

A Closer Look at CanWEA's Health Claims

Published by Wind Concerns Ontario, originally posted at:

<http://windconcernsontario.wordpress.com/2009/05/22/deconstructing-canwea-health-claims/>

But it has moved/changed in the past and may move/change again, so I've copied it to windfarmrealities.org, edited slightly for continuity's sake. To get WOC's latest version of this report, go to their home page, search for "health" and look for the "Deconstructing" link.

Pages 1 – 6 of the following report were written by WCO. Pages 7 – 8 were originally written by me and were graciously included by WCO in their posting. Pages 9 – 11 are Appendix A and are a copy of the entire CanWEA posting.

The links all worked at the time this was originally posted, but may be old by the time you read this. Also, moving links from the original html to an MS word doc to PDF is problematical, so you may have to "copy and paste" the links as opposed to just clicking on them.

Deconstructing CanWEA Health "Research"

May 22, 2009

On October 06, 2008, the Canadian Wind Energy Association (CanWEA) posted the following release on their web site: "Scientists conclude that there is no evidence that wind turbines have an adverse impact on human health." "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:"

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

WOC has made a review of the articles compiled by CanWEA to determine:

- To what extent they support CanWEA's statement: "Scientists conclude that there is no evidence that wind turbines have an adverse impact on human health"
- To what extent they support CanWEA's statement: "These findings clearly show that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health."
- To what extent they respond to Dr. Nina Pierpont's research.

For reference the full text from CanWEA's web page is included at the end of this document in Appendix A. Note: primary references of these articles were not reviewed.

WCO Executive Summary

7 out of 7 articles do not “conclude that there is no evidence that wind turbines have an adverse impact on human health”.

7 out of 7 articles do not state “that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”.

7 out of 7 articles do not review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).

1 out of 7 articles do mention Dr Pierpont’s case studies and does state “One cannot discount the information”

6 out of 7 articles do identify wind turbine noise as a health concern which must be considered.

1 out of 7 articles do not mention noise at all when assessing adverse health effects related to various forms of electricity generation.

7 out of 7 articles do not study patients or reports of patients describing adverse health effects when exposed to wind turbines.

7 out of 7 articles do not consider recent research such as that conducted by Dr Pierpont, Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.

1. Article referenced by Canadian Wind Energy Association: INFRASOUND FROM WIND TURBINES – FACT, FICTION OR DECEPTION 2006 Geoff Leventhall Noise and Vibration Consultant.

www.wind.appstate.edu/reports/06-06Leventhall-Infras-WT-CanAcoustics2.pdf

- Technical article concentrates on acoustics terminology.
- Author is not a health care professional.
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** state “that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does not** study patients or reports of patients describing adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.

- **Does** state “Turbulent air inflow conditions cause enhanced levels of low frequency noise, which may be disturbing” Page 34
- **Does** conclude “... there are wind turbine installations which may have noise problems.” Page 36

2. Article referenced by Canadian Wind Energy Association: WIND TURBINE FACILITIES NOISE ISSUES -DECEMBER 2007 Ramani Ramakrishnan, Ph. D., P. Eng. Prepared for Ministry of the Environment of Ontario

http://windfarmrealities.org/wfr-docs/ramakrishnan_report.pdf

- This work is a literature review.
- Author is not a health care professional.
- **Does not** contain original research.
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** state “that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does not** study patients or reports of patients describing adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research such as that conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.
- **Does** state “There is an understanding that noise pollution can be the cause of serious health effects through short term and long term, or cumulative, exposure.” Page 25
- **Does** conclude “Literature review showed that additional research is still required to make definitive conclusions about wind turbine noise impacts as well as human response to wind farms.” In addition, detailed research on meteorological conditions, and their impact on sound generation needs to be undertaken to realize definitive conclusions;” Page 56
- **Does** conclude “The Ministry of the Environment’s procedures to assess wind farm noise levels follow a simple procedure that is sound for most situations. However, additional concerns still need to be addressed in the next round of revisions to their assessment process. These revisions may need to be addressed after the results from future research provide scientifically consistent data for effects such as meteorology, human response and turbine noise source character.” Page 56

3. Article referenced by Canadian Wind Energy Association: WIND TURBINE ACOUSTIC NOISE, Anthony L. Rogers, Ph.D., James F. Manwell, Ph.D., Sally Wright, M.S., PE – June 2002 Amended January 2006

http://www.ceere.org/rerl/publications/whitepapers/Wind_Turbine_Acoustic_Noise_Rev2006.pdf

- This work is a literature review.

- Authors are not health care professionals.
- **Does not** contain original research.
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** state “that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does not** study patients or reports of patients describing adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research such as that conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.
- **Does** state “In most countries, however, noise regulations define upper bounds for the noise to which people may be exposed.”
- **Does** present a graph which indicates that wind turbines designs in the 2000s emit more dB than in the 1990s. Page 21 This is contrary to what the wind energy industry is telling the public.
- **Does** conclude “noise is a primary siting constraint.” Page 23
- **Does** conclude “Community noise standards are important to ensure livable communities. Wind turbines must be held to comply with these regulations.” Page 24

4. Article referenced by Canadian Wind Energy Association: RESEARCH INTO AERODYNAMIC MODULATION OF WIND TURBINE NOISE: FINAL REPORT Dr. Andy Moorhouse, Malcolm Hayes, Dr. Sabine von Hünenbein, Ben Piper, Dr. Mags Adams – July 2007

http://usir.salford.ac.uk/1554/1/Salford_ Uni_Report_Turbine_Sound.pdf

- **Does** state purpose of study: “The aims of this study are to ascertain the prevalence of AM (aerodynamic modulation) from UK wind farm sites, to try to gain a better understanding of the likely causes, and to establish whether further research into AM is required.”
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** “show that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does not** study patients or reports of patients describing adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research such as that conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.
- **Does** present format of survey used which concentrates on aerodynamic modulation not adverse health effects. The survey does not ask respondents any questions about their health or adverse health effects. Pages 54, 55, 56

- **Does** state further research may be needed. “On the other hand, since AM cannot be fully predicted at present, and its causes are not understood we consider that it might be prudent to carry out further research to improve understanding in this area.” Page 47

5. Article referenced by Canadian Wind Energy Association: ELECTRICITY GENERATION AND HEALTH, Anil Markandya, Paul Wilkinson – September 2007

<http://www.ncbi.nlm.nih.gov/pubmed/17876910>

- This work is a literature review.
- **Does not** contain original research.
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** “show that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does not** study patients or reports of patients describing adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research such as that conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.
- **Does** comment on various forms of electricity generation and related health effects as they pertain to emissions not noise.
- **Does not** mention or consider noise ever in the report.
- **Does** state “The negative effects on health of electricity generation from renewable sources have not been assessed as fully as those from conventional sources” Page 19

6. Article referenced by Canadian Wind Energy Association: THE HEALTH IMPACT OF WIND TURBINES: A REVIEW OF THE CURRENT WHITE, GREY AND PUBLISHED LITERATURE – June 2008 Dr. David Colby, Acting Medical Officer of Health, Chatham-Kent Public Health Unit

<http://www.chatham-kent.ca/NR/rdonlyres/CA6E8804-D6FF-42A5-B93B-5229FA127875/7046/5a.pdf>

- This work is a literature review.
- **Does not** contain original research.
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** “show that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does** make note of Dr Pierpont’s ‘case studies’ Page 14
- **Does** state regarding Dr Pierpont’s case studies “One cannot discount the information” then proceeds to ignore it. Page 14
- **Does not** reference to Dr. Pierpont’s case studies in the References section.

- **Does not** study patients who describe adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research such as that conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, or the Academy of Medicine of France.
- **Does not** comment on research of Frey and Haddon but rather lists it in “Additional Resources” section.
- **Does** identify noise as a health issue “noise is one of the few health issues surrounding wind turbines that can be measured and has guidelines that must be adhered to.” Page 12
- **Does** include 11 photos of wind turbines in the document and accompanying slides.
- **Does not** include any photos of humans or communities.

7. Article referenced by Canadian Wind Energy Association: FOURTH MINISTERIAL CONFERENCE ON ENVIRONMENT AND HEALTH Budapest, Hungary, 23-25 June 2004, World Health Organization

<http://www.euro.who.int/document/eehc/ebakdoc08.pdf>

- **Does** comment on various forms of energy generation, including wind, and related health effects as they pertain to emissions and accidents and does not study noise related effects.
- **Does not** contain original research.
- **Does not** “conclude that there is no evidence that wind turbines have an adverse impact on human health”.
- **Does not** state “that there is no peer-reviewed scientific evidence indicating that wind turbines have an adverse impact on human health.”
- **Does not** review Dr Pierpont’s research. (Wind Turbine Syndrome Manuscript).
- **Does not** study patients or reports of patients describing adverse health effects when exposed to wind turbines.
- **Does not** mention other recent research such as that conducted by Dr. Amanda Harry, Alves Perreira and Castello Blanco, Frey and Haddon or the Academy of Medicine of France.
- **Does** state “Wind energy can, however, have some potential burdens on amenity through ...noise.” Page 12
- **Does** state “noise pollution may be a problem if turbines are situated close to centres of population” Page 70
- **Does** state the review did not report on wind turbine related “issues such as sleep disturbance, school absenteeism, eventually resulting from noise in vicinity” Page 70

An Assessment of CANWEA's Research on Health Issues with Wind Turbines

by Wayne Gulden

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Probably the most contentious area surrounding wind turbines is the noise they produce and its potential health effect on neighbors. In Ontario there are basically two sides to this argument. On one side is a group of doctors who have studied the complaints and would like someone, presumably the government, to conduct an epidemiological study to scientifically establish what the health affects of wind turbine noise might be.

On the other side is the wind energy community who argues that there is no evidence in peer reviewed literature that there is any health affect, and thus a study is unnecessary. For simplicity, I'll call the first side The Doctors, which includes names familiar to anyone following this debate – McMurtry, Pierpont, Nissenbaum etc. I'll call the second group CanWEA, the Canadian Wind Energy Association, a lobbyist for the wind industry. Their spokesman, Sean Whittaker, has appeared in the media numerous times.

A typical Whittaker statement is

“It's certainly of concern, but you do have to look at the peer-reviewed research that's been done on the subject and what that tells you.”

I've done just that, going to the CanWEA web site to see what their research shows. The page I worked from is at: http://www.canwea.ca/media/release/release_e.php?newsId=37 and is titled “Scientists conclude that there is no evidence that wind turbines have an adverse impact on human health.” At the bottom of that page are 7 references, described as: “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.”

CanWEA has included a quote from each of these sources that appears to support their contention. As any reader will quickly discover, however, these quotes generally have little to do with the gist of the article. It quickly becomes obvious that CanWEA has “cherry-picked” the articles for the most supportive sentence, completely out of context.

Anyone can play this game, and as an example I could take The Doctor's position and use quotes out of the very same 7 references to support it. Such a statement might look something like:

There are numerous reports of health issues caused by wind turbines and we want to have an epidemiological study to determine the facts. We have compiled a list of articles and publications on the subject from reputable sources in Europe and North America.

1. Leventhall. “Attention should be focused on the audio frequency fluctuating swish, which some people may well find to be very disturbing and stressful, depending on its level.”
2. Ramakrishnan. “However, additional concerns still need to be addressed in the next round of revisions to their assessment process. These revisions may need to be addressed after the results from future research provide scientifically consistent data for effects such as meteorology, human response and turbine noise source character.”
3. Rogers. “Community noise standards are important to ensure livable communities. Wind turbines must be held to comply with these regulations.”
4. Salford. “The results showed that 27 of the 133 windfarm sites operational across the UK at the time of the survey had attracted noise complaints at some point.”
5. Lancet. “In varying degrees these [renewable] sources share four main drawbacks:… ; and environmental effects, aesthetic effects, or both, that might in part off set the broader environmental and health gains derived from lower air pollution and greenhouse-gas emissions.”
6. Colby. “Despite extensive searching of the current literature, limited information is available on health concerns relating to wind turbines.”
7. WHO. “health effects from wind energy are negligible, however issues such as sleep disturbance, school absenteeism, eventually resulting from noise in vicinity, could not be evaluated.”

Why don't they? Aside from the time constraints of not having their livelihoods supplied by the wind energy industry, they have a different set of priorities. CanWEA's main interest, perhaps their only interest, is making money for their clients and themselves.

With that goal, the appearance of being truthful is far more important than actually being truthful. The Doctors, on the other hand, deal with real people having real health issues, and the real truth is the basis of how they deal. And the real truth being conveyed by these 7 references – most of which are, as CanWEA says, respectable – has very little to do with health issues and epidemiological studies for people living in the shadow of wind turbines.

To use these otherwise useful references in this way is fundamentally dishonest, but it creates a “he said, she said” confusion that serves the interests of the industry. I have prepared a separate report (in the interests of keeping this short) giving my take on the gist of each of the 7 references above, and the reader can judge for themselves if CanWEA's use of the references is honest or not. And if you think I've been dishonest, please let me know the particulars and I'll certainly respond.

Appendix A: Full Text from Canadian Wind Energy Associations Website

10/06/2008 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 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 wind farms 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 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 Organization, 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/ehec/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.