Biala wind farm – Background Noise Monitoring

The background noise measurement section of the EIS does not provide the GPS coordinates of the measurement setups; it does not provide multi-directional photos of the setups to inform other parties of any potential extraneous noise sources around the measurement equipment; and it does not provide information to allow a clear determination as to whether any of these monitoring sites will shield the equipment from the wind farm during noise compliance testing.

Without that information no "peer reviewer" can determine the appropriateness of the background noise measurement done, nor can residents.

The Department should not have allowed the EIS to go on public exhibition without that essential data, none of which is difficult to provide or "technical". Its absence indicates either carelessness or concealment of relevant facts either of which undermines the integrity of the whole noise prediction process.

From the scanty photographic information provided, it certainly appears that in a number of cases the noise measurement equipment has been inappropriately sited.

The noise prediction section of the EIS should be totally rejected until the proponent provides background noise measurement that conforms with best practice and that information is made available for public comment. DPE should review its procedures to ensure that EISs are not placed on public exhibition with such shonky and uninformative sections on key matters.

Best practice requirements for conducting and reporting background noise measurement

The NSW Wind Farm Guidelines (draft) state:

> "For a new wind farm development, the predicted equivalent noise level (Leq, 10 minute), adjusted for any excessive levels of tonality, amplitude modulation or low frequency, but including all other normal wind farm characteristics, should not exceed 35dB(A) or the background noise (L90) by more than 5dB(A), whichever is the greater."

As has been no doubt pointed out previously, it is therefore advantageous for the background noise to be as high as possible in pre-construction measurements, without being fraudulent, of course.

To assist the consultants, the draft guidelines also state:

> "Care should be taken to ensure that selected measurement locations are not shielded from the wind farm and will be suitable as a location for any future repeat monitoring (such as during compliance). Where tall trees are present which may compromise the collection of valid noise data, then it may be justified to undertake measurements at an upwind location (the wind farm side of the trees) provided that a similar offset to the trees is adopted. The microphone should be positioned 1.2−1.5 metres above the ground and at least 5 metres from any reflecting surface (other than the ground) and remote from any significant extraneous noise sources. Site information should be recorded and the area photographed."

The South Australian Guidelines also are helpful:

> "The property boundary of the receiving premises is generally not considered a valid measuring position for large rural properties unless a house is located near the boundary or the development plan clearly envisages noise sensitive development at such a location. In general, any area within 30 metres of a house and in the direction of the wind farm would be a valid measuring position. Care should be taken to ensure that the area is not screened from the wind farm by house, shelter or other elements. Background noise levels can be significantly affected by local conditions, such as the presence of trees nearby. Photographs from multiple directions are to be taken showing the noise measurement position and associated surroundings, such as buildings, trees and topography. This will ensure that no significant physical changes have been made to the locations since the time of the initial background noise measurements. Care must be taken when using a measurement position to represent other receivers in the locality. Trees, grass and shrubs should be representative of the local area that is being assessed. Background noise measurements should represent the natural background in the immediate vicinity of the relevant receiver; extraneous noise sources (water pumps, air conditioning units, electrical transformers, etc) should not influence the data. In case selection of the representative point is not straightforward a conservative approach should be taken by placing the microphone in the quieter location."

Examples of questionable background noise measurement in the EIS

With this guidance in mind let us examine the locations of the noise measurement equipment from the Biala EIS. Unfortunately, the EIS does not contain the GPS coordinates of the measuring equipment as best practice (and the draft guidelines) require. We therefore cannot confirm whether the EIS is fair in its measurement of background noise or is indeed correct.
Neither can the Department.

Figure 5.2 Photo of noise logging equipment installed at House HN03.

What is between the device and the nearest turbine?
What is surrounding the device within say 20 metres
Would the closeness of the fence and the gate have any impact in windy conditions?
Does this location comply with the above guidelines?
Is the device in the most “conservative” location?

Figure 5.3 Photo of noise logging equipment installed at House HN05.

What is between the device and the nearest turbine?
What is surrounding the device within say 20 metres?
Does this location comply with the above guidelines?
Is the device in the most “conservative” location?

Figure 5.4 Photo of noise logging equipment installed at House HN06.

What is between the device and the nearest turbine?
What is surrounding the device within say 20 metres?
Would the closeness of the hedge have any impact in windy conditions?
If so, would that fairly represent the background noise at the residence?
Does this location comply with the above guidelines?
Is the device in the most “conservative” location?

Figure 5.5 Photo of noise logging equipment installed at House HN07.

What is between the device and the nearest turbine?
What is surrounding the device within say 20 metres?
Would the closeness of the fence have any impact in windy conditions?
If so, would that fairly represent the background noise at the residence?
Does this location comply with the above guidelines?
Is the device in the most “conservative” location?

Figure 5.7 Photo of noise logging equipment installed at House HN11.

What is between the device and the nearest turbine?
What is surrounding the device within say 20 metres?
Would the closeness of the fence have any impact in windy conditions?
Would the fact that the device is surrounded by tall grass have any impact on background noise in windy conditions?
If so, would the fence and the tall grass fairly represent the background noise at the residence?
Does this location comply with the above guidelines?
Is the device in the most “conservative” location?

Figure 5.9 Photo of noise logging equipment installed at House HN13.

What is between the device and the nearest turbine?
What is surrounding the device within say 20 metres?
Are measurements taken at a significantly different level to the residence representative?
Would the closeness of the tree have any impact in windy conditions?
If so, would measurements taken close to (under?) a tree fairly represent the background noise at the residence?
Does this location comply with the above guidelines?
Is the device in the most "conservative" location?

Asking similar questions for the remaining measurement sites would be repetitious.

To a casual observer, the sites chosen would appear to be advantageous to the proponent.

A question or two to the Department.

The Department has its own noise specialist.

Did he review the noise sections of the EIS before it was deemed suitable for public review?
Did he specifically review the section on background noise measurement?

Does he believe the siting of noise measurement equipment meets the requirements of both the draft Guidelines and the South Australian Guidelines both in actuality and spirit?
Does he believe the siting is fair to the affected residents?
As the process does not normally provide for the answering of questions directed to the Department, should these questions be sent to the Secretary?

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