Proposed changes to the Public Health and Well being Act 2008
Exclusion of Wind Turbine installation from Public Nuisance
From: Bart Wissink,

Ladies/Gentlemen,
It is a pleasant surprise that we finally have acknowledgement from the Parliament that Low Frequency Noise is a real fact and an issue, but is the proposed method of dealing with it really ethical?

I concede that perhaps Councils are not properly equipped to deal with Nuisance Noise complaints involving a powerful and influential industry group. Perhaps the disputes could be better managed by a properly resourced body, with access to qualified personnel. The Federal Wind Commissioner is not resourced to investigate complaints, and is somewhat of a failure in addressing issues, perhaps due to resources available ?

If the industry seriously believes it does not generate a nuisance noise, why is this change being put forward? Surely it can defend itself in court or preferably deal directly and honestly with complainents and demonstrate that it does not generate nuisance noise.

A major complaint of Wind Industry noise is sleep deprivation. Sleep deprivation is recognized as a torture weapon. Exempting an industry such as Wind Turbine installations from the Public Nuisance requirements of this act is appalling and tacitly gives approval for an industry to inflict torture on its neighbours. I would not be surprised to find an exemption from cruel practises in perhaps China or Russia or other despot ruled states. We are, hopefully in Australia where surely Health and Wellbeing of the population are more important than an inconvenience to an industry which aggressively attacks any complaints against it and blankly refuses to acknowledge any issues to its disadvantage.

The New Zealand standard NZS 6808 does not address Low Frequency Noise (LFN), but we note that a committee member refused to endorse the standard (Massey University, Prof. Philip Dickinson) citing amongst other issues, the failure to address LFN. Standards, by their very nature cannot cover all aspects of a proposed design installation, where the standard does not address a situation, as LFN in the NZS, standard, the correct engineeering response is to revert to first principles, and the first principles would be appropiately dealt with under Public Nuisance and not a hard and fast rule. NZS measures all noise on an A weighted scale, ie an average, now the average LFN may be measured as 55dB(A), but the peak my be double that, well above the threshold of human hearing perception. It should also be noted that the level of hearing perception will vary from one individual to another. If a hard and fast rule is required, and it is required that it be measured as dB(A), then the upper limit

for LFN needs to be set at a level of at least 50% of the average human hearing perception.

The New Zealand standard 6808 has been found deficient on addressing the infra-sound or low frequency noise on at least two occasions {[2017] AATA 2424 (4 December 2017); The Honourable Justice White, Deputy President and Deputy President K Bean and recently in Bald Hills case Justice Melinda Richards found that the operators of the Bald Hills Wind Farm had not established that the April 2019 resolution of council was affected by any jurisdictional error.As a result, their decision, that there is an "intermittent nuisance of the kind alleged" by the nearby landowners and acknowledged by the council, stands.}
The proposed change contradicts the two legally found rulings.

Noise complaints and low frequency complaints come from nearby residents of Wind Installations, the communities are small and do not have the financial resources of the operators. The operators aggressively attack any complaints, referencing the Bald Hills saga clearly demonstrates this.

Sleep deprivation is a common complaint in complaints to Wind Turbine noise, it is also a used in torture, which , hopefully, we are not endorsing in Australia

I acknowledge that the AMA has stated that LFN does not create a health hazard, however I have not been able to find any supporting research, by the AMA, to support its view, am I perhaps not looking in the correct quarters? My understanding is the AMA statement refers to LFN under the level of human perception, am I interpreting it correctly? So is the AMA statement really applicable? Further there is a large number of references and research, peer reviewed, into LFN and Health issues, which the Industry very aggressively dismisses. I am reminded of the Tobacco Industries stance: I do recall the "ad" "The first man to offer a new mum a cigarette, will be her family doctor" , will be shortly see a "ad" "The first man to offer a new home owner a Wind Turbine will be their family doctor"?

LFN is a complex problem and many of the papers I have read do state that it is more than just a noise issue, LFN may be amplified by a structure, such as a house, aggravating the nuisance. I note there are a large number of papers, dismissing LFN as an issue, however I have yet to find one which actually included extensive field research. I have no medical qualifications, I have engineering qualifications, so I am not able to comment. By relying solely on the hard and fast rulings given in NZS standard the LFN nuisance is summarily dismissed, this is not acceptable in anyway.

References:

I attach abstracts from a small number of references to support my argument. I am able to provide the full article if required, they are also freely available on the internet. I am also able to provide further references,

World Health Organization: Wind Turbine Noise as a Health Hazard

(masterresource.org/wind-turbine-noise-issues/wto-wind-turbine-noise-as-a-health-hazard October 17, 2018)

“The wind industry has denied and ignored evidence directly linking wind turbines and sleep disruption leading to negative human and animal impacts worldwide. Expect WHO’s new Guidelines to give rise to new standards to mitigate if not eliminate this ongoing suffering.”

“The burden of environmental noise with wind turbines is not episodic or random: for the most part its effects are constant and unrelenting.... This is an undeniable health pressure of enormous magnitude.”

Abstract: While only “conditional,” acknowledgement is given to pulsation (impulsive amplitude modification, as Steven Cooper calls it) and ILFN (Infra and Low Frequency Noise), the new World Health Organization report underscores the failure of current regulations of dB to manage health impacts from industrial wind installations worldwide.

The other irrefutable conclusion is that the wind industry has been given a regulatory path to profits with an unfathomable license to hurt in the form of sleep deprivation (and associated disease) for a very long time. Master Resource reported earlier on the findings of the Australian Senate Select Committee on Wind Turbines (June 29, 2015). This court established that there is a direct pathway to disease resulting from wind turbine noise.

An Extract from the rulingof Bald Hills Wind Farm appeal against South Gippsland Council on Public Nuisance Noise from Bald Hills Wind Farm:

115,Bald Hills sought to dismiss the reference, in [65] of the QC opinion, to its ‘numerous assessments and acoustic investigations ... to assess compliance with applicable noise limits’ as being directed only to whether it was ‘choosing to cause injury to its neighbours’. I do not read the paragraph in that way. I understand that paragraph as an acknowledgement that Bald Hills was not deliberately creating the alleged nuisance, and had taken extensive measures to demonstrate that it was compliant with the planning permit

conditions regarding noise. In other words, it was a reference to the acoustic material that had been discussed in detail in previous paragraphs. The absence of any more specific reference to Bald Hills' acoustic material is perhaps explained by the fact that it did not really engage with the nuisance alleged by the complainants, or with their noise logs.

116, The Council was satisfied that there existed a nuisance because it accepted the complainants' complaints of wind farm noise that disturbed their sleep and injured their personal comfort as 'credible and consistent', and in light of the conclusions of the Smith Report and 'the weight of the other evidence'. 79 Given the Council's earlier reference to the submissions and 'extensive evidentiary material' made available to it, and its reliance on the QC opinion, I am satisfied that the 'other evidence' that it weighed included Bald Hills' acoustic material.

117, Bald Hills did not establish that the Council disregarded relevant material that was essential to the performance of its statutory function.

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RESEARCH ARTICLE
Assessment of low-frequency noise from wind turbines under different weather conditions
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Abstract
Background: Low-frequency (20–200 Hz) noise (LFN) from wind turbines has received much public attention due to potential health concerns. This work tries to estimate the sound power level of wind turbines (L W,A (dB)) at 20–200 Hz, which are not provided by manufacturers but essential for estimating LFN exposure (L Aeq) of nearby residents.
Methods: L W,A at 20–200 Hz at three wind farms, each with a different brand of wind turbine (Brands A, B and C, respectively) were estimated using propagation model ISO 9613-2 under different weather conditions (rain, wind speed and wind direction) and validated with LFN monitoring data. The

feasibility of using validated L W,A as inputs for ISO 9613-2 to simulate residents'exposure (L Aeq) to LFN were assessed considering interferences from rain, wind speed and wind directions.
Results ; The average L W,A at 20–200 Hz ranged between 93.2 and 100.4 dB, 97.8 and 107.2 dB, and 96.5 and 110.4 dB for turbines of Brands A, B, and C, respectively, operating under wind speeds from 2 to 12 m/s. The L W,A at wind speed of 2–8 m/s increased on average by 1.4, 1.9 and 1.7 dB per 1 m/s increase for Brands A, B and C, respectively. The differences in modeled L eq obtained through the input of L W,A into the ISO 9613-2 model and the measured L Aeq for the three studied wind farms all fall within 1.5 dB.
Conclusion; This study successfully determined and validated the L W,A of wind turbines of three brands, and subsequent residents' LFN exposure (with 1.5 dB difference) at three wind farms. Accurately obtaining LFN exposure will serve as the basis for assessing LFN exposure-health relationship. As wind power widely use worldwide, health impact should be assessed based on validated LFN exposure assessment.
Keywords Wind power . Wind turbines . Low-frequency noise . Noise exposure . Noise model validation

Wind Turbine Acoustic Investigation: Infrasound and Low-Frequency Noise—A Case Study
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Abstract
Wind turbines produce sound that is capable of disturbing local residents and is reported to cause annoyance, sleep disturbance, and other health-related impacts. An acoustical study was conducted to investigate the presence of infrasonic and low-frequency noise emissions from wind turbines located in Falmouth, Massachusetts, USA. During the study, the investigating acousticians experienced adverse health effects consistent with those reported by some Falmouth residents. The authors conclude that wind turbine acoustic energy was found to be greater than or uniquely distinguishable from the ambient background levels and capable of exceeding human detection thresholds. The authors emphasize the need for epidemiological and laboratory research by health professionals and acousticians concerned with public health and well-being to develop effective and precautionary setback distances for industrial wind turbines that protect residents from wind turbine sound.