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SUBMITTAL VIA E-MAIL

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Re: Case No. 17-F-0282 | All-Catt Wind Energy LLC
PETITION OF ALLE-CATT WIND ENERGY LLC FOR A SECOND AMENDMENT OF THE CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED

Per your request, below please find comments in reference to the All-Catt Wind Energy LLC petition to amend its Certificate of Environmental Compatibility and Public Need (Petition), dated January 26, 2026. This letter provides supplemental comments concerning the Lnight modeling in the March 24, 2026 PNIA for the proposed Alle-Catt Wind Farm submitted April 1, 2026 by Hankard Environmental, Inc. the day before my most recent comments were submitted April 2, 2026. The comments in this letter build on, and should be read together with, my previous comments filings of April 2, 2026, December 15, 2025, and April 22, 2025.

My earlier comment filings established that among other shortcomings, Alle-Catt's PNIA does not apply either of the two modeling approaches the Siting Board's June 3, 2020 Order directed, and that restoring Alle-Catt's 2 dB discount improperly obtained by the PNIA Section 4.5 use of G = 1.0 shows that the Lnight 40 dBA noise goal cannot be met at multiple non-participating residences listed in the PNIA Table C.1. These supplemental comments confirm that the night noise goal is not met at 19 residences under the March 24 PNIA submitted April 2, 2026 and establish three additional findings:

First, the Bluestone Wind procedure that the Order references as precedent used G = 0.5 throughout, with no propagation-side adjustment between short-term Leq and long-term Lnight modeling. The shift to G = 1.0 in the Alle-Catt PNIA Section 4.5 is novel relative to the Bluestone-approved methodology and accepted practice.

Second, the Alle-Catt PNIA does not report its source input (LWnight) to the propagation model used to estimate Lnight at receptors. My independent calculation of the long-term equivalent nighttime source sound power level (LWnight) for the Alle-Catt site, using the NREL WRDB NOW-23 dataset and the source-side procedure described in PNIA Section 4.5 paragraph 2, yields source LWnight = 103.2 dBA. This is 1.8 dB below the PNIA LWmax of 105.0 dBA. My calculations are provided below.

Third, the PNIA's reported receptor-level Leq − Lnight differences (or deltas) in Table C.1 cluster in the range of 5.0 to 6.3 dB. By the arithmetic identity (Leq − Lnight),receptor = (LWmax − LWnight),source + (D,Leq − D,Lnight),propagation, this requires the propagation calculation to contribute approximately 3.2

to 4.5 dB of additional attenuation to the Lnight computation. The shift to G = 1.0 accounts for 2 dB. The remaining 1.2 to 2.5 dB delta at receptors is unattributable to any disclosed propagation parameter.

In my professional opinion, PNIA Section 4.5 introduces propagation modifications beyond what the Order authorized and beyond what the PNIA narrative discloses. The Section 4.5 calculation should be re-run using the propagation parameter set approved in Bluestone Section 19(d), and the model input files should be made available to enable a reviewer to identify the source of the residual 1.2 to 2.5 dB at receptors.

1. The Order's Required Methodology

The Siting Board's June 3, 2020 Order directed Alle-Catt to remodel using either the entire suite of CONCAWE corrections or the "Van den Berg corrections as approved in Bluestone Wind and Deer River matters." In the March 24 PNIA, the applicant elects the second option.

The "Van den Berg corrections as approved in Bluestone Wind and Deer River" on which the PNIA says it relies are the specific procedure documented in the Bluestone PNIA, prepared by Epsilon Associates and approved by the Siting Board on December 16, 2019 (Case 16-F-0559). The Deer River project (Case 16-F-0267) followed Bluestone, as confirmed by the Rebuttal Testimony of Robert D. O'Neal (filed November 22, 2019), which states that the Deer River certificate conditions are *"consistent with the Recommended Decision in Case 16-F-0559, Bluestone Wind, LLC, issued October 1, 2019."*

DPS Staff Witness Moreno-Caballero, in prepared testimony in this proceeding (Exhibit MMC-33, October 4, 2019), defined the "van den Berg method" operationally as the kinematic shear correction applied on the source side: hourly hub-height wind speed extrapolation from on-site met data, matched to the manufacturer's sound power table, and energy-averaged across nighttime hours to produce LWnight. The Bluestone PNIA Section 9 implements this procedure, using 8,760 hours of 2017 data from on-site tower #1001, an annual average wind shear $\alpha = 0.23$, and energy averaging for long-term LWnight values. The analytic results are reported in Bluestone PNIA Table 9-9.

The Alle-Catt March 24, 2026 PNIA Section 4.5 paragraph 2 implements the same source-side procedure. That much is consistent with Bluestone.

What Bluestone did not do, and what the Order did not authorize, is to combine the kinematic emission (source) Lnight sound power correction with a separate, novel downward propagation adjustment between short-term and long-term modeling. This additional procedure is applied in the March 24, 2026 PNIA.

2. The G-Factor Change in PNIA Section 4.5

The March 24, 2026 PNIA Section 4.4 (short-term 8-hour Leq) uses ISO 9613-2 with G = 0.5, receptor height 1.5 m, and a 2 dBA uncertainty added. However, Section 4.5 (long-term annual Lnight) uses ISO 9613-2 with **G = 1.0**, receptor height 1.5 m, and a 2 dBA uncertainty added. The narrative explains that the change accounts "for atmospheric conditions not as ideal as those assumed." The single propagation parameter difference between the two calculations is the ground factor G.

In my previous comments I performed a comparison of the PNIA at G = 0.5 and G = 1.0 with all other parameters constant. The result at receptors was a uniform 2 dB shift downward with G = 1.0.

Restoring Alle-Catt's 2 dB discount improperly obtained by the PNIA Section 4.5 use of G = 1.0 shows that the Lnight 40 dBA noise goal cannot be met at 19 non-participating residences listed in the PNIA Table C.1. Similarly, the Lnight 40 dBA noise goal cannot be met at 36 of all non-participating properties.

3. The Bluestone-Approved Procedure Uses G = 0.5 Throughout

Bluestone Wind Exhibit 19, Section 19(d), states the propagation parameter set:

"*The Study Area was modeled with a spectral ground absorption using a G-factor of 0.5, corresponding to 'mixed ground' ... and a 2 dBA additional uncertainty factor added to the turbine sound power. ... Meteorological conditions assumed in the model (temperature = 10 ºCelsius (C) and relative humidity = 70%) were selected to minimize atmospheric attenuation in the 500 Hz and 1000 Hz octave bands. The meteorological correction term (Cmet) was set to zero ...*"

The same Section 19(d) describes the long-term annual nighttime calculation:

"*The same full year of on-site wind data, described above, were used to calculate an equivalent sound level for all nighttime hours in one year (Leq, night-outside). This was done using the percent time matched to sound power level at a given wind speed, and was calculated on an energy basis for each turbine under consideration.*"

The long-term calculation differs from a short-term calculation only on the source side, in how per-hour sound power is assigned and aggregated. Bluestone Section 19(d) identifies no separate propagation parameter set for the long-term Lnight computation. The G = 0.5, Cmet = 0, T = 10 °C, RH = 70% set is stated once and used throughout. Deer River followed Bluestone.

The Alle-Catt Certificate Order's reference to "Van den Berg corrections as approved in Bluestone Wind and Deer River matters" therefore authorizes the kinematic source-side correction. It does not authorize a propagation-side ground factor change between short-term and long-term modeling.

4. Calculation of Yearly Sound Levels (LWnight) for Alle-Catt

The March 24 PNIA Section 4.5 paragraph 2 describes the source-side procedure but does not report the resulting LWnight. Only the receptor-level Lnight values appear in Table C.1.

I performed an independent calculation using the WRDB NOW-23 Great Lakes wind dataset at NOW-23 grid point 304763 near the project meteorological tower, the same dataset used in my prior filings. Full-year 2020 data, 100 m hub-height wind as proxy for the 105 m turbine hub (a conservative approximation that underestimates hub wind under positive shear), nighttime window 22:00 to 06:00 local, cut-in V100 ≥ 3 m/s, sound power assigned by linear interpolation of the March 24 PNIA Table T05 for the V150-4.5 STE, energy-averaged across all 3,294 nighttime hours of 2020 with non-operating hours contributing zero acoustic energy. The result is **LWnight = 103.2 dBA**, with **LWmax = 105.0 dBA**. The source-side

delta is **LWmax − LWnight = 1.8 dB**. Figure 1 presents the cumulative LWnight accumulating in chronological order across the year.

This result is consistent with the Bluestone PNIA Table 9-9 results from its long-term equivalent nighttime sound power calculation performed under the New York Article 10 framework using this approach. Pairing Bluestone's Table 9-9 (Lnight) values with the worst-case sound power levels (LWmax) stated in the Bluestone PNIA narrative produces the following summary table[1].

Bluestone Turbine	LWmax, dBA	LWnight (all hours), dBA	Delta, dB
GE 3.8-137	107.0	104.4	**2.6**
Vestas V150-4.2	104.9	102.3	**2.6**
Nordex N149/4500	106.1	105.0	**1.1**
Senvion 4.2M148	105.0	103.6	**1.4**

The Bluestone Lnight deltas range across the four candidate turbines from 1.1 to 2.6 dB. The mean delta is approximately 1.9 dB. DPS Staff Witness Moreno-Caballero reviewed these Bluestone values in MMC-33 and characterized the Lnight delta in the range 1.5 to 2.5 dB. These Alle-Catt Lnight delta computations and the previous Bluestone delta calculations are independent, performed on different sites with different turbines and different met data sources, and both place the source-side LWnight delta centered near 2 dB.

5. The Lnight Receptor-Level Arithmetic and the Undisclosed Residual

For any single receptor, the decibel ratio or delta between Leq and Lnight can be stated as,

$$L_{eq,receptor} - L_{night,receptor} = L_{Wmax,source} - L_{Wnight,source} + (D_{,Leq} - D_{,Lnight})_{,propagation}$$

where $D_{,Leq}$ and $D_{,Lnight}$ are propagation deltas for short-term Leq and long-term Lnight.

The receptor-level difference equals the source-side LWmax-LWnight delta plus the propagation contribution D. The March 24 PNIA, Table C.1, reports the modeled Leq and Lnight at non-participating residences. The value deltas range from approximately **5.0 to 6.3 dB**.

Figure 2 presents the Table C.1 receptor-level results relative to Leq and integrates the Lnight reduction with the contributions identified in this and prior comments filings: the verified 1.8 dB source-side delta (Section 4 above), the 2 dB propagation contribution from the disclosed G = 0.5 to G = 1.0 shift (controlled comparison in my prior comments), and the residual that the disclosed PNIA parameters do not account for. Substituting the verified source-side delta:

$$5.0 \text{ to } 6.3 \text{ dB} = 1.8 \text{ dB} + (D_{,Leq} - D_{,Lnight})$$

$$(D_{,Leq} - D_{,Lnight}) \approx 3.2 \text{ to } 4.5 \text{ dB}$$

[1] Bluestone Table 9-9 values are reconstructed from underlying data beneath visual redaction blocks in the public record document.

The shift from G = 0.5 to G = 1.0 contributes 2 dB as established in previous comments. A residual of approximately 1.2 to 2.5 dB at receptors is not attributable to any propagation parameter change disclosed in the PNIA narrative. The residual is comparable in magnitude to both the verified source-side delta and the disclosed G shift. Approximately one-third of the total receptor-level Leq − Lnight difference reported in Table C.1 is not attributable to any propagation parameter the PNIA discloses. A possible candidate is the meteorological correction Cmet, which Bluestone Section 19(d) explicitly fixed at zero throughout but which the Alle-Catt March 24, 2026 PNIA Section 4.5 does not specify. A non-zero Cmet for the Lnight computation could account for additional attenuation and would constitute a second departure from the Bluestone procedure beyond the use of G = 1.0. Source spectrum differences may contribute minor additional differences. The model input data for both the Section 4.4 and Section 4.5 calculations are needed to identify the source of the residual.

6. G = 1.0 Is Not Supported by the Empirical Literature

Because elevated wind turbine noise sources are affected more often than not, in the course of a year, by wind shear, Article 10 requires stability-dependent noise modeling for wind farms. 16 NYCRR 1001.19(d). The CONCAWE methodology accomplishes this on the propagation side. The kinematic shear correction for sound power level (the "Van den Berg corrections" approved in Bluestone and Deer River) accomplishes part of it on the source side. The June 3, 2020 Order in this proceeding directed Alle-Catt to apply one of these two methodologies.

Two empirical references have been cited in New York Article 10 proceedings on the question of ground factor selection for wind turbine noise modeling. Both validate G = 0.5 specifically. Neither validates G = 1.0.

First, Cooper, Evans, and Alamshah (Inter-noise 2014), based on approximately 10,000 turbine-noise-controlled measurements over 8 months at a flat site 1,150 m from the nearest turbine, conclude:

"*For flat sites, the ISO 9613-2 noise model provided accurate downwind predictions of wind turbine noise when a ground hardness of G = 0.5, humidity of 80% and temperature of 10°C were used as model inputs.*"

Second, the Massachusetts Study on Wind Turbine Acoustics (RSG, 2016), quoted in Bluestone Exhibit 19:

"*The ISO 9613-2 model with mixed ground (G = 0.5) with +2 dB added to the results was most precise and accurate at modeling the hourly Leq, as compared to individual five minute periods*."

Neither study validates G = 1.0 for any site condition. The G = 1.0 choice in the March 24 Alle-Catt PNIA Section 4.5 has neither empirical support in the references DPS Staff has previously relied on nor procedural support in the Siting Board's prior approvals.

7. Conclusions and Requested Action

The March 24 PNIA's use of G = 1.0 for the long-term Lnight calculation in Section 4.5, while retaining G = 0.5 for the short-term Leq calculation in Section 4.4, produces a uniform 2 dB downward shift at all non-participating residences. This shift is not authorized by the Order's reference to "Van den Berg corrections as approved in Bluestone Wind and Deer River matters." Bluestone Exhibit 19(d) used G = 0.5, Cmet = 0, T = 10 °C, and RH = 70% throughout. Deer River followed Bluestone. The empirical literature DPS Staff and the Bluestone applicant relied on uses G = 0.5.

Beyond the 2 dB G shift, the receptor-level arithmetic identifies an additional 1.2 to 2.5 dB modeling shift downward at receptors not attributable to any disclosed propagation parameter. A possible candidate is a non-zero Cmet, which would constitute a second departure from Bluestone.

I respectfully request:

1. That the Section 4.5 long-term calculation be re-run using the propagation parameter set approved in Bluestone Section 19(d), specifically G = 0.5, Cmet = 0, T = 10 °C, and RH = 70%, applied uniformly with the Section 4.4 calculation. The corrected Lnight predictions will be approximately 2 dB higher at all non-participating residences than reported in the PNIA.
2. That the model input files for the Section 4.4 and Section 4.5 calculations be made available, including the estimated LWnight, so the source of the residual 1.2 to 2.5 dB can be identified. If additional undisclosed parameter changes are present, the corrected Lnight predictions will be higher still.

The petition to remove the 40 dBA Lnight design goal should be denied. The remedy for an applicant unable to satisfy the long-term noise design goal under valid modeling assumptions is project redesign, not removal of the goal. The applicant should be directed to revise the project design through some combination of noise-reduced operation, turbine relocation, or other mitigation as set forth in Certificate Condition 71.

8. Professional Responsibility

INCE Rules of Practice require noise control engineering studies, reports, or work be provided to decision makers only when they are, to the best of the reviewer's knowledge and belief, are safe for public health, property, and welfare and in conformance with best practices (INCE Canon of Ethics). Best practices include designing to prevent noise complaints and impacts on sleep and amenity, and assure that facilities comply with regulatory requirements with an adequate design margin (Maria, Rutheravan, 2016).

1. The only reliable noise control option available during the design stage is sufficient distance to prevent complaints. Once installed, if complaints occur, the only reliable noise control option is shut-down.

2. Removing the 40 dBA limit would permit operation at noise levels that:

    1) Result from modeling that systematically underestimates actual noise exposure.

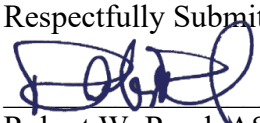
2) Exceed the WHO 2009 40 dBA Lnight threshold that assures that subclinical adverse health effects are minimized.
3) Increase incompatible noise levels at quiet rural residences per ANSI Standards.
4) Affect numerous non-participating residences in the Alle-Catt project area.

This represents a significant increase in noise impact compared to the ordered design goal. The purpose of pre-construction compliance demonstration is to ensure adequate distance and appropriate design before construction proceeds and residents are exposed. Eliminating pre-construction requirements and hoping post-construction testing will catch problems inverts this protective sequence and ensures residents will suffer harm before mitigation is even considered.

These issues combined with the exceedances of Order Conditions and non-conservative methods documented previously and herein raise significant doubts as to whether the PNIA reasonably assures the Siting Board that non-participating residents will be protected from unwanted noise, and that complaints during operations will be minimized.

Thank you for your consideration of this letter. If you have any questions, please contact me.

Respectfully Submitted,



Robert W. Rand, ASA, INCE (Member Emeritus)

Figure 1

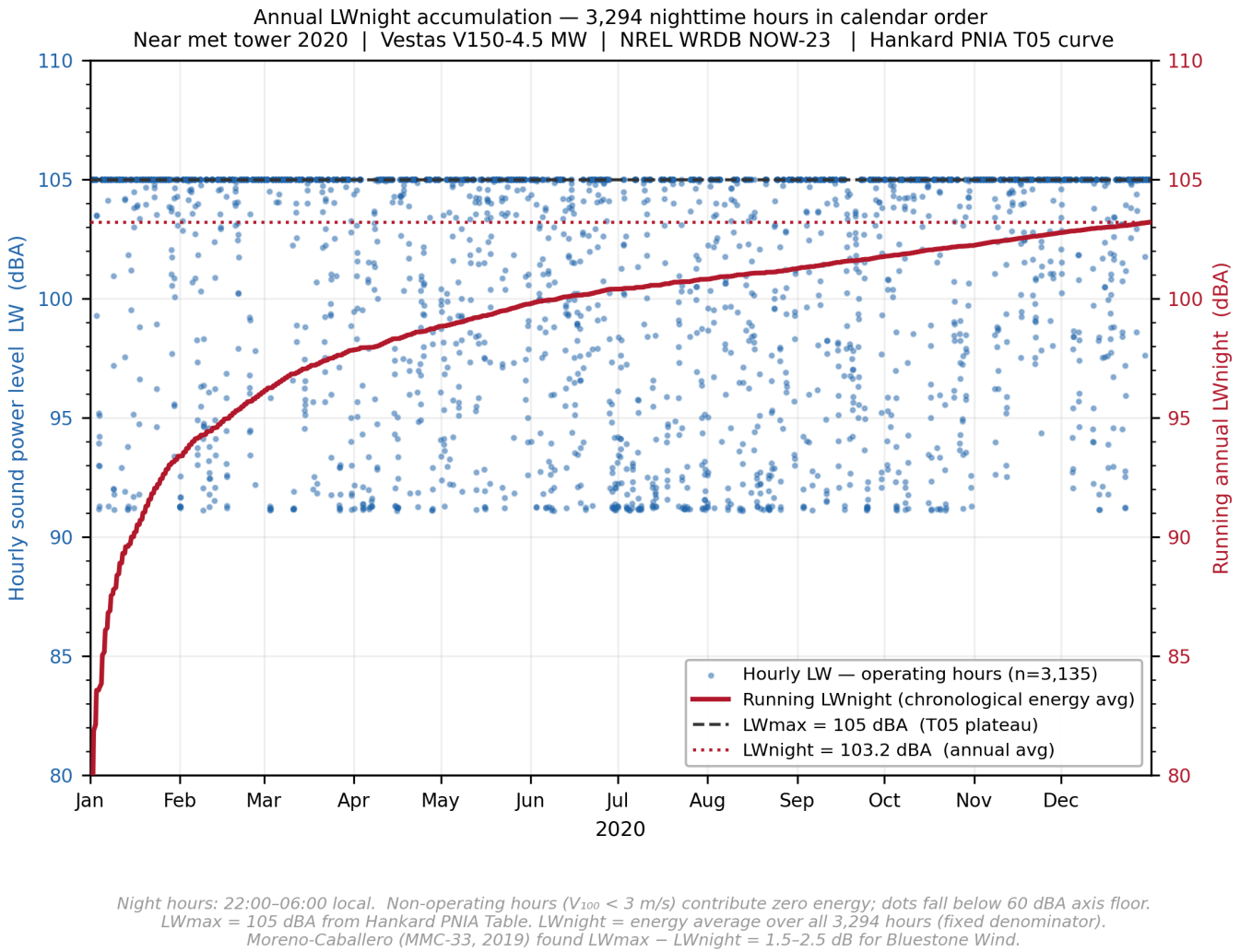


Figure 1. Annual LWnight accumulation, 3,294 nighttime hours in calendar order, near met tower, 2020. Vestas V150-4.5 MW with Hankard PNIA T05 curve, NREL WRDB NOW-23 wind data. Hourly LW values for operating hours (n = 3,135) shown as blue points; non-operating hours (V_100 < 3 m/s) contribute zero energy to the running average. Running LWnight in chronological energy average shown in red. LWmax = 105 dBA from the T05 plateau. Annual energy-averaged LWnight = 103.2 dBA. Source-side delta LWmax − LWnight = 1.8 dB, consistent with Bluestone PNIA Table 9-9 (Epsilon Associates, 2018) finding 1.1 to 2.6 dB across four candidate turbines, and DPS Staff Witness Moreno-Caballero (MMC-33, 2019) characterizing the same Bluestone calculation as 1.5 to 2.5 dB.

Figure 2

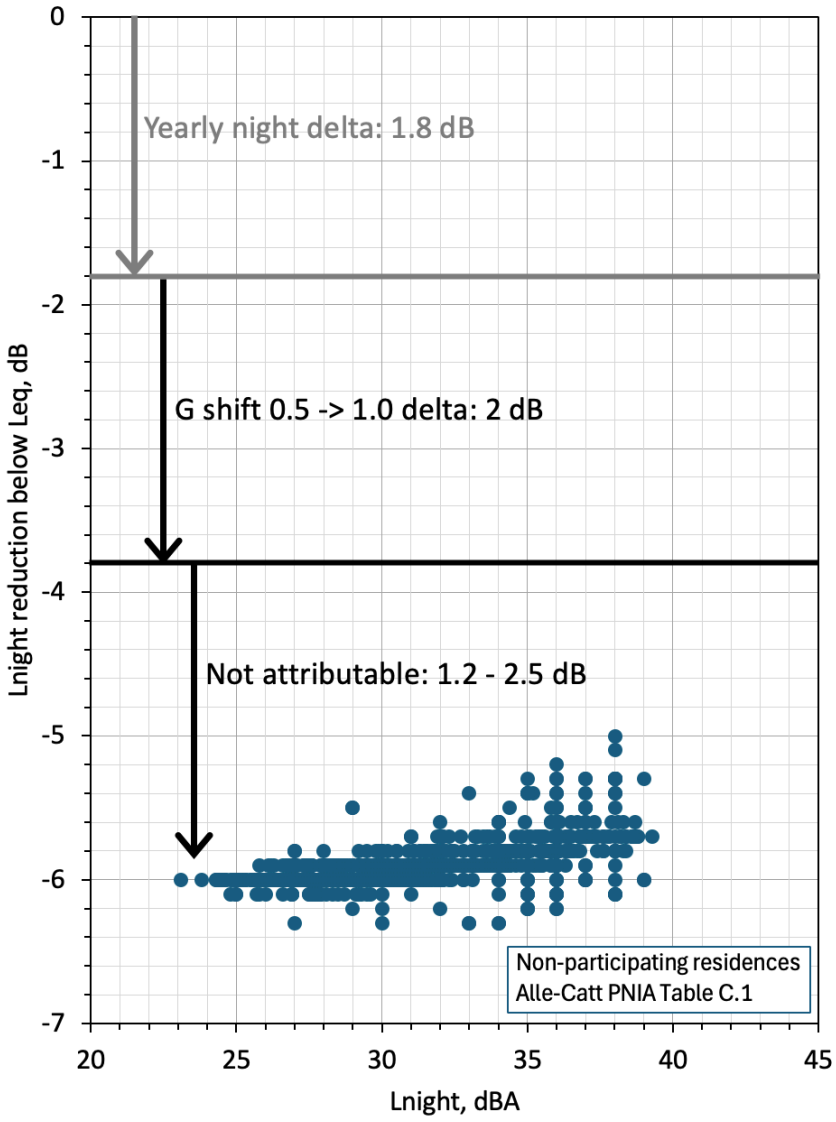


Figure 2. Analysis of the modeled receptor-level Lnight reduction below Leq for non-participating residences in Hankard PNIA Table C.1. The data cloud at bottom shows receptor Lnight value deltas relative to Leq reported in the Alle-Catt March 24, 2026 PNIA Table C.1, ranging from approximately 5.0 to 6.3 dB below Leq. Reading downward from Leq at the top, the contributions are:

1) the source-side delta LWmax − LWnight = 1.8 dB, verified independently in Section 4.
2) the disclosed propagation contribution from the G = 0.5 to G = 1.0 shift = 2 dB, established by controlled comparison in prior comments.
3) a residual of 1.2 to 2.5 dB not attributable to any propagation parameter disclosed in the PNIA narrative.

References

Bluestone Wind, LLC. *Pre-Construction Sound Level Impact Assessment.* Prepared by Epsilon Associates, Inc. Case 16-F-0559, filed September 7, 2018. https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B0F0B824D-1F92-4E3A-843F-1C75191A0E30%7D

Bluestone Wind, LLC. *Exhibit 19, Noise and Vibration.* Case 16-F-0559. https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B435DF38A-A333-473A-B6CD-F995C9FD2BC3%7D

Cooper, J., Evans, T., and Alamshah, V. (2014). "Influence of non-standard atmospheric conditions on turbine noise levels near wind farms." *Inter-noise 2014*, Melbourne, November 16-19, 2014.

INCE Canon of Ethics. https://www.inceusa.org/pub/?id=A31057F9-EFA6-9D27-572B-1754C2BF6BC7

Section II.1 "b. Approve only noise control engineering studies, reports, or work which, to the best of their knowledge and belief, is safe for public health, property, and welfare and in conformance with accepted practice."

Section II.1 "INCE members shall hold paramount the safety, health, and welfare of the public in the performance of their professional duties and shall: a. Notify their client and such other authority as may be appropriate, if their professional judgment is overruled under circumstances where the public safety, health, property, or welfare are endangered."

Note: Best practices were acquired during a decade of work in the Noise and Vibration Control Group in the Environmental Engineering Division at Stone & Webster Engineering Corporation. Design safety margins were approved conservative project investments to prevent much higher costs of noise control if noise levels exceeded regulatory limits or generated complaints once facilities were in operation.

International Organization for Standardization (1996). *Acoustics, Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation.* ISO 9613-2:1996, Geneva.

Maria, Rutheravan. (2016). Summary Of Safety Criteria In Design. 10.13140/RG.2.1.1501.5285.

Note: Factors of Safety are a part of engineering design.

Moreno-Caballero, J. *Direct Testimony of Jose Moreno-Caballero on Behalf of the Department of Public Service Trial Staff.* Case 17-F-0282, prepared October 4, 2019, corrected November 26, 2019, Exhibit MMC-33.

New York State Board on Electric Generation Siting and the Environment. *Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions.* Case 16-F-0559 (Bluestone Wind, LLC), issued December 16, 2019.

New York State Board on Electric Generation Siting and the Environment. *Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions.* Case 16-F-0267 (Atlantic Wind LLC, Deer River Wind Farm), issued June 30, 2020.

O'Neal, R.D. *Rebuttal Testimony of Robert D. O'Neal on Behalf of Atlantic Wind LLC.* Case 16-F-0267, filed November 22, 2019. https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BC8C93998-B594-4323-8F39-237C81E9D17F%7D

RSG (2016). *Massachusetts Study on Wind Turbine Acoustics.* Prepared for the Massachusetts Clean Energy Center and the Massachusetts Department of Environmental Protection.

van den Berg, G.P. (2008). "Wind turbine power and sound in relation to atmospheric stability." *Wind Energy*, 11(2):151-169.

WRDB Wind Resource Database. NOW-23 Wind Resource Dataset. National Renewable Energy Laboratory. https://wrdb.nrel.gov