Submission in Response to
the Environmental Assessment

for the

Proposed
Bodangora Wind Farm, Wellington

from
Mr & Mrs J Gerathy

10 August 2012

10th August 2012

The Department of Planning & Infrastructure

GPO Box 39

SYDNEY NSW 2001

Attention: Mr James Archdale

RE: Submission in Response to the EA on the Proposed Bodangora Wind Farm (MP10_0157)

Dear Sir,

As rural landholders very familiar with wind farms we object to the proposed Bodangora development for the reasons contained in this Submission.

1. Introduction

There are several important reasons why the proposal is inappropriate and ought be refused planning consent by the Department of Planning & Infrastructure (DP&I).

The reasons, in summary, are as follows:

- With regard to noise impact assessment there are serious flaws, namely:
  - The SA Noise Guidelines are due for legislative review by the ERD Court after the SA Supreme Court acknowledged potential deficiencies;
  - Various experts have questioned the integrity of the Guidelines (see below);
  - Background noise monitoring only occurred for a mere six weeks in summer. No data was collected for the critical winter months when temperature inversions occur and have significant implications on the noise profile.

- The NSW Government is preparing Wind Farm Planning Guidelines that are currently in a draft state. A planning decision on the project should be deferred until the guidelines are finalized and adopted.

- The EA is silent on how much the proponent will contribute financially to the Shire Council during the life of the project. There should be openness and transparency regarding what financial contributions will be made for road and associated infrastructure upgrades, repair and maintenance over the life of the project, what land rates will be paid given the affected lands are being changed from rural to industrial land use and contributions to other local services and infrastructure.

- The traffic and road impacts are poorly quantified and management of the impacts are inadequately addressed. The roads are not designed to handle vehicles that are over size (longer than 19 m) and over-mass (gross mass in excess of 42.5 tonnes).

The costs associated with road infrastructure upgrades, repairs and maintenance should be made transparent now as part of the assessment process. The state and local governments need a commitment from the proponent to pay all upgrade, repair and ongoing maintenance costs.

- Landowners are most concerned at the diminution in the value of their property holdings caused by the prospect of having a wind farm in their neighbourhood. Evidence suggests that the UCV on properties potentially affected by wind farms and comparable industrial developments falls by at least 30 %. To add insult to injury, there is no compensation forthcoming to the landowner for the loss of market value.

- The proponent has not complied with the DP&I's warning letter to the proponent dated 16th August 2011 to engage in an adequate level of community dialogue.

- The proponent has not sufficiently addressed the issue of flicker as detailed in the attached report of Professor Harding anors as affecting particularly young people at distances up to 10 km (Attachment 1)

The arguments supporting the abovementioned points are presented below.

2. Noise Assessment

a. Judicial Review in South Australia

With regards to noise, the Director General's Requirements state the impact assessment of the wind turbines must be undertaken consistent with the South Australian Environment Protection Authority's *Wind Farms – Environmental Noise Guidelines, 2003* ('Noise Guidelines') and amended in 2009.

In November 2011 the Full Court of the Supreme Court of South Australia set aside the decision of the Environment, Resources and Development Court ('ERD Court') to approve the proposed Hallett 3 Wind Farm (Quinn & Ors v. Regional Council of Goyder & Anor). The Supreme Court found there were *"important factual issues(s) to be resolved"* (para 5) regarding *"the extent of noise generated by wind turbines"* (para 2). In part, at issue is the technical adequacy of the South Australian Environment Protection Authority's *Wind Farms – Environmental Noise Guidelines, 2003 (*amended in 2009) to assess noise and sound impacts.
The issue of the extent of noise generated by wind turbines, together with the role of the Noise Guidelines in setting appropriate standards for noise limits, prediction and compliance, is likely to come under scrutiny when the South Australian ERD Court rehears the Quinn matter.

Given the Supreme Court of South Australia decision, the NSW Government is urged to adopt the precautionary principle on the proposed Bodangora Wind Farm until such time as the ERD Court has reconsidered the noise issues for Hallett 3 and the adequacy of the Noise Guidelines is established.

b. Technical Adequacy of the SA EPA Noise Guidelines

Professor Colin Hansen from Adelaide University is of the view that the SA Noise Guidelines are deficient in certain elements. Professor Hansen's credentials include:

- Professor at the University's School of Mechanical Engineering with a First Class Honours degree in Mechanical Engineering and a PhD in acoustics;
- A Chartered Professional Engineer and a Fellow of Engineers Australia, the Australian Acoustical Society and the International Institute of Acoustics and Vibration;

- Served as President of the International Institute of Acoustics and vibration; and
- Awarded the 2009 Rayleigh Medal by the British Institute of Acoustics for outstanding contribution to acoustics.

Professor Hansen believes there a number of deficiencies in the Noise Guidelines, shortcomings that are directly relevant to the Bodangora Wind Farm impact assessment. The shortcomings in the Noise Guidelines include:

a) Procedures for determining ambient noise levels prior to installation of a wind farm require that many 10-minute average measurements are recorded at some representative receiver locations as a function of wind speed at a monitoring mast which is typically in the general vicinity of where the wind farm will be located. The 10 minute average data points are then plotted on a graph of dB versus wind speed and a typical scatter would be plus or minus 15 dB about a mean line that is drawn through the data. The mean line through the data is designated the ambient noise level for the purpose of assessing the impact of the proposed wind farm.

   There are a number of flaws with this approach, as outlined below:

   - The actual ambient noise level can be up to 15 dBA (or more in some cases) below the average line, which is problematic especially when it is noted that each data point represents a 10-minute average (LA90), and there are many times when the ambient noise is much less than the averaged line level for long periods of at least 10 minutes;

   - The wind strength measured on a weather station mast high on a hill at a potential turbine location is not necessarily correlated with the wind strength at the receiver location, perhaps in a valley below. In fact there are many times at night when there is sufficient wind at hill height to drive a turbine while there may be little or no wind at a residential location. This negates the argument often used that as the wind gets stronger and the turbines become noisier, the turbine noise is masked by the general noise caused by the wind;
   - Sound logging instrumentation typically used by consultants cannot measure below about 20 dBA. However, there are many times on still nights when the ambient noise without the wind farm can be below 20 dBA. Thus the Noise Guidelines need to specify instrumentation requirements for measurements down to 10 dBA.

   - Night time measurements should be the focus as these are the ones that are critical for assessing the extent to which wind farm noise exceeds the ambient noise and thus its potential for sleep disturbance. It would be more meaningful to divide the time sampling into at least four periods, namely midnight to 5am, 5am to 7am, 7am to 7pm and from 7pm until midnight and determine an ambient noise for each time period.

b) The use of a single number descriptor (LAeq) for wind farm noise is inadequate for assessing the effect of the noise on humans as it does not allow quantification nor assessment of the effects of modulation depth and short term maxima on sleep disturbance.

c) For some reason the Noise Guidelines specify 35 dBA for areas zoned rural ‘living’ (eg lifestylers) and 40 dBA for other areas (including rural ‘industry’, which characterises all farmers).

It is unreasonable and erroneous to zone farmers in rural 'industry'. The land use zoning for the Bodangora area is for 'rural activity' and it is not zoned for 'industry' in the usual sense of the word, which infers industrial-type activities and characteristics such as lots of heavy vehicles, heavy machinery and equipment, sirens, pumps, valves, etc and associated noises. The 35 dBA + 5 dBA - the + 5 dBA for industrial activity - is a con by the wind farm sector and is plainly environmentally unjust. The Noise Guidelines should have an exception for farming that does not include a factory (such as a winery) and specify 35 dBA in such circumstances.

d) The Noise Guidelines do not specify how compliance is to be checked. Preferably it should be done during nights when weather conditions are stable, when wind at turbine height is blowing towards the point of compliance measurement and when the wind at the point of compliance measurement is very light. Also a number of measurement points for compliance should be specified and agreed to by all stakeholders prior to development approval being given.

e) The Noise Guidelines make no mention of allowable vibration levels inside a residence and they make no mention of allowable infrasound levels and low frequency noise levels inside a residence.

c. Background noise monitoring

With regard to background noise monitoring the Department is urged to be mindful of the following matters and clarify same with the proponent:

- There is often a difference in wind speeds at the receptor location compared to turbine location. Wind speeds can differ significantly between the turbines on high ridges, and houses on the slopes and in the valleys below. Thus if the receptor in the valley has little background noise the turbine noise can be significant .

- There is a need to verify the details of the sound meters used for monitoring. For most machines the minimum for accuracy is 30 dB(A). Hence data below 30dB(A) using standard equipment will be inaccurate and outside the approved measurement range for the instrument.

- Must ensure that noise data does truly reflect ambient background levels. Logger positions with respect to residences and trees have to be appropriate to enable accurate assessment.

- Noise analysis needs to take into account various weather conditions, and in particular the presence of temperature inversions with and without downwind effects.

Background noise monitoring was only undertaken for three weeks from 16 February 2011 to 9 March 2011 at five locations. This timeframe is inadequate as it takes no account for seasonal variations and variations such as temperature inversions that regularly occur in winter in this location. Twelve months of baseline date is required to obtain an accurate picture. The noise profile as regards wind turbines will be very different in winter to that in summer.

d. Noise impact assessment predictions

With regard to noise impact assessment the Department is urged to be mindful of the following matters and clarify same with the proponent:

- What is the accuracy of the noise models used? Often such models have an accuracy of +/- 2 dB(A). Unless background survey data is completely robust & accurate, then compliance margins are often less than 2 dB(A). For the situation where the suggested error margin of +/- 2 dB(A) is less than the margin between predicted and derived compliance levels then this situation could cause an exceedance of the Noise Guidelines.

- A lesson learnt from the Capital Wind Farm project is that a major issue in winter is a strong enhancement of noise due to temperature inversions. The Bodangora area gets very cold in winter and temperature inversions are commonplace. The proponent should be required to assess noise impacts during temperature inversions.

- The difficulty in assessing noise compliance comes from the fact that background sound levels are not completed at each potentially exposed residence. Worse still, if the background surveys have collected suspect data and then testing for compliance becomes problematic.

In our view the proponent should be required to use the updated version of the Guidelines.

It is recommended DPI obtain a definitive statement from the proponent regarding the exact specifications of the turbines to be constructed and confirmation that that exact specification has been modeled. This information needs to be specific to enable meaningful noise and visual impact assessments. If consent was to be granted it should clearly specify the technical and structural design and power specifications of the turbine and all its related parts, including tower height and diameter.

Similarly DP&I should not allow the fudge factor of 'micrositing' whereby the proponent is allowed to have a plus or minus tolerance of 100 m as to where the turbines are to be located. This information should be fixed prior to noise and visual impact modeling.

3. <u>Planning decision should be deferred until the NSW Wind Farm Planning Guidelines are finalised and adopted.</u>

A planning decision on the project should be deferred until the Guidelines are finalized and adopted. This would provide for a more robust and sound basis for Government decisions on wind farms.

4. <u>Significant road and traffic impacts and funding to address those impacts not quantified.</u>

Heavy vehicles of 60 m length and up to 160 tonnes <u>on road</u> weight for transformers and up to 80 tonnes <u>on road</u> weight for other heavy components will seriously compromise and damage the local roads.

The local road network was clearly not designed to handle vehicles that are over size (longer than 19 m) and over-mass (gross mass in excess of 42.5 tonnes).

Road upgrading requirements should be identified now as part of the EA, not left to the haulage contractor to do post project approval. The upgrading works will have substantial financial and environmental consequences. All these costs must be borne by the proponent as they are directly attributable to the project.

Not only will there be oversize and overweight trucks but also heavy concrete trucks with each turbine footing requiring over 100 m3 of concrete .

It is essential that a detailed analysis of the local road infrastructure is prepared and assessed prior to any project approval so that all is evaluated in a balanced and objective way, not afterwards when the balance of negotiating power shifts to the proponent.

We support the Shire Council's EA submission in regard to detailed road condition surveys being required prior to any proponent construction activity and that the necessary road improvements are paid for by the proponent.

The proponent should be required to undertake, as part of the assessment process, a detailed appraisal of all roads - both state and local - being considered for use, and address:

a) Pavement width and strength;
b) Bridge and culvert width and strength;
c) Design, layout and pavement strength of intersections, including turning paths, acceleration and deceleration lanes;
d) Removal of trees, rock outcrops and other obstacles;
e) Road, intersection, bridge and culvert upgrade costs;
f) Road, intersection, bridge and culvert damage repair costs; and
g) Road, intersection, bridge and culvert ongoing maintenance costs.

The costs associated with road infrastructure upgrade, repairs and maintenance should be made transparent now. The proponent should reach an agreement with Wellington Shire Council on these costs and who pays before any planning approval is granted.

See Attachment 2 regarding the diminution of road quality caused by construction traffic for a wind farm, namely the Macarthur Wind Farm in Victoria. The severe damage means some roads will revert to lower quality gravel pavement instead of being sealed. As ratepayers of Wellington Shire we do not wish to see this happen to our roads.

5. No quantified commitment regarding financial contributions to Wellington Shire Council

The EA is silent on financial contributions by the proponent to the local Council during the life of the project.

All road upgrade work required for the project must be totally funded by the proponent. This needs to be separate to ongoing, yearly financial contributions paid to Council for hard and soft infrastructure including road repair and maintenance.

It is vital that there be openness and transparency regarding demonstration that this industrial project 'pulls its weight' regarding making fair and reasonable financial contributions to what is a small rural Council already burdened by demands for the provision of infrastructure and services.

We support any requirement that the proponent to enter into a Voluntary Planning Agreement to secure financial contributions that will represent a fair and reasonable financial return for residents and ratepayers.

6. Visual impact assessment

As per the noise impact assessment, the visuals should be conducted on the exact turbine infrastructure to be built and there should be no 'wriggle room' for changing the infrastructure specifications after the assessment process is complete or the 'micrositing' fudge factor of up to 100 m as to the exact location .

7. Adverse impact on the economic value of land surrounding the Project Site

Nearby landowners are concerned at the diminution in the value of their property holdings caused by the prospect of having a wind farm in the neighbourhood. Evidence suggests that the UCV on properties potentially affected by wind farms and comparable industrial developments falls by at least 30 %. To add insult to injury, there is no compensation forthcoming to the landowner for the loss of market value.

One of Australia's experts in rural land valuations, Elders National Sales Manager Shane McIntyre, is on record in early 2011 as stating that there was "no doubt" that land near wind farm turbines "falls significantly in value" and could lead to a decline of 30-50 per cent. In his 30-year experience in rural and regional real estate, McIntyre said, when a possible buyer "becomes aware of the presence of wind towers, or the possibility of wind towers, in the immediate district of a property advertised for sale, the fall-out of buyers is major". "Very few go on to inspect the property and even fewer consider a purchase. On the remote chance they wish to purchase, they seek a significant reduction in price."

Mr McIntyre also states that wind turbines adjacent to a property had the same effect as high-voltage power lines, rubbish tips, piggeries, hatcheries and sewage treatment plants. This meant, he said, that "if buyers are given a choice, they choose not to be near any of these impediments to value".

Evidence to confirm Mr McIntyre's observations is attached in the form of a letter from a Principal of Ray White Real Estate, Orange advising that the prospect of the wind farm adversely affected the sale of a property adjoining the proposed Flyers Creek Wind Farm near Orange in March 2009, causing a significant price reduction. See Attachment 3.

As referred to in our submission in respect of the Flyers Creek Wind farm Application we have personally experienced reduction in land values at Errowanbang (Flyers Creek) of over 20% because of the negative impact of wind farms on property values.

Clearly, despite what wind farm proponents will say, there **is** a negative impact on the value of land adjoining wind farms because of people's actual experiences. It is time wind farm proponents were required to step up to the plate and compensate adjoining landowners for loss of value on all fronts – economic, environmental and social.

We seek to rely on the Submission of Dr Bahramali "Wind Turbine Electricity Generation: An analysis of the negative factors" submitted in relation to the Flyers Creek Wind Farm Application. Ref: MP08-0252

8. Decommissioning

Once the 25 year project life as per any consent has expired we wish to see the site decommissioned with the site returned to its pre-existing condition, including exhuming the concrete foundations and rehabilitating all the vehicular tracks constructed. We do not wish to see the wind farm equipment replaced and the project continue. If the Government was of a mind to issue approval for the current proposal then we expect to see inclusion of extensive decommissioning conditions.

A recent study of the Beech Ridge Energy Project (a 124 wind turbine project in West Virginia) by Energy Ventures Analysis (EVA) revealed that the net cost of decommissioning the project equated to US $ 83,900 per turbine which was more than the salvage scrap value of each turbine. Hence we request the Department impose a condition requiring a security bond of a minimum of $100,000 per turbine (plus an annual 3% CPI index) to capture the true demolition costs and escalation risk. Wellington Shire Council should be the beneficiary of the security and it should include terms under which the funds would be dispersed.

9. Conclusion

Having examined the contents of the EA for the proposed Bodangora Wind Farm we firmly believe that there are major deficiencies that warrant the Department of Planning & Infrastructure not approving the project as currently documented.

We have outlined above several key reasons why this proposal is inappropriate and ought to be refused planning consent.

We thank you for your willingness to understand and appreciate the matters raised and we look forward to a favourable response to our Submission.

If you have any queries regarding the abovementioned matters please don't hesitate to contact the undersigned on telephone 0415 225 940.

Yours sincerely,

(Signed)

Mr & Mrs J Gerathy

ATTACHMENT 2

Call for wind farm roads to be resealed

ABC Ballarat
November 17, 2011

The Moyne Shire says the Victorian Government must ensure roads near the Macarthur wind farm are resealed after construction there finishes.

VicRoads has told the council it will convert some of the roads to gravel because they have been severely damaged by trucks carrying building materials to the site of the $1 billion wind farm.

It says annual funding and road maintenance priorities will determine when the roads are resealed.

Moyne Mayor Jim Doukas fears the roads may be left with a gravel surface indefinitely.
"We asked well, fair enough, if you haven't got the time because of the traffic to fix them, but what happens when all of the trucks are left and no longer require the road and they said there's a very, very good chance that they won't be resealed again," he said.
"Well, we just can't accept that, that's not on."

A local farmer, Jeff Riordon, says some of the roads around the wind farm have become too dangerous to drive on.

He says residents are taking long alternative routes because they do not believe the roads are safe.

"Some of them you don't really want to drive on," he said.

"We've got to go the long way round to get to Warrnambool and they're only narrow roads."

ATTACHMENT 3

Ray White Real Estate Letter – Property Values

Ray White.

24 Sale Street
Orange NSW 2800
PO Box 1237
Orange NSW 2800

tel 02 6362 0211
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orange.nsw@raywhite.com

raywhite.com

Re: Proposed Flyers Creek Wind Farm Land Value

I am a Principal of Ray White Orange and have been engaged in the real estate industry for over 30 years, 25 of which have been in Orange.

In or about February 2009 I was engaged by Michael Redman, then owner of Lot 63 DP 750358, to sell his property. This comprised 251 acres of undulating to steep grazing land with permanent creek access, and a recently built 2 bedroom cottage.

The property was marketed at $610,000 and subsequently sent to auction on the 23rd March, 2009, where it did not sell.

Despite a thorough marketing campaign the proposed Wind Farm was a complete negative to this property's most likely market, the lifestyle hobby farmers. The only market where the property had any real interest was with neighbours, and people thinking of buying a block with potential wind farm revenue. However, these purchasers were not prepared to pay anything like the property's market value.

The property was ultimately sold for $395,000.

The negative affect on property values by Wind Farms was clearly demonstrated with this property.

Yours Sincerely

David Blunt

Silvall Pty Ltd trading as
Ray White Orange
ABN 26 107 934 867

Orange