

Critique of

“Wind Turbine Health Impact Study: Report of Independent Expert Panel”

A Report Prepared For the Massachusetts Departments of Environmental Protection and Public Health (Dated January 2012).

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Qualification

I hold a PhD in psychoacoustics, a Masters of Science degree in experimental psychology, a Bachelor of Science degree in psychology and biology, and a Bachelor of Arts degree in history and politics. My PhD dissertation was a study on the abilities of human observers to discriminate between low level sounds. My Masters thesis investigated a newly emerging paradigm in physics, stochastic resonance, and applied it to the processing of low level sounds in humans.

The impact of environmental factors on health defines the scope of my research practice. I approach the study of noise and health both descriptively and experimentally, and conduct both epidemiological (i.e., in the community) and controlled (i.e., in the laboratory) research. I have published papers on both noise-induced health deficits and the psychoacoustical measurement of human hearing abilities, and have presented data at numerous international conferences on the topic.

As a recognised expert on noise and health I have previously presented evidence before the Environment Court in New Zealand, and equivalent judicial structures in Canada. In both an official or unofficial capacity, I also contribute to a number of international organisations dedicated to the scientific assessment and mitigation of environmental noise.

Introduction

Industrial scale wind energy is relatively new, and the Massachusetts Departments of Environmental Protection and Public Health have assembled an expert panel to assess the health risks associated with this novel source of energy. Indeed, planning authorities, environmental agencies and policy makers in many parts of the world are seeking information on possible links between wind turbine noise and health in order to legislate permissible noise levels or setback distances. Concurrently, larger and noisier wind turbines are emerging, and consent is being sought for progressively larger wind farms to be placed even closer to human habitats.

The protection of living environments is for the public good and a legitimate aim of a democratic society. For example, the European Convention on Human Rights Article 8 states:

“Everyone has the right to respect for his private and family life, his home and his correspondence.”

and further, that both an individual’s health and wellbeing should be considered in the face of negative environmental factors. Adopting the WHO’s definition of noise, Article 8 can be interpreted as a right of individuals not to be exposed to unnecessary noise in their homes. Noise is recognised by the World Health Organisation as a degrader of health and wellbeing, and thus authorities should, as directed by statute, consider noise when developing policy.

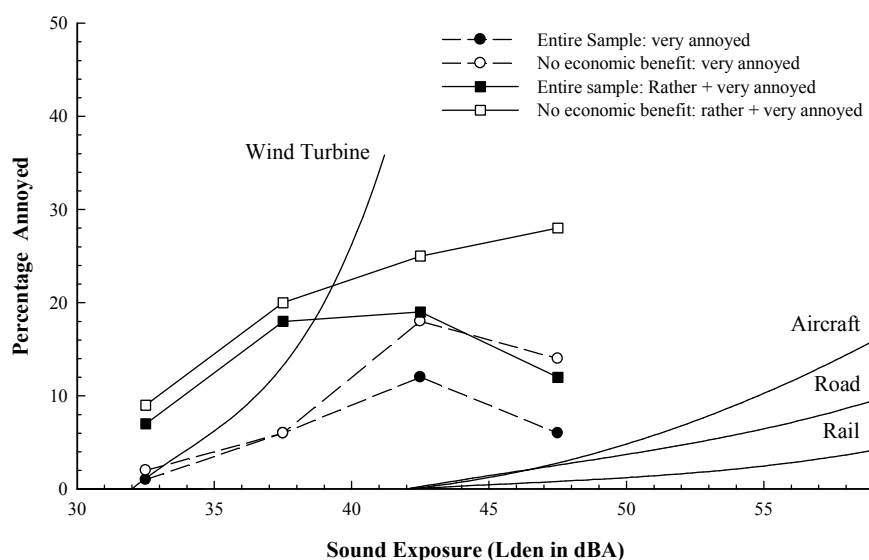
Specific comments relating to the report

1) The part of the title reading “Report of Independent Expert Panel” needs to be changed to reflect the expertise of the panel in the area of noise and health. While I agree that the panel consists of experts, it is somewhat unfortunate that their expertise lies largely in areas other than noise and health, and this needs to be acknowledged. Arguably, of this panel, only Ellenbogen can claim to have a back ground in noise and health. In 2010 he was named fifth of five authors on the following peer reviewed paper:

Dang-Vu ,T.T, McKinney, S.M, Buxton, O.M, Solet, J.M, Ellenbogen, J.M. Spontaneous brain rhythms predict sleep stability in the face of noise. *Current Biology*. 20(15):R626-R627.

I am unable to find any other peer-reviewed publications on noise and health by Ellenbogen, although I note that he has published a plethora of data on the importance of sleep. A change of title to “Report From the Commissioned Panel” would be appropriate.

2) In asserting that wind turbine noise has no adverse health effects, the authors are effectively denying that any noise, besides that inflicting noise-induced hearing loss, is a public health issue. That is, if they argue that wind turbine noise does not impact health then they cannot logically argue that other noise impacts health, given current data showing the toxicity of wind turbine noise relative to other sources (See, for example, figure below). This stance diverges from that taken by the world’s highest authority on health, the World Health Organisation, which asserts that chronic exposure to noise can compromise health and wellbeing, even at low levels.



3) A crumb of data is worth more than a loaf of opinion, and the panel's assessment of evidence demonstrates that a political, as opposed to a critical approach, has been adopted. First, the reoccurrence of the phrase "*there is limited epidemiological evidence*" (and derivatives thereof) indicates that there is still evidence. Second, there is **no** limited evidence that wind turbine noise should be considered privileged and benign, incapable of adversely impacting health unlike its road-traffic and aviation counterparts. Third, this "limited" evidence simple reflects the novelty of industrial wind power, and the lack of time to accumulate health data. There was a point in time when "*limited epidemiological*" evidence relating to the health impacts of tobacco existed. Note that the limited evidence of road-traffic and aviation noise impacts has grown over time into a large body of evidence showing that these sources of noise do need to be controlled for the public good.

4) The comments made by the panel in relation to our paper:

Shepherd, D., McBride, D., Welch, D., Dirks, K. N., & Hill, E. M. (2011). Evaluating the impact of wind turbine noise on health-related quality of life. *Noise and Health*, 13(54), 333 – 339

can only be construed as a nit-picking attempt to discredit what is a peer-reviewed, scientific, and statistically valid piece of research, undertaken by five researchers whom would be considered authorities on noise and health. I invite the panel to contact me directly if they have any serious issues with this research, aside from the trivialities they raise in their report. In the interim they might reference the following paper to clarify the relationship between the visual and noise components of wind turbine noise:

Pheasant, R.J., Fisher, M.N., Watts, G.R., Whitaker, D.J., and Horoshenkov, K.V. The importance of auditory-visual interaction in the construction of 'tranquil space'. *Journal of Environmental Psychology* 2010;30:501-509.

Conclusion

This report says nothing definitive about industrial wind turbine noise and health. As such, this report is of no intrinsic value to guardians of public health.

Recommendation

That a panel of experts in noise and health be convened to consider the impacts of wind turbine noise on public health.