting wind turbines have described shadow flicker as annoying and a nuisance, and that the record shows that normal operation of the Project will produce shadow flicker. For that reason, the Examiners found that the effect of shadow flicker should be minimized or avoided to the maximum extent practicable.

The Examiners considered the local laws of the Towns of Charlotte and Cherry Creek which require that measures be taken to eliminate or mitigate flicker concerns, noting that the local laws did not prescribe any applicable limits. The Examiners noted that 30 hours per year of shadow flicker exposure has been applied at existing wind projects in New York, and found that 28 receptor premises are predicted to experience more than 30 shadow flicker hours per year from the Project.

The Examiners recommended that a Shadow Flicker Impacts Analysis, Control, Minimization and Mitigation Plan should be required. This Plan should include: a 30-hour-per-year limit on shadow flicker at any non-participating residences; an updated prediction of flicker impacts based on

the final project plan; a monitoring protocol including details of shadow detection and prevention technology; temporary turbine shutdowns during conditions that produce flicker; and shielding and blocking measures to respond to complaints from receptor locations that are not subject to the 30-hour limitation.

No party took exception to the RD's proposed findings and determinations on this issue, and we adopt them.

Electric and Magnetic Fields

The Applicant's Electric and Magnetic Field study is contained in Appendix GGG of Hearing Exhibit 99 and in Hearing Exhibit 15. The calculated field strengths are below any federal or State standard or guideline both at maximum value and at the edge of the 100-foot right-of-way. The Examiners concluded that EMF fields created by the Project will not create impacts. No party took exception to the RD's proposed findings and determinations on this issue, and we adopt them.

Noise and Vibration

The RD provides an overview, based on materials from the record in this case, of the basic noise concepts presented in this case.[100] To summarize, a sound pressure level measures the force with which a sound wave is perceived by the human ear and may roughly be analogized to the concept of volume. Sound pressure levels are measured as decibels (dB). Sound pressure level is expressed in sound measurements as "L." The L is followed by some indicator expressing the type or degree of the reported sound pressure level.[101]

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[100] In addition to the RD's explanations, Cassadaga Wind provided a detailed primer on sound and noise in its Hearing Exhibit 99, Appendix Z at 143.

[101] Hrg. Ex. 99, App. Z at 143.

Sound is a fluctuation of air pressure over time and distance, and the number of cycles over one second is the sound's frequency. The frequency of a sound is expressed in hertz (Hz).[102] Most sounds are emitted across a spectrum of hertz, some of which are audible, and some which cannot be heard by the human ear. Where only the audible sound spectrum frequency values are reported, the decibel designation used is dBA.

In addition to audible noise, wind turbines propagate noise at very low, inaudible frequencies that may be perceived as physiological sensations such as pulsing or vibration.[103] This type of sound, generally acoustic energy below 20 Hz, is referred to as infrasound, which can occur at significant distance from the sound source.[104] Where sound is measured with no, or zero, weighting applied across the entire frequency spectrum of 10Hz to 20kHz ±1.5dB, the decibel designation used is dBZ. Thus, dBZ measures report the actual sound power levels not just for audible frequency ranges, but also even for the levels at frequencies below and above human hearing.

Sound guidelines and requirements can be specific to a certain duration. For example, we might require that the Applicant avoid any extremely loud sounds from occurring, even if that sound only occurs for a few seconds or less, or we might be concerned with how loud, on average, a sound is over a longer defined period, such as overnight. Here, the Towns of Charlotte, Cherry Creek, and Arkwright all have local laws that limit the sound pressure levels from the Facility to 50 dBA L_{10}, meaning that noise is not in compliance where, during any hour

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[102] Hrg. Ex. 99, App. Z at 145, see Tr. 1609-12.

[103] Hrg. Ex. 99, App. Z at 145; Tr. 1609-10.

[104] Hrg. Ex. 99, App. Z at 145; see Tr. 1611.

of the day, the noise exceeds an audible range measurement greater than 50 decibels for more than 10 percent, six minutes, of that hour.[105]

The recommendations in the RD established limits on overall noise, measured as a sound pressure equivalent (L_{eq}), of 45 dBA L_{eq} (8-hour)[106] outside any non-participating residence, and 55 dBA L_{eq} (8-hour) outside any participating residence. The RD's certificate conditions apply this limit only to the nighttime period with no apparent corresponding limit imposed during daytime hours.[107] Also, the RD recommended that we impose a limit on noise generated by the collector substation equipment of 40 dBA L_{eq} (1-hour) at the outside of any residence.[108] The RD restricted the Project's facilities from producing any prominent tones, as defined by ANSI S12.9 Part 4-2005 Annex C, and recommended that should such prominent tones be detected, a penalty of 5 dBA be added to the post-compliance measurements to determine whether the Project is in compliance with the

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[105] RD at 88. This measure is called a percentile sound level and describes the statistical distribution of sound levels over time. "L_N" is the level above which the sound spends "N" percent of the time. L_{90} represents the value for which measured sound is exceeded 90 percent of the time and as, therefore, sometimes referred to as the "residual base level." L_{50} is considered the median sound level such that the measured sound will be equally higher and lower than the sound level value. Hrg. Ex. 99, App. Z at 147.

[106] In acoustics, L_{eq} is the preferred method to describe sound levels that vary over time, resulting in a single decibel value which takes into account the total sound energy over the period of time of interest. Leq (8-hour) indicates that the sound pressure equivalent measure was measured over an 8-hour period. For compliance with a 45 dBA Leq (8-hour) standard, the measured equivalent sound over 8 hours from a source should be 45 dBA or less.

[107] RD Appendix A, Certificate Condition 70(a).

[108] RD Appendix A, Certificate Condition 70(e).

foregoing limits.[109] Moreover, the RD recommended that we impose a regulatory limit of 65 dB L_{eq} for the low frequency sounds and infrasound at the full octave bands of 16, 31.5 and 63 Hertz measured outside of any non-participating residence.[110] The RD also adopted a restriction on the Facility's production of amplitude modulated sounds, such as complaints of swishing or thumping type sounds. Should such amplitude modulated sounds be found to exceed a noise level of 45 dBA for more than 5 percent of the evaluation period, the Certificate Holder would be required to implement minimization measures.[111]

In addition to the foregoing, the Examiners recommended that we require the Certificate Holder to provide, once the final turbine unit has been selected, revised sound modeling results. The revised modeling is intended to demonstrate that the constructed facility, with the actual components selected, is expected to comply with the local town laws regarding noise.[112] The recommendations require the Certificate Holder to demonstrate in its modeling expected conformance with certain design goals that, while not imposed as regulatory standards, are necessary to allow construction to proceed. These design goals consist of 40 dBA annual equivalent

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[109] RD Appendix A, Certificate Condition 70(b). ANSI notes that a prominent tone exists if the noise level in the 1/3rd octave frequency band containing the tone exceeds those of the two neighboring bands the following numbers of decibels (dB), 15 dB for frequency bands from 25 to 125 Hertz inclusive, 8 dB for frequency bands from 160 to 400 Hertz inclusive, 5 dBA for frequency bands from 500 to 10,000 Hertz inclusive. ANSI recommends that for noise featuring a prominent tone or tones, its measured level be adjusted upwards by 5 dBA.

[110] RD Appendix A, Certificate Condition 70(c).

[111] RD Appendix A, Certificate Condition 75(d).

[112] RD Appendix A, Certificate Condition 71(d).

average nighttime sound level at any non-participating residence, 50 dBA annual equivalent average nighttime sound level at any participating residence, and a 65 dBZ maximum 1-hour equivalent continuous sound level at the 16, 31, and 63 Hz full octave bands outside any non-participating residence.

The RD also recommended that we impose a post-construction monitoring protocol consisting of measuring the sound produced by the Facility at sites designated by the Applicant consistent with the sites selected to help produce its initial sound modeling projections.[113] The protocol also provides for three additional measurement sites based on any complaints received. The RD's recommendations for the timing of the sound monitoring measurements include a first test within seven months of the commercial operation date of the Facility, and a second test to be done in an alternate season, to provide leaf-on and leaf-off comparisons, with the results submitted for the second test within 13 months of commercial operation.

The Facility's Noise Impacts

Cassadaga Wind's evaluation of the potential noise and vibration impacts associated with the Project are in its in Application Exhibit 19 and Application Appendix Z, both in the record as part of Hearing Exhibit 99. Appendix Z, the Applicant's Preconstruction Noise Impact Assessment (PNIA), prepared by RSG Inc. (RSG), contains the results of the sound modeling performed pursuant to Pre-Application Stipulation 19 (Stipulation 19), in the record as Hearing Exhibit 137. Cassadaga Wind, DPS, DEC, DAM, and by the Towns of Charlotte, Cherry Creek, and Arkwright all executed Stipulation 19.

[113] RD Appendix A, Certificate Condition 72.

Stipulation 19 required Cassadaga Wind to perform certain computer modeling intended to demonstrate the noise impacts that could be expected during construction and operation of the Project. The Project was evaluated by comparing the results of the predictive noise modeling with the goals that Cassadaga Wind sought to adhere to in its design plans for the Facility. The computer model was programed according to certain noise propagation ISO standards as required by Stipulation 19. The model allows for the input and modification of certain variables that affect sound propagation over distance. Some of these variables, such as the use of climate data published by the trade organization Conservation of Clean Air and Water in Europe (CONCAWE) were included in Stipulation 19. Other variables, such as those accounting for the ability of ground to reflect or absorb sound both through its shape, as well as its hardness, were not included in Stipulation 19.

DPS Staff conceded that the Applicant's noise modeling complied with Stipulation 19, but DPS Staff challenged the Applicant's noise modeling results as unreliable inasmuch as DPS Staff disagreed with some of the values chosen by RSG for its modeling variables. In response, Cassadaga Wind asserted that DPS Staff was barred from challenging the sound modeling by virtue of its having signed Stipulation 19. The Examiners found both that the DPS Staff challenges to the modeling were procedurally improper and that the modeling was appropriate and sufficient for us to make adequate findings on the Facility's noise impacts.

Although DPS Staff complains on exceptions that the Examiners were incorrect on both procedural and substantive grounds, it has withdrawn its objections to the modeling. Its position now is that its concerns are better addressed through our requiring a robust post-construction compliance monitoring

protocol. Accordingly, we do not need to address the RD's denial of the DPS Staff objections on procedural grounds. Instead, we focus our discussion on the question of whether the record is sufficient for us to make our necessary impact findings.

The RD determined that the inputs and assumptions RSG used for the models variables were appropriate and provided results that met the requirements of 16 NYCRR §1001.19. First, the RD found that the Applicant's sound modeling considered the appropriate topography for the Project area. Second, the RD determined that RSG used an appropriate ground factor in its modeling representing the ability of the ground to absorb some of the sound. Third, the RD deemed that RSG's use of the turbine manufacturer's warrantied maximum sound power level was appropriate for its modeling. Finally, the RD found that the Applicant properly applied CONCAWE meteorological data in its noise model.

The Examiners declined to recommend that we require the Applicant to remodel the Project's expected noise impacts under a new set of variables as requested by both DPS Staff and Concerned Citizens. The RD reasoned that the model accounted for the conditions that actually exist at the Project site, and that the modeling inputs and assumptions proposed by the opposition would present an unrealistic worst-case scenario. The RD states that modeling based on an unrealistic scenario is inconsistent with PSL §168, inasmuch as the statute requires us to make findings only on the probable impacts, not impacts that are not possible because they do not reflect the conditions of the Project area.

Based on its conclusions regarding the reasonableness of the Applicant's modeling, the RD includes recommended findings on the Facility's potential noise impacts. The highest

modeled sound level for a non-participating receptor was 51 dBA, six decibels above the 45 dBA design goal for the Project and up to 3 dBA above the town ordinance level. Including the foregoing, a total of 41 non-participating receptors exceeded 45 dBA. Employing noise reduction minimization measures, the highest one-hour nighttime L_{eq} at a permanent non-participating residence was 45 dBA. The highest one-hour nighttime L_{eq} at a seasonal home was 48 dBA.[114] Based on the fact that the 10 percent sound pressure level (L_{10}) for wind turbines is typically less than two dB above the measured equivalent sound pressure level (L_{eq}), the RD found that a 48 dBA L_{eq} would result in compliance with the local Town laws.

The RD also found that while wind farm low frequency sounds and infrasound can create noises and vibration, such sound can create noise-induced vibration, particularly in lightweight structures. The RD noted that the PNIA results demonstrate that the sound levels from the Project will be below the threshold for moderately perceptible vibration and rattle in all three frequency bands of 13, 31.5, and 63 Hz.[115]

The RD noted that excessive exposure to noise can negatively impact health, potentially causing, at excessive levels, hearing loss, sleep disturbance, and cardiovascular and psycho-physiological conditions, interference with communication, reductions in cognitive performance, annoyance, and impaired social behavior and recognized the World Health Organization's 1999 noise guidelines and 2009 update as establishing noise limits protective of human health. Based on these guidelines, the RD recommended that noise from the Facility should not exceed an annual average of 40 dbA, and a

[114] RD at 106.

[115] RD at 107.

one night outdoor maximum of 45 dbA. The Examiners stated these limits should minimize sleep disturbance which has been shown to be correlated to declines in health and to susceptibility to disease. Finally, the Examiners found that annoyance was the only significant effect associated with wind turbine noise measured at a maximum annual average of 46 dbA, and that sleep disturbance was not significant at that level. In summary, the RD concluded that noise presents issues both of direct and indirect harms. The RD recommended that we limit the Project's noise levels consistent with the WHO 1999 and 2009 guidelines.[116]

On exceptions, Concerned Citizens maintains that the RD misapprehends the degree to which the Applicant's sound modeling was conservative, and states that the modeling is unreliable such that we are unable to make our requisite impact findings. Concerned Citizens claims that the distinctive characteristics of the sound produced by wind turbines, such as pulsations, nighttime operations, and substantial variance in the amount of sound power emitted, require any modeling to exclude any factors that could serve to diminish the model's results, or to add extra "penalty" decibels to those results.

In particular, Concerned Citizens criticizes the RD's acceptance of the Applicant's ground hardness variable, noting that the actual area hardness of the ground is irrelevant in the case of wind turbines where the sound source exists more than 30 meters above the receiver. Concerned Citizens also states that where such a height differential exists, differences in the sound grazing angle and ground attenuation are not accounted for in RSG's sound models, requiring Cassadaga Wind to have used either a completely reflective ground factor variable or to add additional penalty decibels to the model's results. Concerned

[116] RD at 110.

Citizens also claims that the differences are further exacerbated by the effect of wind shear, particularly for low frequency sounds. Concerned Citizens argues that that the identified errors demonstrate that Cassadaga Wind's modeling results for mean sound levels over the period of an hour cannot account for sound level spikes that occur over shorter time periods, and, therefore, do not present an accurate demonstration of the expected sound impacts.

Concerned Citizens also claims that Cassadaga Wind failed to provide a thorough literature review of adverse impacts and health effects from wind turbine noise including audible noise, low frequency noise and infrasound, sleep disruptions and annoyance, instead reviewing only literature that supported its methods and conclusions.

Opposing Concerned Citizen's exceptions, Cassadaga Wind reiterates that the modeling was done pursuant to Stipulation 19 and notes that ISO 9613-2 specifically allows for the use of specific meteorological information to predict sound levels. As for the ground factor, Cassadaga Wind notes that while the height of a sound source can affect how the sound is reflected by the ground, such as the degree or concentration of the sound wave, the ability of the ground to absorb some portion of the sound so reflected does not change. Cassadaga Wind also notes that the ISO standard does not indicate that tall sources such as wind turbines should be modeled without accounting for ground absorption.

Cassadaga Wind states that Concerned Citizens is incorrect in its assertion that the modeling failed to account for wind shear. First, Cassadaga Wind notes that the ISO model assumes the existence of moderate wind shear. Second, Cassadaga Wind explains that the CONCAWE data also assumes several

different meteorological conditions consisting of different levels of wind shear.

Finally, Cassadaga Wind notes that, as the RD found, the modeling results included a 2 dB "penalty" adder as an uncertainty factor, increasing the resulting impacts. Cassadaga Wind states that Concerned Citizens misapprehends the purpose of Project design modeling, conflating it with post-construction testing for determining turbine-specific sound emissions. In the former case, under consideration herein, to determine the potential impacts the assumptions used have no bearing on a manufacturer's warranty.

We agree with the RD that Cassadaga Wind has demonstrated that its application exhibit 19 modeling results are sufficient for us to make our required findings of the potential impacts of the Facility. The Examiners thoroughly explained why they believed that the variables used by RSG to perform the sound propagation modeling were a proper exercise of professional judgment and did not deviate from standard practice. As such, we adopt the RD's findings determining that the Applicant's presentation of the probable impacts is reliable and complete.

Design Goals and Regulatory Limits

When designing a project, an applicant will create goals that it uses to inform its project design that are not enforceable regulatory limits. Some of those may later be imposed by the Siting Board as limits, should the record demonstrate that such action is necessary to serve the public interest. Here, we consider certain elements that were used as design goals and whether they should be adopted as enforceable standards.

Short and long term standards

As previously noted, the RD recommended that we impose overall noise limits of 45 dBA L_{eq} (8-hour) for any non-participating residence, and 55 dBA L_{eq} (8-hour) for any participating residence during the nighttime period with no corresponding daytime noise limit; a limit of 40 dBA L_{eq} (1-hour) at the outside of any residence for noise generated by the collector substation equipment; a limit of 65 dB L_{eq} for the low frequency sounds and infrasound at the full octave bands of 16, 31.5 and 63 Hertz measured outside of any non-participating residence; and a restriction on the Facility's production of amplitude modulated sounds.

For their recommended short-term noise limit, the Examiners considered and rejected the position that the 2009 WHO guidelines intended to replace the 1999 WHO guidelines recommendation of 45 dBA $L_{(8\ hr)}$ in favor of a regulatory limit of 40 dBA L_{night}. The Examiners determined that the 2009 WHO guideline updates intended 40 dBA $L_{night,outside}$ as an annualized average, not appropriate for a short-term regulatory limit. The RD recommended we institute a regulatory short-term limit consistent with the 1999 WHO guidelines of 45 dBA as measured over an 8 hour period.[117]

On exceptions, DOH Staff points out that, as drafted, the RD's proposed certificate conditions 70(a) and 71(d)(i) do not adequately define "non-participating residences" as applying both to permanent and seasonal receptors. To cure this, DOH Staff requests that we included the words "permanent or seasonal" in the recommended conditions.

As for DPS Staff, it takes issue with the fact that the RD's proposed certificate condition 70(a) does not reflect

[117] RD at 113.

its request for adopting a noise limit for the daytime to be the same as that imposed on the nighttime. DPS Staff maintains that its recommendation, derived from the NARUC-2011 and NARUC-2012 guidelines, would impose a regulatory limit of 45 dBA to minimize complaints, and apply to both the daytime and the nighttime periods. DPS Staff also notes that the proposed regulatory limit of 45 dBA for the daytime period is greater than the NARUC-2011 ideal design goal of 40 dBA for both daytime and nighttime. DPS Staff observes that as currently written, the certificate condition would result in the Facility not having a regulatory limit on its daytime operations, in contravention of precedent under both Article VII and Article X.

Concerned Citizens notes that while the RD acknowledges that the WHO noise guidelines call for consideration of the maximum level of "sound events" known to cause sleep disturbance, it neglected to consider the WHO's recommended statistical descriptor for such sound events, the L_{max}. Concerned Citizens points to the Massachusetts Clean Energy Center and Department of Environmental Protection study[118] to support its position that use of the L_{max} descriptor makes a difference in interpreting the modeling results. It claims that when an L_{max} is calculated for the Project and compared to a 1-hour L_{eq}, much more of the area around the project would be exposed to very annoying or even intolerable sound levels.

Cassadaga Wind opposes DPS Staff's request that we impose a limit on daytime noise separate from the nighttime limit. Cassadaga Wind states that the RD does contain a daytime limit inasmuch as the Towns have limits of 50 dBA L_{10}, with which Cassadaga Wind must comply, that do not differentiate between day or night.

[118] Hearing Exhibit 130.

The Applicant also states that there is no record basis for a separate daytime requirement, and that DPS Staff did not even raise the issue until the post hearing stage. Cassadaga Wind indicates that NARUC, on which DPS Staff relies, does not support a separate regulatory daytime limit, but that the NARUC limit DPS Staff identified is a long-term multi-week average that simply includes both daytime and nighttime periods, not two separate limits for daytime and for nighttime. Finally, Cassadaga Wind states that it has shown that for a given multi-week sample of wind turbine noise, the maximum 8-hour nighttime period will always be higher than the multi-week mean such that a multi-week average of NARUC's suggested design goal or 40 dBA may not be more conservative than a single-night 45 dBA, the regulatory limit recommended in the RD. The Applicant states that using NARUC's 45 dBA multi-week average for a single daytime limit is inconsistent with the context of the NARUC recommendations.

We are not persuaded by Cassadaga Wind. The difficulty is that the Applicant's showing concedes only that a multi-week average of 40 dBA "may not be more conservative" than a single-night 45 dBA. This is too speculative to assure us that the local residents are completely protected from unwanted noise that may, as the Applicant admits, cause annoyance without the adoption of the design goal as a regulatory limit. Accordingly, we modify the RD's regulatory limits to apply both the RD's 45 dBA L_{eq} (8-hour) standard for any non-participating residence and 55 dBA L_{eq} (8-hour) standard for any participating residence during both the day and nighttime periods. On the record of this case, we also find it necessary to apply a longer-term standard consistent with NARUC of 40 dBA $L_{90\text{-}10\ minute}$ standard as a long term multi week average and urge other Article 10 applicants to take note of this action.

Should Cassadaga Wind be in compliance with the 45 dBA standard, then according to its own statement that the maximum 8-hour nighttime period will always be higher than the multi-week mean, it should have no difficulty complying with this additional standard. Moreover, NARUC has stated that the 40 dBA limit is expected to minimize annoyance and complaints.

Finally, Cassadaga Wind has not opposed DOH's clarification regarding seasonal residences. In any event, we see no significance in whether a residence is used only seasonally or all year. Accordingly, we adopt DOH's clarifying language for the certificate conditions, which are now numbered 80 and 90.

Area of property to be measured

The RD also noted that the Applicant designed the Facility in accord with the goals of keeping sound levels at or under 45 dBA $L_{(8\ hr)}$ at all non-participating seasonal and permanent receptors, 40 dBA $L_{night,outside}$ at all non-participating receptors, 55 dBA $L_{(8hr)}$ at participating receptors, 50 dBA $L_{night,outside}$ at participating receptors. The Examiners explained that although the Applicant also agreed to adopt a long-term design goal of 50 dBA $L_{eq-1-year}$ for the nighttime period at all participant receptors' property lines, it applied that measure only to the portion of a real property plot that is within 150 feet of an existing roadway. The RD recommended that we impose the design goal as a regulatory limit across the entire property to preserve the enjoyment of the entire property.

Cassadaga Wind argues that the RD's requirement is impractical and unnecessary. Specifically, the Applicant takes exception to the RD's suggestion that both the present and potential future use and enjoyment of non-participating property owners' property must be addressed through a design goal. The Applicant relies on the WHO, noting that the guidelines are

related to potential impacts to public health and residents occupying houses, not to the right to quiet enjoyment of an entire parcel of property. Cassadaga Wind also relies on the fact that there are no state or local guidelines to apply to any property boundaries, only to residences and receptors.

The Applicant notes that, consistent with the Article 10 regulations, its Facility design already accounts for noise at property lines in that it established a design goal of 55 dBA $L_{(1h)}$ (50 dBA $L_{eq\text{-}1\text{-}year}$ long term) at any nonparticipating property within 150 feet from a public roadway because this is the location where residences would most likely be built. Cassadaga Wind argues that it is not practicable to establish a design goal that protects against human health effects in areas of land where it is highly unlikely that people will actually reside.

Opposing Cassadaga Wind's exceptions, Concerned Citizens notes that the RD's recommendation is consistent with the local Town laws, inasmuch as those local laws measure compliance at the external property boundary lines hosting the Facility's components which correspond to the closest non-participants' property lines. In addition, Concerned Citizens, citing 16 NYCRR §1001.19(g), notes that the RD is consistent with the Article 10 regulations that require noise design goals at representative external property boundary lines of the Facility. Concerned Citizens also notes that the Cassadaga Wind, notwithstanding its assertions regarding the use of property beyond 150 feet of existing roads, cannot guarantee that people will not later reside there. As support for its position, Concerned Citizens notes that DEC's Part 360 noise rules protect the entire property if it is located in areas zoned or otherwise authorized for residential purposes.

Similarly, DPS Staff contests that Cassadaga Wind's limitation on the design goal to within 150 feet of a public

road is arbitrary and has no foundation in the record. DPS Staff does, however, concede to a certificate condition that would allow for an exemption in the case of an existing wetland as the construction of a residence is not allowed there.

We agree with Concerned Citizens and DPS Staff. Cassadaga Wind's 150-foot from a public roadway limit is arbitrary. Notwithstanding the lack of specificity in the experience that Cassadaga Wind relies on to support its position, we do not agree that such experience is relevant for the local community at issue in this case. Accordingly, we adopt the RD's recommendation.

Amplitude Modulation

The RD also included in its recommended certificate condition 75, language that would impose a limit on the amplitude modulation effect of sounds produced by the wind turbines. This effect can be caused or exacerbated by instances of wind shear that create a swishing or thumping sound. The condition at issue is triggered only when the Applicant receives a complaint about such noise. In such a case, the certificate holder is charged with investigating and measuring instances of amplitude modulation at the affected receptors during the time frame when the worst conditions are known or expected to occur. The condition applies a standard that, if exceeded, would require additional avoidance, minimization or mitigation.

On exceptions, Cassadaga Wind states that compliance is not practicable inasmuch as accurate predictions of the level and frequency of amplitude modulation from wind turbines is not practical or reliable, and, therefore, the condition is arbitrary. The Applicant notes that its sound expert testified the Facility site does not appear to be conducive to amplitude modulation, and that the concerns raised by DPS Staff regarding high wind shear causing amplitude modulation are unfounded and

not supported by the studies cited by DPS Staff. It takes exception to the lack of substantive discussion in the RD on which it relies on DPS Staff's testimony to make such a recommendation. The Applicant does, however, provide in its Brief on Exceptions, proposed edits to the RD's recommended certificate condition that it indicates would fix the condition so that it is not overly burdensome and arbitrary, but that it would provide assurance "that mitigation is implemented in rare legitimate cases where unusually excessive amplitude modulation may exist[]." To that end, Cassadaga Wind proposes that the Siting Board adopt a specific numerical limit, 6 dB, for the measurement of modulation depth, and, only if that limit was exceeded, would an additional decibel modification be added to the Certificate Holder's compliance monitoring results.[119]

DPS Staff opposes the Applicant's exceptions, arguing that Cassadaga Wind's positions place the risk of annoyance due to amplitude modulated sounds on the residents. As to Cassadaga Wind's assertion that a regulatory limit applicable to amplitude modulation is not appropriate because the phenomena is difficult or impossible to predict, it is in contravention to the Applicant's burden of proof on the issues. DPS Staff notes that conditions and limits on amplitude modulation exist in other jurisdictions and do not present any undue risk on the Applicant. Similarly, Concerned Citizens criticizes Cassadaga Wind's downplaying of the potential for amplitude modulation noting that such characteristic sounds as a whoosh or thump can cause physiological symptoms in persons who live or work near large scale wind turbines.

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[119] Relying on standards adopted in Europe, DPS Staff had proposed a graduated scale that began to add additional decibels to monitoring results at a modulation depth of 3 to 5 dB, with an increased amount of added decibels if the measured modulation depth exceeded 5 dB.

We agree with the Examiners' finding that the risk of residents reacting to amplitude modulated sounds should be borne by the Certificate Holder. We are, however, sensitive to Cassadaga Wind's charge that the RD's certificate condition is ambiguous inasmuch as it does not define excessive amplitude modulation as a measurement of modulation depth. In the Applicant's proposed modification in its brief on exceptions, it indicated that if the Siting Board wanted to include regulatory limit on amplitude modulation, it should adopt a specific numerical limit on the depth of modulation and proposed 6 dB. On the record before us, we find that an amplitude modulation depth exceeding 5 dB, DPS Staff's maximum amount for its first tier, should be assessed an additional 5 dB to be included in its compliance monitoring results. In taking this action, we recognize that this is an evolving area of noise regulation, particularly with regard to wind turbines, and appreciate Cassadaga Wind's suggestions for clarity. We will be reviewing the parties' development of the record on this issue in future proceedings.

Low Frequency Noise and Infrasound

The RD recommended that we adopt a regulatory limit of 65 dB applicable to low frequency noise and infrasound, the 16, 31.5, and 63 Hertz full-octave frequency bands. The RD determined that 65 dB as an unenforceable design goal was insufficient to protect human health and safety. In making this recommendation, the RD rejected a proposed certificate condition based on ANSI S2.71-1983 that would measure vibration at a receptor rather than the sound power level. The RD reasoned that the rejected condition only addressed sound power levels that actually create measurable structure vibration, but failed to address lower sound pressure levels that might cause

annoyance to occupants without inducing vibrations in the building as intended by the ANSI 12.9 Part 4 standard.[120]

On exceptions, DPS Staff requests that we add language to clarify the period of time for collection and demonstration of conformance for this condition. Noting that airborne induced vibrations are better correlated to short term sound levels, but that the Applicant's computer noise results are represented as maximum $L_{eq\text{-}1\text{-}hour}$ sound levels, DPS Staff requests that we restate the RD's certificate condition 70(c) as requiring compliance "with a maximum daytime and nighttime noise limit of 65 dB $L_{eq\text{-}1\text{-}hour}$ 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."

Cassadaga Wind takes exception to any regulatory limit being imposed on the full octave frequency bands of 16, 31.5, and 63 Hertz outside of a residence. The Applicant notes that the RD appears to ignore the ANSI standard is intended for the inside of a residence, but is being applied improperly by the RD to the outside of a residence. The Applicant states that the ANSI 12.9 Part 4 standard cannot be used as a regulatory limit without accounting for the attenuation that occurs as the sound travels to the inside of a typical residence. Cassadaga Wind explains that applying the ANSI standard outside is inconsistent with the proper application of the standard. ANSI S12.9 Part 4 Annex D states that 65 dB at the full octave frequency bands of 16, 31.5, and 63 Hz results in minimal annoyance. The Applicant maintains that this standard is typically considered an interior sound level. Cassadaga Wind proposes we modify the RD's certificate condition 70(c) to read that it must comply with a maximum low frequency noise limit of 65 dB L_{eq} at the full octave

[120] RD at 114-115.

frequency bands of 16, 31.5, and 63 Hertz inside of any non-participant residence.

Opposing Cassadaga Wind's exceptions, DPS Staff states that Cassadaga Wind's argument ignores what it has already agreed to in Stipulation 19 which specified that the potential for sound induced vibration and annoyance at the low frequency bands of 16, 31.5 and 63 Hz be assessed using outdoor criteria in annex D of ANSI standards S12.9-2005/Part 4. DPS Staff also demonstrates that the standard states that it specifies methods to assess environmental sounds and to predict the potential annoyance response of a community to outdoor long-term noise, and that it also states that, so far as indoor environments are concerned, sound transmission loss from windows and walls is minimal and often is offset by modal resonance amplification in enclosed rooms.

Concerned Citizens contends that the real issue resides in the characteristic amplitude modulation of the wind turbine noise which is not affected by whether it is measured indoors or outdoors. Concerned Citizens urges us to adopt a maximum sound pressure standard that would place the Certificate Holder in noncompliance for very loud sounds even if they occur over a duration of one second or less. Concerned Citizens argues that Cassadaga Wind's objections to low frequency noise standards ignore potential physiological effects to consider only structural impacts. Finally, like DPS Staff, Concerned Citizens notes that the ANSI standard indicates specifically that distance, walls and windows do not dampen low frequency noise.

We are persuaded by the language of the ANSI standards cited both by DPS Staff and Concerned Citizens that the intent is to have both an indoor and outdoor standard. The ANSI standard explains that sound transmission loss from windows and

walls is minimal and that any loss is likely to be offset by indoor characteristics. To clarify any confusion from the RD, we determine that the Certificate Holder should be responsible both for the outdoor component of low frequency noise and infrasound in accordance with Annex D of ANSI standard S12.9-2005/Part 4, as well as the indoor standard of ANSI/ASA S2.71-1983 (August 6, 2012), as reflected in condition 80(d) and (e) attached hereto.

Post-Construction Monitoring Protocols

To determine whether the Facility is in compliance with the foregoing standards, the Certificate Holder will need to perform post-construction monitoring. The RD considered three different issues related to the monitoring protocols. First, the RD recommended that we reject a proposal that the baseline ambient noise control measure be done from proxy locations, that is locations different than those from where the post-construction monitoring is to be performed. Second, the RD recommended that we adopt the Applicant's proposed locations for post-construction noise monitoring which are the same locations used during pre-construction, rather than requiring the Certificate Holder to measure just from the locations expected to experience the most significant impacts. The RD reasoned that using the same locations as used during pre-construction will allow the Certificate Holder to assess the accuracy of its predictive pre-construction sound modelling. Third, the RD recommended that we adopt the Applicant's proposed time frame for conducting its post-construction monitoring rather than accelerating when its testing should be done.[121]

On exceptions, DPS Staff maintains that the Applicant's selection of testing locations, as described in the

[121] RD at 115-118.

revised monitoring protocol is inadequate and premature, noting that the Applicant's pre-selected positions included in the protocol are at distances greater than 2,000 feet from a proposed turbine. DPS Staff states that such distances render the locations irrelevant to critical sound receptors. DPS Staff also maintains that the Applicant's justification for retesting at pre-construction locations is not valid as such predetermined locations were never agreed upon in signed stipulations and is not required by Article 10 regulations. To cure the foregoing, DPS Staff requests that we require that the post-construction testing locations be approved by DPS Staff before commencing such testing.

The Applicant objects to any condition that would require approval by DPS Staff of a revised compliance protocol or of the selected testing locations. To support its objection, Cassadaga Wind contrasts the experience of its experts against that of the DPS Staff witness who did concede on the record that he has never prepared or performed post-construction sound monitoring at a wind project. Cassadaga Wind notes that to properly assess the sound of the turbines, locations that were monitored pre-construction need to be re-monitored post-construction to provide for appropriate comparisons. Cassadaga Wind reiterates its belief that DPS Staff continues to ignore that its monitoring protocol provides for three additional monitoring sites based on the receipt of noise complaints.

Although we agree with the RD's finding that there is value in the ability to compare pre-construction sites that served as the basis for RSG's modeling with post-monitoring results, we also do not think that DPS Staff's request to have some input into post-construction monitoring sites is unreasonable. Cassadaga Wind already allows for the selection of up to three additional monitoring sites based on complaints.

We determine on the record evidence that the Certificate Holder's protocol should also allow for three additional sites to be selected by DPS Staff. To the extent that Cassadaga Wind protests the selection of a DPS Staff selected monitoring site and cannot resolve the dispute through negotiation, it may avail itself of the Department's alternative dispute resolution processes.

Cultural, Historic and Recreational Resources

Boutwell Hill State Forest

In 2016, a law was enacted which authorized DEC to grant an easement for the placement of a collection line in the Boutwell Hill State Forest (BHSF law).[122] The Project contains a 1.2 mile overhead three circuit collection line which runs along roads through the Boutwell Hill State Forest (BHSF).[123] Wind turbines will not be placed in BHSF.

The Examiners found that the Project will adversely impact the existing character of BHSF during construction and operation of the facilities.[124] In particular, the Project will potentially interfere with activities and movement within BHSF, it will be visible from recreation trails and other areas of the

[122] Chapter 481 of the Laws of 2016, An Act to authorize an easement on a portion of real property within the Boutwell Hill State Forest in the county of Chautauqua for the location of electric collection or distribution facilities in connection with a wind powered electric generation project located in the towns of Charlotte and/or Cherry Creek (effective November 28, 2016). Hrg. Ex. 53 (ACD-5). RD p.118.

[123] RD p.118.

[124] RD p.119-120.

forest, and freshwater wetlands and vegetation will be impacted.[125]

The Examiners found that local laws are not applicable to the Project. The Examiners did not reach a conclusion on whether the Project's design conforms with the requirements of the BHSF law easement.[126]

The Examiners considered the effects of placing the facilities underground or using steel monopole structures, which would avoid the use of guy wires and thus create a smaller facility footprint.[127] The Examiners noted that there would be significantly less site disturbance to construct un-guyed structures in freshwater wetlands.[128] The Examiners also noted that emergency access along existing utility rights-of-way, clearances from existing utility infrastructure and any facilities' protection systems could be compromised by the use of guy wires.[129] The Examiners recommended that alternative pole configurations be used to avoid placement of guy wires in visibly sensitive areas.[130] The Examiners also recommended that Cassadaga Wind scrutinize the possibility of burying the lines where it is technically feasible and not cost prohibitive.[131] The Examiners recommended that, with a certificate condition requiring either the elimination of guy wires or burying of the lines, the Siting Board find that adverse impacts to BHSF are

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125 RD p.119-120.

126 RD p.121.

127 Tr. 792-93. RD p.120.

128 RD p.122.

129 RD p.122.

130 RD p.122.

131 RD p.122.

minimized or avoided to the maximum extent practicable.[132] Their recommendation for a certificate condition was contained in the RD's Appendix A, condition 61.g.

On exceptions, DPS Staff notes that the RD incorrectly combined discussion of the 115 kV generator lead line location with the discussion of the 34.5 kV electrical collection lines proposed to traverse through BHSF. DPS Staff notes that the 115 kV generator lead line will be located entirely outside and to the west of BHSF. Staff brief on exceptions at 27.

On exceptions, Cassadaga Wind argues that the cost to underground collection system facilities to minimize the already minimal visual impacts associated with overhead collection system facilities is not balanced. The Applicant argues that an increase from $1 million for overhead lines to approximately $3.2 million for buried lines is unreasonable. Cassadaga Wind notes that while overhead lines may be visible when driving on Town roads, there is already an existing distribution line located on Boutwell Hill Road with 40- to 50-foot-tall poles. Cassadaga Wind insists that the proposed collection system will not be visible from recreational trails or any cultural resources within the Facility area or BHSF. Furthermore, the Applicant asserts that the neighboring forest vegetation will shield views of the structures as it is similar in height. Cassadaga Wind agrees to use alternative pole structures to offset the placement of guy wires and therefore argues that the Siting Board should permit the installation of an overhead collection system. Applicant brief on exceptions at 29-31. No other party took exception to the issues regarding BHSF.

[132] RD p.122.

In its brief opposing exceptions, DPS Staff asserts that Cassadaga Wind is including in its calculations unnecessary mileage that is not recommended for undergrounding by Staff because it is primarily located outside of BHSF and that inclusion of this additional mileage substantially increases cost. DPS Staff notes that the structures proposed to be sited along Boutwell Hill Road are actually much larger and more cluttered in appearance than the rural lines on this road. Moreover, the overhead collection line crosses over the main public access area and trailhead location in BHSF so the visual impacts are substantial. DPS Staff states that multiple guy wires and anchors would need to be used in the modification of the Applicant's proposed siting of collection lines across BHSF. These modifications create objectionable visual impacts and concerns for public safety, since the structures are next to public roads that access recreational trails. DPS Staff urges the Siting Board to adopt the recommendations in the RD and compel underground installation. Staff brief opposing exceptions at 20-23.

In its brief opposing exceptions, Concerned Citizens note that BHSF is in the Town of Charlotte, which requires wind projects, to the maximum extent practicable, bury transmission lines. It questions if there may actually be a cost savings, since multiple lines would be co-located if buried underground. Concerned Citizens argues that the Applicant's cost comparison between using guy wires and avoiding them is unpersuasive. Concerned Citizens brief opposing exceptions at 20-21.

The Siting Board, having considered the record and the parties' arguments, adopts the Examiners' recommendations in part. We will require self-supported monopole structures rather than two-pole circuits with guy wires within the Boutwell Hill

State Forest. The Siting Board finds on this record that the monopoles will significantly reduce the overall footprint of the Project by eliminating the use of guy wires and eliminate potential impacts to recreational areas. We reject that the facilities must be designed, installed and maintained in an underground configuration to the maximum extent achievable. The Siting Board also finds that undergrounding the lines in the small portion of the Boutwell Hill State Forest is not necessary as the record demonstrates that overhead lines will not diminish the aesthetics or use of recreational areas. We note also that the electric collection system facilities to be located along Boutwell Hill Road, Mill Creek Road and East Road within properties comprising the Boutwell Hill State Forest must be located in conformance with any easement granted by the NYSDEC. These conditions ensure that the adverse environmental effects of the construction and operation of the Project in the Boutwell Hill State Forest will be minimized or avoided to the maximum extent practicable.

Other Cultural, Scenic and Historic Resources

The Examiners found that the project will affect viewsheds in and around the Project area, changing the visual character of existing historical and cultural resources in the area. The potential impacts are identified in Application Exhibits 2, 20, and 24 and Hearing Exhibit 99. The Applicant's Cultural Resource Mitigation Plan ensures that construction and operation of the project will have no direct physical impacts on historic architectural or archeological resources.

Because the options to minimize visual impacts of the Project are limited, the Examiners recommended that off-set projects should be used to provide benefits to the community's cultural resources. This plan will be adopted by the federal

permitting agency under the National Historic Preservation Act, or by the State Historic Preservation Office.

Other Visual Impacts

The Examiners found that potential cost increases from mitigation measures must be balanced against the public interest in maintaining the character of the community as much as possible. The Examiners recommended a number of conditions including the use of glare-reducing overhead conductors and restrictions on signage, color, and lighting. With these conditions in conjunction with those discussed above, the Examiners concluded that the impacts to cultural, historic, and scenic resources would be minimized to the maximum extent practicable.

On exceptions, the Applicant agreed that non-specular lines are appropriately required for public rights of way, but argued that there is nothing in the record supporting their use on private land, and the Examiners erred in accepting Staff's position for the majority of the overhead lines that are not on public roads.

The use of non-specular wire reduces glare and reduces the visual impact of the Facility. The Applicant's claim that there is nothing in the record supporting the use of such wire on private land is not correct. The record discusses the visual impacts of the Facility as may be seen from many public areas. While some of the wires connecting Project facilities will be placed underground, there are portions that will not be underground and may be viewed from significant distance, even though they are located on private land. The Applicant's information demonstrates that the cost differential from using non-specular wire is not significant. Accordingly, we adopt the

RD's recommendation requiring the use of non-specular wire for the overhead lines.

Infrastructure Impacts

Transportation

The Examiners found that Project construction would lead to a temporary increase in truck traffic on local roads, and potential delays of local traffic. Because local area traffic volume is relatively low, the impacts will not be significant. The Applicant will obtain necessary local permits, and will enter a Road Use Agreement providing that any damage to local roads will be repaired at the Applicant's expense. The Project will not have any impact on nearby airports or heliports, and there is no evidence of potential adverse impacts to recreational air traffic.

In its brief opposing exceptions, DPS Staff notes that highway use and occupancy permits and highway work permits issued by the NYS Department of Transportation represent the issuance of property rights that are not superseded by Article 10. We concur. As stated in Certificate Condition 2, Cassadaga Wind will be responsible for obtaining such permits as may be necessary, for example to construct the generator lead line across NYS Route 60.

Communications

The Examiners found that the Project will not adversely impact any federal communication systems; nor will it affect NEXRAD or Doppler radar. The National Telecommunications and Information Administration has identified no concerns with air traffic control, global positioning satellites, or other systems.

There is potential for the Project to cause interference with some television station reception, but not with cable or satellite reception. Residents who experience television interference may file a complaint with the Applicant; the Applicant will investigate methods to improve reception; if such methods are not available or effective, the Applicant will provide cable or satellite reception systems.

Utilities

Collection and transmission lines of the Project will run parallel to natural gas lines in some portions of the system. This creates a possibility of damage to gas lines from a lightning strike or high fault current. The Examiners recommended that National Fuel Gas (NFG) is in the best position to assess potential impacts to its infrastructure. The Examiners recommended that the Applicant should contact all pipeline operators in the area to determine the scope of a study, which may be performed by NFG or by a qualified third party, in consultation with the DPS Gas Safety staff.

On exceptions, the Applicant stated that the Examiners were correct that NFG has the ability to assess potential impacts; the Applicant argued that the RD erred in requiring Applicant to prepare a scope of work to study potential impacts for other companies' gas lines. Cassadaga Wind contends that, instead, it should be required to reach an agreement with each affected gas line and that the NFG criteria will be applied in these agreements.

The chief concern we have is with regard to the existence of gas gathering lines relative to the construction of the Project's facilities. The Public Service Commission has instituted a proceeding to examine issue related to ensuring the

safety of those lines.[133] The Certificate Holder should monitor the Commission's proceeding for the identification of any gathering lines that are located within the Project area. The Certificate Holder should also contact the land owners on which its facilities will be located and of any other properties located within the distance identified by the NFG guidelines as to the siting clearances for electrical facilities to determine if those landowners are aware of any gas utility infrastructure located under their land. Where such infrastructure exists, the Certificate Holder should take appropriate steps to ensure that the requirements for protecting the gas infrastructure from interference or damage by events related to the Certificate Holder's electric infrastructure, as guided by the NFG protocols.

In addition to the foregoing gas safety concerns, on exceptions, Niagara Mohawk Power Corporation d/b/a National Grid (National Grid) filed a Brief on Exceptions to some of the certificate conditions attached to the RD for the safety of its infrastructure. National Grid asserts that the recommended certificate conditions incorrectly describe the interconnection between Project facilities and its own infrastructure. National Grid proposes several clarifying revisions for six of the RD's recommended certificate conditions for the point of interconnection. Additionally, National Grid proposes one new certificate condition and revisions to six of the RD's recommended certificate conditions intended to protect National Grid's 115 kV transmission facilities.

Cassadaga Wind indicates in its Brief Opposing Exceptions that it has no objection to National Grid's proposed

[133] See Case 17-G-0424, Proceeding on Motion of the Commission to Review Operating Procedures of Natural Gas Gathering Lines.

revisions to the RD's recommended certificate conditions 10, 25, 39, 55, 67, 101(d), 107, 128, and 151. The Applicant also agrees to the proposed revision to recommended certificate condition 3, but adds its own clarification, as well. For recommended certificate condition 4, which allowed for the construction of a new point of interconnection station, the ownership of which the Certificate Holder may transfer to National Grid, Cassadaga Wind objects to the transfer being made "on terms agreeable to National Grid," noting that the language should state that the terms of ownership should be the product of mutual agreement. Regarding National Grid's new proposed certificate condition which would require the Certificate Holder to submit plans to National Grid for review and approval prior to submitting them as compliance filings, Cassadaga Wind objects on the grounds that it is superfluous and does not contain clear guidance on National Grid's proposed review and approval process. Cassadaga Wind indicates that it is required, as part of the interconnection process, to consult with National Grid to ensure that any final design plans and profile drawings are consistent with the parties' Interconnection Agreement, with National Grid's Electric System Bulletins, and with the New York State High Voltage Proximity Act. Cassadaga Wind proposes to revise National Grid's proposed language to indicate that the Certificate Holder will work with National Grid, rather than requiring review and approval. Cassadaga Wind maintains that National Grid's concerns are already addressed by the Open Access Transmission Tariff and NYISO procedures and process.

Having considered National Grid's brief, we agree that Cassadaga Wind's proposed revisions and clarifications are appropriate. We adopt National Grid's revisions to the RD's recommended certificate conditions 10, 25, 39, 55, 67, 101(d), 107, 128, and 151 as proposed, condition 4 with Cassadaga Wind's

clarification, condition 3 and the newly proposed National Grid certificate condition as further revised by Cassadaga Wind. These are now conditions 10, 41, 48, 35, 67, 106(d), 75, 130, 152, 3 and 4, respectively.

Interconnections

The Project will have minimal wastewater and water supply needs, connected with the Project's Operations and Maintenance building. It is likely that this building will utilize on-site water well and septic systems. The Project will not have any telecommunication interconnections.

Additional Design Disputes

The Examiners recommended that the collector lines and the 115 kV transmission facility should be constructed according to the latest edition of the American National Standards Institute for operation at 212 degrees Fahrenheit. The Examiners also recommended that the Applicant be required to maintain collector and transmission rights of way in a manner assuming active road usage beneath the line.

On exceptions, the Applicant argued that the Examiners erred by accepting Staff's initial argument and ignoring Staff's changed position in its Reply Brief, where Staff agreed with the Applicant that ground clearances for private land should be based on the landowner's projected land uses. Based on the record and exceptions, we grant Cassadaga Wind's exception. Applicable standards require only that the lines be constructed based on current or known projected uses.

Environmental Justice - PSL §168(2)(d) & §168(3)(d)

According to DEC's geographic information tools, the closest Environmental Justice community is approximately three miles from any turbine. Because the Project is not in close

proximity to any recognized Environmental Justice community, and because the Project will not produce emissions or air quality impacts, the Examiners found that it will not have a disproportionate impact on any Environmental Justice community. No party excepts, and we adopt the Examiners' finding

State and Local Laws - PSL §168(3)(e)

The discussion of issues elsewhere in this order demonstrates that the construction and operation of the Facility will comply with applicable State laws. In this section, we discuss compliance with, or waiver of, local laws.

Pursuant to 16 NYCRR §1001.31(a), any procedural provisions of local laws are preempted by Article 10 except as expressly authorized by the Siting Board. Pursuant to 16 NYCRR §1001.31(d), any substantive requirement of local law must be complied with by the Applicant unless the Siting Board finds that the local provision would be unreasonably burdensome. The Examiners found that the Application contained the required list of all applicable procedural and substantive local laws.

A local law of the Town of Cherry Creek affects the use of guy wires, applicable construction hours, and the maximum height of turbines. An amendment to that law was certified on September 14, 2017. Because the terms of the Application are consistent with the amended local law, the Examiners determined that no waiver from the Cherry Creek local law is required.

Local laws of the Towns of Arkwright and Charlotte limit construction activity on wind facilities to the hours between 7:00 a.m. and 8:00 p.m. Both of those Towns have passed resolutions stating that they have waived the construction hours provision.

The Examiners determined that the Town resolutions provide useful information to the Siting Board but do not control the outcome of the Siting Board's decision. Because the

town laws remain in place, the waiver authority resides in the Siting Board and cannot be preempted by local resolutions. For that reason, the Examiners determined that the Applicant's waiver request would need to be evaluated, using the standard of whether the local laws are unreasonably burdensome.

Applying this standard, the Examiners recommended a limited waiver to address the concerns specifically raised by the Applicant. The limited waiver would allow turbine construction activities during extended hours on an as-needed basis to address unusual circumstances, such as a time-sensitive construction stage that may be affected by inclement weather. This waiver would not apply to ordinary construction activities such as delivery and maintenance, except as they are directly tied to the unusual circumstances.

With the exception of the limited waiver related to construction hours, the Examiners recommended that the Siting Board find that the Applicant will comply with all substantive local law provisions.

On exceptions, the Applicant noted that the Examiners' proposed Certificate did not reflect their finding that the local law amendment of Cherry Creek requires no waiver. We agree with the RD's finding regarding the effect of the Cherry Creek amendment obviating the need here for any waiver. The certificate condition has been edited consistent with our decision.

Additional Certificate Conditions

The Examiners determined that notice to the public prior to construction activities should utilize a definition of "construction activities" that excludes minor vegetation cutting, testing, and surveying activities.

The Examiners recommended that the Applicant should file all manufacturer documentation, including updates, related to the design, safety and testing information for the specific generating and related facilities equipment to be installed during construction, or related to any equipment installed during Facility operation as a replacement of failed or outdated equipment.

Because underground conditions will vary, the Examiners recommended that the Applicant should have flexibility, during construction of underground collection lines, to change the installation method from what is depicted on approved maps. Such a change may be made following consultation with the environmental monitor and DPS field staff, and must be filed within 48 hours.

Decommissioning and Restoration - 16 NYCRR §1001.29

It appears there was no dispute among the parties regarding what events would trigger the obligation of the certificate holder to decommission the wind farm and restore the site, nor was there dispute regarding the scope of work this would entail. However, the Examiners were called upon to resolve disputes regarding the estimated costs of decommissioning and site restoration, necessary to establish the means for insuring there will be funds available to carry out such activities in the future. The RD also addressed the appropriate means of security for future decommissioning.

The RD noted the significant difficulties in estimating future decommissioning costs that arise from the fact that Cassadaga Wind has not yet selected the precise model of turbine it plans to install for the Project.[134] Accordingly, the Examiners did not establish a dollar figure for decommissioning,

[134] RD pp. 143-44, 147-48.

but rather recommended that the Siting Board require Cassadaga Wind to provide a more accurate estimate, in consultation with DPS, once the final Project components are identified.[135] The RD provided some additional guidance to the parties in arriving at a final figure to be used for decommissioning costs.

In particular, the RD addressed the issue of offsetting estimated costs with the value of amounts received in salvaging the wind farm components. Rejecting a DPS Staff position, the Examiners recognized salvage and resale value as a legitimate revenue source to offset decommissioning costs, noting that the Siting Board's decommissioning regulations explicitly refer to salvage values.[136] They acknowledged the risks inherent in estimating something that could fluctuate considerably in the future, but stated that there were effective and more reasonable measures to account for such fluctuation, such as reevaluating the estimate and reserve on a regular basis, more often than the every five years proposed by Cassadaga Wind.[137] Moreover, they continued, nothing in the regulations requires that the amount posted for decommissioning costs need consider 100 percent of the calculated salvage or scrap value.[138] The Examiners wrote that, in this case, where some estimates on the record showed salvage values nearly equal to decommissioning costs, such that only a very small amount be set aside or secured for decommissioning, such amounts appeared not to afford adequate protection for those who could be impacted by an abandoned project.[139]

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[135] RD p.148.

[136] RD p. 147.

[137] RD p.147.

[138] RD p.147.

[139] RD p. 147.

The Examiners also found that it would be appropriate to apply a contingency factor to estimates of decommissioning costs in order to ensure an adequate level of a decommissioning fund.[140] However, they criticized DPS Staff's proposed 100 percent contingency factor as lacking record support.[141] They invited the parties on exceptions to provide the Siting Board with appropriate citations or references to the use of contingency factors on decommissioning estimates.[142]

Finally, the RD recommended that the Siting Board require security in the form of letters of credit to be held by the Towns of Arkwright, Cherry Creek, and Charlotte during the existence of the Project facilities.[143] They credited the position of DPS Staff that letters of credit provide greater certainty that the holder can recover the funds from the bank holding the credit letters.[144] They further credited DPS Staff's position that the ease of access to a letter of credit is favorably contrasted with performance bonds and other forms of financial assurance, which can often be tied up in protracted litigation, because the bond holder has the right to challenge the calling of the bond.[145] They further noted that the Siting Board has required a letter of credit or standby trust in other Article X Certificates to fund site restoration and decommissioning.[146] Similarly, the PSC has indicated a

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140 RD p.148.

141 RD pp. 147-48.

142 RD p.148.

143 RD pp. 150-51.

144 Tr. 1130, 1139. RD p.149.

145 RD p. 149.

146 See Case 97-F-1563, Athens Generating Company, L.P. – Application for Article X Certificate, Opinion and Order Granting Certificate of Environmental Compatibility and Public Need (issued June 15, 2000). RD p.150.

preference for letters of credit to secure financial assurances.[147] Their recommendation for a certificate condition was contained in the RD's Appendix A, condition 23.

No party takes exception to the Examiners' disinclination to establish a dollar figure for decommissioning or their recommendation that, instead, Cassadaga Wind be required to provide a more accurate estimate, in consultation with DPS, once the final Project components are identified. The Applicant notes this recommendation is consistent with its proposal for the Towns' independent expert to prepare the final estimate after the turbine model is selected and before construction begins.[148] DPS Staff also finds merit in the Examiners' approach and acknowledges that, if that approach is followed, it would support a lower contingency factor, such as 25 percent.[149] However, if the Applicant fails to provide a more accurate estimate based on the actual turbine model and actual decommissioning costs from other similar projects, DPS Staff continues to rely on the estimate of $8 million that was provided to the Applicant by the Towns' independently hired engineering firm, but adds a 100 percent contingency factor, to argue that a total reserve of $16 million is necessary to protect the localities in the event of project abandonment.[150]

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147 See Case 99-F-1625, Application by KeySpan Energy for a Certificate of Environmental Compatibility and Public Need, Opinion and Order Granting Certificate of Environmental Compatibility and Public Need (issued September 7, 2001); Case 17-C-0050, Joint Petition of FairPoint Communications, Inc., et al. for Approval of Proposed Transactions, Order Approving Joint Petition Subject to Conditions (issued June 15, 2017). RD p.150.

148 CW's Brief opposing exceptions at 19.

149 DPS BOE, page 33.

150 DPS BOE, page 33.

DPS Staff takes exception to the RD's conclusion that it would be appropriate to include some amount for salvage or resale value in establishing the decommissioning reserve. It says that including any amount for salvage will not ensure financial security where resale becomes problematic, scrap prices fluctuate, or the Project facilities are never built.[151] While it acknowledges that the regulations allow salvage to be part of a decommissioning plan, DPS Staff asserts that they do not require it.[152] No party responds to this argument.

For its part, Cassadaga Wind excepts to the Examiners' endorsement of a contingency factor, asserting that there is no record evidence supporting a contingency. CW's BOE, page 34. It notes that contingency factors are used in projects such as construction, where there is no opportunity to update, but states that here, where updates will be provided, they obviate the need for a contingency factor.[153] Cassadaga Wind asserts that DPS Staff failed to respond to the RD's invitation to provide some rationale for a reasonable contingency factor. DPS Staff responds by noting that an error in its exceptions brief led to the exclusion of a line of text, in that its reference to a 25 percent contingency factor was meant to refer to the construction industry.[154]

The arguments of the Applicant and DPS Staff, as well as those of Concerned Citizens, highlight the somewhat fluid trade-offs that are represented in the concepts of salvage value and contingency factor. Based on the arguments presented, we agree that it is not necessary or appropriate to apply a

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[151] DPS BOE, page 30.

[152] Id.

[153] Cassadaga Wind's Brief opposing exceptions at 19.

[154] DPS Brief opposing exceptions at 26-27.

specific contingency factor in this particular situation to be added to the security required hereafter, particularly where Cassadaga Wind will be providing updates to the estimated cost of decommissioning. We further agree with DPS Staff that we can best address the primary risks posed by a potential abandonment of the Facility by not including in the security any offsets for the amount for salvage or resale value of the component parts or materials. The process of dismantling the Facility and restoring the site would be a significant and complicated undertaking, and it is crucial that sufficient funds be available at the outset for the work to proceed in a timely and efficacious manner. This can be assured by having the full decommissioning cost available, with no offset for salvage value. In addition, salvage value could fluctuate dramatically, and we do not regard that risk to be an appropriate one for the affected Towns to assume here. In lieu of a separate contingency factor added to the security, omitting any offset for salvage value is an appropriate method of reducing the risk inherent in decommissioning.

Moreover, notwithstanding that the decommissioning estimate on the record at this point is only a preliminary value, it is important for our certificate to establish a baseline value for the decommissioning reserve. Consequently, while we adopt Cassadaga Wind's proposal to provide a more refined estimate, through use of an independent engineering consultant, once the Project components are identified, we will nevertheless establish here the $8 million figure, based on the estimate prepared on behalf of the Towns and put into the record by Cassadaga Wind, as the minimum level of an appropriate decommissioning reserve. If the later estimate demonstrates that a higher reserve should be established, that estimate shall prevail; however, the level of the reserve should, in no event,

fall below the $8 million established here. In the event of any overage not needed to cover decommissioning costs, either from the security or the additional salvage and resale value realized, such amounts will return to the Certificate Holder once all decommissioning has concluded.

The other primary issue raised on exceptions is the form of security for the decommissioning reserve. Cassadaga Wind excepts to the Examiners' recommendation that a letter of credit, to be held by the Towns, should be the form of security. It asserts that there is no record support for the position that a letter of credit is a more secure financial instrument and that the only testimony on this subject came from engineers with no experience evaluating financial guarantees. Further, Cassadaga Wind argues, none of the Siting Board or Public Service Commission cases cited by the Examiners required a letter of credit exclusively. Instead, says the Applicant, those cases allowed for other forms of security.[155] Cassadaga Wind cites other Article X cases allowing for performance bonds instead of a letter of credit.[156] Opposing the Applicant's exception, DPS Staff highlights the language in the Recommended Decision that justifies the Examiners' preference for a letter of credit as more secure.[157] For its part, Concerned Citizens notes its support for a letter of credit. It says that Applicant has offered nothing persuasive to the contrary.[158]

Also on exceptions, DPS Staff says the Siting Board should designate an alternate holder of the letters of credit in

[155] Cassadaga Wind's BOE at 33-34.

[156] Cassadaga Wind's BOE, page 34.

[157] DPS Brief opposing exceptions 25-26.

[158] Concerned Citizens' Brief opposing exceptions, page 2.

the event that the Towns refuse to hold them.[159] DPS Staff proposes that the Siting Board establish an alternate holder, although does not propose language as to who that should be.[160] In response, Cassadaga Wind notes that it has entered into Host Community Agreements with the Towns, which address decommissioning, and the Towns have never objected to holding the appropriate security for the decommissioning.[161]

On this point, we deny Cassadaga Wind's exception and adopt the Examiners' recommendation for letters of credit. While Cassadaga Wind is correct that this form of security is not required, we conclude that this highly secure instrument is appropriate here. Given the long-term nature of the need for available funding, spanning the entire life of the Project, the certainty to the Towns provided by a letter of credit that such funds will be readily available regardless of the solvency of the Certificate Holder is sufficient reason to require its use.

We acknowledge that the Towns have been active in this proceeding and have entered into the Host Community Agreements with Cassadaga Wind, and their participation has contributed positively to the outcome in this proceeding. Nevertheless, the certificate we grant includes a specific condition that the Certificate Holder obtain an agreement from the Towns to hold the letters of credit. This agreement should be obtained at least 90 days prior to construction and submitted for approval as a compliance filing. If a Town does not agree, the Certificate Holder will be required to obtain a third-party trustee to manage a standby trust perpetually until decommissioning is completed. Other Article 10 applicants

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[159] DPS BOE, page 34.

[160] DPS BOE at 35-36.

[161] Cassadaga Wind's Brief opposing exceptions, page 20.

should take note of our action herein and address our concerns in their respective proposals.

Public Interest Review - PSL §168(3)(b)

For its Public Interest Review, the RD summarized its findings and recommendations and explained the Examiners' position that those items provided a basis for determining that the Project is in the public interest. On exceptions, Concerned Citizens objected to this structure, indicating that the RD appears to have been drafted to accommodate a public interest finding stating its opinion that it relegated all other issues irrelevant for anything but appropriate certificate conditions.

Concerned Citizens states that the RD's assumption of a general policy encouraging renewable energy generation is misplaced in that such policy does not address the specific siting issues peculiar to the Project. Concerned Citizens asserts that the correct standard should be that the Project is properly sited, and therefore in the public interest. Concerned Citizens presents its distinction between the two as requiring that where a project only makes a modest contribution to the State's overall policy goals, then the public interest can only be satisfied through a robust evaluation of the balance of the Project's benefits and burdens. Otherwise, any proposal under Article 10 that can demonstrate some consistency with the State policy would be found to be in the public interest.

To support its position, Concerned Citizens cites to the Public Service Law's sections regarding making a public interest finding for mergers, acquisitions and facility transfers and certain Public Service Commission decisions under those statutes. Concerned Citizen's argues that because the Article 10 enabling legislation states that nothing in Article 10 shall be construed to limit any administrative authority, with respect to matters included in this act, which authority

existed prior to the effective date of this act, that the public interest standards applied by the Commission under Section 70 necessarily constitutes the same public interest standard in Article 10. Concerned Citizens claims that Commission's public interest requires an affirmative demonstration of concrete net benefits and whether the benefits a particular proposal outweigh the harms.

Notwithstanding that two different entities, the Public Service Commission and the Siting Board, are responsible for the two different sections of the Public Service Law, even assuming that Concerned Citizens is correct that the Commission's standard is as described and that it applies here, the RD did make such findings. Concerned Citizens claims that the RD adopted DPS Staff's position that the Project will result in a modest beneficial addition of electric generation capacity in the State that will not inefficiently displace other beneficial generation. It states that the RD's recitation of the Project's burdens clearly outweigh the modest benefit. This reading is not supported by the RD. The RD found that, with the implementation of certain certificate conditions, any potential adverse environmental impact findings required by PSL §168(2) have been minimized or avoided to the maximum extent practicable, and that the Project is designed to operate in compliance with the applicable State and local laws. Moreover, the RD found that the Project will result in specific public health, environmental, and socioeconomic benefits. Only after making those findings, did the RD consider the Project's consistency with, and contribution to, the State Energy Plan's policy goals.

We agree with the RD's approach. As recognized by Article 10, there will be impacts resulting from virtually any proposal that the Siting Board considers. We must consider

whether those impacts have been avoided or minimized to the maximum extent practicable. We also must consider whether the proposal is in the public interest. Section 168 of the Public Service Law does not provide any special weight to the public interest finding that elevates it above the other required findings and determinations that we must make thereunder. Rather, it is a determination that we must make together with our determinations regarding the facility's impact on the generation capacity of the state, the proposal's minimization and avoidance of its adverse environmental effects, the avoidance or offset or minimization of any environmental justice impacts, and the proposal's compliance with applicable State and local laws. The RD examines all of these issues and we agree with its conclusion that the record demonstrates here that construction and operation of the Facility will serve the public interest.

PROCEDURAL ISSUES

In his concurrence, Associate Examiner P. Nicholas Garlick raises two procedural issues for the Siting Board's consideration and guidance. First, the Associate Examiner sought guidance concerning when and how the State agency parties should be required to propose specific issues for adjudication. The Associate Examiner's recommendation is that specific issues be identified earlier in the process than occurred in this case.[162] Second, the Associate Examiner requested that the Siting Board consider when and under what circumstances a State agency party, or any other party, may engage in settlement discussions with an applicant and other parties, and to identify which, if any, regulations or other guidance govern those

[162] RD at 156-157.

discussions.[163] We address these points here to provide the requested informal guidance for future Article 10 proceedings. The Siting Board recognizes the potential need to revisit this guidance based on the experience in future proceedings.

Issues Identification

In its brief on exceptions, DPS Staff agrees with the general proposition that the State agencies and other parties in an Article 10 proceeding should work towards identifying issues for adjudication as early and as specifically as possible and that such efforts can contribute to the efficient adjudication of the issues. However, DPS Staff objects to any proposal that a specific timeframe be set and a certain degree of specificity for the identification of issues be required.[164] Further, DPS Staff asserts that identifying issues at an early procedural conference could preclude consideration and incorporation of issues and views expressed at a public statement hearing held close in time or after the procedural conference and would therefore be inconsistent with Article 10's emphasis on public participation.

DPS Staff asserts that an issues conference similar to the conference conducted in DEC Permit Hearing Proceedings under 6 NYCRR Part 624 or under former PSL Article X would be inconsistent with the requirements of PSL Article 10 and its implementing regulations. Moreover, because PSL §165(2) prohibits preclusion of additional issues that contribute to the development of an adequate record, DPS Staff asserts that early issue identification would likely result in motion practice to revise and expand the list of issues to be adjudicated as the parties conduct their review of the application materials and,

[163] RD at 158-161.

[164] DPS Staff's Brief on Exceptions at 4-5.

thereby, reduce the efficiency of the review process and impede the parties', especially the intervenors', meaningful participation in the proceeding.[165]

Cassadaga Wind argues that the list of issues, together with an explanation of why litigation is necessary on an issue, required by 16 NYCRR §1000.12(a)(1) should provide sufficient detail to allow applicants to understand the issues raised by the parties and to allow for meaningful discussions to resolve issues without the need for hearing. Cassadaga Wind also urges that the Siting Board adopt the "substantive and significant" standard for adjudication used by DEC in permit hearing proceedings under 6 NYCRR Part 624.[166] DEC Staff also concurs with Cassadaga Wind's recommendation that the Siting Board adopt DEC's Part 624 issues conference and its "substantive and significant" standard for identifying issues for future Article 10 proceedings.

In keeping with the statutory scheme to act efficiently, the Siting Board encourages the early identification and refinement of issues requiring adjudication in future Article 10 proceedings. Accordingly, the State parties in particular are encouraged to use their best efforts to identify and focus the issues for adjudication by using the procedural provisions incorporated in Article 10 and its implementing regulations that are designed to foster early issue identification. These include the pre-application stipulation process (see 16 NYCRR §1000.5[j]), and the post-application statement of issues and issues conference (see 16 NYCRR §100.12[a][1]).

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[165] Id. at 8-9.

[166] Cassadaga Wind Brief on Exceptions at 47-48.

With respect to the standard for identifying issues for adjudication proposed by Cassadaga Wind and DEC Staff, the Siting Board was asked to consider adopting the "substantive and significant" standard during the rulemaking for the new Article 10 regulations. In the memorandum and resolution adopting the Article 10 regulations,[167] the Siting Board rejected the "substantive and significant" standard for issues identification as being inconsistent with Article 10's "relevant and material" standard (see PSL §167[1][a]). Accordingly, the "substantive and significant" standard is not adopted here as the standard for issue identification in future Article 10 proceedings, but instead issues should be considered that are, as prescribed by PSL §167(1)(a), "relevant and material."

Settlement Procedures

With respect to settlement negotiations under Article 10, DPS Staff notes that in the absence of a governing provision in Article 10 and its implementing regulations or the State Administrative Procedure Act (SAPA), the Rules and Procedure of the Public Service Commission contained in Subchapter A of Chapter I of 16 NYCRR apply (16 NYCRR §1000.3). Accordingly, DPS Staff argues that the Commission's requirements governing settlement procedures contained in 16 NYCRR §3.9 apply in Article 10 proceedings, and no further clarification by the Siting Board on this point is needed.[168] DPS Staff adds that if settlement negotiations had occurred in this proceeding, the

[167] See Case 12-F-0036, Matter of the Rules and Regulations of the Board on Electric Generation Siting and the Environment, contained in 16 NYCRR, Chapter X, Certification of Major Electric Generating Facilities, Memorandum and Resolution Adopting Article 10 Regulations (issued July 17, 2012) at 23-24.

[168] DPS Staff's Brief on Exceptions at 12-13.

amount of time available to the parties to prepare for litigation would have been drastically reduced. Accordingly, DPS Staff urges that any future requests for settlement negotiations should include a notice by an applicant of its willingness to extend the statutory clock for the Siting Board's review.[169]

Cassadaga Wind argues that the requirement of 16 NYCRR §3.9(a) that notice be given to all parties interested in participating in settlement discussions, applicable to rate-making cases for utilities, is not applicable to Article 10 proceedings. Cassadaga Wind argues that requiring an opportunity for all parties to participate in discussions to resolve disagreements will make those discussions unwieldy. It argues that promoting discussions between an applicant and one or more agencies does not prevent the public or other parties from commenting upon or contesting any agreement that may be reached. Cassadaga Wind notes that under 16 NYCRR §5.2 and precedent under former Article X, technical discussions among parties to identify issues and determine points of contention are and were encouraged. In addition, Cassadaga Wind contends that allowing the parties to meet and resolve issues allows the process to proceed in a more efficient manner and places the State agencies in the proper role as careful and unbiased reviewers of the applicant's information.[170] Cassadaga Wind contends, moreover, that §3.9(a) contemplates exploratory discussions between parties without the need for formal notice or participation by all parties.

Cassadaga Wind also takes issue with DPS Staff's assertion that statutory timeframes do not allow for settlement

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[169] Id. at 13.

[170] Cassadaga Wind Brief on Exceptions at 48-49.

discussions. Cassadaga Wind argues that negotiations could have drastically reduced the amount of time all parties needed to prepare for litigation. It objects to DPS Staff's proposal that any future request for settlement negotiations include notice of the applicant's willingness to extend the statutory clock for the Siting Board's review. Cassadaga Wind asserts that this suggestion ignores aspects of the Article 10 process, including pre-application procedures, that provide DPS Staff and others with the opportunity to review and comment on an applicant's project, including during the period before the statutory clock begins to run.

DEC Staff notes that DEC's Part 624 addresses the circumstances under which State agencies and other parties may engage in settlement discussions with an applicant or other party. DEC Staff urges the Siting Board to recognize that in DEC permit hearing proceedings under Part 624 and under former PSL Article X, parties are and were encouraged to resolve issues and modify proposed permit and certificate conditions accordingly, at all stages of a proceeding. DEC Staff notes that Article 10 and its implementing regulations incorporate many procedures used in Part 624 and Article X proceedings, including prehearing conferences, technical conferences, and issues conferences, to identify, prior to hearing, why litigation is necessary for each issue (citing 16 NYCRR §1000.12[a][1]). DEC Staff agrees with Cassadaga Wind that fostering discussions among the parties to an Article 10 proceeding does not preclude the ability of a party or the public to comment on or litigate any proposed agreement that might be reached.

All parties are encouraged to engage in discussions to resolve issues without resorting to formal adjudication and to propose Certificate conditions that incorporate the parties'

agreements. Like all processes within an Article 10 case, such discussions are governed by the Article 10 regulations. Under 16 NYCRR §1000.3, where there is no conflicting Article 10 regulation, the Public Service Commission Rules of Procedure apply. We find that, therefore, the PSC settlement rule, 16 NYCRR §3.9, is applicable to Article 10 cases and should govern both the stipulations discussions at the pre-application phase and any discussions to resolve issues during consideration of a formal application. The requirement of Rule 3.9 that all parties receive notice of and an opportunity to participate in settlement discussions should provide important protections to affected landowners, municipalities, and their citizens.[171] Generally, upon the applicant's filing of a PSS pursuant to 16 NYCRR §1000.5,[172] a notice of a procedural conference is issued to initiate the stipulations process, which serves to advise all interested persons of their right to participate. However, the filing of a formal notice by an applicant would be a good practice to follow at that stage. In any event, all those expressing an interest in participating in pre-application stipulations discussions should be invited to attend and participate. At the application stage, the applicant should file the requisite public notice required by the rule and,

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[171] While the discussion here focuses on Rule 3.9's notice requirement, we note the other important aspect of the Rule, namely its confidentiality requirement, which we also find to be applicable to discussions of stipulations or other agreements under Article 10.

[172] Rule 3.9 does not apply to discussions that occur before the filing of a PSS. Nor does the Rule apply to exploratory discussions between an applicant and another party or potential party before it is determined that the settlement of an issue or issues is possible (see Rule 3.9[a][1]). Finally, the Rule does not apply to discussions at any stage with entities or individuals that are not potential parties to an Article 10 proceeding.

again, should be prepared to invite all interested parties to participate.[173] Throughout the process, however, exploratory discussions to determine the possibility of reaching stipulations are encouraged and permissible without triggering the formal settlement process of Rule 3.9. The Siting Board declines to adopt any requirement that applicants seeking to engage in settlement discussion must provide notice of their willingness to extend the statutory timeframe for the Siting Board's review. Parties are free to negotiate such extensions of time, however, should the need arise.

PSL SECTION 68

In its initial brief, DPS Staff asserted that Article 10 does not preempt the portion of PSL §68 that requires the Public Service Commission (PSC) to issue a Certificate of Public Convenience and Necessity (CPCN or certificate) to an electric company before construction and operation of an electric plant. In the RD, the Examiners recommended that the Certificate Holder must obtain all necessary permits and other approvals, including those pursuant to PSL §68. Their recommendation for a certificate condition was contained in Appendix A, condition 2.

Cassadaga Wind argues in its brief on exceptions that it is not obligated to obtain a certificate under §68 because Article 10 preempts the portion of §68 that is duplicative, i.e. certificates to construct and operate a facility. The Applicant notes that Article 10 does not preempt issues relating to franchises in §68, but franchises do not apply to this Facility.

[173] Of course, a party's right to be present at discussions that might lead to agreement on certificate conditions or other aspects of a case does not require that all parties join in any particular agreement, nor does it give any party the right to disrupt such discussions.

Cassadaga Wind, citing PSL §172(1), declares that the Siting Board has exclusive jurisdiction over the siting, construction and operation of a generation facility. It asserts that no other State entity, including the PSC, can require additional certificate conditions once an Article 10 certificate has been pursued. Cassadaga Wind maintains that the PSC has no authority to require a certificate to construct a facility under Article 10. Applicant brief on exceptions at 40.

Cassadaga Wind claims that the PSC has explicitly held in multiple cases that §68 certificate requirements apply unless the project has been reviewed and approved under Article 10. The Applicant references DPS Staff's REV White Paper on Lightened Regulation in which Staff reiterated that corporations could avoid §68 certification requirements by obtaining an Article VII or Article X certificate.

Cassadaga Wind contends that requiring a certificate under §68 would duplicate the substantial work that was already prepared and submitted to the Siting Board. They explain that Article 10 certificates not only address the same subjects and concerns as §68 requires, but have even more comprehensive and stringent application conditions.

Cassadaga Wind argues that because DPS Staff was engaged in the Article 10 review process and supplied expert review, testimony and input, it would be redundant to have the same Staff involved in a §68 review by the PSC. They allege that under Article 10, the Siting Board would come to the same conclusions as the PSC under §68; consequently, their review is unnecessary.

Cassadaga Wind further emphasizes that they are a wholesale competitive market participant and they do not deal with retail sales, customers or retail utility service. Thus,

the Applicant believes that they cannot be considered a franchise subject to PSC regulation under §68.

Cassadaga Wind defends that a Town's road use agreements, subdivision approvals, rights-of-way and municipal easements are not franchises and cannot be regulated under §68. The Applicant affirms that a Town can use their municipally owned property in any manner they choose and do not need approval from the PSC to do so. Cassadaga Wind stresses that the Siting Board has or will be supplied with all pertinent approvals and agreements with the Town and it is superfluous for the PSC to review this information. Cassadaga Wind attests that they have not obtained a franchise agreement to supply retail service in a municipality and do not seek to exercise a franchise, so the PSC's authority under §68 is not triggered. Finally, the Applicant states that the agreements with public landowners are also not franchises and do not fall under §68 review.

In its brief opposing exceptions, DPS Staff agrees that Cassadaga Wind will not be supplying retail service but because final project designs have not been submitted, it is unknown if a franchise will be required. Staff responds that the Applicant will still be obliged to prove to the PSC that it is financially fit to run the Facility before construction begins. DPS Staff concludes by citing a full quote from PSL §172, stating that the Siting Board can authorize other state agencies to grant permits, certificates, consents or approvals, and therefore can require a §68 approval from the PSC. Staff brief opposing exceptions at 32-34.

In its brief opposing exceptions, Concerned Citizens cites PSL §168(5) and insists that the PSC has the power to enforce compliance with any order issued by the Siting Board. They echo that Article 10 grants authority to the PSC to compel

compliance with the provisions of the certificate before constructing the Facility. Concerned Citizens brief opposing exceptions at 24.

The Siting Board regulations define "approvals of incorporations and franchises, financings and transfers pursuant to PSL §§68, 69 & 70" by the New York Public Service Commission (Commission) as "State Actions Not for the Construction or Operation of the Proposed Major Electric Generating Facility." 16 NYCRR, Section 1000.2(ao). Therefore, the Permanent Siting Board has already recognized in its rulemaking adopting the Article 10 regulations that there are aspects to PSL §§68, 69 & 70 that are not duplicative of Article 10 approvals for the "construction or operation" of the proposed Major Electric Generating Facility. The Article 10 rules have the force of law.

The subject matter of Article 10 is need and environmental compatibility. It is not designed to encompass all aspects of regulating electric corporations. Among the requirements of PSL §68, the Commission (a) examines a certified copy of the charter of the entity proposing to own or operate electric plant to determine whether the entity has the legal capacity to do so; (b) ensures that the entity is properly registered to do business in New York State including determining whether the entity is properly registered so that service of process can occur if the entity is difficult to locate; and (c) ensures that the entity has received any required consent of the proper municipal authorities for the use of any municipal property or public rights-of-way. Such consents are not limited to franchises. Franchises are merely one form of municipal consent. These described functions are police power functions related to the entity, not to the facility to be constructed. In the absence of Article 10

jurisdiction, the Commission would also be examining need and environmental compatibility issues of the facility to be constructed due to the overlay on PSL §68 of the environmental impact review requirements of the State Environmental Quality Review Act (SEQRA). In 2013, PSL §68 was amended to also require that the Commission examine the economic feasibility of the entity and the entity's ability to finance improvements, render safe, adequate and reliable service, provide just and reasonable rates, and be in the public interest. The 2013 amendments also established a new regime by which the Commission is now expressly empowered to police such entities by having the ability to revoke or modify its PSL §68 Certificate. The 2013 amendments add further credence to the functioning of much of PSL §68 as regulation of the entity, not the facility. The precedents cited by Cassadaga Wind do not adequately address these nuances.

To settle this matter with complete certainty, the Siting Board also exercises its powers pursuant to the first sentence of PSL §172(1) and hereby expressly authorizes the 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 the need and environmental compatibility issues already addressed by the Siting Board and will instead only act on its police power functions related to the entity as described above.

EXPIRATION DATE

Siting decisions are necessarily made in the context of existing conditions in the community and known development plans at the time the decision is made. Over time, those conditions invariably change and the base information relied

upon in making the siting decision becomes stale. Changes in the community over time may directly affect whether the proposed Facility is in fact environmentally compatible. Given the dynamic nature of communities, it is appropriate that this Article 10 Certificate not be open-ended such that the certificate Holder can wait for many years before either commencing or completing construction. In recognition that this certificate requires extensive steps to be taken to satisfy pre-commencement conditions before construction work can begin, and that it may take between one and two construction seasons to complete the construction work, the Siting Board finds that it is appropriate to require that this Certificate will automatically expire in ten years from the date of issuance unless the Certificate Holder has completed construction and commenced commercial operation of the Facility by then. A condition to that effect is therefore stated in this Certificate.

CONCLUSION

Based on the record before us, the arguments of the parties, and all applicable laws and policies, we grant the certificate of environmental compatibility and public need to Cassadaga Wind LLC with the conditions set forth in Appendix A to this order.

The Board on Electric Generation Siting and the Environment orders:

1. The recommended decision of Examiners Dakin D. Lecakes and P. Nicholas Garlick, to the extent consistent with this opinion and order, is adopted and, together with this opinion and order, constitutes the decision of this Siting Board in this proceeding.

2. Except as here granted, all exceptions to the Examiners' recommended decision are denied.

3. Subject to the conditions set forth in this opinion and order and appended to it, a certificate of environmental compatibility and public need is granted, pursuant to Article 10 of the Public Service Law, to Cassadaga Wind, LLC (the Applicant) for the construction and operation of a 126 megawatt wind farm consisting of up to 48 wind turbines in the Towns of Cherry Creek, Charlotte, and Arkwright, with a generator lead line connecting to a substation in the Town of Stockton, all in Chautauqua County, provided that the applicant files, within 30 days after the date of issuance of this opinion and order, a written acceptance of the certificate pursuant to 16 NYCRR §1000.15(a).

4. Upon acceptance of the certificate granted in this opinion and order or at any time thereafter, the applicant shall serve copies of its compliance filing in accordance with the requirements set forth in 16 NYCRR §1002.2(c) and Certificate Condition IV. Pursuant to 16 NYCRR §1002.2(d), parties served with the compliance filing may file comments on the filing within 15 days of its service date.

5. Prior to the commencement of construction, the Certificate Holder shall comply with those requirements of Public Service Law §68 that do not relate to the construction and operation of the facility by obtaining Public Service Commission permission and approval as an electric corporation.

6. If the Certificate Holder decides not to commence construction of any portion of the Project, it shall so notify the Secretary in writing within 30 days of making such decision and shall serve a copy of such notice upon all parties and all entities entitled to service of the application or notice of the application.

7. In the Secretary's sole discretion, the deadlines set forth in this order may be extended. Any request for an extension must be in writing, include a justification for the extension, and be filed at least one day prior to the affected deadline.

8. This proceeding is continued.

By the New York State Board
on Electric Generation Siting
and The Environment,

(SIGNED) KATHLEEN H. BURGESS
Secretary

APPENDIX A

CERTIFICATE CONDITIONS

Appendix A

Certificate Conditions

I. Project Authorization

1. The Certificate Holder is authorized to construct and operate the Facility (or the Project), as described in the Application by Cassadaga 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 and 70), 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 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 the need and environmental compatibility issues 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 the Certificate.

3. Facility construction is authorized for up to 48 wind turbines in the Towns of Cherry Creek, Charlotte and Arkwright, access roads, above and underground 34.5 kilovolt (kV) collection lines, an above-ground 115kV generator lead line, collection and point-of-interconnect (POI) substations, two permanent meteorological towers, one operations and maintenance building, and two temporary staging/laydown areas. The POI substation and a small portion of the 115kV generator lead line are located in the Town of Stockton. The total generating capacity of the Facility shall not exceed 126 megawatts (MWs). Following

completion of an Interconnection Agreement between the Applicant, Niagara Mohawk Power Corporation, d/b/a National Grid (National Grid), and the New York Independent System Operator (NYISO), construction of Lines 161 and 162 to loop in and loop out of the new POI station; temporary and permanent relocation of Line 159; and a staging/laydown area associated with the permanent and temporary relocation of the National Grid 115 kV Lines.

4. The Certificate Holder is authorized to construct electric transmission facilities and interconnect those facilities, in accordance with the terms and conditions of the Interconnection Agreement between the Applicant, National Grid, and NYISO, to a new POI station to be constructed adjacent to the existing Moon substation owned by National Grid, in the Town of Stockton. If the Applicant elects to construct the new POI station and transfer ownership to National Grid, such ownership shall be transferred to National Grid in accordance with the Interconnection Agreement, on mutually agreeable terms, and in a manner consistent with the Public Service Law and the regulations of the Public Service Commission.

II. General Conditions

5. Prior to the commencement of construction of the Facility, as defined in condition 13, the Certificate Holder shall file a request/application for a 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 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 further amended, revised, and adopted, except for those local laws the Siting Board waives as unreasonably burdensome, as stated in the Siting Board's Order Granting Certificate.

8. The Certificate Holder shall construct the 115kV transmission facility in accordance to 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 National Grid, and any successor Transmission Owner (as defined in the NYISO Agreement), to ensure that, with the addition of the Facility (as defined in the Interconnection Agreement between the Certificate Holder, NYISO and National Grid), the system will have power system relay protection and appropriate communication capabilities to ensure that

operation of the National Grid 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 National Grid, 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 National Grid 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 13, 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.

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 Public Service Commission's (Commission) 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 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.

g) DPS Staff will promptly notify the New York State Department of Environmental Conservation (DEC) Region 9 representative of any activity that involves a violation of the Certificate within DEC's jurisdictional areas (e.g., a State-regulated wetland or its adjacent area, a protected stream or other waterbody, or a threatened or endangered species).

12. 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

13. 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 or testing or surveying (such as geotechnical drilling and meteorological testing) to determine the adequacy of the site for construction, the Certificate Holder shall notify the public as follows:

    a) Provide notice by mail to host landowners, adjacent landowners within 5,000 feet of the final layout to be constructed, and persons who reside on such property (if different from the landowner);

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

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

    d) Provide notice for display in public places, which will include 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, and the Facility construction trailers/offices; and

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

14. The Certificate Holder shall write the notice(s) required in paragraph 13 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 Siting Board and Commission.

15. 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.

16. 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.

17. Prior to the end of construction, the Certificate Holder shall notify the entities identified in Condition 13 (a) and 13(b) with the contact name, telephone number, and address of the Operations Manager, and shall file the same with the Secretary.

18. 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.

IV. Compliance Filings and Reporting Requirements

The following plans, drawings, and other documents shall be filed for approval by the Siting Board in accordance with the rules for submittal, public comment, and decisions set forth in 16 NYCRR §1002. The Certificate Holder shall implement all requirements of the compliance filings, as

approved or amended by the Siting Board. Required compliance filings shall be filed with the Secretary at least 45 days prior to the commencement of construction date, as defined in Certificate Condition 13, unless otherwise noted.

General

19. Documentation demonstrating that the final Facility design meets or exceeds the turbine setback requirements set forth in the zoning regulations for the Towns of Arkwright, Charlotte, and Cherry Creek, unless written consent has been obtained from affected property owners. Proofs of consent shall be provided and indicated on the final design drawings.

20. A Final Decommissioning Plan and proof of financial security as required by the Siting Board. The decommissioning estimate 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. The Applicant shall work with DPS Staff and the Towns of Arkwright, Cherry Creek, and Charlotte on an acceptable form of letter or letters of credit and the Applicant shall file with the Secretary with the Towns' approvals within 90 days prior to construction. The Applicant shall also file with the Secretary 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 Arkwright, Cherry Creek, and Charlotte 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.

Health and Safety

21. The Final Emergency Action Plan that shall be implemented during Facility construction, operation, and decommissioning. 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.

22. 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.

23. The Final Health and Safety Plan that shall be implemented during Facility construction, operation, and decommissioning.

24. The Certificate Holder shall contact all known pipeline operators in the area and as identified in the PSC's Case 17-G-0424, and all land owners on which Project facilities are to be located or whose property lines are within the zone of safe siting clearance, and shall reach an agreement with each operator to ensure that the electric transmission line 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 transmission line, and should include both the 115 kV lines and the 34.5 kV collection lines, specifically addressing 16 NYCRR section 255.467(g) (External corrosion control; electrical isolation). 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.

25. 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

26. A final Traffic Control Plan that will be developed in order to minimize potential delays to local traffic during construction. The Certificate Holder shall coordinate with the State, County, and local municipalities to respond to any locations that may experience any traffic flow or capacity issues. The Traffic Control Plan shall include copies of Host Community Agreements and/or Road Use Agreements with the County and Towns where the local roads are being used for delivery and construction vehicle transport routes.

Plans, Profiles, and Detail Drawings

27. 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 wells (unless waived by landowner and gas well operator);

    d) 550 feet from public roads;

    e) 550 feet from State lands;

    f) 550 from non-residential structures;

    g) 1,500 feet from non-participating residences;

    h) 1,000 feet from participating residences;

i) 550 feet from non-participating parcels; and

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

Environmental

28. An Environmental Compliance Program Plan, including:

a) Establishment of funding for an independent, third-party environmental monitor to oversee compliance with environmental commitments and permit requirements. The environmental monitor shall perform daily inspections of construction work sites and, in consultation with DPS Staff, issue regular reporting and compliance audits. The Certificate Holder shall identify and provide qualifications and contact information for the independent, third-party monitor for environmental compliance monitoring; there shall be an independent, third party agricultural monitor. If the Department of Agriculture and Markets (DAM) agrees that the independent third party monitor is qualified on agricultural issues, one monitor can act as both environmental and agricultural monitor.

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.

29. Final Detailed Geotechnical Engineering Report 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.

30. 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, subject to verification using shadow detection and operational controls at appropriate wind turbines. The Shadow Flicker Impacts Minimization and Mitigation Plan shall include:

    a) updated analysis of realistic and receptor-specific predicted flicker based on final proposed design;

    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 that will be adopted for real-time meteorological monitoring and operational control of turbines;

    d) temporary turbine shutdowns during periods that produce flicker; 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.

    Details of flicker control, minimization and mitigation measures shall be indicated on final design drawings and standards, and site plans as appropriate.

31. A final Cultural Resources Mitigation and Offset Plan, either as adopted by federal permitting agency in subsequent National Historic Preservation Act (NHPA) §106 review, or as proposed in the April 3, 2017 Application supplement and as revised in further consultation with the State Historic Preservation Office 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.

32. A final Bird and Bat Conservation Strategy (BBCS) will be developed in consultation with DEC, DPS Staff and the United State Fish and Wildlife Service (USFWS). A copy of the Final BBCS will be provided to DEC and DPS at the same time it is submitted to USFWS but not less than 45 days prior to the commencement of construction.

33. A final Net Conservation Benefit Plan which shall be filed within six months of the date of issuance of the Certificate. The Net Conservation Benefit Plan shall be prepared in consultations with and approved by DEC and DPS Staff, said consultations being open to any Party to Case 14-F-0490 desiring to participate or observe, and shall meet the requirements of 6 NYCRR §182.11. The minimization measures in the Net Conservation Benefit Plan that require installation shall be installed prior to operation of the Facility. At a minimum, the Net Conservation Benefit Plan shall contain:

a) a demonstration that the Net Conservation Benefit Plan results in a positive benefit on the Northern Long Eared Bat species and not just an offset for any potential take of the species;

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

c) full source information used as inputs to the net benefit calculations;

d) a consideration of potential minimization measures identified by DEC Staff;

e) a consideration of potential sites identified by DEC Staff for minimization measures;

f) the identification and detailed description of the additional minimization measures developed to minimize potential take of the Northern Long Eared Bat that will be undertaken by the Certificate Holder; and

g) a curtailment regime during the period July 1 through October 1 requiring a minimum curtailment of 5.0 m/s, 30 minutes prior to sunset through 30 minutes after sunrise, when temperatures are greater than 10 degrees Celsius.

34. A final Invasive Species Control Plan (ISCP). 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 conducted 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 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.

35. Final wetland and stream impact drawings, site plans, and construction details (including the POI station and National Grid electric lines) shall 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) Assessment of reasonable avoidance measures;

c) Identification and assessment of methods to minimize impacts; and

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

36. A final Wetlands Mitigation Plan 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.

Information Reports: The following written information reports, plans, drawings, and other documents shall be filed with the Siting Board in accordance with 16 NYCRR §1002.4. If the filings are not acceptable to Department of Public Service Staff and Department of Public Service Staff and the Certificate Holder cannot agree on changes to such filings, then those respective filings shall be referred to the Siting Board or the Commission if the Siting Board's jurisdiction has ceased as compliance filings in accordance with 16 NYCRR §1002.2 and the Certificate Holder will be required to implement all requirements of the compliance filings, as approved or amended by the Siting Board or the Commission if the Siting Board's jurisdiction has ceased. Required compliance filings shall be filed with the Secretary at least 45 days prior to the commencement of construction date, as defined in Certificate Condition 13, unless otherwise noted.

General

37. Copies of all federal permits and/or approvals required to conduct jurisdictional activities associated with certain aspects of construction and operation of the Facility, including but not limited to the Federal Aviation Administration determination that construction and operation of the Facility shall have no adverse effects on, or interference with, radar or instrument systems used for air traffic control, guidance, weather, or military operations including training.

38. 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.

39. Documentation demonstrating that all necessary agreements are in place for use of the Facility Site for construction and operation (e.g., landowner agreements, easements, setback waivers, or Good Neighbor Agreements).

40. A copy of the Interconnection Agreement between NYISO, National Grid, and the Certificate Holder. Any updates or revisions to the Interconnection Agreement shall be submitted 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 National Grid and file such information with the Secretary.

41. All Facilities Studies issued by National Grid and the NYISO shall be provided within 14 days of receipt of the final study report(s). Any updated facilities agreements will also be filed throughout the life of the Facility.

42. 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.

43. Any manufacturer provided information regarding the design, safety and testing information for the specific generating and related facilities equipment to be installed during construction, or as related to any equipment installed during Facility operation as a replacement of failed or outdated equipment. All such updates will be submitted to the Siting Board, or to the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary throughout the life of the plant.

Plans, Profiles, and Detail Drawings

44. Details and specifications of the selected turbine model (including cut sheets, and blade details (including length and thickness), including third-party certification documenting that the turbine model meets international design standards); 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.

45. 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.

46. 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.

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

    a) final details of the concrete batch plant layout, location, and access;

    b) temporary lighting that avoids offsite light trespass;

    c) copies of required permits; and

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

    e) 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.

48. Final design plans and profile drawings of the 115 kV transmission line and termination structures to the substation. Certificate Holder shall also provide the Facilities Study, Interconnection Agreement, and any Facilities Agreement that the Certificate Holder has entered into. Minor activities required for testing and development of final engineering and design information may be performed prior to commencement of construction.

49. 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. A breakdown of the number of miles per installation shall be included as a legend (including installation distances for single, double, triple, etc. runs).

50. Final details of single and multiple-circuit overhead 34.5 kV electric collection line layouts. 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) "Heavy Angle Dead-End 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.

51. Final design and details of single and multiple electric circuit underground collection lines. Each Project circuit layout (single, double, triple, etc.) shall include a cross-section and clearing and ROW widths needed for accommodating circuit installations.

52. 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 will be subject to formal filing with the Secretary within 48 hours from the agreement to make the change in installation method.

Environmental

53. Frac-Out Risk Assessment and Contingency Plan 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 20 feet from the edge of the stream or wetland to minimize disturbance to the extent practicable. 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 DEC and DPS Staff shall be notified immediately and a written monitoring report describing the location, estimated volume, and cleanup efforts shall be submitted within 24 hours of the occurrence.

54. 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*.

55. A 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 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.

56. Site-specific plans for management of Japanese knotweed and common reed and areas with high concentrations of invasive species identified in the Baseline Species Report as well as all areas of disturbance in Boutwell Hill State Forest shall be included in the Final ISCP.

57. 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.

58. A final approved Storm Water Pollution Prevention Plan (SWPPP). 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.

59. 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. 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.

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

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

e) Reporting to DPS Staff any complaints not resolved within 60 days of receipt;

f) Arbitrating complaints not resolved within 60 days; and

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

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

61. A detailed Facility Exterior Lighting Plan shall be filed with DPS Staff within 30 days of the commencement of construction. The Lighting Plan shall address:

a) security lighting needs at wind turbine sites, substation and switchyard sites, the facility Operations and Maintenance building site and any exterior equipment storage yards;

b) plan and profile figures to demonstrate the lighting area needs and proposed lighting arrangement at the substation and switchyard sites, the facility Operations and Maintenance building site, any exterior equipment storage yards; and typical figure(s) for wind turbine sites;

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

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, 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.

62. A Post Construction Avian and Bat Monitoring and Adaptive Management Plan shall be filed at least 60 days prior to the start of commercial operation of the Facility. The plan will include direct impact fatality studies and habituation/avoidance studies. The details of the post-construction studies (i.e., the start date, number and frequency of turbine searches, search area, bat monitoring, further monitoring beyond the second year, etc.), will be described following DEC's June 2016 *Guidelines for Conducting Bird and Bat Studies at Commercial Wind Energy Projects*, for Standard Post-Construction Studies and through consultation between the certificate holder, USFWS, and DEC. Post-construction monitoring will be conducted for a minimum period of at least two (2) years but no more than three (3) years.

63. The Certificate Holder shall file with the Secretary within 60 days of the commercial operation date a certification that the collector lines and the 115 kV transmission facilities were constructed to the latest editions of ANSI standards and that the 115 kV lines were constructed to meet the minimum clearance requirements at 212 degrees Fahrenheit conductor operating temperature under short term emergency conditions. 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.

64. No less than 60 days prior to commercial operation date, the Certificate Holder shall file with the Secretary, Operation and Maintenance Plan(s) for the Facility. The Company shall file with the Secretary complete documentation of its 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.

65. 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.

66. Prior to Certificate Holder providing final design plans and profile drawings of the 115 kV transmission line, new POI station, collector station, feeder lines, and other work related to interconnection referenced in certificate conditions 39 through 42, the Certificate Holder will work with National Grid to ensure such documents are in accordance with the Interconnection Agreement and National Grid’s Electric System Bulletins, as well as the New York State High Voltage Proximity Act.

67. A Relay Coordination Study that has been reviewed and accepted by National Grid shall be filed at least four months prior to the projected date for commencement of commercial operation of the facilities.

68. As-built drawings in both hard and electronic copies shall be filed 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 transmission and collection line locations.

69. Long-range Electric Transmission Facility and Corridors Management Plan shall be filed within one year of the commercial operation date. The plan shall address specific standards, protocols, procedures and specifications for:

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;

h) Landowner notification procedures.

70. The Certificate Holder shall present to the Siting Board, or the Commission after the Siting Board’s jurisdiction has ceased, by filing with the Secretary at a minimum 120 days prior to the start of construction:

a) Final drawings and details of the Wind Generating Facility, 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.

   (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.

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 61400-14 standard, 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 required to meet the noise conditions of this Certificate.

(ii) Sound Power levels from the turbines shall not exceed 106.6 dBA overall, 122 dBZ at the 16 Hz full octave band, 119 dBZ at the 31.5 Hz full octave band, and 115 dBZ at the 63 Hz full octave band, to the extent this information is available or can be calculated.

d) Revised sound modeling using the same methodology as the Application but with the specifications of the wind turbine model selected for construction to demonstrate that the project is modeled to meet the Local Laws on Noise for the Towns of Charlotte, Cherry creek and Arkwright and the regulatory limits of Conditions 78(a), 78(b), and 78(e). In addition, the revised sound modeling will show conformance with the following design goals:

(i) 40 dBA $L_{(night\text{-}outside)}$, annual equivalent continuous average nighttime sound level from the Facility outside any existing permanent or seasonal non-participating residence.

(ii) 50 dBA $L_{(night\text{-}outside)}$, annual equivalent continuous average nighttime sound level from the Facility outside any existing participating residence

(iii) 65 dBZ $L_{(1\text{-}hour)}$, 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.

71. Compliance with Certificate Conditions for the Facility shall be evaluated by the Certificate Holders by following a Sound Testing Compliance and Noise Complaint Protocol that shall:

a) Follow the provisions and procedures for post-construction noise performance evaluations indicated in the Application and include testing for the limits imposed by the Siting Board in these Certificate Condition, except to also include the addition of three

compliance monitoring sites to be selected by DPS Staff. In the event that the Applicant contests the DPS selected monitoring sites and such dispute cannot be resolved, the dispute is to be referred to the Commission's alternative dispute resolution process.

b) Be presented to the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary for review within 90 days after the issuance date of this Order but no later than 90 days before the start of construction.

c) Include, among other items, sound instrumentation specifications and calibration requirements; equipment settings; noise and vibration descriptors to be evaluated; weather conditions to be tested and to be excluded; seasons and time frames for testing; testing procedures, provisions for audible prominent tones, low frequency noise, and vibrations; provisions for processing test results, reporting, and documentation.

d) Include provisions for First-Year Compliance Testing and testing in response to noise and vibration complaints.

e) Include provisions to notify and request permission for access from property owners to conduct noise or vibration measurements at outdoor or indoor private property locations, provided the property owners are willing to grant permission.

72. 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.

a) 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.

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 73(a), but no later than thirteen (13) months after the commencement of operations of the Facility.

73. If the results of the first or the second Sound Compliance Tests, or any subsequent Compliance or Violation Tests or any test performed in response to complaints, 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:

(i) 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.

(ii) 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.

(iii) 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.

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.

74. 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 and submit an approvable "Wetland Mitigation Remedial Plan" for DEC 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. After the transfer of any assets from the Certificate Holder to National Grid, the evaluation and remediation responsibilities described in this paragraph shall be conducted by National Grid, and the Certificate Holder shall reimburse National Grid for all costs associated therewith.

75. 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 and submit an approvable "Invasive Species Remedial Plan" for DEC approval. The "Invasive Species Remedial Plan" must describe the likely reasons for not achieving DEC 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. After the transfer of any assets from the Certificate Holder to National Grid, the evaluation and remediation responsibilities described in this paragraph shall be conducted by National Grid, and the Certificate Holder shall reimburse National Grid for all costs associated therewith.

76. Prior to installation of any permanent road/stream crossings, a site specific "Stream Crossing Plan" shall be submitted to the Department for approval. 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.

These plans must be approved by DEC prior to construction.

77. After commencement of construction of the point of interconnection substation, the Certificate Holder shall file with the Secretary and provide to National Grid a monthly report on the progress of construction of the point of interconnection substation and an update of the construction schedule, and shall file copies of current construction progress reports during all phases of construction. In the event the Commission determines that construction is not proceeding at a pace that is consistent with the Interconnection Agreement between National Grid and the Certificate Holder, and that a modification, revocation, or suspension of the Certificate may therefore be warranted, the Commission may issue a show cause order requiring the Certificate Holder to explain why construction is behind schedule and to describe such measures as are being taken to get back on schedule. The Order to Show Cause will set forth the alleged facts that appear to warrant the intended action. The Certificate Holder shall have thirty days after the issuance of such Order to respond and other parties may also file comments within such period. Thereafter, if the Commission is still considering action with respect to the Certificate, a hearing will be held prior to issuance of any final order of the Commission to amend, revoke or suspend the Certificate. It shall be a defense in any proceeding initiated pursuant to this condition if the delay of concern to the Commission:

a) arises in material part from actions or circumstances beyond the reasonable control of the Certificate Holder (including the actions of third parties);

b) is not in material part caused by the fault of the Certificate Holder; or

c) is not inconsistent with a schedule set forth in the Interconnection Agreement.

78. 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.

V. Requirements Prior to Operation

79. 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;

d) Lighting controls at substations, turbines and turbine sites shall be maintained;

e) Non-specular conductors shall be used for overhead portions of the generator lead line and the electric collection system;

f) Facility decommissioning program funds shall be established to assure removal of visible components;

g) The electric collection system facilities to be located along Boutwell Hill Road, Mill Road and East Road within properties comprising the Boutwell Hill State Forest

shall be located in conformance with any easement granted by the DEC. Self-supported monopole structures shall be required within the Boutwell Hill State Forest. The facilities shall be designed, installed and maintained in accordance with the Board's decision; and

h) If any overhead-to-underground transition structures are created, such may be sited within 100 feet of the entry point of the State Forest near East Road and exit point westerly of Housington Road.

VI. Noise and Vibration

80. 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 45 (dBA) L_{eq} (8-hour) at any permanent or seasonal non-participant residence existing as of the issuance date of this Certificate and 55 dBA L_{eq} (8-hour) for any participant residence existing as of the issuance date of this Certificate.

b) Comply with a limit of 40 dBA L(night-outside), annual equivalent continuous average nighttime sound level from the Facility outside any existing permanent or seasonal non-participating residence, and a limit of 50 dBA L(night-outside), annual equivalent continuous average nighttime sound level from the Facility outside any existing participating residence.

c) 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 70(a).

d) 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 (Sounds with strong low-frequency content).

e) 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."

f) Comply with a limit of 40 dBA L_{eq}(1-hour) at the outside of any non-participating residence from the collector substation equipment, and subject to the tonal penalties of sub-condition 70(b).

Emergency situations are exempt from any of these limits.

81. 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 Charlotte, Cherry Creek and Arkwright 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) All complaints received shall be reported monthly during the first full year of commercial operations and quarterly beyond the first full year to the Board, or the Commission after the Board's jurisdiction has ceased, by filing with the Secretary during the first 10 calendar

days of each month, including copies of the complaints and if available, a description of the probable cause (outdoor or indoor noise, tones, low frequency noise, amplitude modulation, vibrations, rumbles, rattles, etc.); 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 filing is not required for that period.

d) Should complaints related to excessive and persistent amplitude modulation occur at any non-participant residence existing as of the issuance date of this Certificate with modeled sound levels exceeding 40 dBA L_{1hr}, the Certificate Holder shall investigate and measure amplitude modulation at the affected receptors during the time frame when the worst conditions are known, or, if not known, expected, to occur. If the $L_{90\text{-}10\ minute}$ noise levels (dBA), including any amplitude modulation and prominent tone penalties exceed a noise level of 45 dBA and amplitude modulation is in excess of a 5 dB modulation depth at the evaluated receptor(s) for more than 10% of the time during the identified time frame of evaluation, the Certificate Holder shall continue with the investigation, identify frequency of occurrence and the conditions that may be favorable for its occurrence, and propose minimization measures to avoid or minimize the impacts. Minimization measures that avoid, minimize, resolve or mitigate the amplitude modulation impacts shall be identified and reported to the Siting Board, or the Commission after the Siting Board's jurisdiction has ceased, by filing with the Secretary and implemented after review and approval. Compliance with this Certificate Condition shall be finally demonstrated by conducting a test that shows that the $L_{90\text{-}10\text{-}minute}$ sound levels (dBA), including a 5 dBA penalty for amplitude modulation at that particular location and any additional prominent tone penalties, are lower than or equal to 45 dBA and amplitude modulation depth is 5 dB or lower for a minimum 90% of any hour. For any complaints that do not exceed the limits established in the foregoing, the

Certificate Holder should handle those complaints under its complaint resolution protocol.

e) The Certificate Holder shall investigate all other noise and vibration complaints by following the Complaint Protocol in, and consistent with the limits imposed by, these Certificate Conditions.

82. 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 of Noise Reduced Operations for individual turbines shall also be kept and updated as necessary.

83. The Certificate Holder shall comply with the following conditions regarding construction noise:

a) Comply with all local laws regulating construction noise;

b) Maintain functioning mufflers on all transportation and construction machinery;

c) Respond to noise and vibration complaints according to the Protocols established in the Certificate Conditions.

VII. Threatened and Endangered Species

84. Excluding bald eagles (*Haliaeetus leucocephalus*), if at any time during the life of the Project an active nest of any federally, or State, listed threatened or endangered bird species is discovered within an active construction, ground clearing, grading, or maintenance site, the regional DEC Natural Resource Supervisor will be notified within forty-eight (48) hours of discovery, and the nest site will be marked. An area five hundred (500) feet in radius around the nest will be avoided until notice to continue construction at that site is granted by the regional DEC Natural Resource Supervisor.

85. If at any time during the life of the Project a bald eagle nest is located, the regional DEC Natural Resource Supervisor will be notified within forty-eight (48) hours of discovery, and prior to any disturbance of the nest or immediate area. An area six hundred sixty (660) feet in radius from the nest tree will be posted and avoided until notice to continue construction at that site is granted by the regional DEC Natural Resources Supervisor. The nest tree will not be approached under any circumstances unless authorized by the regional DEC Natural Resource Supervisor.

86. 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 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 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 9 Natural Resource Supervisor within one week of the event.

d) Reporting Requirements: All reports of TE species shall include the following information: species, observation date and time; 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 observed; identification and contact information of the observer; and the nature of and distance to any project construction or maintenance activity.

e) If at any time during the life of the Project any dead, injured or damaged 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 regional DEC Region 9 Natural Resource Supervisor (716.372.0645) and United States Fish and Wildlife Service (607.753.9334) to arrange for recovery and transfer of the specimen(s). The following information pertaining to the find shall be recorded: species, the date the animal or nest was discovered; the GPS coordinates of the location of discovery, the name(s) and contact information of the person(s) involved with the incident(s) and find(s); and, if known, an explanation of how the mortality/injury/damage occurred. This record shall be kept with the container holding the specimen and given to the DEC at the time of transfer. If the discovery is followed by a non-business day, the Certificate Holder shall ensure the location of the find is marked, GPS data recorded, detailed photographs of the carcass(es) or nest(s) taken and surrounding landscape relative to the Project and components, and the specimen(s) placed in a freezer until it can be retrieved by the proper authorities.

VIII. Wetlands and Streams, Vegetation and Invasive Species

87. 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.

88. The Certificate Holder shall submit a Notice of Intent to Commence Work to the Region 9 Supervisor of Natural Resources, DEC Region 9 Allegany Sub-Office, 182 East Union Street, Suite 3, Allegany, NY 14706 at least 72 hours in advance of the commencement of construction and shall also notify him/her immediately in writing of the completion of work.

89. All construction activity, including operation of machinery, excavation, filling, grading, clearing of vegetation, disposal of waste, street paving, and stockpiling of material, is to take place within the project site as depicted on project plans. No construction activity is to take place 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.

90. During construction, erosion control devices such as straw bales or silt fences shall be used to prevent erosion of the dredged material or disturbed soil along with other measures as described in the SWPPP. The straw bales or silt fence 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. They shall remain in place until construction is completed and the area is completely stabilized. Use of hay bales is strictly prohibited to minimize the risk of introduction of invasive species.

91. All equipment and machinery shall be stored and safely contained more than 100 feet landward of the 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.

92. Fuel or other chemical storage tanks shall be contained and located at all times in an area more than 300 feet landward of the regulated wetland or water body. 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.

93. All mobile equipment, excluding dewatering pumps, must be fueled in a location at least 100 feet to 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 and absorbents capable of containing any leakage of petroleum products.

94. Spillage of fuels, waste oils, other petroleum products or hazardous materials shall be reported to the DEC's Spill Hotline (1-800-457-7362) within two hours according to the DEC Spill Reporting and Initial Notification Requirements Technical Field Guidance.

95. All equipment used within bed or banks of streams or in wetlands and adjacent areas must be inspected daily for leaks of petroleum, other fluids, or contaminants and may only enter a stream channel if found to be free of any leakage. A spill kit must be on site and any leaks must be stopped and cleaned up immediately.

96. All fill 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.

97. Any stream crossing determined to not be feasibly crossed trenchlessly by the Site Specific Constructability

Assessment shall be opened for the installation and backfilled in one continuous operation. Before trenching through stream banks or wetlands 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. Trench breakers/plugs shall be used at the edges of wetlands as needed to prevent draining of an entire wetland during construction. 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 DEC is notified and a remediation plan to restore the wetland and prevent future dewatering of the wetland has been approved by DEC. Only the excavated wetland topsoil and subsoil shall be utilized as backfill. In wetland areas, the topsoil shall be removed and stored separate from subsoil. 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. Depth of buried cables must be sufficient to prevent exposure during future high flow events.

98. No turbid water resulting from dewatering operations, including water that has infiltrated the construction site, shall be discharged directly to or allowed to enter any wetland, stream or water body within the Project area. All other necessary measures shall be implemented to prevent any visible increase in turbidity or sedimentation downstream of the work site. Turbid water resulting from dewatering operations shall be 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 any visible increase in turbidity or sedimentation downstream of the work site.

99. Discharges from dewatering operations shall be baffled or otherwise diffused in order to prevent erosion or turbid water from entering wetlands and waterbodies.

100. 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.

101. Markers used to delineate/define the boundary of the wetland or the extent of the structures allowed by the Certificate shall be left in place and remain undisturbed until completion of construction activities and restoration of the impacted area.

102. All disturbed soils within regulated freshwaters wetlands and the associated adjacent areas must be seeded with a native seed mix and mulched with straw only (hay is prohibited). Mulch shall be maintained until the disturbed area is heavily revegetated. Additional seeding shall be completed as necessary to achieve an 85% vegetative cover across all disturbed areas.

103. All areas of temporary disturbance to regulated Freshwater Wetlands and 100-foot adjacent areas must be restored and appropriately graded upon completion of temporary work items.

104. 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.

105. All wetland and DEC adjacent areas disturbed during installation of buried interconnects shall be restored 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 the wetland and State-regulated adjacent area boundary. Immediately upon completion of grading, the area shall be seeded with native herbs 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. 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 exists prior to construction. Because of the limited areas of impact of the Facility to forested adjacent areas that will only be cleared, the Applicant and DEC will agree on appropriate restoration measures which may include natural revegetation. In those areas where relevant, monitoring for woody vegetation establishment will take place during the growing season over a 5-year period. Random sample points will be established within temporarily disturbed wetlands and adjacent areas. 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 points will be averaged and extrapolated to the entire area of temporary disturbance within a given wetland or adjacent area. Vegetation reestablishment will be considered successful once 85% absolute cover of woody species is achieved. If at the end of the fifth year of monitoring, 85% absolute cover of woody species is not achieved, then the Certificate Holder must evaluate the reasons for these results and submit an approvable “Wetland Planting Remedial Plan” for 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, the "Wetland Planting Remedial Plan" will be implemented according to the approved schedule. Performance requirements contained in the approved "Invasive Species Monitoring and Control Plan" must also be achieved.

b) 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 DEC.

c) 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.

106. Overhead transmission lines and interconnects in wetland and State-regulated adjacent areas shall be completed in accordance with the following requirements:

a) Swamp mats must be used in wetlands for installation of utility poles and overhead lines;

b) Prior to installation in wetlands and adjacent areas, swamp mats must be cleaned of invasive species following protocols described in the approved "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 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 evaluate the reasons for these results and submit an approvable "Wetland Planting Remedial Plan" for DEC approval. The "Wetland Planting Remedial Plan" must describe the reasons for poor 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. After the transfer of any assets from the Certificate Holder to National Grid, all monitoring and evaluation duties described in this paragraph shall be conducted by National Grid, and the Certificate Holder shall reimburse National Grid for all costs associated therewith.

107. Any debris or excess material from construction of the Project shall be completely removed from the wetland or adjacent area (upland) and removed to a facility duly authorized to receive such material. No debris is allowed to remain in wetlands and/or regulated adjacent areas.

108. Cleared vegetation and slash from wetland and adjacent areas will not be burned or buried within the wetland or adjacent area. The vegetation must be disposed of outside of the wetland and adjacent area, but slash that is cut may be left in place (drop and lop or piled in dry or seasonally saturated portions of freshwaters wetlands and 100-foot adjacent areas to create wildlife brush piles).

109. This Certificate does not authorize any permanent alteration of wetland hydrology.

110. No disturbance to wetlands or regulated adjacent areas is allowed until the "Wetland Mitigation Plan" has been approved in writing by DEC. All measures and requirements included in the approved "Wetland Mitigation Plan" shall be enforceable conditions of the Certificate.

111. To control the spread of invasive insects, the Certificate Holder will:

a) coordinate with outside logging contractors for sale and use of the merchantable timber; and provide unmerchantable timber as firewood to adjacent 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. If these insects are found, they must be reported to the DEC regional forester.

112. Waste concrete or concrete from truck clean out activity and/or any wash water from trucks, equipment or tools if done on site, must be contained in a manner that will prevent it from escaping into the streambank or into the stream channel and entering the stream, or entering wetland, or any other waterbody. If a discharge occurs, DEC Region 9 Supervisor of Natural Resources shall be contacted within 2 hours. Disposal of waste concrete or wash water must occur greater than 100 feet from any waterbody.

113. If a one-time crossing of a stream occurs as part of an installation of a temporary bridge and a tire mat is used, the following restrictions apply:

a) The mat must follow the contour of the streambed and allow for a low flow channel and not change the flow path of the stream thalweg.

b) The mat shall be removed immediately after the crossing of the stream occurs.

114. In-stream work shall only occur in the dry. 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.

115. 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.

116. 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 foot buffer area shall be left on the ground.

117. 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.

118. All crossings of buried cables under state-protected streams (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 must provide an approvable "Site-Specific Constructability Assessment" for DEC approval. The "Site-Specific Constructability Assessment" must be conducted by an experienced and qualified, professional engineer licensed in New York State and must 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 Department approves stream crossings using trenched methods, all stream crossings must be done in the dry. 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 9 Supervisor of Natural Resources.

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.

119. 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.

120. Erosion and sediment control will be used at the point of drilling, so that sediment laden runoff shall not escape the drill site and enter streams or wetlands. The disturbed area will be restored to original grade and reseeded upon project completion.

121. Drilling fluid circulation 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. 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 Department 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.

122. While HDDing under wetlands, 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. 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., freshwater wetlands, 100-foot adjacent areas, waterbodies) shall be reported to the DEC Region 9 Supervisor of Natural Resources within 2 hours.

123. To reduce thermal impacts to exposed streams, native woody plants such as shrub willows, dogwoods, appropriate native trees, or other native riparian species will be planted at all stream crossings, which have less than 50% cover due to construction impact of any such vegetation and is to be restored following a temporary impact, to shade the project area. Planting may be done at top of bank and/or among rocks along toe of slope.

124. During periods of work activity, flow immediately downstream of the work site shall equal flow immediately upstream of the work site.

125. Any 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. 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. Any in-stream structures placed in a stream must not create a drop height greater than 6".

126. 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.

IX. Facility Construction

127. 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).

128. 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 has reviewed the turbine manufacturer's grounding requirements and that it accepts such requirements as a suitable substitution for the IEEE standards.

129. 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).

130. 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; National Grid shall be invited to such meeting. The BOP construction contractor and the environmental compliance monitor shall be required to attend the preconstruction meeting. At least 14 days before the commencement of construction activities affecting facilities owned or to be owned by National Grid, the Certificate Holder shall hold a pre-construction meeting with National Grid, and the BOP 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 BOP Contractor cannot finish the construction of the Project, and one or more new BOP contractors are needed, there shall be another preconstruction meeting with the same format as outlined above.

e) Throughout construction, the Environmental Compliance Monitor will notify the DEC Regional Natural Resource Supervisor of any refinements in the schedule of construction activities in regulated wetland and adjacent areas as they are identified.

131. In the Towns of Charlotte and Arkwright, construction work hours shall be limited to 7:00 a.m. to 8:00 p.m., on Monday through Saturday, and 8:00 a.m. to 8:00 p.m. on 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. In the Town of Cherry Creek, construction work hours shall be limited to 6:00 a.m. to 9:00 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 8:00 p.m. DPS Staff shall be notified if such extensions are being considered prior to extending construction work hours.

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.

132. 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 classified as C(T or TS), B(T or TS), A(T or TS), or AA(T or TS), 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 Regional Supervisor of Natural Resources.

133. Dates for the seasonal work period restrictions on in-stream work during Facility construction, established in consultation with DEC, shall be included in the plan and noted on final construction detail drawings.

134. At least 10 days before construction, copies of all necessary transportation permits from the affected State, County, and Town agencies. 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.

135. At least 10 days before construction, copies of all necessary agreements with local utility companies for raising overhead wires where necessary to accommodate the oversized/overweight delivery vehicles.

136. The Certificate Holder will provide DPS Staff copies of all applicable local code requirements for the operations and maintenance building (i.e., building permits, certificate of occupancy, etc.) at least 10 days before construction.

137. The Applicant shall construct the Facility consistent with the DAM *Guidelines for Agricultural Mitigation for Wind Power Projects*, 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.

138. 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.

139. 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.

140. 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.

141. 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.

142. The creation, modification or improvement of any permanent road/stream crossing 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 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.

e) Before any such work, proposed plans must be submitted to DEC for approval prior to construction. The requirements above may be adjusted, if agreed to by the DEC, on a case-by-case basis.

143. As set forth in the approved Environmental Compliance Manual, 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.

144. 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.

145. Where 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.
146. No turbid water resulting from dewatering operations, including water that has infiltrated the construction site, shall be discharged directly to or allowed to enter any wetland, stream or water body within the project area. All other necessary measures shall be implemented to prevent any visible increase in turbidity or sedimentation downstream of the work site. Turbid water resulting from dewatering operation shall be 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 any visible increase in turbidity or sedimentation downstream of the work site.

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.

147. 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).

X. Facility Operation

148. The Certificate Holder shall operate the Facility in accordance with the Interconnection Agreement, approved tariffs and applicable rules and protocols of National Grid, NYISO, NYSRC, NPCC, NERC and successor organizations.

149. The Certificate Holder shall operate the Facility in full compliance with the applicable reliability criteria of National Grid, 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 National Grid with a copy of the NYISO notice.

150. 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 National Grid Control Center, or its successor, in order to maintain the reliability of the transmission system.

151. 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.

152. The Certificate Holder shall work with National Grid engineers and safety personnel on testing and energizing equipment in the authorized interconnection and collection substations. A testing protocol shall be developed and provided to National Grid for review and acceptance. The Certificate Holder shall file with the Secretary a copy of the final testing design protocol within 30 days of National Grid acceptance.

    The Certificate Holder shall make a good faith effort to notify DPS Staff of meetings related to the electrical interconnection of the project to the National Grid transmission system and provide the opportunity for DPS Staff to attend those meetings.

153. 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 to National Grid. 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 National Grid, NYISO, NYSRC, NERC and the NPCC to prevent any future occurrences.

154. If National Grid 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 NYISO or National Grid find such facilities are causing, or have caused, reliability problems to the New York State Transmission System.

155. If, subsequent to construction 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.

156. 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 National Grid 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 National Grid 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.

157. In the event of a blade failure, fire or other catastrophic event involving a wind turbine and its associated equipment, the Department's Chief of Bulk Systems shall be notified no later than 12 hours following such an event.

158. The Certificate Holder shall have an inspection program for the wind turbine blades and file monthly reports with the Secretary identifying any damage, defects or any other problems with the wind turbine blades, or indicating that no such damage, defect or problem was found. The report should include any photographs of the area in question, the repairs under taken and the diagram of the wind turbine blade.

159. 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.

160. The Certificate Holder has not asserted that it has the power of eminent domain to acquire real property or demonstrated that the feasibility of the Project relies in any way upon the Certificate Holder or any other entity having the power of eminent domain or exercising the power of eminent domain to acquire permanent or temporary real property rights 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, an entity in the nature of a merchant generator and not in the nature of a fully regulated public utility company with an obligation to serve customers, 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. Had the Certificate Holder been a fully regulated public utility company with an obligation to serve customers and the project was needed to provide safe and adequate utility service, any finding of public need for the purposes of the EDPL for particular parcels of land would have been made during the Environmental Monitoring and Compliance Process and not upon the granting of a Certificate. 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, construction staging areas or interconnections necessary to service the Facility without an express amendment to this Certificate authorizing such granted by the Siting Board.

161. This Certificate will automatically expire in ten 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.