

September 21, 2021

To: SEC Chair Martin, SEC Subcommittee Chair Evans and Committee Members

Antrim Wind – Evolution of Sound Complaints

The most recent SEC Subcommittee Public Meeting (August 18th) revealed an astonishing admission, through statement of Antrim Wind’s attorney Barry Needleman, Antrim Wind’s use of one-hour averaging for the preconstruction predictive sound modeling. A thorough review of Antrim Wind’s Sound Level Assessment, filed with their Application in 2016, **fails to disclose** the use of a one-hour averaging in determining the predictive sound levels.

EXCERPT FROM AUG 18, 2021 SUBCOMMITTEE QUESTIONS OF ANTRIM WIND ATTORNEY NEEDLEMAN:

Min 1:19:50 of audio recording: <https://mm.nh.gov/media/nhsec/2021-02-2021-08-18-subcommittee-meeting-recording-part-1.mp3>

Duclos: You stated, what’s going on at least in my mind, all preconstruction monitoring was done based on one-hour averaging, right?

Atty Needleman: That is my understanding.

Duclos: Was there ever any type of comment, I didn’t find it anyway, about that being the standard or not being the standard that was just what was submitted to figure out the maximum decibal of the facility, right?

Atty Needleman: Yes, I think Mr. O’Neill can probably speak more specifically to that piece. {This question was never asked of Mr. O’Neill}

Instead of any reference (disclosure) to one-hour averaging, these are the statements within the {Application} Sound Level Assessment (with full paragraphs contained below), “**The worst-case sound levels will be less than 40 dBA at any residence.**” and “*The results of this sound level impact assessment show that the Project will **easily** comply with recently revised New Hampshire Site Evaluation Committee (SEC) Site 301.14 standards. In addition, the Project meets sound level limits set in decisions on comparable wind turbine projects in Lempster and Groton, NH,*” Also contained in the {Application} are the following statements, “*The standards specified by the NH SEC as well as those that have been applied to sounds levels from other wind projects in New Hampshire contain both an absolute and a relative standard,*” and “**the absolute standard of 40 dBA applies**”.

Was the hourly averaging of the predictive sound modelling done intentionally to deceive the SEC, in an effort to meet the compliance requirement needed for the Site and Certificate permit to be granted?

The Subcommittee Proposal makes many references to the regulatory intent, or lack thereof, of the sound standard. Antrim Wind and it’s experts have manipulated the very clear Record of

administrative 'intent' as it pertains to the sound standard, yet a review of the historical record dispels that misconception, as follows:

Per Proposal Para 49, "The Subcommittee believes the administrative history is contradictory and unclear..." This statement is contradicted by Para 56 where the Rulemaking Subcommittee referred to the noise limits several times as a "maximum" or "not-to-exceed" standard, with final statement by Attorney Weisner, ("[T]his is setting an absolute standard not to be exceeded."). Despite this clear statement and those of Chair Honigberg and Cmr Scott, the Subcommittee Proposal continues to allege (Para 57), "The Subcommittee does not consider these statements important indicators of administrative intent." It doesn't get any clearer than that!

In a deeper dive, the Subcommittee, through it's Proposal Para 58, acknowledges and agrees the SEC Rules for the Sound Standard were based on the Antrim Wind 1 [2012] sound standard.

ANTRIM WIND 1 [2012] ORDER AND DECISION:

"In coming to this conclusion, the Subcommittee noted existing standards such as the EPA Guidelines and the 1999 WHO Guidelines. The Subcommittee relied upon the newer 2009 WHO Guidelines in establishing **a sound level condition.**"

The necessary conditions are as follows:

- 1. In the daytime, sound levels generated by the Facility at the outside façades of residences shall not exceed 45 dBA or 5 dBA above ambient, whichever is greater.** For the purposes of these conditions, daytime is considered to begin each morning at 8 AM and conclude at 8 PM. All other time shall be considered to be the nighttime.
- 2. At nighttime, sound levels generated by the Facility shall not exceed 40 dBA or 5 dBA above ambient, whichever is greater. "**

The Antrim Wind 1 SEC Committee focused on health as the highest priority in determining the sound limit during the deliberations of Antrim Wind 1 [2012], particularly at night, with an acknowledgement that Antrim Wind had committed to being able to achieve the "shall not exceed" standard, as conveyed by these statements by the SEC Committee members:

MR. BOISVERT: ...during summer months, the noise was fairly significant, so as to bother the sleep and so forth, that will be a problem. *But, when you take it on an annual average, you would have to have almost a bracket out there. You'd have to have extraordinary high noise levels that everyone would agree would be bad. And, when you put that into the annual average, it probably still would end up being below 40. So, we could have, say, a six-week period in the summer, where, hypothetically, it's very noisy, and most reasonable people would agree this is interrupting sleep, and it's an annoyance, and it certainly is quite negative. But, when you pump it through, pump the numbers through on the annual average, it wouldn't make any difference. It wouldn't be in violation of what we have approved. And, the issue of how you*

monitor it is separate and difficult. But this could, because, you know, we're buttoned up in the wintertime, make it such that any noise level in the summer, however loud, once you averaged it through, would be below the 40.

MS. BAILEY: Maybe we should go to a standard that says "it can't exceed 45 dBA." I mean, they {Antrim Wind} have said they can make that...

MS. BAILEY: ... So, I think it would be reasonable to adopt a 45 dB absolute threshold ... And, that way we don't have to deal with the annual average issue.

Chair Ignatius: out of a concern over people's sensitivity about sleep, that over the years there's been a lower level for nighttime

MS. LYONS: I just want to be clear that we're trying to set these limits for health...

MR. BOISVERT: ...that is the key on the health front. That, if it disturbs someone, raises stress levels, interrupts sleep, that has a health effect. And, I think that we -- we're talking about "health" in this portion of deliberations, and I think we need to focus on the "health" part.

MS. BAILEY: Right. ...if Mr. Tocci's calculations are correct, and the ambient is around 15 at night, the standard would be 25 dBA. And, there's testimony that indicates that would certainly not have any health impact. I think there's testimony that suggests that less than 30 would have no health impact...

*CHAIRMAN IGNATIUS: ... But another way to do it would be to have a daytime and nighttime limit, **not get into the average over time** ...*

CHAIRMAN IGNATIUS: How about a show of hands of who would be supportive of a two-step standard, daytime 45 dBA, or 5 dB over ambient; and a nighttime standard of 40 dBA, or 5 over ambient? Show of hands, who would support that? (Show of hands.)

CHAIRMAN IGNATIUS: Any opposed to that? (No indication given.)

SUMMARY: The facts are clear!

1.) The SEC Rules were promulgated from the Antrim Wind 1 [2012] docket, which specifically RULED OUT any averaging, including the WHO-based annual averaging, and focused specifically on the health impacts. The SEC Rule, as defined by Antrim Wind 1 [2012] was carried forward to the Antrim 2 Order and Decision. The ONLY reference to the WHO was for the absolute "not to exceed" threshold of daytime 45 dBA and nighttime standard of 40dBA. Per Para 25, as stated in the Order and Decision of Antrim Wind 2 "... (2) Antrim Wind "guaranteed that the noise levels associated with the project will not exceed the requirements set forth in N.H. Code Admin. Rules Site 301.14(f)(2)(a)."

For an understanding of the impact of averaging, refer to the graphs on page 1 and 2 of the filing by Rob Rand on 7/29/2021¹. These graphs show that ANY averaging, including 1-minute averaging, will eliminate the peak noise impacts which are causing sleep disturbance and annoyance to the neighbors of Antrim Wind.

Per the filing of noise expert, Rob Rand, “1-minute Leq averaging hides the dominant "loud", "modulating" wind turbine whooshes and whumps provoking sleep disruption and complaints. The short-term 0.1-second Leq levels (ANSI S12.9 Part 3, 3.6 dominant sound) exceed the NH SEC night limit of 40 dBA, reaching 43 dBA, 7 dB higher than the 1-minute Leq and 10-minute Leq values. But the 1-minute Leq barely budges from the 10-minute Leq, and stays below the regulatory limit.”

Rather than upholding the SEC Rules based on the clear regulatory intent, which NEVER accepted the notion of “averaging”, the SEC Subcommittee has formulated an arbitrary recommendation allowing for at least a 5-minute averaging. This is a significant departure from the SEC Rule, which the SEC Subcommittee is not authorized to make, without instituting the SEC Rulemaking process. This recommendation ignores the administrative record on Antrim Wind 1, SEC Rulemaking, Antrim Wind 2 and all prior wind-related dockets.

2.) Antrim Wind’s Application contains a material misrepresentation of the facility’s ability to meet the SEC Sound Standard, through the use of a one-hour averaging, resulting in post-construction sound levels higher than permitted (and guaranteed by AWE) to meet compliance and significant impacts to those living within proximity to the facility.

Sincerely,

Lori Lerner

Excerpts from:

Sound Level Assessment Report – Antrim Wind Energy Project (application filing)

https://www.nhsec.nh.gov/projects/2015-02/application/documents/2015-02_2016-02-19_att09_updated_noise_rpt.pdf

Section 1.0 (Page 5 of 67) {emphasis added}

¹ https://www.nhsec.nh.gov/projects/2021-02/public_comments/2021-02_2021-07-29_rand_complianc_assessment.pdf

This sound level assessment included a sound-monitoring program to determine existing sound levels in the vicinity of the Project, computer modeling to predict future sound levels when the wind turbines are operational, and a comparison of the worst-case operational sound levels associated with the wind turbines to accepted criteria. Every residence is at least 2,600 feet (one-half mile) from the nearest wind turbine. ***The worst-case sound levels will be less than 40 dBA at any residence.*** There are no federal or existing local noise regulations that apply to this project. ***The results of this sound level impact assessment show that the Project will easily comply with recently revised New Hampshire Site Evaluation Committee (SEC) Site 301.14 standards. In addition, the Project meets sound level limits set in decisions on comparable wind turbine projects in Lempster and Groton, NH,*** as well as community noise guidelines published by the World Health Organization (WHO), and noise guidelines put out by the US Environmental Protection Agency (EPA).

Section 5.2 (Page 13 of 67) {emphasis added}

The standards specified by the NH SEC as well as those that have been applied to sound levels from other wind projects in New Hampshire contain both an absolute and a relative standard, as discussed in Section 3.2 of this report. Because the NH SEC noise limit has both an absolute and relative component (e.g., the greater of 45 dBA or 5 dBA above ambient during the day and the greater of 40 dBA or 5 dBA above ambient at night), we performed a background study to inform the upper limit. Thus, if background sound levels were consistently 50 dBA during the day, a project could operate at a maximum limit of 55 dBA under the standard during the daytime. If background sound levels at night were at levels such that those levels plus 5 dBA equals less than the absolute standard (e.g., background levels of 30 dBA plus 5 dBA equals 35 dBA and is less than a 40 dBA nighttime limit) then ***the absolute standard of 40 dBA applies. Under this type of standard, which is applicable to this Project, measuring the quietest periods during the background ambient sound study will not impact the results, as the lower limit for the project will still be controlled by the absolute component of the standard.***

Section 8.0 (Page 37 of 67) from Antrim Wind

8.0 EVALUATION OF SOUND LEVELS The Project will be subject to the requirements contained in the recently adopted NH SEC sound standards for wind energy facilities of 45 dBA (daytime) or 40 dBA (nighttime) contained in Site 301.14(f)(2)(a). The Project is also subject to the sound levels specified in the Agreement between the Town of Antrim and Antrim Wind Energy LLC as noted previously. The predicted worst-case sound levels from the Antrim Wind Energy Project will be below 40 dBA at all occupied buildings. ***A review of Table 7-5 shows that the highest sound level will be under 40 dBA at receptor #20 (38.1 dBA) under worst-case operating conditions. Therefore, the Antrim Wind Energy Project will easily meet the standards set forth by the NH SEC in Site 301.14 for wind energy facilities and the criteria in the Agreement with the Town of Antrim.***