

Response to the CMOH Report on Adverse Health Effects from Wind Turbine Operation

On May, 20th 2010, Dr. Arlene King, Chief Medical Officer of Health (CMOH) for Ontario, released a report on the adverse health effects of wind turbine operation. In my opinion, the CMOH report is flawed.

The CMOH report concludes as follows:

- a) Some people living near wind turbines report symptoms such as dizziness, headaches and sleep disturbance;
- b) The scientific evidence to date does not demonstrate a direct causal link between wind turbine noise and adverse health effects.
- c) The sound level from wind turbines at common residential setbacks is not sufficient to cause hearing impairment or other direct health impacts, although some people may find it annoying. It has been suggested that annoyance may be a reaction to the characteristic “swishing” or fluctuating nature of wind turbine sound rather than to the intensity of the sound.
- d) Other concluding statements are referred to below.

Contrary to the statements of CMOH are the findings of the World Health Organization which acknowledges the relationship between annoyance and other health effects and recognizes noise as an “environmental health hazard”.

The adverse health effects are indirect in character: annoyance, sleeplessness and disturbed sleep lead to stress, head-aches, inability to concentrate, depression, a sense of worthlessness and anger

The CMOH’s report and the earlier report sponsored by the Canadian and American Wind Energy Authorities are skirting the issue. Claiming there are no direct health impacts when they know full well there are health impacts that are indirect in nature is a way to support the agenda of the provincial government and the wind industry.

Unfortunately it is not unusual for organizations to minimize or hide findings in order to support their agendas – especially where large amounts of money are concerned. Tobacco companies are a prime example.

It is fact that more than one hundred people living near wind turbines in Ontario have reported adverse health effects. Over a dozen families in Ontario have abandoned their homes because they could not take the noise.

In some cases, wind energy developers have purchased the properties but at what price we do not know because of associated gag orders.

Dr. King has misquoted from field studies of annoyance due to wind turbine noise. The CMOH report includes the statement: “The sound was annoying only to a small percentage of the exposed people; approximately 4 to 10% were very annoyed at sound levels between 35 and 45 dBA.”

After reviewing the original publications we find the following: The authors broke down the responses to turbine noise from the surveys (586 non-participants in the Netherlands and 1095 mostly non-participants in Sweden) into five categories: do not notice; notice but not annoyed; slightly annoyed; rather annoyed; and very annoyed. The survey population was grouped by the noise level at their homes: 30 to 35 dBA, 35 to 40 dBA etc.

The authors add together “rather annoyed” and “very annoyed” when determining annoyance from turbine noise. Figure 2 of the 2009 publication by Dr. Pedersen and colleagues shows very clearly that the fraction of respondents annoyed was 20% and 25% in the ranges 35 to 40 dBA and 40 to 45dBA respectively for the Dutch survey and was 9% and 29% for the two ranges in the Swedish survey. As in any survey, there is uncertainty; the authors put the uncertainty at about 5% in the above percentages.

For reference, the noise limit regulation for Ontario is 40 dBA for wind speeds up to 22 km/h with the possibility of rising to 51 dBA for wind speeds up to 36 km/h. Dr. King is quite correct in writing that annoyance due to transportation noise at the same level is very much smaller, about 3%.

A major criticism of the CMOH report is that no attempt was made to meet with those in Ontario who are suffering adverse health impacts. It would have been very easy for Dr. King to have asked the local medical officers of health to talk with those in their communities who have registered complaints and to have visited their homes to experience the night-time noise that causes the annoyance and sleep disturbance. After all, these medical officers are first and foremost doctors.

Another major criticism is that no attempt was made to investigate whether the real noise levels at the homes of those suffering were above or below the regulation noise limit. The Ministry of the Environment has been overwhelmed by complaints of excess turbine noise and has reacted by claiming that there is no protocol for measuring noise levels at homes.

This is nonsense. Acoustics consultants have been performing noise audits in all sorts of situations and environments for years. Consultants have indeed performed noise audits of turbine noise. One audit performed by a very experienced company on behalf of a major developer showed noise levels at an Ontario home above the Ontario noise limit for all wind speeds above 10 km/h and at times 25 dBA above the 40 dBA limit. The CMOH report accepts this state of affairs.

Until audits in response to complaints can be made routinely, there should be a moratorium on all new development.

In writing the report, Dr. King does not seem to know what the Ministry of the Environment is allowing in its regulations. For instance, in the report we read that a complete blade has been thrown 150 metres, a blade fragment 500 metres and sizeable ice fragments 100 metres. Later: The risk of injury is minimized with setbacks of 200 to 500 metres. However, Technical Bulletin Six issued by MOE on March 1, 2010 allows a

setback of hub-height plus 10 metres (i.e. 90 metres) from public roads and a setback of hub-height (i.e. 80 metres) from property lines. A proponent can even apply to reduce the setback from a property line, over the objection of the neighbour.

Again, in the report we read that the minimum setback from a receptor is 550 metres. Until Technical Bulletin Six this was true. Now, a participating receptor is no longer subject to this minimum setback. This is regardless of the fact that the participating receptor may have a family and that the 550 metre setback was put in as a mild effort to avoid adverse health effects.

Yet again, we read in the report that setbacks now extend beyond 550 metres with an increased number of turbines, with an example of 950 metres for five 107 dBA turbines within a 3 km radius of the receptor. In fact, the MOE regulations that accompanied the Green Energy Act allow the developer to hire a consultant and use the old October 2008 noise and setback regulations, subject to the minimum 550 metres for non-participating receptors.

The CMOH report finishes with un-supported statements that allegation of adverse health impacts may diminish if there were more community engagement, fairness and equity. As if these things will change the noise intrusion and resulting annoyance and sleep disturbance!

For a more detailed critique of the CMOH report please see the website of the Society for Wind Vigilance at http://windvigilance.com/CMOH_Analysis.aspx

John Harrison
8850, Second Concession Road,
Stella, ON K0H 2S0
613-389-5176
harrisjp@physics.queensu.ca