

Analysis acoustics initial review

From: Richard James [<mailto:rickjames@e-coustic.com>] **Sent:** February-13-18 4:53 PM
To: Robert Edinger **Cc:** 'Michael A. Nissenbaum, MD'; ametelka@cogeco.ca
Subject: RE: Pierre Labranche and Edna Stewart -vs- Énergie des Moulins

Mr. Edinger,

I have obtained a machine translation of the Soft dB Offer and conducted an initial review of the two proposals. (See attached: Offre 18 01 15 Hydro Québec (Recours collectif Therford Mines) rev02 (Machine Translated to English).)

Based on review of the translated document, the proposals of Soft dB fail to address the protocols that were provided for them in my document of “17-11-13 Preliminary Sound Test Protocols” and may result in increased costs and lower usefulness. (Attached)

My initial observations are provided below:

1. Neither of the Soft dB measurement protocols follow the 17-11-13 Preliminary Sound Test Protocols (PSTP/M) or Metelka measurement instrumentation and methods for indoor/outdoor testing.
- 1.1. Soft dB substitutes long-term non-observed testing using their Class 1 integrating sound level meters (described as “25x sonomètres de classe 1 Soft dB (concertos + altos + mezzos)” at nine (9) or more sites over two weeks for two seasons (Option 1). This method, in my opinion, will substantially increase the costs for the extra sites and measurement time. Further, results may not be useful for assessing compliance with standards, or annoyance/health impacts. This is because Soft dB’s protocol does not appear to include simultaneous indoor/outdoor and On/Off testing as presented in my PSTP/M document.

My protocols called for testing inside/outside four homes with infra sound capable microphones over a period of one week and, during that week, one or more On/Off tests of the wind turbines during conditions of high energy production and low wind speeds at the ground level (per ANSI S12.9 Part 3). The results of the one week inside/outside tests with periods including the On/Off test would be used to assess compliance with standards and annoyance/health risks.

The Soft dB protocols appear to be similar to those used by acousticians who work for the wind energy utilities in Ontario and other Provinces whose work I have reviewed in the past. Those studies have been found to produce ambiguous results. Some of those reports include statements that the study was not conclusive.

The PSTP/M protocols rely upon the ANSI S12.9 Part 3 On/Off compliance test that was developed to address compliance of outdoor noise source sound pressure levels, such as power plants. It was approved for use by the ANSI committee that included Dr. David Michaud of representing Health Canada. The Introduction to the standard states:

“This standard, Part 3, deals with basic measurements of sound with an observer present. Typically, the duration of these measurements ranges from several minutes to several hours. The purpose of this part is to provide the method(s) to measure the sound of a specific source at a specified location, such as the noise from a specific power plant in some specified person's backyard. The method is to measure the total sound and then to subtract the background, which is all sound at the location in question except for the sound from the specific source in question.”

2. There is no indication that Soft dB intends to do either simultaneous indoor/outdoor testing or the On/Off tests per the ANSI S12.9 Part 3 document as described in the PSTP/M document.
3. Soft dB proposes to conduct vibration and dBG measurements. Based on the information provided, I am concerned these tests will not be sensitive to the type of infra sound pulsations that have been linked to the complaints of people in other wind projects. They may just add unnecessary costs and lead to ambiguous results.

The one week long indoor/outdoor testing using the type of instruments and microphones described in Metelka's protocols (similar but not equivalent to Metelka's Sinus Apollo instruments (see 4 below)) would be sufficient to address vibration and infra sound immissions from wind turbines. This opinion is based on the current understanding of wind turbine sound emissions/immissions by myself, Cooper, Metelka, Rand, Schomer, and other acousticians who have studied wind turbine noise following the protocols of the PSTP/M document.

This part of the Soft dB offer does not appear to provide any benefit unless there is more that Soft dB can add to my understanding with further explanation.

4. Soft dB proposes to construct a computer model of the project. This was not part of the PSTP/M document and, in my opinion, is not needed for compliance evaluation. It may have already been done for the Des Moulins project by the developer during design phase. The results of the design stage model or any subsequent models should be provided by Des Moulins.
5. My review of the specifications on the Soft dB web site for the Alto series of instruments show that the instrument is limited to measurements from 30 to 119 dB. Since the wind turbine noise immissions and the rural nature of the community are likely to have very low sound pressure levels this range is not adequate. Further, the specifications I found online for the Alto (or Mezzo) do not state that the instruments include filters complying with requirements of IEC 61672 (for sound level meters), or IEC 61260 (for 1/3 and 1/1 octave band filters). It appears that filters are simulated as Equivalent Rectangular Filters, which do not meet Class 1 requirements. Soft dB may have specifications addressing this that I did not locate. The Metelka protocol instruments have been certified to meet the IEC 61672 and 61260 standards.

Based on my review of the translated proposal the scope calling for more homes/test sites and more weeks of measurements results in a higher cost study that, in my opinion, is not likely to result in the type of data needed to pursue the lawsuit.

Rick James