

Dr Ian Holland

November 22, 2012

Secretary, Senate Community Affairs committee

Secretary, Senate Environment & Communications committee inquiry into the renewable energy (wind farm noise) bill

PO Box 6100, Parliament House

Canberra ACT 2600

Dear Dr. Holland,

Thank you for the Committee's invitation. It was an honour to appear before the Committee on November 14, 2012.

I write today both to answer a question sent to me by Ms. Carol Stewart, who asked in an email dated Nov. 19 to 'provide a definition of "annoyance" in a health context', and to respond to remarks made by witnesses regarding our study as indicated in the Hansard document sent to me for comment by your office.

Annoyance is a word that was used repeatedly in many of the earlier studies on adverse health effects related to industrial wind turbines, chiefly in the several and oft quoted papers by Eja Pedersen PhD et al, regarding populations in Scandinavia and the Netherlands. It became clear in the last several years that in Canada, the USA, the UK, and Australia, industry 'white paper' literature reviews, and/or some governmental reviews interpreted the word 'annoyance' in these studies to suggest a minor inconvenience, which is the colloquial North American use of the word, concluding that while this 'annoyance' may occur, and while it may be unpleasant, it was not in itself a health concern and unrelated to true health concerns. A bibliography of such industry white papers and governmental literature reviews is available upon request, but these documents have no doubt already been supplied to the Committee by other witnesses (the Committee is no doubt mindful of the difference between these sorts of documents and original studies, which are medical investigations carried out among real people in the real world). As a medical doctor reading these white papers and reviews, and familiar with the original Pedersen studies from which the word 'annoyance' was lifted, I wrote to Dr. Pedersen to ask her if she was aware of how the word 'annoyance' in her papers was being used, and what her understanding of the word was.

She wrote back:

"Annoyance is a response, rather than an effect. However, to be annoyed means a lowered well-being and annoyance should therefore be avoided. The relationship between annoyance and symptoms of lowered health goes, from what I have found in my studies, two ways.

- People who have lowered physical or mental health are more vulnerable and therefore get annoyed.

- People who get annoyed may not get the physiological and psychological restoration that they need and annoyance could hence increase the risk for impaired health." (personal email communication June 3, 2010)

This is an appropriate definition of annoyance, and entirely consistent with the World Health Organization definition of health. It is quite different from the colloquial interpretation that has been put forth in industry commissioned white papers and governmental literature reviews (of these very same Pedersen papers) in the Anglosphere. It is clearly the definition that must be kept in mind when interpreting the papers written

by Dr. Pedersen and her coauthors - as it is the definition she had in mind when carrying out her studies and writing these very papers.

Pedersen went beyond 'annoyance' in a presentation to the Third International Meeting on Wind Turbine Noise in Alborg Denmark in June of 2009, where she described the prevalence of disordered sleep among populations in Sweden and the Netherlands living in proximity to turbines, and was able to show associations with dBA levels. She called for further research and adjustment of regulations governing turbine to dwelling distances. These findings and conclusions curiously, did not find their way into those same 'white papers' and governmental 'literature reviews' that were otherwise quick to embrace the word but distort the meaning of 'annoyance' in her other papers.

The research paper of which I was a coauthor and which I was honoured to be invited to present ('Effects of industrial wind turbines noise on sleep and health'), went beyond 'annoyance' as well, and delved more deeply into chronic sleep disturbances and other more familiar adverse health effects.

This brings me to the second focus of this letter, a response to statements made by other witnesses regarding our study.

In its deliberations, I trust the Committee would wish to be mindful of the differences in the approach of the academic witnesses. If I had to over-simplify, our work focused on the evidence that sleep is indeed disrupted by wind turbines, and, the evidence about what happened to people's health when their sleep was disrupted. The effects of noise on sleep are by far the most universal complaints among those living in proximity to large industrial wind turbines. Simply put, we found that chronic disturbing noise resulting in chronic sleep disturbance, affects health.

By contrast, you heard testimony from others, particularly Professors Seligman and Chapman, about an issue referred to as 'Wind Turbine Syndrome'. We wish to confirm that we did not investigate 'Wind Turbine Syndrome' and it formed no part of our study. The information available on the internet and referred to by witnesses concerning 'Wind Turbine Syndrome', relate to many issues other (though including) chronic sleep disturbance. We would recommend caution if the Committee is asked to compare our work with any study or opinion, formal or informal, scientific or non-scientific, that is about 'Wind Turbine Syndrome' or other complaints other than those related to sleep deprivation and its known and recognized consequences.

I note that Prof. Chapman provided testimony based upon a review of many symptoms he tabulated as occurring within 5km of wind turbine installations, as well as various internet searches, and cited this review as evidence that no correlation could be found between turbine noise and provable adverse health effects. When asked by a Committee member if he could return to his data base and derive data relating to what might be occurring within 1.5km, he stated that that would be difficult, and that "I thought 5 kilometers was a reasonable distance. (*in which to carry out his observations*)".

5 km in fact is not a reasonable distance. It is a distance where our study suggests that effects on sleep and mental health are negligible, for the turbine sizes (1.5MW, rotor diameter 80m) under discussion. Distances of 3km and greater were used for our CONTROL group (the group where we expected to find no adverse effects), the actual study subjects who we were evaluating for adverse health effects living WITHIN 1.5km.

If one wanted to choose a distance where health effects were negligible, or if one wanted health effects occurring close to turbines to be subsumed by and 'disappear' within a mass of random health complaints any human population is prone to (regardless of whether they live near wind turbines), 5km would be a good distance to choose.

I also wish to confirm that not only where there no 'considerable anti-wind activities' (Prof. Chapman's words) at the two towns in our study, Mars Hill and Vinalhaven, Maine - there were none whatsoever. Any assertions to the contrary are simply untrue. Our data were collected several years ago, and these towns were 'early adopters', with most people looking forward to the reduced electricity costs they were promised. If anything, they were predisposed to a 'placebo' effect, not 'nocebo'.

On 'nocebo', if a physician provides the diagnosis of 'nocebo' (a psychologically mediated effect analogous to a 'psychosomatic illness/response'), medical protocols dictate that it be done subsequent to a process of thoroughly excluding the possibility of any pathophysiological pathways that are plausible, more likely, or more important (because of serious downstream implications) to consider.

The 'nocebo' concept is inapplicable and it would be irresponsible to apply it as an explanation for the chronic sleep disorders which are the result of often unremembered nighttime arousals related to noise (a simple physiological chain of events that is not medically controversial in the least, and which are detectable by validated investigational tools such as used in our study). It's rushed utilization here would be a conjectural, unfair and cruel exercise that would in effect tell people that while what they are feeling may be real, the origin is 'all in their head' rather than in well understood physiological interactions between the sleep mechanism and noise.

Finally, suggesting a diagnosis of 'nocebo' without investigating, 'boots on the ground', for more plausible, better understood, or more logical causes of a medical condition would normally constitute medical malpractice in most Western-based medical systems, including Australia. Individuals who are not physicians are not limited by this professional mandate or even necessarily this conceptual framework. Please bear that in mind when deliberating the opinions (which, when not backed up by the evidence would by definition be superficial - and possibly contrived) - of witnesses or experts who opine on medical matters.

I apologize for the length of this missive. I enjoyed my experience testifying before the Committee, and thank the members for the opportunity to make a contribution.

Sincerely,

Michael A. Nissenbaum, MD

Maine, November 22, 2012