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SUBMISSION TO AUSTRALIAN FEDERAL SENATE INQUIRY

RENEWABLE ENERGY (ELECTRICITY) AMENDMENT (EXCESSIVE NOISE FROM WIND FARMS) BILL 2012

Environment and Communications Legislation Committee

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What is the intent of the legislation?

The intent of this legislation proposed by Senators Madigan and Xenophon is to address the current situation where unregulated noise pollution from industrial wind turbines is causing serious and predictable harm to the health of some of those residents living and working nearby.

Thus the legislation is ultimately intended to ensure better protection of the health of most residents and employees in the vicinity of industrial wind turbine power generators, **including** the health of wind turbine "hosts" and their families. Both non participating neighbours and turbine "host" families include individuals who are particularly vulnerable to "excessive noise", such as children, the elderly, and the chronically ill.

Importantly, the legislation will NOT affect the operation of those wind developments which are not emitting excessive noise and causing predictable harm to human health as a consequence.

The provision that the "excessive noise" penalty trigger limit should be "background plus 10dB(A)" is being extremely fair to the wind industry, as it is generally accepted in noise pollution regulations that noise above "background plus 5dB(A)" will have an adverse impact. It could be argued that this legislation gives the wind developers "special favourable treatment".

Why is this legislation necessary now?

An unintended consequence of the Renewable Energy Act, has been to cause serious harm to human health, and even to drive some Australian families out of their homes because of the serious adverse health consequences from acoustic pollution (noise and vibration) from large industrial wind turbines. Those whose health is being damaged include the families of wind turbine "hosts" who receive money for leasing their land to the wind developers.

This situation needs to be urgently remedied, and the provisions of this Bill will do so very effectively and fairly. In due course, when the research recommended by the Australian Federal Senate inquiry into Rural Wind Farms in June 2011 has been conducted, the provisions of the Bill may need to be amended further.

What is the current situation?

Currently, there are a growing number of Australian residents who are experiencing serious health problems resulting directly from exposure to excessive noise from operating wind turbines. By excessive noise, I am referring to the full sound spectrum and vibration emitted by wind turbines. Their symptoms are specifically related to the operating wind turbines – they do not have these symptoms when the turbines are not operating, nor do they have these symptoms when they are away from their homes. This pattern of exposure related symptoms has been long known to acousticians working in the field of both infrasound and low frequency noise, and is supported by existing peer reviewed published literature, which unfortunately has been ignored by too many, for too long.

The Waubra Foundation are now aware of over 40 families from Queensland, New South Wales, Victoria and South Australia who have left their homes because of excessive noise from the wind turbines near their former homes, and the consequent serious health problems they experienced. There are many other rural families who are forced to significantly reduce the time they spend at their home, and the consequences for their lives and their health are significant and detrimental.

Other families are trapped in homes which have become places of serious physical and mental illness and suffering, unable to sell, or unwilling to move from longstanding multigenerational family homes and farms. Some have openly talked of suicide, and have made serious plans to take their lives, as they currently see no way out. Persisting denial of any associated health problems despite the growing evidence to the contrary, and ongoing vilification in public discourse by wind developers, public health "experts" and others does further harm to their already fragile mental health.

As disclosed by Senator Chris Back in the Federal Senate on 30th October, 2012, there are clauses in the contracts turbine "hosts" have signed which make it impossible for them or their families to speak out publicly about their noise and health problems. There are similar "gag" clauses in the contracts of those sick residents who are "non participating neighbours" who have been bought out by wind developers because of these serious health problems. The existence of these clauses in such contracts was confirmed by Slater and Gordon's General Manager James Higgins, in a letter to the Australian on 4th May, 2012, which confirmed that residents are adversely affected (they are paid compensation) and stated such contractual clauses are "typically required", implying that these are not isolated incidents for this industry. The existence of such clauses has consistently been denied by the wind developers, and by their industry lobby group, the Clean Energy Council, and by a non clinical Professor of Public Health from a well respected University who is used by the wind developers to speak at conferences and address meetings with community members asserting that there are no health problems.

At the same time, it is noted that the Australian Government's National Health and Medical Research Council are still standing by their Public Statement (2009) and Rapid Review (2010) on the topic of wind turbines and health, which misleadingly states "there are no direct pathological effects from wind farms and that any potential impact on humans can be minimized by following existing planning guidelines". This statement was incorrect in 2009, and it is even more incorrect now. Yet these documents are relied upon at all levels of government, and by health, planning and other bureaucrats, by the judiciary, and in particular by the wind developers themselves, and are used to deny the existence of a serious and rapidly growing public health problem.

To date, no responsible authority or individual at any level of government is actively addressing the serious miscarriage of justice and abuse of human rights which is occurring, with the exception of a handful of Federal and State Parliamentarians and their staffers, the occasional local government elected official, and the very rare public servant.

Senators Madigan and Xenophon are to be lauded for their efforts to address "excessive noise" or acoustic pollution in this proposed legislation, and the consequent serious adverse health problems, which is the root cause of much of the significant distress and growing social unrest relating to industrial wind developments in rural communities.

The residents' reports of serious health problems resulting from wind turbine excessive noise are, almost without exception, met with denial of the problem, inaction, disbelief, or disinterest, from all levels of government, including elected officials and those historically described as public servants, whose current behaviour does not reflect that label. The particular responsible authorities are Health, Planning, and those with responsibility for noise pollution regulation.

No responsible State noise pollution regulation authority is actively and thoroughly investigating the noise pollution, even when multiple complaints are made, and the seriousness of the situation is made clear. The investigation, if it occurs, is cursory, often with equipment which cannot measure the full acoustic spectrum or the true background noise accurately, and it always occurs when the wind project operators are well aware that such an investigation is occurring.

There are consistent allegations from the residents living nearby, backed up by observation of turbines locally and by power output figures derived from the Australian Electricity Market Operator, from the particular development at the time, that the operation of the turbines during such an "audit" period, does not represent the reality and extent of noise and vibration pollution which the residents live with when such an audit is not occurring. There have also been occasions when the resident's reasonable request to allow their acoustic consultant to place their machine next to the acoustical consultant performing the audit has been denied. One has to seriously question the reason for refusing this request, as it would appear that those conducting that government "audit" in that case may be concerned about independent verification of the data collected during that noise pollution audit process.

Some residents with sufficient financial resources have resorted to employing their own acoustic consultants, in order to try and determine what the precise acoustic emissions are, and whether or not their particular neighbouring development is "compliant" with the noise legislation, or the operating permits to operate. In order to determine compliance, the acousticians require the information from the wind developer's meteorological mast. This data is, of course, never supplied, so the residents and their acousticians are never able to determine compliance. The excuse used by these operators, who may be a big corporation or who may be the responsible officers of a "community wind farm" is that such information is "commercial in confidence". The only way to obtain this information is to go to court and get a judge to issue a court order. Recently, when one developer was instructed by the judge to hand over such data, the multimillion dollar court case was withdrawn just prior to the deadline for the provision of this information.

If the residents' complaints eventually result in further monitoring by the wind developer's own acoustical consultants, the residents consistently say that if the turbines are noisy during that period they are told "the batteries went flat", or there is "equipment malfunction" or they observe that the turbines are not working as hard as they usually would given the wind conditions.

This summary acoustic report is eventually given to the residents, without any of the raw data, or if raw data is provided, it has crucial pieces of the raw data missing for the period when their symptoms were the worst. The residents are then informed that the wind developers own acoustical consultants have determined that the development is "compliant" and they are then expected to go away, satisfied. The problems for the residents are unchanged, and relentlessly worsen over time. This is predictable, given what is known about the consequences of cumulative sleep disturbance and chronic stress alone.

This is thus the ultimate "catch 22" situation.

The mandatory provision of the noise data and the wind mast data in real time to all stakeholders would therefore go a long way to ensuring that there is much greater transparency and less opportunity to break the law with impunity, and without any consequences to the operator, as would appear to be currently regularly occurring at some wind developments.

Residents have also reported that on occasions the developers have openly admitted that the wind development is not compliant. Currently there are no consequences for these breaches, and therefore no reason for the noise polluters to change their behaviour.

Thus the sanction of not receiving accreditation in order to collect the renewable energy certificates is an integral and necessary part of this legislation. Without these consequences, based on past experience, the noise polluting behaviour by the wind developers and project operators will continue, and so will the serious cumulative damage to the health of the residents.

Over time, the health of those affected relentlessly deteriorates, in a manner which was predictable given peer reviewed, published, acoustical and health research data, available in 2003, about the adverse health effects of low frequency noise on human health. This information was not included in the National Health and Medical research Council's Public Statement or Rapid Review, despite one of the two reviewers of that Rapid Review being the author of the 2003 document. Nor, it appears, was his conflict of interest of his work with the wind industry disclosed to the NHMRC. The other reviewer was the previously mentioned non clinical Professor of Public Health who denies there is a problem at speaking engagements organized by the wind industry.

The combination of predictable symptoms and health problems related to vestibular dysfunction, chronic sleep deprivation, and chronic physiological and psychological stress, causes relentlessly deteriorating health, in ways which themselves are well known to well established and long standing peer reviewed published clinical medicine. They include a range of serious mental and physical health problems, including cardiovascular diseases and mental health disorders, which can be fatal. There is also a growing body of peer reviewed published scientific research data that there is long term tissue damage from exposure to infrasound and low frequency noise and vibration, which also includes congenital abnormalities.

This information is not new to some – for example a report by military aviation medical researchers in the US recommended that pregnant US military helicopter personnel should be banned from flying certain rotary bladed helicopters known to emit vibration as a result of research done in 1994. The ban is still in place today.

Despite being made well aware of the existence of serious problems by the sick residents and by the Waubra Foundation, not one State health department has actively investigated "on the ground", despite responsible medical officers employed by one State department of health admitting on at least two separate occasions over 12 months ago to sick residents and their advocates that they were well aware there was a problem. The Chief Health Officer of that State has refused a request from a local council where the problems are well known, specifically to conduct a Health Impact Assessment, as is required under that State's Legislation.

The same lack of interest or any effective response has occurred from each of the other State health departments. In another State, the responsible department head stated in a meeting that "there were not enough people affected" to be concerned, despite never having investigated just how many people were affected. Driven to do their own research, in that same State, concerned community members are finding that proportions of households whose sleep is adversely affected by the noise extend to 76% of those living within 7.5km of the nearest wind turbine (71% response rate out to that distance). Similar community surveys interstate have found similar disturbing results. The responsible authorities still fail to act, or investigate, despite these survey results, which reinforce what the individual residents are saying.

Current State planning legislation and regulations and responsible authorities and officials still rely on the NHMRC Rapid Review, which is regularly purported by those authorities to state "there is no health problem". This means that planning approvals for wind projects are still being made on the basis of currently false and misleading information, which was also inaccurate in 2009 and 2010.

This legislation will not affect those wind developers whose current operations are not causing harm to health from excessive noise.

There are certainly some wind developments where public reports from the neighbours of health problems are non existent. Providing these developments are not those where the residents are currently bound by a confidentiality agreement stopping them from speaking about any health problems related to operating wind turbines, (ie turbine host families and "good neighbour agreements" for example those used in WA), then it would appear that some wind developments are well designed, do not emit excessive noise and therefore there is no excessive noise problem.

However this legislation will encourage those wind developers who own or operate wind developments where serious problems are being reported to rapidly, constructively and transparently address the problems which are occurring, where such problems are being experienced and reported by neighbours, and by turbine hosts (if the confidentiality clauses previously mentioned are deemed to be illegal).

It may be that such developments which are found to be consistently emitting excessive noise, could, under certain wind and weather conditions, still operate, but in noise reduction mode, which would still result in power generation but would not cause the damage to health that is occurring at present. It will put an end to the cruel, callous disregard they currently show by just ignoring the distress of those affected, and dishonestly pretending there is no problem.

This legislation provides an obvious incentive for these companies to ensure there is no excessive noise, as there are clear consequences for them if they continue to emit harmful noise pollution. If this provision is not included, their health damaging noise polluting behaviour is unlikely to change, based on their current behaviour and attitude.

CONCLUDING REMARKS

It is specifically noted that the existing Federal Renewable Energy legislation is currently resulting directly in serious harm to human health. It is also resulting in people being driven out of their homes, because of the "excessive noise" from the wind turbines, currently unregulated, and with no consequences to the noise polluter, which this Bill seeks to prevent.

This serious damage to human health and forced home abandonment is being funded, via the Renewable Energy Certificates, by the Australian taxpayer, and is currently sanctioned by the Federal Parliament.

It is being futher facilitated by the complete abrogation of responsibility by State health, planning and noise regulatory authorities.

Importantly, the legislation will NOT affect the operation of those wind developments which are not emitting excessive noise and causing predictable harm to human health as a consequence.

The provision that the "excessive noise" penalty trigger limit should be "background plus 10dB(A)" is being extremely fair to the wind industry, as it is generally accepted in noise pollution regulations that noise above "background plus 5dB(A)" will have an adverse impact.

The Waubra Foundation strongly supports the proposed legislation, providing the following occurs:

- The definition of "excessive noise" **must include measurement of the full acoustic spectrum**, ie infrasound, low frequency noise, tonal components, amplitude modulation, and also vibration. The measurement locations **must include inside homes and workplaces** as well as outside those premises where excessive noise is reported.

- **The Bill is further amended as new scientific knowledge is obtained** about the consequences for human health of chronic exposure and cumulative doses to wind turbine acoustic emissions, and when dose response curves are developed for specific combinations of frequencies of infrasound and low frequency noise and vibration.

- The Bill is further amended if it becomes evident that the intent of this Bill is being circumvented by the use of currently unanticipated loopholes by acousticians and lawyers working for the wind industry, if the end result is to permit health damaging noise and vibration (acoustic) pollution to occur.

- The Bill should be amended to include the addition of a clause to make it illegal for a wind developer to enter into binding legal agreements with wind turbine hosts or affected neighbours containing clauses which prevent the host, neighbours or members of their families from speaking out publicly about noise and vibration (acoustic) pollution and consequent health problems, from taking part in research, or from reporting noise pollution to the relevant authorities.

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Details are available from wind-watch.org, and the first two authors. The third author was instructed by his supervisor at Adelaide University not to distribute the survey results back to the community members who had participated in the research.

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Appendix 1 – Table from p 49 of Leventhall et al 2003, report for DEFRA
http://www.wind-watch.org/documents/review-of-published-research-on-low-frequency-noise-and-its-effects/

Appendix 2 – Wind Turbine Acoustic Pollution Assessment Requirements
http://www.wind-watch.org/documents/wind-turbine-acoustic-pollution-assessment-requirements/

Appendix 1

Extract from Leventhall et al 2003 report for the UK Dept of Food and Rural Affairs on the effects of Low Freqency Noise on Human Health

12.2 Effects on health. In an epidemiological survey of low frequency noise from plant and appliances in or near domestic buildings, the focus was on health effects (Mirowska and Mroz, 2000). …
A control group of dwellings had comparable conditions to the test group, with similar A-weighted levels, except that there was no low frequency noise. There were 27 individuals in the test group and 22 in the control group.
The test group suffered more from their noise than the control group did, particularly in terms of annoyance and sleep disturbance. They were also less happy, less confident and more inclined to depression.
The comparison of the symptoms between the tested group and the control group show clear differences, as in Table 5.

Table 5. Health comparison of exposed and control group.

Symptom	Test group %	Control group %
Chronic fatigue	59	38
Heart ailments anxiety, stitch, beating palpitation	81	54
Chronic insomnia	41	9
Repeated headaches	89	59
Repeated ear pulsation, pains in neck, backache	70	40
Frequent ear vibration, eye ball and other pressure	55	5
Shortness of breath, shallow breathing, chest trembling	58	10
Frequent irritation, nervousness, anxiety	93	59
Frustration, depression, indecision	85	19
Depression	30	5

These results are extremely interesting as an epidemiological survey of an affected and a control group. Table 5 shows very adverse effects from low frequency noise levels which are close to the threshold and which do not exceed A-weighted limits.

Download from http://www.wind-watch.org/documents/review-of-published-research-on-low-frequency-noise-and-its-effects/

Appendix 2

WAUBRA FOUNDATION

11th May, 2012

WIND TURBINE ACOUSTIC POLLUTION ASSESSMENT REQUIREMENTS

On behalf of the many people around the world, suffering acute and chronic health damage from living near wind turbines, the Waubra Foundation demands that relevant authorities initiate:

- ***full frequency spectrum acoustic monitoring inside and outside the homes and workplaces of people claiming health problems caused by the proximity of operating wind turbines;***

- ***the monitoring must be conducted for sufficient time, under the weather and wind conditions indicated by victims as being contributive to their symptoms;***

- ***measurements must specifically include, infrasound and low frequency noise, (dBZ or dBLin, dBA, dBC, & dBG).***

The noise monitoring must be performed by accredited acousticians demonstrably independent of the wind industry, approved by the sufferers, and in a manner that will avoid any deliberate manipulation of turbine operation to reduce the acoustic emissions during testing. The results (including all the raw data and associated sound files) must be made available to all parties.

The Rationale for These Demands

- Most health practitioners are well aware of the links between chronic severe sleep deprivation[1] chronic stress[2] and poor physical and mental health. This is exactly what residents living near wind turbines are experiencing,[3] together with other specific symptoms directly correlating with acute exposure to this sound energy.[4,5,6,7]

- Knowledge of the damage to health from exposure to infrasound [8] and low frequency noise [9] (ILFN) has been known for many years. Despite this, little is known about the current exposure levels of residents to ILFN emissions from wind turbines inside their homes.

- The link between chronic exposure to low frequency noise and chronic physiological stress, even when asleep, was clearly highlighted by Professor Leventhall et al in 2003.[10]

- Most medical practitioners have been unaware of the problems associated with exposure to ILFN. This ignorance has not been helped by acousticians and others calling such problems "annoyance" without accurate clinical diagnoses.[11]

- These symptoms have been reported to occur specifically with exposure to operating wind turbines by medical practitioners since 2003.[12,13,14,15,16,17] Symptoms have been reported by acousticians, health practitioners and residents from countries including Denmark, Sweden, Germany, United Kingdom, France, United States, Canada, New Zealand and Australia.

- Symptoms have been reported historically up to 4 km from the nearest wind turbine, and more recently characteristic symptom patterns have been reported at distances up 10km away from the nearest wind turbine[18]. This is described especially with larger wind turbines (eg 3MW), and on occasions even further away, where turbines are sited at altitude[19] or near expanses of water.

- These health problems consistently worsen over time, until the exposure ceases. Families are being advised by their treating doctors to leave their homes in order to regain their health. Many have nowhere else to go, and cannot sell their homes, so they become homeless "wind farm refugees". Others remain trapped, unable to move[20].

- Professors Moller and Pedersen, from the University of Aalborg in Denmark, have confirmed that larger more powerful wind turbines emit more low frequency sound waves as a proportion of their sound emissions[21]. These emissions are known to easily penetrate through the walls, roofs, and windows of homes and workplaces, due to the lower transmission loss of low frequencies.

- Recent acoustic survey work in the USA (Falmouth) [22] and Australia (NSW) [23] has confirmed that low frequency noise **and** pulsatile infrasound emitted by wind turbines have been measured inside the homes and workplaces of sick people, and occur when they are experiencing the symptoms of Wind Turbine Syndrome.

- Currently governments around the world do not require measurement of the full sound and vibration spectrum, do not require measurement **inside** homes and workplaces, do not require evaluation of sleep or other disturbances, but instead limit almost all assessment to audible noise (dBA) only, **outside** homes and workplaces.

Summary

The plight of people made ill by wind turbine acoustic pollution has been universally ignored by their respective governments.

The current noise assessment practices and standards are incompetent and unacceptable, and must be changed to include full spectrum acoustic monitoring inside homes and workplaces as a matter of urgency.

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