

1 February 2021

Ms. Dianne Martin, Chair  
Site Evaluation Committee

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Dear Ms. Martin,  
Tocci

Re: SEC/AWE Questions for

My published letters of early January 2021 to some local papers triggered a response from your SEC, including the transcript of your secret meeting on 23 November 2020. In that transcript your Committee recessed to another unspecified date. Your Committee also agreed to have Cavanaugh Tocci conduct sound measurements in Antrim, in Spring 2021. Transalta agreed (in its undated "3<sup>rd</sup> party sound measurement protocol") it "will provide the weather and wind turbine operating conditions". Since Tocci's previous measurements were deliberately timed to NOT be under the "conditions similar to those when residents ..... complained", it is vital that he be instructed to follow the agreed SEC procedures as to date and time, and including SIMILAR WEATHER, for his Spring 2021 sound measurements.

The sound levels from the turbines are dependent on the wind. The broadcast of the sound to its neighbors depends on the temperature structure of the neighborhood. Failure to match both against the weather on the nights of the complaints renders his observations meaningless. He even avoided mentioning either! Is he kidding??

Tocci has actually committed TWO serious errors. He failed to select a weather situation similar to the weather at the time of the neighbors' complaints (in fact he selected a weather situation to minimize both the turbine noise output and its broadcast to its neighbors). He also averaged sound levels to minimize the apparent noise sent to its neighbors.

***Tocci must not be allowed to choose another "favorable" date and time for his check of neighbor complaints! He must follow the SEC rules, which require weather similar to that on the nights/hours of the complaints! He also should be forbidden from averaging his data. Neither the human ear, nor the human brain averages noise levels.***

The transcript of your November 2020 meeting shows that there were many questions by a member of your own Committee about Tocci's measurements, questions very much like those raised at your July hearing, and in letters to you and others, following that meeting. It is crucial that your Committee hear the evidence from experts, and instruct Mr. Tocci in the proper methods for his spring 2021 measurements. Spring 2021

begins in March, one month hence, leaving little time to correct Mr. Tocci's misdirection/misunderstanding.

To help correct his misdirection/misunderstanding, I have attached a list of questions for Mr. Tocci to answer, in writing. These answers should be available prior to the resumption on your hearings on the complaints of neighbors to the AWE facility. They require no research by Mr. Tocci, nor the release of any proprietary information. In fact, any first-year student in meteorology could easily answer most of these questions.

#### QUESTIONS ON TOCCI AVERAGING DATA

If we sited a rifle range next to a church or library, would the loud noises of the very short duration "cracks" be averaged out by the long silences in between shots?  
Why do ranges use ear protectors, when the AVERAGE sound levels are so low?

Tocci claims that the analysis of one-eighth second data would be very burdensome, and rightly so. But there are two ways to reduce this burden, Tocci's averaging, or selective culling of only those data which are likely to produce excessive noise, namely the highest wind cases which are a tiny fraction of the total. Select the likely "noisiest" cases, those with high winds. If they pass the test, the rest are superfluous. I have analyzed many huge time series, and would be happy to assist in that selection. I have special expertise in time series with harmonics, as is true of the present case due to the regular passage of the turbine blades across the support poles.

If Tocci were to confront many large piles of hay in which each contained one reward, might he select the smallest pile to examine first?

#### QUESTIONS ON TOCCI SCHEDULING HIS TEST ON THE WRONG DATE AND TIME (His 24 August 2020 report on the 26 July 2020 study)

Do you agree that the ONLY environmental parameters which produce changes in the sound OUTPUT from the turbines are the wind, both its speed and direction?  
Do you agree that the ONLY environmental parameters that affect the broadcast of turbine noise to its neighbors are the wind, and the temperature structure of the air in its neighborhood?  
If so, what conditions, other than the wind and temperature structure, would constitute the "conditions similar to those when residents ..... previously complained"?  
Are you aware that Transalta agreed it "will provide weather and wind turbine operating conditions"?

Since the loudest sounds are generated in strong winds, did you select your 26 July 2020 night for measurements on a night with strong winds? What were those winds, and how did they compare to the winds on the night of the complaints?  
Have you looked at the AWE sound generation records to determine whether, and to what extent, the topography around the turbines is a factor in the noise perceived by the neighbors?

If so, did you factor that information into your selection of the night for your measurements, or account for wind direction in your analysis?

Are you aware that different surfaces reflect sound at different rates. That some surfaces, such as an ice-coated snowpack (a common occurrence in the long nights of winter), or a smooth water body, are highly reflective of sound, especially at low incidence angles?

Turning to the temperature structure in the turbine area. How does that factor in to the broadcast of sound to the neighbors?

Can a temperature inversion, another common late night occurrence, substantially raise the sound reaching its neighbors?

Do these temperature inversions develop during the night, and become most effective in the hours before dawn?

Did that factor into the timing (in the early evening twilight) of your observations ?

Would you share the wind and temperature conditions at the time of the complaints, and those on your selected evening, and especially their wind and temperature similarities?

Do you agree that wind turbines make their loudest sounds in the higher wind speeds at night, and that their broadcast to their neighbors is maximized late at night, and before dawn?

Which of these well-known effects did you take into account in your selection of the date and time for your observations in Antrim last year?

## END OF QUESTIONS

These are simple questions which an expert like Tocci can answer off the top of his head. Any refusal to answer them is evidence that he knows the answers, but these answers will inevitably lead to his demonstrating AWE non-compliance.

Any repeat of Tocci's previous "test" will be the clearest and most convincing evidence of his complicity in a cover-up. Any agreement by the SEC will be clear and convincing evidence of SEC complicity in a cover-up.

Failure to require Tocci to answer these simple questions indicates that the SEC has decided to ignore obvious misdirection on the part of both Tocci and AWE. Does this deafness suggest that both AWE and the SEC Committee KNOW that the AWE facility violates the agreed noise levels and are engaged in a cover-up of monstrous proportions, in an attempt to justify the earlier SEC approval? Why else schedule a "test" on a day and time selected to produce "favorable" results. Tocci's selection is proof positive that he dared not conduct the experiment properly, so he selected both the date and the time to produce the results for which he was paid.

Tocci's selection of a (seasonally late) date and (early evening) time, shows that he knew AWE was in violation. If the SEC doesn't question his outrageous selections, it thereby becomes complicit in this charade. Tocci's answers to these questions should

leave no doubt in the Committee's mind that he knows AWE is in violation of the required noise standards.

His answers to these questions will show that AWE has apparently violated, and will continue to violate, the AWE/SEC agreement. If this Committee does not require Tocci to conduct a legitimate test (under the "similar" meteorological conditions" required by SEC rules) in Spring 2021, and give a legitimate justification (if one exists) of his averaging process, they will be complicit in illegal activity.

I ask time be scheduled at the next session of your Antrim hearing for Mr. Tocci and me to discuss Mr. Tocci's answers to my questions.

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