renewable power ventures

26th May 2006

Mr Chris Wilson
A/Executive Director
NSW Department of Planning
23-33 Bridge St
Sydney NSW 2000

Reference: **A.** Dept of Planning Letter of 9 May 06, request for Submissions Report re Proposed Capital Wind Farm (PA No. 05_0179).

Dear Sir,

As requested in Ref A, the following is Renewable Power Ventures (RPV) response to issues raised in the DEC submission to the Department of Planning. VIPAC conducted the noise assessment and has responded to the noise questions raised by the DEC in the attached document (Attachment 1). Further, on the issue of noise compliance, RPV has already committed to undertaking post construction noise monitoring to ensure compliance and identified effective steps to be undertaken to ensure noise compliance at a location where a minor exceedance risk might otherwise exist. This is discussed in Para 7.2 of the Noise Impact Assessment, Chapter 10 and Chapter 15 of the EA. RPV agrees that a post construction avifauna monitoring programme is prudent.

As discussed in the EA, Buru Ngunawal representatives conducted a site inspection of the project and reported on such (see report attached to Cultural Heritage Assessment report in EA). After the project design was scaled back, a second survey was conducted of the site, for the benefit of another Aboriginal group. The Buru Ngunawal had already seen the reduced project site and as such there was no need for them to revisit the site. The EA explains at length the process undertaken for site surveys by the archaeologist and Aboriginal Groups and incorporates the reports received from these parties.

Finally, PWC Legal has provided an opinion on issues relating to protection of Aboriginal objects, to which RPV agrees and attaches for your reference. The changes

to the statement of commitments that they recommend will form part of the Preferred Project Report.

Yours sincerely,

David Griffin
CEO

Attachment: 1. Vipac answers re DEC noise questions
2. PWC Legal opinion on cultural heritage issues

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Vipac Responses to DEC Questions (Ref S04/01018/1, dated 28/4/06):

1. Areas of known uncertainty in the noise prediction model have not been fully explored;

VIPAC: There has been no extensive validation of the model in Australia as yet – this was described and explained in section 6.1 of the report. However, the SA EPA is in the process of validating modelling results for the Starfish Hill Wind Farm: preliminary results (A. Marchuk/EPA email, 21 April 2006) show that the Concawe noise model overpredicted by 3 dB relative to measured levels at a standard receiver location.

2. Safeguards and contingency measures have not been fully assessed to provide an offset against potential noise modelling inaccuracies;

VIPAC: The model has enough in-built conservatism (described in our section 6.1) to account for possible inaccuracies. We added more detail to section 6.1 of final report.

3. The noise prediction modelling has not considered the worst-case wind direction for all receivers;

VIPAC: The modelling was run for the complete range of wind directions and the worst case wind direction was run for each receiver (in accordance with the SA Guidelines). The WNW wind direction is the worst case for most of the receivers. For a few of the receivers other directions were the worst case but in these cases the levels were still very close to the WNW case levels (which were tabulated). We added a clarifying note to section 6 of the final report and note the wind sector management for the 'bad to worst' case directions as part of mitigation options in section 7.2 of report.

4. The EA does not provide sufficient information in relation to the potential noise impacts at 'associated receivers' to ensure that commercial agreements between the wind farm proponent and land owners are consistent with the SA Guidelines.

VIPAC: The Agreements are adequately informed by describing the potential noise impacts including the worst case range of expected noise levels. The Agreements are consistent with the SA Guidelines (and satisfy the requirements of section 2.3 of the guidelines). Refer to prepared Agreement documents.

5. DEC notes that recent studies regarding wind shear (wind speed variations with height) and temperature inversion effects present additional uncertainties to wind farm noise prediction modelling and thus the potential compliance risks;

VIPAC: The model (Concawe algorithm) used does include the generalised effects of inversions and wind propagation under differing conditions. It does not include wind shear variations but does assume a uniform wind field, which represents a conservative situation compared to reality (where fluctuating wind fields would help to diffuse & disperse the noise).

6. DEC also notes that two associated receiver residences are predicted to experience noise levels above World Health Organisation health based noise levels.

VIPAC: These two receivers (E2 & E3) have been purchased/leased by RPV.

From Attachment A:

A. The NIA did not provide validation, calibration and verification that the constructed noise can accurately predict wind farm noise. Etc.

VIPAC: There has been no extensive validation of the model in Australia as yet – this was described and explained in section 6.1 of the report. However, the SA EPA is in the process of validating modelling results for the Starfish Hill Wind Farm: preliminary results (A. Marchuk/EPA email, 21 April 2006) show that the Concawe noise model overpredicted by 3 dB relative to measured levels at a standard receiver location. The model has enough in-built conservatism (described in our section 6.1) to account for possible inaccuracies. We added more detail to section 6.1 of final report.

B. DEC is aware that the developer of the ENM model (RTA technology) has released a technical note providing guidance on adjustments to wind speeds to account for elevated source height. The NIA did not provide information on the relevance of the RTA Technology technical note on the noise model.

VIPAC: We do not use ENM software and therefore this is not relevant (we use the CONCAWE algorithm in SoundPLAN). The CONCAWE algorithm incorporates a correction for source height above ground and applies meteorological effects based on a combined vertical gradient (that includes the generalised effects of vertical temperature gradient and wind vector).

C. DEC understands that the study *'Development of a Wind Farm Noise Prediction Model, CEC Joule Project Report JOR3-CT95-0051,(2000)'* recommends several modifications to the ISO9613 model to increase its accuracy under certain conditions. The NIA did not demonstrate whether the recommended modifications to the prediction modeling are applicable to this project and/or whether modifications have been applied.

VIPAC: The ISO9613 does have limited accuracy and should only be used to describe neutral (no wind) conditions, for which it was intended (and therefore recommended modifications are not applicable). This is what we have done (only used ISO9613 for the neutral scenario) and that is why you need to use the CONCAWE algorithm for predicting wind propagation effects on noise for a range of conditions.

D. DEC requested the proponent to confirm that the 'west north west' wind direction represents the 'worst case' scenario for all residential receivers. The

EA indicates that the 'west north west' wind direction is not the 'worst case' scenario. The modelling of only 'west north west' wind direction departs from the requirements of the SA Guidelines.

VIPAC: The modelling was run for the complete range of wind directions and the worst case wind direction was run for each receiver (in accordance with the SA guidelines). The WNW wind direction is the worst case for most of the receivers. For a few of the receivers other directions were the worst case but in these cases the levels were still very close to the WNW case levels (which were tabulated). We added a clarifying note to section 6 of the final report and note the wind sector management for the 'bad to worst' wind directions as part of mitigation options in section 7.2 of report.