

Evidence of the Adverse Health Impacts of Industrial Wind Turbines

This is a supporting document for the report “**Wind Turbines – The Untold Story**” to provide more information in support of the comment: “There is a growing body of evidence that adverse health impacts are real and that they are occurring at greater distances from turbines than previously recorded.”

Following is an outline of some of the science and references:

1. Ms Krogh’s summary of peer reviewed articles with their abstracts and citations regarding adverse health effects and industrial wind turbines, March 2012.

Ms Krogh is a former adviser to Health Canada, and a senior Pharmacist, and edited the compendium used by doctors and nurses in Canada for prescribing drugs. Her summary shows clearly that there is now mounting evidence of a serious problem, which has led health professionals and noise consultants around the world to author seventeen peer reviewed articles on the adverse health effects caused by wind turbines. Health Canada made an announcement last week that they are commissioning a multidisciplinary study into the reported adverse health problems in Canada.

2. Leventhall, G., Pelmear, P., and Benton, S. 2003, *A Review of Published Research on Low Frequency Noise and its Effects*, Department for Environment, Food and Rural Affairs, London, UK; 2003.

The DEFRA Literature Review was based on peer reviewed and published literature available in 2003, and page 49 lists the symptoms of "wind turbine syndrome" which were known in 2003 by Leventhall and his colleagues to occur in some people exposed to low frequency noise. Professor Leventhall confirmed his knowledge of these symptoms at the NHMRC workshop in June 2011 during his presentation, and specifically confirmed that he had known about them “for some years.” Professor Leventhall was also aware in 2003 of the link between low frequency noise exposure and cortisol / physiological stress. Professor Leventhall did not share that crucial information with the authors of the NHMRC 2010 Rapid Review, despite him being one of two peer reviewers.

3. Shepherd, D. McBride, D. Welch, D et.al, 2011, *Evaluating the impact of wind turbine noise on health related quality of life*, Noise and Health, vol 13; 54, 333 – 339.
4. Hanning, C. and Evans, A. 2012, *Wind Turbine Noise – Seems to affect health adversely and an independent review of evidence is needed*, British Medical Journal, 344: e1527.

5. Carl V. Phillips, 2011, *Properly Interpreting the Epidemiologic Evidence about the Health Effects of Industrial Wind Turbines on Nearby Residents*, Bulletin of Science, Technology, and Society, vol. 31, no. 4 (August 2011), pp. 303-315.

Abstract:

“There is overwhelming evidence that wind turbines cause serious health problems in nearby residents, usually stress-disorder type diseases, at a nontrivial rate. The bulk of the evidence takes the form of thousands of adverse event reports. There is also a small amount of systematically-gathered data. The adverse event reports provide compelling evidence of the seriousness of the problems and of causation in this case because of their volume, the ease of observing exposure and outcome incidence, and case-crossover data. Proponents of turbines have sought to deny these problems by making a collection of contradictory claims including that the evidence does not “count”, the outcomes are not “real” diseases, the outcomes are the victims’ own fault, and that acoustical models cannot explain why there are health problems so the problems must not exist. These claims appeared to have swayed many non-expert observers, though they are easily debunked. Moreover, though the failure of models to explain the observed problems does not deny the problems, it does mean that we do not know what, other than kilometers of distance, could sufficiently mitigate the effects. There has been no policy analysis that justifies imposing these effects on local residents. **The attempts to deny the evidence cannot be seen as honest scientific disagreement, and represent either gross incompetence or intentional bias.”**

See also Dr Philips submission number 897 to the 2011 Senate Inquiry into the Social and Economic Effect of Rural Wind Farms.

6. Dr Nina Pierpont, Executive summary and peer reviews, Wind Turbine Syndrome, 2009.

Dr Amanda Harry (UK), Dr David Iser (Australia) and Dr Nina Pierpont (USA) were the first doctors to systematically collect and report clinical data, followed by the Society for Wind Vigilance in Ontario.

7. Styles, P. Stimpson, I. et al, 2005, *Microseismic and Infrasound monitoring of Low Frequency Noise and Vibrations from Windfarms* – Recommendations on the siting of windfarms in the vicinity of Eskdalemuir, Scotland, Keele University.

Regarding the UK seismic monitoring site situated at Eskdalemuir near Langholm in the Scottish Borders. It can detect nuclear testing at great distances. This research was done as they had to establish the vibration level from wind farms and whether this would effect the monitoring at Eskdalemuir. It concludes that there is a clear seismic vibration issue out to distances of greater than 18km coming from relatively small turbines that have a generating capacity of 660kW. Further the research found that vibration is proportional to power generating capacity. Therefore a single 2.5 to 3.0MW turbine will produce a significant seismic vibration. A number of turbines combined will have a very significant impact out to

a great distance, and the long term effects of chronic exposure to this vibration are unknown. Some sites where residents are reporting this vibration overnight have become ill very quickly (Waterloo, Glenthompson, Cape Bridgewater and Capital). Note that this urgently required scientific research with large turbines is yet to be instigated.

8. Oral testimony of Professor Anderson, NHMRC, to the Senate Inquiry 31st of March, 2011. “...**we are very aware that the high-quality scientific literature in this area is very thin.** That is why we were at pains to point out that we believe that a **precautionary approach should be taken** to this, because, as you would understand, **the absence of evidence does not mean that there might not be evidence in the future**”.
9. Recommendations from the 2011 Senate Inquiry into the *Social and Economic Impact of Rural Wind Farms*. That the NHMRC held a public forum to review recent evidence does suggest that the public statement, the rapid review and the peer review have not held up under the spotlight of the 2011 Senate Inquiry and Senate Estimates.
10. The Falmouth Board of Health requested on June 11, 2012 that the Massachusetts Department of Health (USA) immediately initiate a health assessment of the impacts of the operation of wind turbines in Falmouth, Massachusetts. It reads: “**This appeal is compelled by two years of consistent and persistent complaints of health impacts during turbine operation.** We realise that this is an atypical health assessment study. The suspected agent of harm is not a food borne, waterborne, or airborne contaminant. **Yet the Wind Turbine Health Impact Study recently completed by the state suggests certain elements of wind turbine operation propagate to health impacts potentially as harmful as those caused by organic agents.**”

A growing number of Australian doctors are speaking out publicly about their concerns, and urging research. These doctors include:

- Dr David Iser, (GP who reported problems in 2004, Toora, VIC)
- Dr Sarah Laurie (Medical Director of the Waubra Foundation)
- Dr Wayne Spring, (Specialist Sleep Physician, Ballarat, VIC)
- Dr Mitric-Andjic, (Daylesford, VIC)
- Dr Alan Watts (retired rural GP from Carcoar, NSW)
- Dr Max Whisson (retired medical researcher and Pathologist, WA).

Other concerned health practitioners and acousticians locally and internationally who have experience in the area or spoken out publicly include:

Acousticians/Engineers:

- Dr Malcolm Swinbanks, (UK)
- Professor Rick James, (USA)
- Rob Rand (USA)
- Stephen Ambrose (USA)
- Wade Bray (USA)
- Dick Horonjeff (USA)
- Steven Cooper (Australia)
- Dr Bob Thorne (Australia/NZ)
- Professor Phillip Dickinson (NZ)
- Professor Colin Hansen (Australia)
- Professor Henrik Moller (Denmark)
- Professor Mariana Alves Pereira (Portugal)

Physiologists

- Professor Alec Salt (USA)
- Dr Timothy Hullar (USA)

Psychologists

- Dr Daniel Shepherd (NZ)
- Professor Arline Bronzaft (USA)
- Dr Helen Parker (USA)

Epidemiologists

- Assoc Professor Jeffrey Aramini (Canada)
- Professor Carl Phillips (USA)
- Professor Alun Evans (Ireland)

Medical Practitioners

- Dr Chris Hanning (UK Sleep Physician)
- Dr Michael Nissenbaum (US Radiologist)
- Dr Mauri Johansson (Occupation Physician, Denmark)
- Dr Henning Theorell (Sweden)
- Dr Noel Kerin (Occupational Physician, Ontario)
- Professor Robert McMurtry (Ontario)
- Dr Nina Pierpont (USA)

- Dr Amanda Harry (UK)
- Dr Herb Coussos (USA)
- Dr Nuno Castelo Branco (Portugal)

Nurses

- Professor Norma Schmidt (Ontario)
- Jane Wilson (Ontario)
- Jane Davis (UK)

Low frequency noise and infrasound as indicated in the above references, is being measured inside the homes of sick people in the USA, and in Australia, and is occurring at the times they are experiencing the specific symptoms. The data recorded clearly indicates that the symptoms and the sound energy frequencies are NOT measurable when the turbines are switched off. I am aware of completed but as yet unpublished work by Dr Bob Thorne which supports previous peer reviewed empirical data collection, from Canada, the UK and the USA, all of which involves empirical data rather than reviews which deny there is any evidence. All of this causes me to publicly question the assertions made by proponents that there are no adverse health effects from industrial wind turbines.

We cannot afford to take risks with human health. It is now 56 years since the last asbestos mine was closed in Western Australia but we are still seeing people exposed to that deadly fibre dying from mesothelioma. We don't know if industrial wind turbines are as damaging as asbestos but it is worth remembering that the community thought that asbestos was safe - they built their houses out of it. A similar case exists with carcinogens affecting firefighters by absorption through their protective clothing.

I believe we should adopt a precautionary approach. Health and independently conducted sound impact studies are vital but in the meantime we need to make sure our buffers are sufficient that the infrasound and low frequency noise impacts are not causing adverse health effects.

Dr Chris Back

Deputy Opposition Whip in the Senate

Senator for Western Australia

27 July 2012

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