



**Department of
Public Service**

Public Service Commission

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August 31, 2016

VIA EMAIL

Baron Winds LLC
Kevin Sheen
Senior Director, Development
1251 Waterfront Place, 3rd Floor
Pittsburgh, PA 15222
ksheen@everpower.com

RE: CASE 15-F-0122 - Application of Baron Winds, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct a Wind Energy Project.

Dear Mr. Sheen,

Attached please find the comments of the Staff of the Department of Public Service relating to the Preliminary Scoping Statement filed by Baron Winds LLC in the above-captioned case on August 10, 2016.

If you have any questions regarding the attached DPS Staff comments and recommendations, please contact me at (518) 474-5474 or by email at: Heather.Behnke@dps.ny.gov.

Sincerely,

HEATHER P. BEHNKE
Assistant Counsel

Cc: Secretary
Party List

**CASE 15-F-0122 - Baron Winds Project
Preliminary Scoping Statement
Comments of the Staff of the
New York State Department of Public Service**

GENERAL COMMENTS

1. In addition to the specific comments on many topics below, DPS Staff advises that the application must also contain all of the informational requirements included in 16 NYCRR §1001.1 et seq.
2. Terminology used in pre-application and future application phases should be standardized.
3. The application should provide a list of acronyms as an appendix to the Table of Contents.
4. The application should be carefully reviewed to ensure that all reference citations within the body of any exhibit are fully cited at the relevant list of reference documents. (Note: The PSS document is missing some referenced documents.)

EXHIBIT-SPECIFIC COMMENTS

Exhibit 2 – Overview and Public Involvement Summary

Section 1.3 – Summary of Pre-Application Activities

1. The Applicant is encouraged to consider establishing a local project office.

Section 2.2(a) – Brief Description of the Proposed Facility

1. This section should include the range of turbine models and sizes being considered.

Section 2.2(c) – Brief Description of the Public Involvement Program before Submission of Application

1. The Applicant lists Cohocton Public Library and Hornell Public Library as repositories. The Applicant should also list all the other host community towns' libraries as repositories, i.e., Avoca Free Library, Dansville Public Library, Fremont Public Library, Howard Public Library and Wayland Free Library. In addition, the libraries should be added to the Stakeholders List. The Applicant should clarify that all repositories have received paper copies of the project documents including the Public Involvement Program Plan (PIP Plan), PSS, and any other materials presented at outreach events.

Section 2.12(d) – Procedures for Addressing Public Complaints and Disputes

1. The Complaint Resolution Plan should be expanded to describe a procedure for review and transmittal of complaints, updates, and plans for resolution to DPS Staff.

Appendix C – Master List of Stakeholders

1. This list should include:
 - Kathleen H. Burgess, Secretary to the Commission
 - Point of contact for each stakeholder
 - Stakeholders list to include individuals and organizations that are on the service list in DMM

Appendix D – Meeting Log

1. The log should provide a summary of questions asked at outreach events and meetings. The Applicant should indicate how it addressed or plans to address the questions.

Exhibit 3 – Facility Location

Section 2.3(a) – Topographic Maps

1. The topographic maps specified in this section should be reproduced at 1:24,000 scale. Facility locations should be clearly visible and should allow discernment of municipal boundaries, as called for in 16 NYCRR §1001.3(b), including the Village of Cohocton boundary near the Facility Area (which is not indicated in PSS Figure 2, Figures Appendix).
2. The description of Facilities at Section 2.3(a)(1) is not clear as to the location of the collection substation and the facilities design proposal for connecting the collection substation to the point-of-interconnection substation. DPS Staff requests that the Applicant specify and provide a map of station locations and the location and voltage of the connecting facilities.
3. DPS Staff requests that the Applicant provide a preliminary Facility layout, indicating Facility component locations, setback requirements of local laws, and other relevant siting constraints currently known to the Applicant as part of the pending Response to PSS Comments, to advance development of the project scope and stipulations.

Exhibit 4 – Land Use

Section 2.4(a) – Map of Existing Land Uses / Section 2.4(f) – Map of Proposed Land Uses

1. The application should address other wind energy generating projects in the Study, whether existing or proposed. These should be denoted as overlays to the underlying land uses where they are located.

Section 2.4(a) Map of Existing Land Uses

1. The map should reflect additional land use information gathered from interviews with participating and nearby landowners, as available, to distinguish specific uses of “Vacant Land” use category. Vacant Land generally refers to land without principal buildings, and may include uses such as recreational, forest management, maple sugaring, seasonal grazing or other uses that may be affected by siting, construction or operation of the proposed major electric generating facilities.

Section 2.4(g) Map of Specially Designated Areas – and Table 1 Sources of Data

1. The application should address National Rivers Inventory study waterways: sections of both the Cohocton River and Canisteo River are included in this inventory of candidate waterways for the federal Wild, Scenic and Recreational Rivers program, as administered by the National Park Service. GIS data and descriptions of these waterways is available on-line at <https://www.nps.gov/ncrc/programs/rtca/nri/index.html>.
2. As discussed in DPS Staff comments on the draft PIP Plan, the Steuben County Planning Department’s Agricultural Districts Review Schedule indicates that Agricultural District 5 is currently subject to review in Cohocton and Wayland and Agricultural District 7 will be subject to review early in 2017. DPS Staff advises that the application should indicate the status and reflect any modifications to enrolled lands.
3. DPS Staff advises that Almond Lake is a federal Recreation Area within the expanded Facility Study Area for visual resources. DPS Staff recommends identifying the nature of recreational uses and activities at this resource location.

Exhibit 5 – Electric System Effects

Section 2.5(b) – Potential Reliability Impacts

1. The application should discuss when the Applicant will enter the New York Independent System Operator (NYISO) Class Year study and note

that it will participate in the part of the study to make the Facility deliverable.

Exhibit 6 – Wind Power Facilities

Section 2.6(a)(1) – Manufacturer’s Setback Specifications

1. The discussion in this section should include any indicated recommendations or factors for consideration including public or private roads, road usage levels, ice throw, and safe work-zone distances for maintenance crews or outdoor activities on nearby lands.

Section 2.6(a)(3) Setbacks required by Local Law or Ordinance

Table 3 summarizes Town setback requirements of various facilities.

1. DPS Staff advises that details of local ordinances, including definitions of terminology, should be important considerations in Facility design and development of the application. Definitions of “structures” and “buildings” and other terms are likely to vary among municipal codes.
2. DPS Staff requests that full text copies of all municipal codes be provided for review in development of the scoping document and stipulations.
3. DPS Staff advises that the Public Service Commission has stipulated to a standard setback distance of 1.5 times maximum blade tip height from major transmission facilities, which would include the NYSEG transmission line traversing the Facility Area, existing substation associated with the Cohocton Wind project, and the high-voltage side of the proposed Facility Collection Substation. See Case 07-E-0213, Sheldon Energy LLC, Order Granting Certificate of Public Convenience and Necessity and Providing for Lightened Regulation (issued January 17, 2008), fn. 5, page 12 (“In the future, we may, as conditions warrant require a minimum setback distance of 1.5 times maximum turbine blade tip height from the edge of the right-of-way of any electric transmission line designed to operate at 115 kV or more”).
4. DPS Staff requests that the Applicant provide a preliminary Facility layout, indicating Facility component locations, setback requirements of local laws, and other relevant siting constraints known to the Applicant, to advance development of the project scope and stipulations.

Exhibit 9 – Alternatives

Section 2.9(c)(1) – General Arrangement and Design / Section 2.9(c)(3) – Scale or Magnitude / Section 2.9(c)(4) – Alternative Turbine Layouts

1. DPS Staff advises that the application should provide a robust alternatives analysis report that addresses turbine size versus turbine numbers, minimization of impacts tradeoffs of alternative arrangements; alternative arrangements that would fully comply with all local legal provisions; and that identifies any reasonable alternatives to the proposed arrangement.

Section 2.9(c)(f) – No Action Alternative

1. Consideration of a “no-build/no-action” alternative, as required by 16 NYCRR §1001.9(f), should address an alternative scale project at less than 25 MW, the threshold level for Article 10 applicability for a major electric generating facility.

Exhibit 11 – Preliminary Design Drawings

Section 2.11(a) – Site Plan

1. For application site plan figures, DPS Staff recommends that the preliminary site plan figures for Facility components should include additional information including indications of zoning designations, and as applicable, buildable area, lot coverage, setback distance requirements, and other area and height requirements (particularly for O&M building site, collection and POI interconnection sites, etc.).

Exhibit 12 – Construction General Requirements

Section 2.12(a) – Preliminary Quality Assurance and Control Plan

1. This section of the PSS notes that the Balance of Plant (BOP) contractor will be responsible for ensuring compliance, inspections, testing, reporting of non-compliance issues, etc. The application should also indicate whether the Applicant intends on obtaining independent environmental and construction monitors to be on-site during the duration of construction.
2. Per 16 NYCRR §1001.12(a), the application should describe how the Applicant will monitor and ensure conformance of Facility installation with all applicable design, engineering, and installation standards and criteria. Also, the application should describe the reporting procedures for any independent environmental and/or construction monitors on-site. If no independent monitors will be on-site, the application should describe how the Applicant will monitor the BOP and related contractors for ensuring compliance of applicable standards and criteria.

Exhibit 13 – Real Property

Section 2.13(a) – Real Property Map of Generating Site

1. This description of the tax parcel map should include indications of other existing easements on properties included in the Facility Site. Access or use easements that may be affected by facilities layout, construction or operation, including those for gas well or pipeline locations, electric lines, other wind projects, etc., should be indicated on the map and described accordingly.

Exhibit 15 – Public Health and Safety

1. DPS Staff recommends that the scope of Exhibit 15 of the application be expanded to include an evaluation of transport and delivery of facilities components to the Facility Site in the evaluation of potential significant adverse impacts on public safety.

Section 2.15(e)(2) – Audible Frequency and Low Frequency Noise

1. This section includes a reference citation to “RSG et al 2016” on page 65. This citation is not supported with details at PSS Section 4.0 References. Please provide the referenced document as soon as possible for DPS Staff review and update the References list at Section 4.0.
2. This section provides a very limited discussion of the potential for Noise, Low Frequency and Infrasound to cause health effects on humans and does not provide a sufficiently detailed basis to support some of the statements in the PSS. A thorough literature review of adverse impacts and health effects from noise including audible noise, low frequency noise and infrasound, sleep disruptions and annoyance should be included in the application.
3. This section states: “The World Health Organization’s guidelines to prevent nighttime sleep disturbance are 45 dBA. LNight (the sound pressure level averaged over the night), and the Facility’s predicted nighttime noise will be compared to this level.” DPS Staff notes that the proposed threshold needs more discussion with consideration of noise descriptors, duration and location of measurements, assumptions for outdoor-to-indoor-noise reductions and interior noise level goals. In addition, DPS Staff further notes that the World Health Organization (WHO) updated its recommendations in 2009 and published guidelines for noise levels at night based on an updated analysis of the relation between noise levels and health effects on humans in Europe. DPS Staff recommends that the Night Noise Guidelines for Europe (WHO-2009) be addressed in the discussion of potential health effects from noise on humans.

Section 2.15(e)(4) – Shadow Flicker

1. This section of the PSS limits the analysis for shadow flicker modeling to calculation of impacts on non-participating residential structures located

within a radius of 10 rotor diameters from all proposed turbine locations. DPS Staff recommends expanding the scope to calculate and report flicker impacts on participating receptors as well as non-participant residences.

2. This section proposes to estimate shadow flicker effects on receptors in terms of a predicted frequency for a year (hours per year). DPS Staff recommends that the scope of studies also propose a threshold for the maximum number of minutes per day with a justification and consideration of potential health effects and also specify whether the proposed threshold should be compared to the results of “worst-case” or “real/expected-case” evaluations.
3. This section proposes reporting shadow flicker contours overlain on mapping of known public recreational areas. DPS Staff recommends that shadow flicker mapping show existing and planned approved residences (both participating and non-participating), property lines, sensitive land locations (including public recreational areas), turbine locations and public roads. Drawings should be full-size and properly scaled.
4. This section proposes a threshold of 30 shadow flicker hours-per-year for analysis of flicker impacts from the proposed Facility. The scope of studies should clarify whether the analysis and threshold is proposed for a “worst case” or “real/expected-case” evaluation along with a justification and consideration of any potential health effects including annoyance, stress or any other cognitive, physical or health effects. Typically, “worst-case” evaluations assume that there is no cloud coverage so that the sun is always shining during the daytime and the plane of rotation of the blades is perpendicular to the wind direction so that the area exposed to shadow flicker is maximal. In an “expected/real case” evaluation, however, cloud coverage and wind direction are accounted for so that the sun is not assumed to be always shining during the daytime and the wind turbines are not assumed to be always facing the sun.

Section 2.15(k) – Mitigation Measures

1. This section lists “implementation of screening(s) at the residence” as the only option for mitigating shadow flicker impacts. The scope should be expanded to include other preconstruction mitigation measures such as turbine elimination or relocation and post-construction mitigation measures such as automatic shutdown of turbines that cause excessive shadow flicker impacts.

Section 2.15(l) – Proposed Monitoring

1. The Applicant should include monitoring of shadow flicker in the scope.

Exhibit 17 – Air Emissions

1. DPS Staff recommends that the application include a characterization of emissions from emergency generators that may be sited in association with collection or interconnection substation facilities.
2. The reference in Section 2.17(d) to “New York Standards and Specifications for Erosion and Sediment Controls” (NYSDEC, 2005) should be updated to the recently revised 2016 publication by the New York Department of Conservation available at:
<http://www.dec.ny.gov/chemical/29066.html>.

Exhibit 19 – Noise and Vibration

Section 2.19(a) – Sensitive Sound Receptor Map

1. This section states that “[r]esidences on participating parcels are not considered sensitive receptors and impacts to such receptors will not be included in the analyses presented in Exhibit 19.” DPS Staff, however, recommends that all participating receptors be included in the analysis of noise impacts with consideration of health effects such as sleep disruptions, annoyance and any other potential health effects. In addition, this section differentiates “non-participating-residences” from “non-participating seasonal homes.” DPS Staff requests the Applicant to explain the basis and justification for establishing this distinction. In addition, as required by 16 NYCRR §1001.19, the scope in section 2.19(a) should be expanded to include public areas and public facilities as sensitive sound receptors.
2. Section 2.19(a) states: “For sensitive receptors outside the Facility Site boundary, only aerial imagery and limited field verification will be used to identify those receptors within 1 mile of the nearest turbine. If access for field verification is not possible and aerial imagery cannot provide an obvious classification of a structure (i.e. residential vs. non-residential) then the structure will be classified as a sensitive sound receptor (i.e. residential).” DPS Staff recommends that the Applicant coordinate with local authorities to identify any existing or proposed sound, vibration or flicker sensitive receptor within the Facility Area.

Section 2.19(b) – Ambient Pre-Construction Baseline Noise Conditions

1. The acronym “RSG” used on page 78 is not defined.
2. Section 2.19(b) explains that the L90 statistical noise descriptor was summarized in 10-minute intervals. The scope should explain how the L90

noise descriptor will be calculated for the purposes of 16 NYCRR §1001.19(f), Exhibit 19 (f).

3. The scope of studies should document the accuracy of the anemometers utilized for the pre-construction surveys with information from the manufacturers.
4. The scope of studies should explain how the L50 one-third octave band summaries were obtained and be expanded to include the results of the one-third octave band noise levels for the L90 statistical descriptor as well.
5. The Applicant should provide a justification for calculating temporal accuracy for the Ldn noise descriptor. DPS Staff notes that 16 NYCRR §1001.19, Exhibit 19, requires reporting results of the pre-construction ambient noise levels based upon the L90 and the Leq noise descriptors for the daytime, nighttime, summer, winter, and for a year (see 16 NYCRR §1001.19(f) for details). Therefore, temporal accuracy should be estimated at a minimum for the L90's and Leq's based upon daily value results for the seasonal measurement period and the two seasons as well. (Daytime, nighttime, day and night). Results of the analysis should include the mean, and the lower and upper limits for the 95% confidence intervals.

Section 2.19(d) – Estimated Sound Levels to be Produced by Operation at the Facility

1. This section specifies that noise contours for the maximum one-hour equivalent average (Leq 1-h) sound levels for the highest wind turbine sound power levels will be provided by using computer modeling under the ISO 9613-2 conditions relating to a moderate nighttime inversion or, equivalently, downwind propagation, and the least attenuation due to temperature and humidity. The scope of studies should:
 - a. Briefly describe the specifications of the computer model that is proposed to be used for evaluation of operational noise impacts;
 - b. Include the range of frequencies that will be evaluated;
 - c. Specify whether the model calculations will be performed in full octave or one-third octave bands;
 - d. Discuss the ground absorption values that are intended to be used;
 - e. Specify how the meteorological corrections will be assumed or calculated under ISO 9613-2 modeling; and
 - f. Explain whether the maximum one-hour-equivalent- average sound levels (Leq 1-h) as determined by the two methods (ISO-9613-1

and CONCAWE) are expected to be the same, similar or which one is expected to be more conservative.

Section 2.19(e)(1) – Future Noise Levels During Operation

1. This section limits predicting future un-weighted full-octave-band “low frequency levels at all sensitive sound receptor.” DPS Staff recommends reporting predictions of mid- and high-frequency noise levels as well. In addition, the calculations and reporting of sound levels should not be limited to sensitive sound receptors but include all participant receptors as well.

Section 2.19(e)(2) – Tonal Evaluation

1. The scope of studies in this section should include a definition and methodology for evaluation of prominent tones from turbines and transformers. DPS Staff notes that:
 - a. Section 9.5 of IEC 61400-11 (Wind Turbines –Part 11- Acoustic noise measurements techniques) has a method for determination of prominent tones for wind turbines. The scope should report whether this information is available from potential manufacturers;
 - b. Annex A from ANSI Standard S1.13-2005 has different methods for identification and evaluation of prominent tones; and
 - c. Annex C from ANSI Standard S12.9- 2005/Part 4 has a simplified method for evaluation of sounds with tonal content that could be applied under some specific circumstances. DPS Staff requests the Applicant to specify a definition of tonal prominence for the purposes of evaluation of tones under the requirements of 16 NYCRR §1001.19, Exhibit 19, and to identify provisions for tones in local noise codes, if any.

Section 2.19(e)(3) – Turbine Model Selection and Avoidance/Mitigation Measures

1. This section specifies that noise modeling will be “performed for the turbine model with the highest sound power levels presented in the Application.” DPS Staff notes that although the evaluation of turbines with the highest sound power levels may provide an estimate of the maximum sound impacts, the scope should also include an evaluation of quieter wind turbine options, alternative layouts and greater setbacks, as part of the assessment of alternatives that may avoid or minimize noise impacts from the Facility. DPS Staff notes that the intent of Article 10 regulations is to avoid or minimize environmental impacts. In addition, 16 NYCRR §1001.19(j) requires an “identification and evaluation of reasonable noise abatement measures for the final design and operation of the facility

including the use of alternative technologies, alternative designs, and alternative facility arrangements.”

Section 2.19(e)(6) – Amplitude Modulation Generation Estimates

1. This section discusses estimates for amplitude modulation generation. The scope of studies should:
 - a. be expanded with a summary of the procedures and formulae to be utilized in the analysis; and
 - b. specify whether manufacturer sound data is available for assessing amplitude modulation, wind shear or turbulent conditions.

Section 2.19(f) – Predicted Sound Levels Table

1. The scope of studies should be expanded to:
 - a. include all the requirements from 16 NYCRR §1001.19(f)(1) - (9);
 - b. specify how the information obtained from pre-construction ambient noise levels will be used to evaluate change in noise levels for each evaluated receptor;
 - c. specify whether single numbers will be applied to a particular receptor or a group of receptors with consideration of spatial accuracy;
 - d. specify whether the evaluation of future noise levels during operation of the facility, related facilities and ancillary equipment required by 16 NYCRR §1001.19(e) will exclude the periods of time when the turbines will not be operating (Wind speed lower than the cut-in speed or higher than the cut-off speed). DPS Staff recommends excluding the periods of time when the turbines will not be operating from calculation of operational noise levels (L10, L50). If the Applicant believes that the inclusion of periods of time when the turbines will not be operating is necessary for the calculation of any specific noise descriptor either for the analysis of a specific noise related topic, or for the purpose of comparing results with any specific methodology, guideline or regulation, the issue should be discussed in the stipulation process or alternatively be considered in a case-by-case analysis for further discussion in the Application;
 - e. specify how the information obtained from pre-construction ambient noise levels will be used to evaluate change in noise levels for each evaluated receptor;

- f. specify whether single numbers will be applied to a particular receptor or a group of receptors with consideration of spatial accuracy; and
 - g. specify whether the evaluation of future noise levels during operation of the facility, related facilities and ancillary equipment required by 16 NYCRR §1001.19(e) will exclude the periods of time when the turbines will not be operating (wind speed lower than the cut-in speed or higher than the cut-off speed). DPS Staff recommends excluding the periods of time when the turbines will not be operating from calculation of operational noise levels (L10, L50). If the Applicant believes that the inclusion of periods of time when the turbines will not be operating is necessary for the calculation of any specific noise descriptor either for the analysis of a specific noise related topic, or for the purpose of comparing results with any specific methodology, guideline or regulation, the issue should be discussed in the stipulation process or alternatively be considered in a case-by-case analysis for further discussion in the application.
2. Report the results in graphical and tabular format in the scope of studies. DPS Staff recommends, at a minimum, reporting noise levels as follows:
- a. Variation of preconstruction ambient noise levels at each measurement location may be reported in graphical format as a function of time (and season).
 - b. Single numbers that identify pre-construction ambient noise levels (L90, Leq) for daytime, nighttime, winter, summer and full-year may be reported in tabular format but also depicted in the graphs indicated above by using horizontal lines.
 - c. Predicted sound levels (L10, L10 plus L90, L50, Leq plus L50) for daytime and nighttime, summer, winter and full-year may be reported in tabular format for each evaluated receptor. Receptors should be labeled with TAX ID numbers.
 - d. Any other identified noise level or threshold may be reported in tabular format for each evaluated receptor by using the applicable noise descriptors (e.g. L8, Leq 1-h, Leq-8 h, Leq 9-h, Leq 1-year, etc.) as required by any local regulation, identified standard, goal, threshold or guideline.
 - e. Predicted sound levels at the Facility including property lines and evaluated receptors may be reported in graphical format (sound contours) for the ISO 9613-2 modeling as specified above.

- f. The Applicant should specify whether predicted sound levels at the Facility Site can be also reported in both graphical (sound contours) and tabular format as calculated with the CONCAWE meteorological corrections for the most critical sound/wind-speed conditions.

Sections 2.19(g) – Applicable Noise Standards / 2.19(h) – Noise Standards Comparison

1. The scope of studies listed in these sections should include full citations for the references and specify:
 - a. the WHO guideline(s) these sections are referring to. (e.g., WHO-1999, WHO-2009, both);
 - b. the EPA guideline(s) these sections are referring to (e.g., EPA-1974, EPA-1978, both) along with the noise impacts that are proposed to be evaluated under EPA guidelines;
 - c. a summary of the National Academy of Sciences document that section 2.19(g) is referring to; and
 - d. a summary of the Federal Interagency Task Force document section 2.19 (f) is referring to.
 - e. Section 2.19(g) of the PSS includes the NYSDEC Standards for evaluation of noise impacts for the Facility. DPS Staff requests that the Applicant identify the specific impacts that are proposed to be analyzed under the NYSDEC noise policy DEP-00-1 and specify how the policy is planned to be applied including the noise descriptors that will be used to describe ambient and operational sounds along with a summary of the procedures and criteria that will be followed for its application.
2. DPS Staff recommends that estimates of the population (or number of households) that will exceed any identified limit, threshold, goal, guideline or recommendation be reported in the application. (In terms of absolute and percent values).

Section 2.19(i) – Noise Abatement Measures for Construction Activities

1. The scope of studies should specify whether noise levels will be monitored or measured in response to complaints related to construction noise.

Section 2.19(k)(5) – Potential for Structural Damage and Interference with Technological, Industrial, or Medical Activities that are Sensitive to Sound

1. The scope of the evaluation is limited to locations within 1 mile of the Facility Site. DPS Staff advises that the scope of studies should contain four subjects that need to be evaluated separately:
 - a. Potential for some construction activities (such as blasting, pile driving, excavation, horizontal directional drilling (HDD) or rock hammering, if any) to produce any cracks, settlements or structural damage on any existing proximal buildings, including any residences, historical buildings and existing infrastructure;
 - b. Potential for low-frequency noise including infrasound and vibration from operation of the facility to cause any interference with the closest seismological and infrasound monitoring systems. For this subject DPS Staff recommends that the application include a map in proper size and scale to show the location of the closest seismological and infrasound stations on both sides of the US-Canada border in relation to the Facility Site, and a table stating the approximate GPS coordinates and distances from identified stations to the Facility Site. DPS Staff recommends the following informational references:
 - i. Technological Information and Guidelines on the Assessment of the Potential Impact of Wind Turbines on Radio Communication, Radar and Seism Acoustic Systems. Radio Advisory Board of Canada (RABC). Canadian Wind Energy Association (CanWEA). April 2007.
 - ii. *Micro Seismic and Infrasound Monitoring of Low Frequency Noise and Vibrations from Wind farms: Recommendations on the siting of Wind Farms in the vicinity of Eskdalemuir, Scotland*; Styles, Stimpson, Toon, England, Wright; Applied and Environmental Research Group; Earth Sciences and Geography, School of Physical and Geographical Sciences, Keele University, 18 July 2005.
 - iii. For information about Seismic Stations in the U.S., the USGS website.
 - iv. For information about seismic stations in Canada, the NRCAN website.
 - v. For information about the existing and planned infrasound and seismic stations that are part of the International Monitoring System (IMS), the CTBTO (Comprehensive Nuclear Test Ban Treaty Organization) website www.ctbto.org.

2. The scope of studies should propose a methodology for evaluation of potential for airborne induced vibrations from the operation of the Facility to generate annoyance, cause rumbles, vibration and rattles in windows, walls or floors of sensitive receptor buildings. DPS Staff recommends the following methodologies (please note this recommendation is based upon the requirements in 16 NYCRR §1001.19(e) for analysis of whether the Facility will produce significant levels of low frequency noise or infrasound and is also applicable to Section 2.19(e)(4) of the PSS):
 - a. Hubbards' criteria ("Noise Induced House Vibrations and Human Perception," Noise Control Engineering Journal, Vol. 19, No. 2, September-October 1982); and
 - b. Outdoor criteria established in annex D of ANSI standard S12.9 - 2005/Part 4. Applicable portions of ANSI 12.2 (2008) may be used if it is expected that ANSI S12.9-2005/Part 4- Annex D guidelines are being met but still represent a potential for perceptible vibrations at indoor locations of sensitive sound receptors.
3. Potential for ground-borne transmitted vibrations from the operation of the Facility to reach a noise sensitive receptor (e.g., residence) and cause vibrations of the floor or building envelope elements that may be perceived by the receptor or exceed guidelines or recommendations.
 - a. DPS Staff recommends that the scope of studies include evaluation of the potential for ground-borne transmitted vibrations from the turbines to be perceptible at residential structures. This may require consideration of the technical variables related to the ground-borne transmission of vibrations such as oscillating/rotating masses, frequencies of rotation, vibration isolation, type of foundation, soil type and set-back distances.
 - b. The Applicant should consider the guidelines, criteria, recommendations and procedures discussed in the following national and international standards:
 - i. ANSI S2.71-1983 (Guide to the Evaluation of Human Exposure to Vibration in Buildings (R 2012)).
 - ii. ISO 2631-2-2003 (Evaluation of Human Exposure to Whole-body Vibration Part 2: Vibration in buildings (1 Hz to 80 Hz)).
 - iii. Additional information may also be found in ASHRAE Handbook- HVAC Applications 2011, chapter 48, Noise and vibration control, Vibration Criteria p.p. 48.43-48.44.
4. DPS Staff recommends that the discussion of infrasound levels be expanded in the scope of studies to include a review and summary of

national and international recommendations, guidelines or regulations for infrasound levels including proposed limits that use the G-weighting scale. DPS Staff also recommends to estimate G-levels for the Facility and compare them with identified guidelines or limits.

5. The Sound Level Monitoring Report states that “various representative areas included rural residential, farming, small town, low and high traffic roads, and remote areas.” The scope of studies should:
 - a. Report GPS coordinates for all tested locations; and
 - b. Report AADT traffic counts and traffic compositions for high-traffic roads close to any ambient monitoring stations.
6. Some sound and wind speed monitoring measurement locations were selected within wooded areas.
 - a. The scope of studies should provide justification for location selection and specify whether selected locations are representative of potentially impacted receptors. DPS Staff notes that 16 NYCRR §1001.19(b) requires an “evaluation of ambient pre-construction baseline noise conditions ... at representative potentially impacted noise receptors” The scope of studies should identify whether it is possible to process collected data to remove sounds resulting from the interaction between wind and wooded areas including leaf sounds.
 - b. DPS Staff also notes that outdoor open areas far from reflective objects are preferred for the installation of sound level meter microphones. In addition, open areas far from wind flow obstacles are preferred for wind speed monitoring locations. Typically, wind speed profiles are affected by surface roughness and vary with elevation. In addition, if anemometers are affected by nearby obstacles, this may result in underestimating wind speeds and potentially affect the process for exclusion of sound readings based upon wind speed criteria. The Applicant should specify whether the wind speed information from anemometers in wooded areas could be potentially analyzed in conjunction with wind speed information from the meteorological stations for validation of the sound and wind exclusion process and pre-construction ambient noise monitoring results.
7. Section 3.2.2 of the Sound Level Monitoring Report (Appendix E) reports the sound level meter frequency response and settings for the different models of sound level meters. The minimum frequency evaluated was either 6.3, 10 or 20 Hz. DPS Staff recommends that the scope include the collection of baseline infrasound levels at Facility Site locations to

cover the range between 0.8 and 20 Hz, which may be compared to estimates of infrasound levels from the Facility at the closest sound sensitive receptors in the application.

Exhibit 20 – Cultural Resources

Section 2.20(a)(3) – Phase 1B Cultural Resources Study

1. DPS Staff requests that the Applicant provide a copy of the Phase 1B Archeological Survey, as referenced on page 86, and the Phase 1A Archeological Resources Survey and Phase 1B Fieldwork Plan, as referenced at page 87, for review in development of scoping.

Section 2.20(b)(1) – A complete Historic Architectural Survey

1. The discussion of potential effects on historic properties at page 89 is limited to visual setting changes. The introduction of noise impacts and changes in audible elements of NRHP eligible or registered properties are considered potentially adverse impacts under 9 NYCRR §428.7(3). The scope should be revised accordingly.

Exhibit 21 – Geology, Seismology and Soils

Section 2.21(h) – Suitability for Construction

1. The PSS states that the Application will include the results of a Preliminary Geotechnical Investigation. The final scope should include a Preliminary Geotechnical Investigation Plan in order to allow parties an opportunity to review and provide feedback to the Applicant regarding the scope of investigations. The Preliminary Geotechnical Investigation Plan should provide a full description of the proposed geotechnical investigations proposed for evaluating the subsurface conditions in the Facility Area and include test borings in representative locations of turbine foundations, road construction, underground collection line and interconnection line installation, substation location, and areas where trenchless methods, including horizontal directional drilling (HDD) will be considered.

Section 2.21(j) – Potential Blasting Impacts

1. This section of the PSS states that “approximately four natural gas wells” are located within the Facility Area. The application should confirm the number of wells, identify the location of each well and associated existing access roads on maps, and describe the status of each well (e.g., active, abandoned). The application should include a discussion indicating how Facility construction activities will avoid disruption or damage to existing gas wells within the Facility vicinity. Where feasible, the Applicant should consult with existing landowners and well operators regarding the

potential for shared use of existing gas well access roads for construction and maintenance of the wind facility components.

Section 2.21(p) – Characteristics of Each Soil Type and Suitability for Construction

1. According to the PSS, the application will “extensively characterize the soil conditions in the proposed locations of Facility components, and address the suitability of these soils for construction of the Facility.” The application should include a characterization of soil conditions for the entire Facility Area, describing:
 - a. the locations of access roads and cut and fill areas for final grading;
 - b. the suitability and limitations of existing soils for the proposed site development, including:
 - i. excavation stability;
 - ii. erosion hazard for access road development; and
 - iii. the potential for corrosion of steel and concrete, as defined by the USDA NRCS Web Soil Survey; and
 - iv. the measures for reducing the risk of degradation of foundation structures.

Exhibit 22 – Terrestrial Ecology and Wetlands

Section 2.22(a) – Plant Communities – Agricultural Land

1. The application should include a map of the Facility Area showing all locations designated as “prime farmland,” “prime farmland if drained,” “unique farmland,” “farmland of statewide importance” and “farmland of local importance.” In addition, the application should include a discussion describing how the siting, construction and operation of the Facility will avoid or otherwise minimize impacts to farmland with these designations, including a description of the proposed methods for soil stripping, storage and replacement upon the completion of construction where disturbance to such areas cannot be avoided.
2. Methods for identifying the locations of drainage tile in designated farmland should be included in the application, along with a description of the proposed practices for restoration of farmland drainage systems following construction.

Section 2.22(d) – Vegetation, Wildlife, and Wildlife Habitats

1. DPS Staff requests that reports of avian studies described at page 108 of the PSS be provided to DPS Staff for review and development of scoping comments.

Section 2.22(h)(1) – Avian and Bat Impacts

1. DPS Staff requests that reports of avian and bat studies described at page 111 be provided to DPS Staff for review and development of scoping comments.

Section 2.22(i) – Map Showing Delineated Wetland Boundaries

1. DPS Staff recommends that the description of information sources for interpretation of wetlands, at 2.22(i) page 112, and at 2.22(l) page 114, also include soils survey information regarding hydric soils presence.

Exhibit 23 – Water Resources and Aquatic Ecology

Section 2.23(a) – Groundwater

1. The application should indicate the anticipated source of water that will be used for concrete mixing operations during construction.
2. Any proposed temporary or permanent water wells should be identified and a description of the anticipated maximum and average withdrawal rates should be provided in the application.
3. The application should include a plan for minimizing impacts to well usages in the area. Such a plan should include:
 - a. a complete inventory of all known shallow aquifer and deep aquifer wells near the Facility Area;
 - b. information on the depth and usages of these wells, as available from the well owners; and
 - c. plans to minimize impacts to well productivity and water quality.
4. Plans for notifying well owners of any proposed blasting operations and plans for monitoring well productivity and ground water quality should be included in the Blasting Plan (if Blasting is ultimately proposed).
5. The Blasting Plan (if Blasting is ultimately proposed) should include measures for minimizing potential impacts to productivity and water quality of private and public water wells and provide 24 hour contact information

for well owners to report impacts to well productivity and water quality during and following blasting operations.

Section 2.23(a) and (b), pages 116-121: The application should include:

1. A detailed description of all proposed dewatering practices and a demonstration of how dewatering will avoid and/or minimize flooding, surface water runoff, transport of fine-grained soils into existing surface water bodies, and impacts to local water well usages of the shallow aquifer;
2. Identification of any locations where permanent dewatering will be required and a detailed description of permanent dewatering practices;
3. Identification of the location of all proposed HDD operations within 500 feet of surface waters, wetlands or existing water supply wells; and
4. A description of mitigation measures to minimize impacts of HDD operations on surface water quality and the hydrologic flow patterns and groundwater quality of the shallow aquifer.

Exhibit 24 – Visual Impacts

Section 2.24(a) – Visual Impact Assessment

1. DPS Staff advises that the steps, procedures, analysis and showings required by 16 NYCRR §1001.24 should be the principal methods for this assessment; and
2. The U.S. Army Corps of Engineers (ACOE) Visual Impact Assessment method cited (Smardon, et al., 1988) is likely of limited applicability in the Facility analysis because that document is primarily focused on assessing impacts of major water resources-related projects and waterfront locations.

Section 2.24(a)(3) – Visibility of Above-ground Interconnections and Roadways

1. DPS Staff advises that overhead collection lines and transmission lines proposed for the Facility should be modeled and simulated based on preliminary design information as of the time the application is filed.

Section 2.24(5) – Lighting

1. DPS Staff advises that exterior lighting at other Facility sites such as the O&M facility, and substations or switchyards, should be addressed in the application.

Section 2.24(a)(8) – Nature and Degree of Visual Change from Operation /
Section 2.24(b)(7) – Simulation Rating and Assessment of Visual Impact

1. DPS Staff requests that the Applicant provide the written instructions and descriptions of the review methods that will be provided to the visual rating and review panelists. This information will assist DPS Staff in development of final project scoping and stipulations.
2. Please see DPS Staff comments on the analysis of shadow flicker above in comments on Exhibit 15 – Public Health.

Section 2.24(a)(11) – Description of Visual Resources to be Affected

1. DPS Staff advises that federally designated resources in the area should be identified, including the ACOE Almond Lake Recreation Area; the North Country National Scenic Trail (coincident with the Finger Lakes Trail in the Facility vicinity); and nearby National Rivers Inventory Study Rivers including the Cohocton River, and the Canisteo River south-easterly of Hornell. The scenic overlook at Route I-86 west of Hornell provides views to the Almond Lake Federal Recreation Area and potentially to the Facility Area.
2. DPS Staff will stipulate that Adirondack Park Scenic Vistas and Palisades Interstate Park will not be affected by any activities or development in the Facility Area.

Section 2.24(b)(1) – Viewshed Maps

1. DPS Staff recommends that Distance Zone designations should be represented on the viewshed maps described in this part.
2. DPS Staff advises that line-of-sight profiles are useful in assessing vegetation screening potential, and in designing mitigation measures to minimize impacts at significant receptor locations. Line-of-sight profile analysis should not be categorically excluded from consideration, particularly due to the requirement of the relevant regulation at 16 NYCRR §1001.24(b)(1).

Section 2.24(b)(3) – Sensitive Viewing Areas

1. DPS Staff advises that the list of visually sensitive resources in the NYS DEC Program Policy DEP-00-2 is not inclusive of all important resource categories. DPS Staff has identified other resources that occur in the Facility vicinity in comments above. Furthermore, the DEC Policy does not account for locally important resources or consideration of community character impacts.

Section 2.24(b)(4) – Viewpoint Selection

1. DPS Staff recommends that the preliminary inventory list and map of known resource locations to be provided to stakeholder groups include known local resource locations (parks, cultural resources, etc.).
2. DPS Staff recommends that the Applicant give consideration to whether “on-line meetings” will be sufficient to effectively confer with all municipal stakeholders. One in-person workshop may be appropriate in addition to one or more on-line sessions.
3. DPS Staff advises that the list of six criteria at page 136 should also include representation of all Landscape Similarity Zones, representation of all distance zones, and a variety of orientations.

Section 2.24(b)(6) – Additional Simulations Illustrating Mitigation

1. DPS Staff advises that mitigation of impacts due to tall turbines at particular viewpoints is potentially achievable by alternative arrangement of facilities, or implementation of screening near to receptor locations. Furthermore, there are Facility components other than turbines that may warrant consideration of mitigation. Therefore, depiction of potential mitigation effectiveness in additional simulations should not be excluded from the final scope of studies or stipulation.

Exhibit 25 – Effect on Transportation General Requirement

1. Paragraph (2) Route Evaluation Study on page 141 of the PSS notes that an evaluation of the adequacy of the road system to accommodate projected traffic will be conducted after the Facility is operational. However, there is no information regarding an analyses of this during construction. Per 16 NYCRR §1001.25(d)(2), the application should include:
 - a. an evaluation of the road system to accommodate the projected traffic;
 - b. a separate analyses conducted for the peak construction impacts of the facility; and
 - c. identification of the extent and duration of traffic interference during construction of the facility and interconnections.

Exhibit 27 – Socioeconomic Effects

1. Section 2.27 should state that Exhibit 27 of the application will contain an estimate of the peak construction employment level, as required by the regulations.
2. Section 2.27 should also state that that Exhibit 27 of the application will contain an estimate of the number of jobs and the on-site payroll, by discipline, during a typical year, once the plant is in operation, as required by the regulations.

Exhibit 29 – Site Restoration and Decommissioning

Section 2.29(b) – Decommissioning and Restoration Plan

1. In its response to these comments, the Applicant should provide an explanation of the basis for establishing two years of turbine inoperability as the basis for triggering decommissioning of the turbine.

Exhibit 31 – Local Laws and Ordinances

Section 2.31(a) – List of Applicable Local Ordinances and Laws of a Procedural Nature / Section 2.31(d) – List of Applicable Local Ordinances and Laws of Substantive Nature

1. DPS Staff advises that the listed laws appear to only address Wind Energy Facilities (except the Town of Dansville Road Preservation Law; and the Town of Wayland provisions for Road Preservation, and Protection and Conservation and Development). The application should include a review of all local legal provisions including zoning or other land use criteria, any requirements or standards for use and development that relate to buildings (O&M building), substations or switchyards, roads, fences, lot sizes, setbacks, etc.
2. DPS Staff requests that complete copies of all Facility Area local laws and ordinances and other applicable provisions be provided as soon as possible for review and development of the scope and stipulations.

Exhibit 32 -- State Laws and Regulations

Section 2.32(b) – List of Procedural State Approvals/Permits/Etc. that the Applicant Requests the Board Not Apply

1. The NYS Department of Transportation (DOT) permits should be fully cited and described in the application.

Exhibit 33 – Other Applications and Filings

1. The application should address any current or pending filing related to participation in a competitive market for energy delivery, renewable energy credits, tariffs, tax abatement or PILOT agreements, or related provisions that may affect the degree or nature of Facility benefits.
2. DPS Staff advises that identification of additional local permitting, as cited in the PSS at Sections 2.38 – Water Interconnection and 2.39 – Wastewater Interconnection (pg. 172) should be addressed in Exhibit 33 of the application.

Exhibit 35- Electric and Magnetic Fields

Section 2.35(d)(3) – Electric Field Calculation Tables and Field Strength Graphs

1. The study for Exhibit 35 of the application should include results of calculations performed at 1.05 times the nominal line voltage.

Section 2.35(d) (4) – Magnetic Field Calculation Tables and Field Strength Graphs

1. The study for Exhibit 35 of the application should include results of calculations performed at the summer normal and winter normal conductor ratings provided by the manufacturer for the conductor specified.