

## **Inquiry into Renewable Energy [Electricity] Amendment [excessive Noise from Wind Farms] Bill 2012**

Keith Staff.

29/ 10/ 2012.

I believe that I am in a position to make a worthwhile submission to this enquiry. I have independently researched the subject matter for over two years and have friends who live in the vicinity of industrial size wind energy facilities at Waubra, Cape Bridgewater and Glenthompson, in Victoria. I have also attended public forums hosted by Senators John Madigan and Nick Xenophon. Plus, meeting with independent acoustics experts.

There are serious community concerns about a proposed wind energy facility consisting of 223 turbines, 175 m tall, to be located just 3 Km from our small historic township. There are serious community concerns about the proponent's unwillingness to release their initial noise data/ assessments.

It is a deliberate untruth that "wind turbine noise isn't a problem. "Wind energy proponents are in constant denial about this fact. No developer can categorically state that there will not be a noise problem, proof of noise problems only become evident when it is too late. Proponents and their compliant consultants indulge in deliberate misrepresentation of noise assessments and compliance issues.

The wind energy lobby groups desperately want to downplay the problems associated with low frequency noise and infrasound. That's not surprising. The industry has no solution for the noise problems. Except of course to increase setbacks between wind turbines and residential areas. But doing so would dramatically alter the industry's ability to site turbines and collect fat taxpayer's subsidies. [1]

To remove all doubt, the five different characteristics of noise from a wind turbine can be clearly seen in a diagram ascribed to the American and Canadian wind energy associations. [2]

There are air-foil [blades] turbulences, -- Pulsing sounds outdoors and inside. [Low frequency sounds can penetrate walls and windows and are sensed as vibrations and pressure changes]. --- high pitched sounds come from the nacelle. --- Distance differences, [standing beneath a turbine may not be as noisy as standing further away.] Shadows, the flickering shadows of rotating turbine blades can also disturb residents.

Not all wind farms cause a problem of noise. Many earlier ones were smaller in height and number of turbines. The situation has changed rapidly as wind energy facilities increase in number and size and cover larger areas.

A Senate Community Affairs reference committee in 2011 recommended a list of seven items for action.

Recommendation Number 1. , states, "the committee considers that the noise standards adopted by the states and territories for the planning and operation of rural wind farms should include appropriate measures to calculate the impact of low frequency noise and vibrations indoors at impacted dwellings". [ especially at night, re; sleep disturbance ]

Nothing has ever happened, why?

Location, Location, Location. An investigation by the Noise Association [U.K.] in a report published in July 2006 defined noise as "unwanted sound" – it can ruin peoples well- being and environment.

The wind power industry and its allies can refuse to acknowledge the extent of suffering that noise can cause and they sometimes deny its very existence. Wind farms have also divided noise experts. There is an ongoing technical debate about the noise and vibration produced by wind farms. The debate has led some acoustics experts to question whether the government's noises guidelines for wind farms are rigorous enough. [3]

Research from the Netherlands suggests that larger, modern turbines may be significantly noisier that previously thought. Van den Berg a physicist at the University of Groningen published a study which argues that the methods used to predict noise from turbines are flawed [4] Van den Berg argues that there is a particular problem at night when wind speeds may fall at ground level to near zero, but remain fast enough at the height of the turbines to turn the blades. His measurements show that wind speeds at night are 2.6 times higher than would be expected.

The result can increase the noise experienced by residents at ground level by 10 decibels in an area where there is limited background noise to mask it [applies to most rural areas]

A peer reviewed report [N.Z.] evaluating the impact of wind turbine noise on health related quality of life, concluded "noise from wind farms located in semi-rural areas is of interest because it is typically a low amplitude noise impacting on a well characterised and general cherished soundscape." [4]

In conclusion the report states, in the Netherlands 440,000 [2.5% of the population] are exposed to significant levels of wind turbine noise.

Dr Bob Thorne an independent acoustics expert in a presentation to the NHMRC in June 2011 highlighted that the Te Rere Hau wind farm had over 360 complaints in 12 months, with the City Council taking legal action to reduce noise. But, - West Wind wind farm, NZ. With over 900 complaints in 12 months, the City Council did not take any action to address complaints.

Ineffective action and responsibility for noise compliance are also major concerns. In Victoria, the EPA has stated that they will not become involved in noise compliance issues with wind farms. Local Shire councils do not have the expertise or financial resources to make decisions and the DPCD, only act in an advisory capacity. I would suggest that a similar problem exists in other states. The end result is that any problem is simply handballed from one agency to another with no one accepting that they should be the responsible authority for noise issues/ compliance regulations. This aspect should be made absolutely clear in any planning approval/ conditions. Who is responsible for what?

Full Frequency spectrum acoustics monitoring inside and outside homes is recommended by the Waubra foundation. [5] Noise assessments results by proponents and their consultants, including all the raw data and associated sound files must be made available to all parties.

What you can't hear can hurt you, resource notes from the Australian Newspaper [6] is required background reading. American noise expert Robert Rand confirmation of wind farm noise problems in Maine, U.S.A. he said, *"The field work points directly to wind turbine low-frequency noise pulsations, especially indoors as a causative factor."*

The case with which poor sound measurement can result in an injustice is illustrated by the Judicial Review [U.K] of enquiries findings concerning the Den Brook Valley Wind Farm in Devonshire. Renewable Energy Systems [RES] appealed against the refusal of permission for the wind farm was conceded on noise grounds alone but a Judicial Review in 2008 lead to the secretary of State to quash the unlawful planning permission on another ground. The case set a precedent that wind farm neighbours have the right to unedited environmental data and it is now beyond doubt that RES noise assessment contained errors. [www.denbrookvalley.co.uk](http://www.denbrookvalley.co.uk)

In Australia, a Local resident's appeal was upheld in S.A. in the Supreme Court. In a recent decision, - August 2012, AGL walked away from potential legal action. They were due to hand over all sorts of noise data. wind mast data and correspondence. AGL refused to give residents the acoustic data voluntarily and withdrew from the court action and the Hallett stage 3 wind farm proposal before they were required to hand the data over. The operational 'Hallett 2' turbines were also proven to be noncompliant with the S.A. EPA noise guidelines. 16 out of 34 turbines are currently turned off overnight by AGL.

Wind Farm sound to be studied.

An indication of the growing public awareness and concerns about wind farm noise issues is the recently announced RMIT University Vic; campus of an independent, multi-million dollar three year scientific study of the impacts on communities and individuals living near them, this will include noise impacts. [7]

I support the proposed amendments to the renewable energy act to ensure that only wind farms that are compliant with appropriate noise standards will be eligible for Renewable Energy Certificates.

2. [References and notes page 3.]

### References and notes.

1. Wind Energy, Noise Pollution. by Robert Bryce. Feb; 2012 [www.nationalreview.com](http://www.nationalreview.com)
2. Wind Turbine Noise Generation,  
*Graphic, sourced from the American and Canadian Wind Energy Associations  
& Mark Boswell Minneapolis Star tribune.*
3. Location, Location, Location. 2006. *An investigation into wind farms and noise by the Noise Association*  
[www.ukna.org.uk](http://www.ukna.org.uk) [includes a list of references]
4. Noise and Health – NZ - 2011 Peer Reviewed. [www.noiseandhealth.org](http://www.noiseandhealth.org)  
Evaluating the impact of wind turbine noise on health –related quality of life.
5. Wind turbine Acoustic Pollution Assessment Requirements. May 2012 [www.waubrafoundation.com.au](http://www.waubrafoundation.com.au)
6. [www.theaustralian.com.au/](http://www.theaustralian.com.au/news/features/) news/features/ - what-you-can't-hear-can hurt-you.
7. Medianet Release 23 Aug 2012 – Wind farm sound to be studied.  
Hamilton Spectator newspaper - Sept 4 2012 – Taking on the wind farm issues.  
[Sean.macdermott@rmit.edu.au](mailto:Sean.macdermott@rmit.edu.au)