

Comment from Dr. L.P. Lombardi, M.D. of June 19, 2010 on the Aercoustics Report – “Measurement of Audible Noise from Wind Turbines – Phase 1 Report” Literature and Jurisdictional Review follows: (As sent to Wind Concerns Ontario team, as his personal comment.)

Mr Laforet invited me to join this group on the 11th of June 2010. I did not realize that there was an MOE hearing so soon until Mr. Palmer notified me.

Since then I have been trying to clear my office appointments for the afternoon session but it has been quite difficult so far because the office was already fully booked. I am a solo practicing family doctor with many elderly patients and hence the difficulty. I am still working on it and if I can make it I will attend, otherwise these are my thoughts regarding the agenda:

- In general I am in agreement with what was drafted by Mr. Lomath and Mr. Kamperman. I am familiar with Mr. Palmer and Mr. Kamperman's past publications and respect their opinions;
- I would like to see included in the suggestions the use of proper instrumentation for the measurement of Low Frequency sound (LFS) and of Infrasound (I) as used by van den Berg (2006), Sugimoto et al (2008) and Jung and Cheung (2008). I am sure you all know that they showed that Wind turbine noise was dominated by LFS and I components, with energy increasing between 1000 and 1 Hz at approximately 5.5dB/octave, reaching levels of approximately 90 dB SPL (1Hz), 100 dB SPL (2 Hz) and 97 dB SPL (1 Hz) respectively.

In most studies of wind turbine noise, this high level of low frequency noise or Infrasound (1-20 Hz) is dismissed on the basis that the sound is not perceptible-" What you cannot hear cannot hurt you".

We have all read and heard this statement from many experts. There is now direct evidence that this statement is INCORRECT. Drs Salt A.N. and Hullar T.E., (Department of Otolaryngology, Washington Univ. School of Medicine, St. Louis, USA, June 2010) have published a paper that is now in print and will be available on this link within 2 weeks-

<http://www.elsevier.com/wps/find/journaldescription.cws/home/506060/description#description>.

Their research clarified that there are other sensory cells or structures (other than Inner Hair Cells) in the inner ear, such as Outer Hair Cells (OHC). These cells are more sensitive to LFS and Infrasonic sound and **can be stimulated at levels of 40 dB below the normal hearing threshold**, hence **the concept that an infrasonic sound that cannot be heard can have no influence on inner ear physiology is INCORRECT**. A greater effort to document the infrasound and LFS components of wind turbine noise, under different conditions, should be made.

The authors also advised that under some clinical conditions, such as Meniere's disease, Superior Canal Dehiscence, or even Asymptomatic Endolymphatic Hydrops, individuals with these conditions are hypersensitive to Infrasound.

Based on the authors' findings and understanding of how LFS and I is processed in the ear, and on reports indicating that wind turbine noise causes greater annoyance than other sounds of similar or higher levels (Pedersen, Persson Waye 2004) and that it affects the quality of life in sensitive individuals, there is an urgent need for more research directly addressing the physiologic consequences of long-term, low level infrasound exposures on humans.

It is therefore imperative to document with proper equipment, all components of Industrial Wind Turbine Noise. These should **always be measured and not calculated.**

In light of the above evidence, Setbacks of wind turbines onshore should be reassessed and must take into consideration the LFS and I components; for Offshore setbacks one should consider the above evidence and that evidence presented by Prof. Abom and Boue' of the Marcus Wallenberg Lab., Sweden (2006) which suggested setbacks greater than 10 Km.

I should also disclose to you all that it is my opinion that there should be a moratorium on further Industrial Wind Turbine developments anywhere.... for many many reasons.

Respectfully submitted;
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