

Comments on “Comments on: Position Paper of the National Institute of Public Health, National Institute of Health, Poland By Dr Geoff Leventhall” Dated 29th March 2016

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1. The comments given below are numbered according to the paragraph numbers of Dr Leventhall’s paper.
2. The Green Energy Act under which the Ontario Environmental Review Tribunals are operating sets “serious harm” as the criterion for preventing a renewable energy development. No definition of “serious” is given in the legislation. Dr Leventhall’s implied suggestion that lesser degrees of harm are acceptable is ludicrous. Proper protection of the public health demands that all harm be prevented and setback distances of at least 2km are entirely appropriate. His statement that: *“None of these (ERT) have found that wind farms,, cause harm to human health”* by omitting the qualifier of “serious” is inaccurate and disingenuous.
3. Dr Leventhall seeks to give the impression that predictions of wind turbine noise are accurate and reliable. Nothing could be further from the truth. The various reports of the Independent Noise Working Group (INWG) demonstrate the deceptions used (see note below).
4. Dr Leventhall’s assertion that infrasound from wind turbines has no effect is manifestly untrue. The recent work of Cooper (2014), Ambrose (2012) and Kelley’s work from the 1980s demonstrate the contribution of low frequency noise and infrasound.

Dr Leventhall’s statement that *“what evidence is available indicates that a resident’s attitude to wind turbines, and their beliefs about them, are the most important factors in determining its effect on them.”* and his reliance on the widely discredited “nocebo” theory demonstrates his highly selective choice of evidence to support his assertions. Please refer to INWG report 3.2 and my submission to the Australian Senate Inquiry into wind turbine noise for a comprehensive consideration and refutation of the “nocebo” theory.

5. Together with LFN and Infrasound, Amplitude Modulation (AM) is the major reason why wind turbine noise is more annoying and more disturbing to sleep than noise from other sources such as road traffic. The shortcomings of the Moorhouse report have been well documented. The UK Institute of Acoustics Working Group is dominated by representatives of the wind industry and those working for it. The reports of the INWG which are supported with data recorded from many operating wind farms

demonstrate the importance of AM, the high likelihood of occurrence and the need to make appropriate allowance in determining setback distances.

10. Dr Leventhall's dismissal of sleep disturbance as "very subjective" demonstrates his ignorance of sleep physiology and the consequences of sleep disturbance. The WHO takes environmental noise very seriously, recognising its widespread consequences for sleep. Many people do indeed have poor quality sleep but that is not a reason for permitting wind turbines to disturb it further. The evidence set out in INWG report 3.2 demonstrates in detail the adverse effects of wind turbine noise on sleep and health
11. Dr Leventhall appears to believe that labelling a consequence of environmental noise as "subjective" allows him to dismiss it. Just because stress and depression do not have physical parameters that can be measured does not mean that they are not important influences on human health.
15. The evidence shows that the noise levels advocated by Leventhall are too high to adequately protect human health. See Thorne 2014.
16. See comment 3
- 18-20 Dr Leventhall's assertion that a minimum distance of 550m is sufficient to protect human health is not supported by the evidence. The NIPH-NIH is entirely correct in its analysis and recommendation for a minimum 2km setback.
21. See comments 4 and 5
23. Annoyance is an adverse health effect (WHO 2011). Dr Leventhall's selection of a 5yr old paper to support his assertions demonstrates his bias. The majority of papers considering annoyance find higher levels of annoyance, see INWG 3.2
24. This is an extraordinary statement. Residents have a right to expect that the relevant authorities will protect their amenity, including their right to good sleep and health. The NIPH-NIH recommendations offer a high likelihood that they will be protected. Those of Dr Leventhall guarantee that they will not be protected.
26. Dr Leventhall's comments are notable for their selective citations. His comments are themselves "an unsubstantiated opinion piece".
27. Once again, Dr Leventhall's selective citations display his bias in the dismissal of the adverse health effects of wind turbine noise as being restricted to annoyance. Why cite a seven year old industry sponsored review when there are a wealth of more recent, independent reviews and original research which shows that sleep disturbance is common and not

necessarily related to annoyance? Annoyance is itself an adverse health effect (WHO 2011). It matters not whether sleep disturbance is secondary to annoyance or caused directly, it is still sleep disturbance and harmful.

The Health Canada studies have been severely criticised for their exclusion of vulnerable groups, use of calculated rather than measured sound levels and inappropriate data analysis (Krogh 2014). The raw data for the studies has recently been made available. Preliminary analysis reveals a very different picture.

Dr Leventhall seems to think that noting that other sources of noise cause the same symptoms as wind turbines somehow excuses wind turbines. He describes 15% of the population as “small” and cites a study suggesting that cognitive behavioural therapy (CBT) can help. Once again, Dr Leventhall’s reference in support of this assertion is not supportive of his views. The paper reports a small study of CBT designed to help those individuals who claim to be able to hear a noise, generally low frequency, but which is not heard by others and can not be detected by monitoring. It excludes those where there is a clear source of noise such as wind turbine neighbours. A small effect is claimed for those who continued with the course but no statistical analysis is offered. The relevance of this paper to those affected by wind turbine noise is highly questionable.

28. As a medical professional, I can accept that an acoustician or engineer might have a different view of what are acceptable criteria. However, wind turbines, which are large, noisy, industrial structures, are being imposed on quiet rural areas. The noise sensitive tend to seek out rural environments for their low noise levels, especially at night. and may constitute up to 50% of the rural population (Pedersen 2004). They deserve protection. Pedersen describes wind turbine noise as intrusive and interfering with restoration (2008). The noise levels and set back distances advocated by Leventhall are not appropriate for this environment.

Overall conclusions

Dr Leventhall’s assertions that the Ontario guidelines for the placement of wind turbines are safe for human health are manifestly incorrect. Hundreds of families across Ontario have been forced from their homes by the noise emissions of wind turbines. A mandatory, minimum 2km setback of wind turbines from human habitation is both reasonable and supported by the evidence.



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Note 1. Independent Noise Working Group

In 1997, the UK government adopted a set of guidelines for the management of wind turbine noise emissions, ETSU-R-97. Rather than rely on existing noise standards which were deemed to restrict the industry, they adopted a novel approach in the knowledge that they had no certainty that the restrictions would protect human health. The UK Institute of Acoustics Noise Working Group (IoANWG) has advised the government on the implementation of ETSU. Those working to protect the public had little faith in the IoANWG as the group is dominated by representatives of the industry and those working for them. In response, the Independent Noise Working Group was formed in 2014 to produce an independent review, primarily of Amplitude Modulation. The INWG comprises acousticians, engineers, sleep medicine physicians and physicists with extensive experience in the relevant fields and with access to a large database of noise recordings from existing wind farms.

All of the INWG reports can be accessed at the website of Chris Heaton-Harris, a member of the UK Parliament.
<http://www.heatonharris.com/reports-publications>

Note 2. About the author

Dr Christopher Hanning, formerly Honorary Consultant in Sleep Disorders Medicine to the University Hospitals of Leicester NHS Trust, based at Leicester General Hospital, having retired in September 2007 as Consultant in Sleep Disorders Medicine. In 1969, he obtained a First class Honours BSc in Physiology and, in 1972, qualified in medicine, MB, BS, MRCS, LRCP from St Bartholomew's Hospital Medical School. After initial training in anaesthesia, he became a Fellow of the Royal College of Anaesthetists by examination in 1976 and was awarded a doctorate from the University of Leicester in 1996. He was appointed Senior Lecturer in Anaesthesia and Honorary Consultant Anaesthetist to Leicester General Hospital in 1981. In 1996, he was appointed Consultant Anaesthetist with a special interest in Sleep Medicine to Leicester General Hospital and Honorary Senior Lecturer to the University of Leicester.

His interest in sleep and its disorders began over 30 years ago and has grown ever since. He founded and until retirement ran the Leicester Sleep Disorders Service, one of the longest standing and largest services in the country. The University Hospitals of Leicester NHS Trust named the Sleep Laboratory after him as a mark of its esteem. He was a founder member and President of the British Sleep Society and its Honorary Secretary for four years and has written and lectured extensively on sleep and its disorders and the effects of wind turbine noise and continues to be involved in research. He chaired the Advisory panel of the SOMNIA study and sat on the Advisory panel for the Medicated Sleep and Wakefulness study, both major projects investigating sleep quality in the elderly, and sat on Advisory panels for several companies with interests in sleep medicine.

He was an Associate Member of the General Medical Council, chairing Investigation Committee hearings, until 2014. In 2010, he was invited to join the Board of the Society for Wind Vigilance.

His expertise in sleep medicine has been accepted by the civil, criminal and family courts. He has been accepted as an expert on sleep disturbance related to wind turbine noise by the Ontario High Court and Environmental Review Tribunals and at planning inquiries in the UK, Canada and Ireland. He has given evidence on wind turbine noise and its effects to the Irish Parliament and Australian Senate. He is a member of and contributor to the Independent Noise Working Group

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