

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Motion of Baron Winds LLC for Approval of
Final Sound Modeling consistent with Condition
68 of the Order Granting a Certificate of
Environmental Compatibility and Public Need

Case No. 15-F-0122

**MOTION OF BARON WINDS LLC FOR APPROVAL OF FINAL SOUND MODELING
CONSISTENT WITH CONDITION 68 OF THE ORDER GRANTING A CERTIFICATE
OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED**

Dated: November 30, 2022
Albany, New York

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I. INTRODUCTION

Certificate Condition 68(e)¹ of Baron Winds LLC's ("Baron Winds") Certificate of Environmental Compatibility and Public Need, with Conditions ("CECPN") requires that Baron Winds submit to the Public Service Commission ("Commission") "[r]evised sound modeling 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 Cohocton, Dansville, Fremont and Wayland, and the regulatory limits of Conditions[sic] 72" and which demonstrates conformance with the design goals in Certificate Condition 68(e).

In accordance with Certificate Condition 68(e)² Baron Winds submitted final revised sound modeling for Phase I of the Baron Winds Facility ("BWI") to the Commission for review and approval pursuant to 16 NYCRR § 1002.2 on August 9, 2021.³ The sound modeling submitted by Baron Winds models the Vestas V150 4.2 MW and Gamesa G114 2.625 MW for BWI and includes modeling for the Vestas V150 4.5 MW for Phase II of the Baron Winds Facility. The sound modeling reasonably demonstrates conformance with the design goals in 68(e), the Local Laws on Noise for the Towns of Cohocton, Dansville, Fremont and Wayland, and the regulatory limits of Certificate Condition 72. The Commission should approve the Compliance filing and enable the Project to proceed to operation.

Because of the urgency regarding approval of the sound related compliance filings, Baron Winds makes this motion requesting that the Commission approve the final sound modeling for BWI at the Commission's December session. The final revised sound modeling is the final pre-

¹ Case 15-F-0122, *Application of Baron Winds LLC for a Certificate of Environmental Compatibility and Public Need*, Order Granting Certificate of Environmental Compatibility and Public Need, With Conditions (issued September 12, 2019).

² Baron Winds has submitted all the information required under Condition 68 (a-e).

³ DPS did not raise any issues with the sound modeling until Spring of 2022, nearly a year after the modeling was submitted.

operational compliance filing needed prior to Baron Winds commencing commercial operations for BWI. As of the date of this filing, all turbines have been erected at BWI and Baron Winds fully intends to commence commercial operations before the end of December to meet its commercial milestones and deliver renewable energy to the consumers of New York. As the Commission's recent press release acknowledges, the construction of projects like Baron Winds is crucial and Baron Winds is "vital to combatting climate change by reducing our reliance on fossil fuels, boosting clean-energy investment, creating clean-energy jobs, and improving our environment".⁴ Any delay by the Commission in approving the final revised sound modeling for the Facility may result in a delay in commercial operations of the Facility and prevent the Facility from delivering much needed clean energy.

As is outlined below, the final sound modeling that has been submitted by Baron Winds demonstrates compliance with the CECPN, was conducted in a manner consistent with the CECPN and the Siting Board's Order issued on May 6, 2020, which approved the amendment BWI,⁵ and is conservative and consistent with industry standards.

As noted above, the final revised sound modeling was submitted for approval on August 9, 2021. Since that time, as described below, DPS Staff has commented that they disagree that the sound modeling is consistent with the requirements of the CECPN Order, namely DPS Staff disagrees regarding (1) the sound power level to be used for modeling the Gamesa turbines and (2) the method of applying Noise Reduced Operations ("NRO") to the sound modeling.

⁴ Press Release, Public Service Commission, PSC Moves 4 Major Wind Projects Forward: Commission Approves Compliance Filings for Renewable Energy Projects (issued November 17, 2022), [https://www3.dps.ny.gov/pscweb/WebFileRoom.nsf/ArticlesByCategory/E77E98736AF52743852588FD00605F6E/\\$File/pr22107%20.pdf?OpenElement](https://www3.dps.ny.gov/pscweb/WebFileRoom.nsf/ArticlesByCategory/E77E98736AF52743852588FD00605F6E/$File/pr22107%20.pdf?OpenElement).

⁵ Case 15-F-0122, *Application of Baron Winds LLC for a Certificate of Environmental Compatibility and Public Need*, Order Approving Amendment (issued May 6, 2020).

As further outlined below, there is no rational or scientific basis for DPS Staff to object to the sound modeling as submitted by Baron Winds. DPS Staff is attempting to re-litigate issues they raised during the proceeding that were rejected by the Hearing Examiners in a Recommended Decision dated May 24, 2019, and ultimately rejected by the Siting Board as part of the CECPN and its May 6, 2020, Order approving the amendment to the CECPN.

DPS Staff is attempting to use the compliance process to force Baron Winds to fundamentally change the operation of the Facility, resulting in significant energy loss, without due process. As explained through this Motion, the issues raised by DPS have been fully litigated before the Siting Board and DPS Staff cannot use the compliance process to withhold approvals of compliance filings to circumvent the Siting Board's Orders. The Commission does not have the authority to approve of the changes requested by DPS Staff as those changes do not comply with the Siting Board's Orders.

DPS Staff seeks to apply unnecessary and incorrect restrictions to the sound modeling which would result in a reduction in the number of hours that the Facility can operate, and therefore significantly reduces the renewable energy which can be generated by the Facility. A decision limiting the operation of the Facility, based on unjustified concerns, is not consistent with the interests of ratepayers of New York State and would frustrate the State's renewable energy mandates under the Climate Leadership and Community Protection Act ("CLCPA").

Baron Winds is already required to monitor sound during operations and post-construction sound monitoring will ensure that Baron Winds complies with the regulatory sound limits in the CECPN.⁶ Requiring Baron Winds to also apply additional curtailment prior to operations, when reasonable and sufficiently conservative sound modeling demonstrates it is not necessary, is

⁶ See Certificate Conditions 70 and 71 of the CECPN.

contrary to the goals of the State, which should be encouraging renewable energy production not curtailing energy before it can ever be produced. This is particularly true here, where there is no process to reduce NRO once applied, however NRO can be easily applied post operations if sound monitoring determines it is necessary.

II. RELEVANT PROCEDURAL BACKGROUND

Baron Winds was issued a CECPN by the Siting Board on September 12, 2019.⁷ The Certificate authorizes Baron Winds to construct and operate a 242 MW wind-powered electric generating facility in the Towns of Cohocton, Dansville, Fremont and Wayland in Steuben County, New York (“Project” or “Facility”).⁸

On March 9, 2020, Baron Winds filed a petition for amendment, requesting that the Siting Board amend certain aspects of its CECPN, including changes in component locations and increases in turbine heights. In addition, Baron Winds proposed to construct the Facility in two separate phases. The March 9, 2020, amendment specifically addressed modifications to BWI, and included updated environmental analyses for resources and subject areas affected by the Project modifications, and as is relevant for this motion, included an updated Exhibit 19 and Supplemental Sound Modeling (“SSM”).⁹ The SSM provided updated information for the turbines chosen for BWI and, consistent with the approach taken in the previous versions of the Pre-Construction Noise Impact Assessment included limitations on the operations of the turbines in certain limited situations where the turbine operations would exceed design goals or limits established in the

⁷ Case 15-F-0122, *Application of Baron Winds LLC for a Certificate of Environmental Compatibility and Public Need*, Order Granting Certificate of Environmental Compatibility and Public Need, With Conditions (issued September 12, 2019).

⁸ *Id.*

⁹ Baron Winds also filed updated sound propagation contour maps on April 14, 2020, DMM Item No. 493.

CECPN. This noise “limitation” is referred to as “noise reduced operation modes” or “NRO” modes which were applied as a function of wind direction and wind speed.

On April 27, 2020, the Secretary to the Commission concluded that “the modifications for Phase I of the Project would not result in any significant adverse environmental impacts as determined according to 6 NYCRR § 617.7(c) as compared to the Certified Facility.”¹⁰ Accordingly, the Amendment Request did not constitute a “revision,” and therefore no hearings were required.¹¹ Thereafter, by Order issued on May 6, 2020, the Siting Board approved the requested amendment to the CECPN for Phase I of the Facility.¹² Notably, when approving the amendment for BWI of the Facility, the Siting Board found that the SSM indicated compliance with the design goals and regulatory limits in the Certificate and the local sound level limits, and that adherence to existing Certificate Conditions adequately mitigates noise impacts.¹³ The May 2020 Order affirmed the approach taken by the Certificate Holder that incorporates the approach approved by the Siting Board in the original CECPN Order.

On August 9, 2021, Baron Winds submitted final sound modeling for BWI consistent with Condition 68(e) of the CECPN and the sound modeling in the Application and amendment.¹⁴ The August 9, 2021, sound modeling notes that BWI includes 32 wind turbines, eight Gamesa G114 and 24 Vestas V150-4.2/4.3 MW wind turbines. Similar to the March 2020 sound modeling submitted for the amendment, the August 9, 2021, modeling reflected the use of the warranted sound power for the Gamesa turbines, and the use of NRO modes to meet the design goals, and

¹⁰ DMM Item No. 494, April 27, 2020, Letter from Hon. Michelle L. Phillips, Secretary to the Commission to James A. Muscato, II, Esq., p. 6.

¹¹ *Id.*

¹² Case 15-F-0122, *Application of Baron Winds LLC for a Certificate of Environmental Compatibility and Public Need*, Order Approving Amendment (issued May 6, 2020).

¹³ *Id.*

¹⁴ DMM Item No. 553, Baron Winds Supplemental Sound Modeling.

these NRO modes would be applied only in certain wind speeds and directions as needed to meet the requirements.

On September 26, 2022, Baron Winds submitted revised sound modeling to clarify that the turbine being used for BWI is the Vestas V150-4.2 not the 4.3 MW version.¹⁵ The 4.2 MW and 4.3 MW versions of the Vestas are the same physical wind turbine but have different available operating parameters.¹⁶ The August 9, 2021, sound modeling used the operating parameters and sound power for the 4.3 MW version of the wind turbine. However, the turbine being constructed for BWI is the 4.2 MW version not the 4.3 MW version, as the 4.3 MW version was subsequently determined to be not suitable for the site based on wind speeds and other technical factors. As such, the September 26, 2022, modeling updated the compliance filings for BWI with revised sound modeling for the entire array, using the 4.2 MW version of the Vestas V150. Importantly, the NRO modes for the 4.2 MW and the 4.3 MW versions of the wind turbines *are the same and were not changed*, though power optimized modes are different, as the two turbines have different modes available for operation.¹⁷ In addition, no changes were made to the G114 2.625 MW sound power levels.¹⁸

Baron Winds has appropriately modeled the sound for BWI in accordance with the CECPN and Amended CECPN. The modeling is consistent with the approved modeling that was the subject of a Recommended Decision by the Hearing Examiners and adopted by the Siting Board in two separate Orders. The Hearing Examiners and Siting Board correctly found that Baron Winds used reasonably conservative methods to model the sound for the Facility. There is no basis to alter these methods at this time, particularly given the urgent need to approve compliance

¹⁵ DMM Item No. 684 (Baron Winds 1 Revised Sound Modeling).

¹⁶ See Affidavit of Kenneth Kaliski, ¶13.

¹⁷ *Id.*

¹⁸ *Id.*

filings and proceed to operation of the Project. DPS Staff's concerns regarding the modeling seek to relitigate issues already decided by the Siting Board and/or demonstrate a misunderstanding of NRO modes and the use of NRO at wind projects.

Essentially, DPS Staff requests that Baron Winds model sound (1) using a higher sound power level for the Gamesa wind turbines than is necessary or appropriate, and (2) seeks to require Baron Winds to apply NRO in situations where NRO is unnecessary to meet the sound limits of the CECPN (i.e., in all wind directions regardless of modeled sound levels). The first request is not required by the Orders and is unnecessarily conservative because it requires the turbines to be modeled "louder" than the warrantied sound level. This in turn requires that the Project be designed with *more* NRO modes in use, meaning more restrictions in operation, than is needed to meet the design goals and standards of the Certificate. The second request imposes the use of NRO modes in all wind directions even if sound modeling does not indicate it is necessary, which again curtails and limits the operation of the turbines, in conditions where it is unnecessary to address sound or ensure compliance with the sound limits or design goals of the Orders. Therefore, as explained below, the Commission should reject DPS Staff's arguments and approve Baron Winds modeling as submitted.

III. ARGUMENT

1. The Sound Power Level Used For Modeling the Gamesa Turbines is Reasonable

On April 15, 2022, in accordance with Certificate Conditions 68(c) and (d) Baron Winds submitted turbine manufacturer information related to the sound power levels for the turbines, including the manufacturer sound emissions specifications (warrantied levels) and a sound

measurement test from Gamesa for the G114-2.625 MW.¹⁹ The test demonstrated that the sound emissions were within the warranted sound specification and provided additional details on the spectral sound emissions from the wind turbine.²⁰ On August 12, 2022, DPS Staff advised Baron Winds of its objection to the sound power levels used in the sound modeling for the Gamesa turbines and requested that Baron Winds use a different higher sound power level when modeling sound from the turbines based on the Gamesa emissions test. Using the higher sound power level would require additional power generation loss at the Facility in the form of additional NRO.²¹

a. DPS Staff is Attempting to Re-Litigate an Issue Decided in Previous Proceedings

Baron Wind's sound modeling uses the maximum sound power levels from the Gamesa turbines at the maximum level of energy production at any wind speed.²² As with all major wind turbine manufacturers, Gamesa provides a warranty of these sound power levels, with an amount added for uncertainty. The uncertainty in this case is ± 2 dB.²³ The turbine manufacturer, in this case Gamesa, tested the equipment under a variety of conditions and factors resulting in representative sound power levels in different conditions. DPS Staff is requesting that Baron Winds use the highest sound power level produced during the emissions test done by Gamesa (International Electrotechnical Commission [IEC] TS 61400-11), which produced a 1 dB *higher* sound level than the published sound level specification at select wind speeds.²⁴ However, it is inappropriate to use this high wind speed as the measured data shows that the sound power levels are within the expected measurement uncertainty (less than 2 dB difference) and there is no need to add additional margin inside the noise model, especially since RSG already has incorporated a

¹⁹ DMM Item No. 606.

²⁰ Affidavit of Kenneth Kaliski, ¶17.

²¹ *Id.* at ¶18.

²² *Id.* at ¶20.

²³ *Id.* at ¶21-22.

²⁴ *Id.* at ¶18.

2dB uncertainty into the modeling for Baron Winds.²⁵ In other words, the 2 dB uncertainty used in the modeling provided a conservative assumption that incorporated the 1 dB higher actual sound results from the emissions test. DPS Staff has stated that it is *implied* that the CECPN requires the use of this higher sound power level from the IEC test for all wind speeds, even though the emissions tests showed a lower sound power level at 8 out of 10 wind speeds, and that the test showed the sound power to be within the warranted level, and that the manufacturer continues to warranty the same sound power level as used in the sound modeling despite the presence of a single test at a single location showing a higher average sound power level at select wind speeds. To be clear, DPS Staff is not requesting that Baron Winds use the higher sound power level at the two wind speeds the emissions test indicated a higher level, but DPS Staff is requesting that Baron Winds use the higher level for all wind speeds.

As explained further below, DPS Staff's position is an attempt to re-litigate an issue decided by the Siting Board during the Cassadaga Wind proceeding and continues to demonstrate a fundamental misunderstanding of sound power levels and turbine technology and how those levels are used during sound modeling. DPS Staff's position is also unsupported by the actual monitoring conducted at the Cassadaga Wind project. The same wind turbine is installed and operating at the Cassadaga Wind Project, a subsidiary of RWE Renewables Development, LLC, which is the same parent company as Baron Winds. Cassadaga's sound modeling used the warranted sound power level for the Gamesa turbines and the sound monitoring for Cassadaga did not result in exceedances of the regulatory sound limits as result of under-modeling the sound power levels. Therefore, the monitoring at Cassadaga does not indicate that the use of the DPS

²⁵ *Id.* at ¶16, 28.

requested higher sound power level is necessary to ensure the Facility can meet the sound limits of the CECPN.²⁶

The issue of using the warrantied sound power level as compared with results from emissions tests was litigated during the Cassadaga Wind proceeding. In the Cassadaga proceeding, sound modeling was performed using the overall sound power level the manufacturer warrantied. In Direct Testimony, DPS Staff questioned the use of the warrantied level and argued that Cassadaga should be required to submit an IEC test and indicate any differences in the emissions test versus the warrantied level and indicate whether such differences “are minor and could make the Facility exceed any Certificate Conditions on noise or vibration”.²⁷ Notably, DPS did not testify that Cassadaga should be required to use the highest sound power level indicated by the IEC test for the modeling, as DPS Staff is arguing now. In rebuttal Cassadaga maintained that the warrantied sound levels were appropriate but nevertheless agreed to provide the IEC tests if available.²⁸

Ultimately the Recommended Decision and the Siting Board agreed with Cassadaga that using the warrantied sound level was reasonable and that the modeling was not required to use the IEC test, whether it was available or not. The Recommended Decision stated “the record demonstrates that if, for some reason, the sound power level exceeds the warranty, a manufacturer is required to repair the turbine so that it meets its warrantied sound power level. Additionally, any discrepancies that cause the turbine to exceed certificate conditions or local laws will require the Certificate Holder to shut down the turbine and bring it into compliance. Therefore, we agree with

²⁶ *Id.* at 25.

²⁷ See 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*, Prepared Direct Testimony of Miguel Moreno-Caballero, pp. 94-95.

²⁸ See 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*, Rebuttal Testimony of Kenneth Kaliski, pp. 12-13.

the Applicant that the manufacturer has an interest in providing realistic, attainable results. We recommend the Board find it was appropriate for RSG to use the manufacturer's warranted sound power level in its models."²⁹ Thereafter, the Siting Board adopted the Recommended Decision on this issue.³⁰

DPS's position that it is *implied* that the Baron Winds' CECPN requires the use of this higher sound power level from the test for all wind speeds, is belied by the record at Cassadaga. As the record at Cassadaga indicates, the purpose of Certificate Conditions 68(c) and (d) is not to determine the sound power levels to be used in the sound modeling, but instead the information is to be submitted, if available, to demonstrate the warranted sound power level and to confirm the uncertainty applied in the modeling (here it is ± 2 dB uncertainty). In fact, Certificate Condition 68(c) only requires the submission of the tests *if available*, indicating that such information is not necessary to determine the sound power level or be used as part of the modeling required to show conformance with the conditions of the Certificate.

Significantly, Cassadaga supplied DPS Staff with the *same test* from Gamesa for the G114-2.625 MW on July 19, 2019, as part of Cassadaga's sound modeling compliance filing, and DPS Staff did not raise any issues with Cassadaga using the warranted sound power level.³¹ Again, Cassadaga was modeled using the exact same specifications that Baron Winds is now proposing. In addition, Baron Winds, just like Cassadaga, must conduct sound monitoring during the first year of operations and in response to certain complaints thereafter for the life of the Facility. Such

²⁹ See 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*, Recommended Decision (issued November 8, 2017), p. 103.

³⁰ See 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 January 17, 2018), pp. 63, 67.

³¹ See 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*, DMM Item No. 517.

monitoring is designed to confirm that the turbines are not exceeding the sound limits in the CECPN.

Baron Winds notes that the same Gamesa wind turbine is used at the Cassadaga Wind Project near Receptors 4581p and 1200b.³² The postconstruction sound monitoring at Cassadaga, shows measured sound levels at those receptors not exceeding the modeled values.³³ Thus, there is demonstrable proof that the methodology used in modeling and the use of the maximum manufacturer warrantied sound power, results in accurate or conservative predictions of sound levels in operation.³⁴ Requiring Baron Winds to apply a higher sound power, which would require additional NRO and energy loss, is unnecessary as has been demonstrated by the monitoring results at Cassadaga.

There is absolutely no basis to require Baron Winds to use a higher sound power level to model the Facility, and the modeling and monitoring at Cassadaga Wind prove that Baron Winds is applying the appropriate sound power levels of for the Facility.

b. Baron Winds Warrantied Sound Power Level is the Appropriate Sound Power Level as the Sound Modeling already accounts for a 2 dB uncertainty

As background, a manufacturer generates noise specifications using, in part, tests that define an average sound level and uncertainty around that sound level for each test.³⁵ For example, the manufacturer may conduct ten tests that average 105 dBA. Some of the tests will show higher sound levels and some will show lower sound levels. The turbine manufacturer may then take the average sound level and warranties that sound level with the uncertainty, normally ± 2 dB. When conducting sound modeling, it is appropriate to use the warrantied sound power level, especially,

³² Affidavit of Kenneth Kaliski, ¶27.

³³ *Id.*

³⁴ *Id.*

³⁵ *Id.* at ¶21.

whereas here, the sound modeling already accounts for the ± 2 dB uncertainty.³⁶ In other words, Baron Winds modeling is already accounting for the fluctuations in the turbine testing and using the highest sound power level produced by the testing would result in an overly conservative penalty to the Facility.

Again, Cassadaga Wind was modeled using the warrantied sound power level of the same turbine model. Now, DPS is arguing, that of any test ever made on that make and model of wind turbine, Baron Winds must use the highest sound power recorded and then still use the ± 2 dB uncertainty. There is no basis to use both, the actual highest sound power level recorded *and* the 2 dB uncertainty that is used when modeling the sound of the turbine, since the testing has been completed and the sound modeling can be done with the *actual* maximum sound levels of the turbine. This is unnecessarily conservative and restricts energy production at the Facility without any rational basis. The emissions test done on the Gamesa wind turbine that showed a higher sound power **was within the uncertainty** (i.e., it is less than 2 dB higher than the warrantied sound power level).³⁷ Again, the sound modeling for BWI assumes uncertainty considering both sound propagation and wind turbine sound power. Therefore, the sound modeling already accounts for the emissions test results and the uncertainty. Baron Winds would agree that if the emissions test fell outside of the uncertainty that the modeling may not be sufficiently conservative to demonstrate compliance and therefore, additional NRO may be needed but applying the highest sound power level and adding the uncertainty would add 3 dB to the sound modeling, which is overly conservative and not necessary to ensure compliance with the CECPN sound limits.

Therefore, the Commission should approve the use of the warrantied sound level for the Gamesa turbines (the same sound power level used in all modeling for the application and

³⁶ *Id.* at ¶28.

³⁷ *Id.*

supplements to date) for compliance modeling and not force Baron Winds to further reduce energy production, because there is no evidence that doing so is necessary to demonstrate reasonable compliance with the CECPN.

2. The Method of Applying NRO to the Sound Modeling is Appropriate and will be Monitored to Ensure Compliance with the CECPN

As indicated in the final sound modeling submitted initially on August 9, 2021 and as revised subsequently on September 26, 2022, NRO modes were used to reduce A-weighted sound levels for certain wind directions and wind speeds.³⁸ NRO modes were also used to reduce low frequency sound emissions at higher wind speeds.³⁹ Note that some NRO modes may result in higher low frequency sound while reducing the overall A-weighted sound level.⁴⁰ Thus, when applying directional NRO modes to meet the A-weighted eight-hour or annual noise limit, additional NRO modes may be applied to further lower the low-frequency noise.⁴¹

This method of applying NRO is (i) consistent with the CECPN and amendment (this is the same method used in the March 9, 2020 amendment application approved by the Board on May 6, 2020), (ii) is commonly used to model wind turbine sound and is standard industry procedure, (iii) is about the same amount of NRO overall as originally proposed in the application, and (iv) and sound monitoring will confirm that the use of NRO as proposed will not result in a violation of any Certificate noise limits.

a. The NRO Method in the Sound Modeling is Consistent with the Amendment Modeling and CECPN Order

On March 9, 2020, Baron Winds filed a petition for amendment, requesting that the Siting Board amend certain aspects of its CECPN, including changes in component locations, and

³⁸ *Id.* at ¶29

³⁹ *Id.* at ¶30.

⁴⁰ *Id.*

⁴¹ *Id.*

increase in turbine height. In addition, Baron Winds proposed to construct the Facility in two separate phases.

The March 9, 2020, amendment sound modeling included Section 2.0 which outlined the sound propagation modeling procedures and highlighted the updates in the modeling procedures Baron Winds used to model the sound for the amendment, including adjustments in the annual NRO Modeling procedure. Explicitly the Amendment SSM stated:

“Annualized modeling was generally the same as what was performed for the PNIA and Supplemental PNIA. The modeling algorithm used was ISO 9613-2 combined with CONCAWE meteorological adjustments. Modeling was performed for a total of 64 meteorological conditions (eight wind directions and eight meteorological classes). This was then adjusted for hub height wind speed and atmospheric attenuation and calibrated to the ISO 9613-2 model. Finally, an uncertainty adjustment was applied, to make the modeling generally more conservative.

In previous modeling, if NROs were necessary, then these were applied to a specific turbine for all wind speeds and all wind directions. This is unnecessarily conservative, since turbine sound powers will be well below the specified maximum for lower wind speeds (6 m/s for example), meaning that NRO will not be necessary. The same applies to wind directions. If a receptor is upwind of the closest turbine(s), then the same NRO may not be necessary as is required during downwind conditions. The current modeling takes this into account, modeling turbines that are placed into NRO individually, allowing application of NRO for only the necessary wind speeds and directions.”⁴²

Although not explicitly applied in the previous Application sound modeling,⁴³ the method of applying NRO to specific wind speeds and wind directions is consistent with the CECPN. Direction-specific sound levels were modeled in the Application and Supplemental PNIA using CONCAWE adjustments, and the CECPN was issued based on those modeling runs. Moreover, the Siting Board declined to limit the use of NRO as part of sound modeling.⁴⁴

⁴² DMM Item No. 480, Baron Winds Supplemental Sound Modeling, Section 2.3 Changes in Annual NRO Modeling Procedure, p. 9.

⁴³ On November 29, 2017, Baron Winds submitted its Article 10 Application with a PNIA. On February 1, 2019, Baron Winds submitted a supplemental PNIA as part of its updated application.

⁴⁴ Affidavit of Kenneth Kaliski, ¶31; see Case No. 15-F-0122, Order Approving Amendment (issued May 6, 2020).

Using direction-specific sound levels in the sound modeling has already been adjudicated by the Siting Board. During the proceedings DPS Staff argued that wind turbine noise is not directional, and that meteorological factors should not be considered in calculating limits for wind turbine noise.⁴⁵ The Siting Board rejected DPS Staff's argument finding that DPS Staff's position is overly conservative, thereby allowing sound modeling to account for wind direction. The Board also rejected DPS's arguments against use of NRO modes during modeling.⁴⁶

DPS Staff is now attempting to use the compliance process to impose its rejected arguments against the use of direction-specific modeling counter to what the Siting Board found. DPS Staff's arguments against using direction-specific modeling for NRO is the same argument DPS Staff made against direction-specific modeling generally, arguing that wind turbine sound propagation is not directional and that NRO modes are an ineffective mitigation mechanism. Again, these arguments were rejected by the Siting Board and the Siting Board declined to limit the use of NRO.

DPS has not put forth any new technical reason for why wind-direction specific NRO's are not appropriate or why they would not work.⁴⁷ DPS Staff's arguments against direction specific NRO are the same arguments the Siting Board rejected with respect to Baron Winds' overall sound modeling and the use of CONCAWE meteorological adjustment. DPS Staff is just now attempting to apply its rejected arguments to Baron Winds' NRO to circumvent the Siting Board's decision.

For example, DPS has expressed concern that sound manufacturer information for the turbines may only be available for the downwind direction and not for any other wind direction. Therefore, DPS argues, the reduction or elimination of NRO's for some ranges of wind direction for a particular wind speed indicated in the NRO Plan is not supported with actual data from the

⁴⁵ See Case 14-F-0490, Order Granting Certificate of Environmental Compatibility and Public Need with Conditions (issued January 17, 2018), pp. 61-67.

⁴⁶ *Id.*

⁴⁷ Affidavit of Kenneth Kaliski, ¶33.

manufacturers. DPS has previously made similar arguments against directionality for the overall sound modeling, which were again rejected by the Siting Board.⁴⁸ As RSG testified during the proceeding, the sound power in the downwind direction is usually higher than in other directions, this is the reason why the IEC 61400-11 test is performed for downwind conditions. As another example, the MassCEC Study on Wind Turbine Acoustics found that close to the wind turbines (around 330 meters), the sound levels from the downwind measurements were about 0.6 dB higher than the crosswind and upwind directions. The Institute of Acoustics Good Practice Guide (IoA GPG) cites research that says sound level differences between up and downwind conditions vary based on distance with differences as high as 13 dB at further distances.⁴⁹ Again, this approach is consistent with the modeling done in the Application and Amendment, which were approved by the Siting Board, where the downwind measured sound power was used for the directional sound modeling.

Because the Siting Board approved direction-specific sound modeling (i.e., using CONCAWE with ISO 9613-2) and because sound levels change with wind direction, consistent with the CECPN,⁵⁰ Baron Winds reduced the amount of NRO in certain wind directions which allows for more energy generation while meeting the noise limits in the CECPN. DPS Staff seems to believe that NRO and wind direction-specific sound levels were not considered by the Siting Board. However, this belief is inconsistent with the record in this proceeding and in the Cassadaga Wind proceeding, which both indicate the issue has been considered by the Siting Board. As such, there can be no argument that wind-direction specific modeling and the use of NRO's were not

⁴⁸ See 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*, Prepared Direct Testimony of Miguel Moreno-Caballero, pp. 18-20.

⁴⁹ Case 15-F-0122, DMM Item No. 384, Corrected Rebuttal Testimony of Kenneth Kaliski, p. 28.

⁵⁰ Affidavit of Kenneth Kaliski, ¶32.

adjudicated by the Siting Board. Moreover, as outlined above, wind-direction specific NRO was used for the sound modeling for the amendment, which was approved by the Siting Board. DPS Staff had no objections to the sound modeling for the amendment and the Siting Board found that the modeling was appropriate.

Moreover, the sound modeling for Baron Winds has been submitted as a compliance filing and the parties and the public have had an opportunity to review and provide comments on the modeling and the application of NRO. There is no requirement in the CECPN that the NRO applied to the Facility be modeled in the same exact manner as the Application, and in fact as demonstrated above, doing so would be contrary to the Siting Board's decision to allow for wind direction-specific sound modeling. Compliance filings routinely include adjustments to account for decisions in the CECPN and DPS Staff compliance requirements.

Finally, as outlined above, Baron Winds' method of applying NRO was outlined in the March 9, 2020, amendment and was included in the initial revised sound modeling submitted on August 9, 2021. DPS Staff did not raise any issues with the NRO application until the Spring of 2022, over two years after the amendment was submitted and almost a year after the revised final sound modeling was first submitted. DPS Staff's delay in raising this issue has placed Baron Winds in a very difficult position, as Baron Winds cannot now make design changes to potentially address DPS Staff's concerns. DPS Staff cannot wait until the last possible minute to raise issues with the NRO sound modeling when they have had over 2 years to raise concerns. DPS Staff's lack of diligence in timely reviewing the filing and timely providing Baron Winds with feedback on the filing, prevents DPS Staff from now raising an issue that will cause the Facility to suffer a significant energy loss, especially where there is no evidence that DPS Staff's position is necessary to ensure compliance with the CECPN. Requiring Baron Winds to model sound in the manner

dictated by DPS Staff is not only contrary to the CECPN and amendment Order as outlined above but is also prejudicial to Baron Winds and leaves New York State energy consumers with less renewable energy than could otherwise be produced at the Facility, without any basis.

DPS staff should not be permitted to use the compliance process as a means of circumventing the Siting Board's authority by obfuscating and conflating issues. The issue of using wind direction in sound modeling was fully litigated and DPS's position against using directional adjustments was rejected. Therefore, Baron Winds use of directional NRO is in compliance with the Siting Board's Order and the CECPN.

b. Applying Direction-Specific NRO is Standard Industry Practice

Wind-direction NRO is supported by Vestas and Gamesa and is widely used in the industry. As an example, RWE uses wind-direction-specific NRO in its 250 MW Scioto Ridge project in Logan County, Ohio and the Vestas and Gamesa software for applying NRO have inputs that are triggered by both wind direction and wind speed.⁵¹

As outlined in the CECPN Order, NRO can function as designed to meet the design goals and regulatory limits for this Facility, and NROs are an accepted, reliable measure to manage noise impacts. The Siting Board declined to prohibit or limit the use of NROs in this proceeding, approved the sound modeling for the Amendment,⁵² and now DPS Staff is inappropriately attempting to use the compliance process to unnecessarily require more NRO than is needed, which in turn causes the loss of renewable energy generation.

Baron Winds has applied NRO at the Facility in a manner that is consistent with industry practice and the NRO has been designed to function as indicated in Baron Winds modeling.

c. NRO has been reduced from the Application Modeling

⁵¹ Affidavit of Kenneth Kaliski, ¶35.

⁵² See Case 15-F-0122, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (issued September 12, 2019), p. 133.

Even though the Siting Board did not limit the use of NRO at the Facility, DPS Staff has taken issue with the amount of NRO proposed in the final sound modeling. However, the amount of NRO proposed for the final revised sound modeling is about the same NRO as originally proposed.⁵³ That is because while more turbines require NRO, overall, less NRO is being applied. Most of the NRO's are required only at high wind speeds and thus are not active most of the time. Specifically, under the Supplemental PNIA, there were 69 wind turbines in the Project, operating in NRO 15 percent of the time.⁵⁴ Under the most recent compliance filing, there were 58 wind turbines (11 fewer), and operating in NRO a similar 17 percent of the time.⁵⁵ Further, under the Supplemental PNIA, the Project operated under an NRO greater the 3 dB for 6 percent of the time compared to the current compliance filing of 0.4 percent of the time⁵⁶. Thus, compared to the Supplemental PNIA, the Project is operating a similar percent of time under NRO, but with lower NRO reductions under most conditions.

d. The Sound Modeling Reasonably Assures Compliance with the Sound Limits of the CECPN and Sound Monitoring will be Used to Verify Compliance

Baron Winds is required to conduct extensive post construction noise monitoring over two seasons (leaf-on and leaf-off) once the Facility is operational, and in response to certain complaints. The post construction noise monitoring is designed to monitor sound at the Facility and determine if the Facility complies with the Certificate Conditions on noise in the CECPN.

As demonstrated above the revised sound modeling submitted by Baron Winds is sufficiently conservative to reasonably ensure that Baron Winds can comply with the sound limits in the CECPN during operations. However, if the NRO that Baron Winds has proposed results in

⁵³ Affidavit of Kenneth Kaliski, ¶36.

⁵⁴ *Id.*

⁵⁵ *Id.*

⁵⁶ *Id.* at ¶37.

a violation of any Certificate noise limit, such violation will be determined during sound monitoring and then Baron Winds will apply minimization measures, which may include adding NROs to specific turbines or wind directions if necessary. It is important to note that the CECPN does not include a method to reduce NRO if determined not necessary by the sound monitoring, only to add NRO if needed. For example, if a turbine is determined to be 5 dBA less than the Certificate allows with NRO during post construction monitoring, there is currently no mechanism in the CECPN for Baron Winds to reduce NRO so that the turbine can operate at a higher sound limit as allowed under the CECPN.⁵⁷ Therefore, unnecessarily applying NRO in modeling has the potential to create a life of project energy deficit even when the NRO is evidently not necessary to achieve compliance.

Considering the energy loss associated with NRO and the requirement that NRO be applied as indicated in the sound modeling regardless of the results of sound monitoring, the application of NRO to the Facility during modeling should not be so overly conservative such that it results in a significant energy loss for the consumers of the State for no clear need. The purpose of sound monitoring is to identify issues that were not anticipated or addressed during sound modeling, and the conservative sound modeling proposed by Baron Winds with the required sound monitoring is sufficient to ensure that the impacts associated with sound at the Facility have been adequately minimized and mitigated.

For all the reasons stated above, the Commission should reject DPS Staff's position and approve Baron Winds sound modeling allowing the application of NRO for only the necessary wind speeds and directions.

⁵⁷ To reduce NRO Baron Winds would need to seek an amendment of the CECPN which would require additional process, time, and resources with an undefined timeline and outcome.

3. Approving Baron Winds Sound Modeling is Consistent with the CLCPA

The CLCPA requires all state agencies, including the Commission, to consider whether their decisions regarding permits, licenses, and other approvals are consistent with, or interfere with, achieving the CLCPA's statewide GHG reduction and green energy generation goals.⁵⁸ The State has set aggressive renewable energy generation goals. Achieving these goals will require the deployment of thousands of megawatts of utility-scale renewable energy generation to help transition New York to a net-zero GHG emission energy portfolio. With the passage of the CLCPA, the New York State legislature has made it clear that New York's energy policy is focused on increased renewable energy generation in the State.

In particular, the State, as implemented through the Commission, has established a process by which renewable energy generators bid to the New York State Research and Development Authority for contracts associated with the production of renewable energy facilities. This has significantly increased renewable energy investment in the State. The Baron Winds project is a 2018 recipient of a NYSERDA award.

To achieve its legal obligations under the CLCPA the State *must produce* clean energy and the projects needed for that production must begin providing the State with energy as soon as possible. The total amount of energy needed for the State to meet just 50% of the renewable target is 33,700,000 MWh of additional renewable energy generation.⁵⁹ Considerably more MW hours of clean energy need to be permitted and constructed to meet the State's goal of 70%. New York has just eight years to more than double the share of the electricity it uses that is generated from

⁵⁸ See *Danskammer Energy, LLC v New York State Dept. of Envtl. Conservation*, 76 Misc. 3d 196, 250 (Sup Ct. Orange County, June 8, 2022).

⁵⁹ Case 15-E-0302, *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, and Case 14-M-0101, *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Final Supplemental Environmental Impact Statement (FSEIS)* (issued May 19, 2016), p. 36.

renewable sources. This means every permitted and constructed MW of renewable energy generation is imperative if the State has any hope of meeting its legally mandated goals.

To meet its contractual obligations to NYSERDA, the project needs to generate MWhs. The contract has certain targets which must be met associated with the generation of the Project.

Applying DPS staff's restrictions to the Facility would reduce energy production from the Facility but are not required to meet the standards and design goals of the CECPN. There is no "impact" reduction if the restrictions sought by DPS Staff are imposed on the Facility, the result is a loss of energy generation potential which puts New York further from meeting the goals of the CLCPA. Baron Winds is required to comply with the limits set forth in the CECPN and is required to monitor the Facility to ensure compliance with those limits. The sound modeling as submitted by Baron Winds is reasonably conservative without unnecessarily restricting operation of the Project, and reasonably assures that Baron Winds can comply as proposed with the sound limits. If, for any reason, Baron Winds is not in compliance with the sound limits of the CECPN, Baron Winds is required to minimize the sound impacts as required by Certificate Condition 71. There is no basis to "pre-minimize" impacts by applying NRO when not necessary, especially when the NRO comes at a loss of renewable energy to New York State consumers.

IV. CONCLUSION

For all the reasons outlined above, Baron Winds respectfully requests that the Commission approve the final revised sound modeling at the December Commission session, as submitted by Baron Winds, as it is consistent with the CECPN and the Siting Board's Order issued on May 6, 2020, is consistent with industry standards, and is reasonably conservative such that it ensures compliance with the CECPN.

Dated: November 30, 2022
Albany, New York

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'JM', written over a horizontal line.

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