29th October 2012.

Dear Committee Members,

Inquiry into Renewable Energy (Electricity) Amendment (Excessive Noise from Wind Farms) Bill 2012

My husband and I live on a large farm at Stockyard Hill in Victoria. We accidently found out 6 years ago that the largest wind farm in the Southern Hemisphere was being proposed for our district. Since then, we have been fighting for a fairer outcome for all and representing dozens of locals in voicing concerns for the growing health issues surrounding noise from turbines. We have been reading and learning about adverse health effects of living too close to wind farms for years now and have put a lot of time and energy into trying to make a change for the better.

This submission voices our growing concern for the excessive noise omitted from wind farms, in-particular low frequency noise and infrasound. We strongly support necessary amendments to the Renewable Energy Act that should include serious consequences for companies that breach guidelines and strict procedures of transparent noise monitoring that are updated to include infrasound and low frequency noise.

Since learning of the proposed Stockyard Hill wind farm six years ago, we have become quite knowledgeable about the impacts of infrasound and low frequency noise. As the research continues it becomes clearer that the damage and ill health of living in close proximity to wind turbines is being principally caused by infrasound and low frequency sound, together known as ILFN. These frequencies travel much further than audible sound and penetrate buildings, making it impossible to safeguard houses from intrusion. As you are aware the current Victrian Planning guidelines for statutory noise limits, takes into no account of ILFN, nor does it mention it as a subject of concern. It is however very much a concern to the residents of Stockyard Hill who at some point in the future will find their houses overshadowed by wind turbines or subject to the insidious impact of ILFN.

Recent noise tests by five independent and otherwise unconnected acousticians at the Falmouth (Massachusetts), Capital (NSW), Waubra and Cape Bridgewater (Vic), and Hallett (SA) wind projects **have clearly proven that dangerous levels of infrasound and low frequency noise are present inside dwellings adjacent to these projects, where people are seriously unwell, some resorting to abandoning their homes.**

At each of the houses tested the inhabitants claimed that severe health problems arose shortly after the relevant wind project came on line; and further that the symptoms were reversible by moving away and returning. All affected residents report the symptoms are worsening with continued exposure.

Wind farm developers and regulatory authorities have tended to concentrate on the ordinary background or high frequency noise produced by wind turbine operation, seeing this output as the one most likely to cause loss of amenity to neighbours. This approach has tended to somewhat simplify the complexity of factors that bear upon the generation and measurement of sound.

The massive size of modern turbines where blades can be 50 metres in length and stand up 140 metres into the sky, now leads to the generation of noise of different kinds. Special Audible Characteristics are types of sound that include tonal complexes and modulation effects that can be produced and contributed to by a multitude of factors including; slope gradients, geographic location, wind speeds, weather and nearby structures. Special Audible Characteristics are not easy to measure and rely a good deal on subjective evaluation of annoyance impact.

Many wind farm victims complain about the annoyance being more evident at night, and paradoxically when there is little or no perceptible wind outside. However up at the turbine hub the wind speed may be quite high and the noise produced can be heard over greater distances because of the wind shear, sometimes known as the Van den Berg effect. Developers have made no effort to understand or address concerns of victims over this.

It is becoming more commonly known that wind turbine noise has a large component of infra sound and low frequency sound which is attenuated less over distance and by solid structures. In fact it appears that infrasound can be higher inside a building than out. And again paradoxically the more one attempts to block out the sound by double-glazing etc. the worse the problem gets. The inside of the house then becomes a more effective resonator of the infrasound once it gets in. This obviously can be more annoying to victims than high frequency noise and more harmful to health as it penetrates into bedrooms while people are trying to sleep.

A recent article in the British Medical Journal (BMJ -March 2012) stated that,

"A large body of evidence now exists to suggest that wind turbines disturb sleep and impair health at distances and external noise levels that are permitted in most jurisdictions..."

And

"Current noise measurement techniques and metrics tend to obscure the contribution of impulsive low frequency noise and infrasound."

At present the only sound measurement taken by developers is the outside Dba level. They are curiously not interested in checking the inside Hz level of infra sound. And once again developers have been quick to deny the harmful impacts of infrasound or low frequency noise. In fact it may be said that wind turbine manufacturers are as willfully blind to the harm caused by their product as tobacco companies were to the risks posed by smoking. The largest turbine manufacturer in the world submitted to the recent NSW Wind Farm Inquiry that there was no need to look into the health impacts of wind turbines as there weren't any.

In an article in The Age of 31 March 2012 discussing the backlash against wind farms it was said that;

"Several industry figures believe the level of opposition in Victoria could have been limited if early developments approved under the former Labor government had been better

handled. In particular, they point to the 128-turbine development at Waubra, north-west of Ballarat, which has become the centre of health complaints. Developed by the company Wind Power and later bought by Spanish company Acciona, it is now widely seen to have been badly handled in its early development. Some in the industry say the result was an unnecessarily divided community and poor design. "There are a couple of houses at Waubra that are surrounded by turbines and I understand why people wouldn't want to live in them," one industry figure says. When Acciona took on the wind farm, it bought houses from some concerned local residents."

Developers in wind farm planning applications have never entered into frank discussions about how turbine placement will impact upon nearby residences, only begrudgingly from a high frequency noise perspective. They have however always been eager to point out how important a turbine is in terms of capitalising on the wind resource, in other words how profitable it will be for them. Turbine placement is largely dictated by maximising the dollar generating potential. Any collateral damage to neighbours can be dealt with later by the application of large sums of money.

CONCLUSION

The BMJ article pointed out that harm is being done to wind farm neighbours even when the utility is in compliance with noise levels prescribed by responsible authorities.

In the words of Australian noise expert Dr. Robert Thorne, ***"It is concluded that wind farm noise prediction, as implemented under NZS6808 (the New Zealand wind farm standard) is not adequate in assessing potential adverse effect, and implementation of the standard does not and will not provide an acceptable level of amenity. Application of the standard does not provide a conservative assessment of sound levels that may be experienced under different meteorological conditions."***

Even the Stockyard Hill Wind Farm Planning Panel was critical of certain aspects of the standards and guidelines they were required to apply in relation to noise, noting how technical compliance with the guidelines is a long way from ensuring that the wind farm's operation will not be injurious to neighbours.

The proposed amendments to the Bill must ensure that if there is excessive noise, which is harming people's health, the renewable energy certificates will not be paid to the noise polluters. To facilitate that, it is proposed that there should be continuous real time full spectrum noise monitoring, which is uploaded to the internet for all parties to be able to access.

Regards,

Megan and Warwick Read