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Scientists conclude that there is no evidence that wind turbines have an adverse impact on human health

Response to a recent publication by Dr. Nina Pierpont

At present there are well over 10,000 wind turbines installed and operating in North America, and tens of thousands of people who live and work in proximity to these wind turbines. Of these individuals, a very small number have claimed that their health has been impacted by wind turbines. However, surveys of peer-reviewed scientific literature have consistently found no evidence linking wind turbines to human health concerns. It is important to note that all wind energy projects are required to undertake environmental assessments that assess the potential impacts of wind turbines on ecosystems and human health. The studies also ensure that the installations meet strict government regulations with respect to sound.

A recent publication by Dr. Nina Pierpont of Malone, New York entitled "Wind Turbine Syndrome" contends that wind turbines can impact the health of individuals living in proximity to wind turbines. This view, however, is not supported by scientists who specialize in acoustics, low frequency sound and related human health impacts. It is important to point out that Dr. Pierpont's work has not been published in peer-reviewed journals, a fact that raises questions as to the scientific validity of her research.

For reference, the Canadian Wind Energy Association (CanWEA) has compiled a list of articles and publications on the subject from reputable sources in Europe and North America. Below are summaries of these articles:

1. **"Infrasound from Wind Turbines – Fact, Fiction or Deception?"** by Geoff Leventhall in Vol. 34 No.2 (2006) of the peer-reviewed journal Canadian Acoustics. This paper looks at the question of whether or not wind turbines produce infrasound at levels that can impact humans. It directly addresses assertions frequently made by Dr. Nina Pierpont, author of a recent book entitled "Wind Turbine Syndrome"
   "In the USA, a high profile objector (Nina Pierpont of Malone NY) placed an advertisement in a local paper, consisting entirely of selected quotations from a previously published technical paper by van den Berg (Van den Berg 2004). However the comment "[i.e. infrasonic]", as shown in Fig 3, was added in the first line of the first quotation in a manner which might mislead naive readers into believing that it was part of the original. The van den Berg paper was based on A-weighted measurements and had no connection with infrasound. So, not only

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is the advertisement displaying the advertiser's self deception, but this has also been propagated to others who have read it. […] The comment, [i.e. infrasonic], added into Fig 3 gives incorrect information. Claims of infrasound are irrelevant and possibly harmful, should they lead to unnecessary fears." www.wind.appstate.edu/reports/06-06Leventhall-Infras-WT-CanAcoustics2.pdf

2. **"Wind Turbine Facilities Noise Issues"** by Dr. Ramani Ramakrishnan for the Ontario Ministry of the Environment. This study looked into the claims made in the doctoral thesis of G.P. van den Berg, a source frequently cited by Dr. Pierpont. It concluded that: *"The research work undertaken by G. P. van den Berg didn't provide scientific evidence to support the few major hypotheses postulated concerning the wind turbine noise characteristics."* http://www.ene.gov.on.ca/envision/env_reg/er/documents/2008/Noise%20Report.pdf

3. **"Wind Turbine Acoustic Noise"**, A White Paper by Dr. Anthony Rodgers at the University of Massachusetts at Amherst. This paper looked into the issue of both sound and infrasound (low frequency sound) and concluded *"There is no reliable evidence that infrasound below the perception threshold produces physiological or psychological effects."* http://www.ceere.org/rerl/publications/whitepapers/Wind_Turbine_Acoustic_Noise_Rev2006.pdf

4. **"Research into Aerodynamic Modulation of Wind Turbine Noise"**, University of Salford, UK, July 2007. This paper looked into claims that it was not infrasound, but "amplitude modulation" (AM) that presented problems. The paper concludes that *"This shows that in terms of the number of people affected, wind farm noise is a small-scale problem compared with other types of noise; for example the number of complaints about industrial noise exceeds those about windfarms by around three orders of magnitude"* and that *"The low incidence of AM and the low numbers of people adversely affected make it difficult to justify further research funding in preference to other more widespread noise issues."* http://usir.salford.ac.uk/1554/1/Salford_Uni_Report_Turbine_Sound.pdf

5. **"Electricity generation and health"** in the peer-reviewed journal The Lancet. The paper concludes that *"Forms of renewable energy generation are still in the early phases of their technological development, but most seem to be associated with few adverse effects on health"* http://www.ncbi.nlm.nih.gov/pubmed/17876910

6. **"Health impact of wind turbines"**, prepared by the Municipality of Chatham-Kent Health & Family Services Public Health Unit. This is a comprehensive review of available literature on the subject. This paper concludes and concurs with the original quote from Chatham-Kent's Acting Medical Officer of Health, Dr. David Colby: *"In summary, as long as the Ministry of Environment Guidelines for location criteria of wind farms are followed, it is my opinion that*

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there will be negligible adverse health impacts on Chatham-Kent citizens. Although opposition to wind farms on aesthetic grounds is a legitimate point of view, opposition to wind farms on the basis of potential adverse health consequences is not justified by the evidence." http://www.chatham-kent.ca/NR/rdonlyres/CA6E8804-D6FF-42A5-B93B-5229FA127875/7046/5a.pdf

7. **Energy, sustainable development and health,** World Health Organisation, June 2004. The study finds that *"Renewable sources, such as photovoltaic and wind energy, are associated with fewer health effects. [...] The increased use of renewable energy, especially wind, solar and photovoltaic energy, will have positive health benefits, some of which have been estimated."* There is also a table on page 79 showing the relative health effects of nearly all sources of energy, which clearly shows wind as negligible. http://www.euro.who.int/document/eehc/ebakdoc08.pdf

These findings clearly show that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.

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