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## How to Apply the Precautionary Principle to Wind Energy Projects

### *A Guide to Responsible Authorities, Departments of Planning and Health and Wind Energy Developers*

The NHMRC's Public Statement dated June 2010 included the words: ***"it is recommended that relevant authorities take a precautionary approach and continue to monitor research outcomes."*** This statement does not offer the option of either - or. The statement was repeated by the NHMRC's CEO in his oral testimony on 31<sup>st</sup> March 2011 to the Senate Hearing into the Social and Economic Effects of Rural Wind Farms where he said ***"that is why*** (referring to the lack of high quality scientific literature) ***we were at pains to point out that we believe a precautionary approach should be taken."***

The World Health Organisation states (in a 2004 document entitled: *The precautionary principle: protecting public health, the environment and the future of our children*):

***"The Principle states that in the case of serious or irreversible threats to the health of humans or the ecosystem, acknowledged scientific uncertainty should not be used as a reason to postpone preventative measures."***

Despite the NHMRC's recommendations about the need to apply the precautionary principle, regrettably there has been no detectable evidence that planning authorities, governments and developers have made an effort to actually apply the principle in a meaningful way. A principle is of value if it is simple to translate into action in the specific area for which it has been recommended; as long as it remains general, as in this case, it will be served with words rather than action.

Any thoughtful and proper application of the precautionary principle to the wind industry is likely to require rethinking of current layouts and some delay in the development of approved and to be approved projects. One could understand the industry being reluctant to see this happen, ***but neither the authorities nor the***

***industry should be so reluctant if it involves possible detrimental and severe health problems for neighbours of yet to be built projects. Building wind projects designed on present incompetent noise guidelines certainly generates such problems.***

The Waubra Foundation has long concluded that such a general principle would fail through lack of specificity. By defining the elements of the appropriate caution in respect to wind energy projects, developers and the relevant authorities can be helped to focus on what they should be doing to adhere to the intent and purpose of the recommendation to apply the precautionary principle.

After consulting with independent acousticians, a review of the most recent studies and its own field surveys, the Foundation has decided to publically state that ***the following elements need to be addressed in the specific application of the principle:***

- turbine to turbine spacing must be at least at the minimum distances recommended by the manufacturer;
- noise impact assessments (essentially noise levels predicted by developers' consultants) must be based on predicting the ***full frequency spectrum of 0.5 hertz to 4000 hertz***; i.e., expressed as dB(Lin)<sup>1</sup> as well as dB(A)<sup>2</sup>;
- base or background noise monitoring prior to construction should be measured at properly selected and sufficient sites, again in dB(Lin) and dB(A);
- noise emission levels under all meteorological conditions (including temperature inversions) should not exceed ***background noise +5dB(A) external to residential buildings***, including correction for tonal and amplitude modulation where present;
- turbine locations in yet unbuilt projects should be positioned or repositioned so that the noise ***inside*** all dwellings will not exceed ***20dB(A) or 60dB(G)***<sup>3</sup> in rooms used for sleeping in rural locations;
- post construction noise monitoring must be performed immediately any turbines are started and continue as turbines are brought on line and run through the full range of meteorological conditions and across the full frequency spectrum. In the event a wind project does not meet the above precautionary levels then regardless of present, or modified but still incompetent, government guidelines, the project must be wholly or partially taken off line until whatever changes are made and tested so that the above noise limits will be met;

- all acoustic estimates, turbine spacing and other matters leading to the placement of turbines and the final layout ***must be signed off by the developer's senior management and by an independent acoustician or acoustical engineer.***
- a similar signoff is to be provided for the post start-up noise compliance study.

An additional general caution has to be that where turbine locations and neighbours' health are in conflict, this is not a matter for compromise.

***Citizens' health cannot be expendable or negotiable!***

Note:

- (1) dB(Lin) or dB(L) is sometimes referred to as dB(Z)
- (2) dB(A) is basically a measure of audible sound.
- (3) dB(G) is basically a measure of infrasound and some low frequency sound.