Emeritus Professor Colin Hansen

October 26, 2012

THE SENATE STANDING COMMITTEE
ON ENVIRONMENT AND COMMUNICATIONS

Re: Submission for the Inquiry into Renewable Energy (Electricity) Amendment (Excessive Noise from Wind Farms) Bill 2012

I am the Chief Investigator on an Australian Research Council funded research project on the Impact of noise from wind farms on rural communities. We have done some preliminary measurements and I am very familiar with work done by many researchers around the globe. My comments are based on this experience as well as what I have learnt during my 30+ years researching, consulting and teaching in acoustics and noise control.

I fully support the intentions of the subject amendment bill and I have attached two very recent explanatory papers by an internationally recognised researcher from Germany and an acoustics consultant from the USA, respectively, which draw conclusions that would support the intention of the bill.

There is one paragraph that I think would be improved with some modifications. This is the one that contains line 21 on page 3, where it is stated that wind farm noise should not be more than 10 dB(A) above the background noise within 30 m of a residence.

- First, it would be helpful if the time of night were specified or the words “at any time of the day or night” could be added.
- Second, it is more technically correct (and less ambiguous) to replace “wind farm creates excessive noise if the level of noise that is attributable to the wind farm exceeds background noise by 10 dB(A) or more” with “wind farm creates excessive noise if the A-weighted level of noise that is attributable to the wind farm exceeds the A-weighted background noise by 10 dB or more”.
- Third, the level of 10 dB is higher than what is normally acceptable when amenity is important. It would be more usual to cite a level of 5 dB as that is when the intruding noise will become easily noticeable. When the difference is 10 dB, the intruding noise becomes quite intrusive and may greatly annoy some people.
- Fourth, wind farm noise experienced at residences some distance from the wind farm is dominated by low frequency noise, which is not well masked by normal background noise. It is normal practice to add a 5 dB penalty to account for the dominance of low frequency noise and this can be tested by measuring the C-weighted noise level as well as the A-weighted noise level. If the C-weighted noise due to the wind farm exceeds the A-weighted noise level by more than 15 dB, then low frequency noise dominates and the 5 dB penalty should be applied, which would require the wind farm noise to be 5 dB lower.

- Perhaps the amendment could also flag that although potential problems with infrasound are not yet well understood, future research may mean that the bill will need further amendment at a later stage following the completion of some definitive research.

I fully support every other item in this amendment.

Yours Sincerely

Emeritus Professor Colin Hansen