

**Submission in Response to  
the Environmental Assessment  
*for the*  
Proposed  
Bodangora Wind Farm, Wellington  
*from*  
Mr & Mrs M Lyons  
'Mount Bodangora'  
Wellington NSW 2820**



6 August 2012

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6<sup>th</sup> 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,

We the undersigned are landholders at Bodangora near Wellington who live adjacent to the site proposed for the Bodangora Wind Farm. We own the rural landholding called "Mount Bodangora".

We object to the proposed development for the reasons contained in this Submission.

**1. Introduction**

On the "Mount Bodangora" property are two occupied houses, known in the EA as Dwelling 13 and Dwelling 13B.

The property is a fully functioning agribusiness, supporting two families and their livelihoods.

This Submission in response to the Bodangora Wind Farm EA contains several important reasons why this proposal is inappropriate and ought be refused planning consent by the Department of Planning & Infrastructure (DPI).

The reasons, in summary, are as follows:

- We understand one property within the project area recently changed ownership and the property transaction reveals nothing about an agreement having being signed permitting and requiring wind turbines to be located on the property.
- Thirty three wind turbines penetrating 150 m into airspace as close as 4.2 km from the Wellington Airport, together with four wind monitoring masts 100 m high, represent a major safety risk with potentially catastrophic consequences.

The airport is used by the NSW Government to service the Correctional Centre and other stakeholders including:

- mining companies conducting geophysical surveys;
- Private aircraft including single and twin engine models;
- Aerial agricultural services (chemical spraying and fertiliser application);
- Waterbombing aircraft fighting bushfires;
- the Air Ambulance and the Royal Flying Doctor Service; and
- the RAAF for training manoeuvres.

The proposed wind farm is totally incompatible with an airport so close by because the turbines and wind monitoring masts are obstacles to low flying aircraft . Many low flying aircraft use Wellington Aerodrome.

- The EA is silent on how much the proponent will contribute financially to the Wellington Shire Council during the life of the project. As ratepayers we wish to know 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 area features basic rural roads that are relatively narrow, with sharp bends and tree hugging. Intersections are of a similar description. 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.

- As Landowners we are most concerned at the diminution in the value of our property holdings caused by the very prospect of having a wind farm in our 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.
- Our agribusiness revolves around the production of sheep for meat and wool for upper end markets both nationally and internationally. Our lambing rates are exceptionally high and we seek evidence from the proponent that the noise impact of the wind turbines will not cause a drop in the rate of conception and live lamb births.
- We support Wellington Council's EA submission requiring the proponent to consult with the Administrator of the Wellington Local Aboriginal Land Council and the Gallangabang Aboriginal Group. We recommend that such consultation and subsequent investigations and site assessment work is completed, with results provided to DPI, well before any project determination is made.
- With regard to noise impact assessment there are serious flaws, namely:
  - The SA Noise Guidelines are due for legislative review 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.

- We require evidence that the assertions made in the EA regarding visual impacts are correct. Simply being told 'views of the turbines from dwellings 13 & 13 A are generally screened by a combination of low rises in topography and screen planting' (page 8-23) does not satisfy us and should not satisfy the Department. We wish to see tangible evidence to support the claim, namely photomontages for both dwellings (13 and 13B).
- The proponent has not complied with the Department of Planning & Infrastructure's warning letter to the proponent dated 16<sup>th</sup> August 2011 to engage in an adequate level of community dialogue. MORE
- 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 finalised and adopted.

The arguments supporting the abovementioned points are presented below.

## **2. Flight risk to aircraft using Wellington Airport**

Wellington Aerodrome, also known as Bodangora Aerodrome, is owned and operated by Wellington Shire Council. For aircraft to safely fly into or out of the airport, circle and manoeuvre in its vicinity, they need airspace that is free of obstacles and obstructions.

Typically, an airport's airspace needs to be safeguarded for a radius of 15 km. Within the radius of the first 5 km there should be with no obstacle greater than 100 m above ground level within the usual visual flight routes. 150 m high turbines and 100 m high wind monitoring masts within 5-10 km of the airport are major hazards and such obstacles should not be permitted. The airspace of Wellington Aerodrome should be protected.

The EA states that the closest turbine to the aerodrome is 4.5 km approximately from the aerodrome. Our calculations indicate that the closest turbine (No 43) is 4.4 km from the airstrip. Furthermore, there are 13 turbines to be built to a height of 700 – 788 m AHD on the wind farm (page 3-7), all within close proximity to the Aerodrome. The half a dozen turbines closest to the airport will be to a height of 650 m AHD.

The proposal also includes three or four 100m high wind monitoring masts in locations unspecified (p3-27). The monitoring towers are exceptionally hazardous because of their low visibility.

Given the catastrophic consequences of a collision of an aircraft with such tall structures, CASA is of the view that for 'registered' airports at least, wind turbines should be banned from aviation airspace for a distance of 30 km. Surely banning them at Bodangora for a 10 km radius is a not unreasonable request, especially given the myriad of low flying activities.

Wellington Aerodrome is a very significant infrastructure, extensively used by many and varied parties including:

- Low level sports craft eg ultralites and microlites.

- Low level aerial agricultural services (chemical spraying and fertiliser application);
- Low level waterbombing aircraft fighting bushfires;
- Low level military operations by the RAAF - touch and go training manoeuvres;
- mining companies conducting geophysical surveys;
- Private aircraft including single and twin engine models; and
- the Air Ambulance and the Royal Flying Doctor Service.

The main runway is bitumen and is equipped with landing lights and was recently extended by the NSW Government to assist Corrective Service personnel to service the local Correctional Centre.

During aerial agricultural operations applications aircraft are typically 3 m above the ground for chemical spraying and 30 m above the ground for fertiliser topdressing. Ferrying of these aircraft to and from the airport usually occurs below 150 m to provide safe separation from other aircraft. Wind turbines and met towers are very hazardous obstructions.

The EA states also states that the runway is orientated north –south. In reality the 05-23 runway is slightly more easterly than north east which means that aircraft using this runway would be flying through the wind turbine tower zone only 4 km from the airstrip. This would represent an extreme safety hazard with potentially catastrophic consequences.

The other runway is 13-31 which is slightly more easterly than SE, also bringing aircraft into conflict with turbines during takeoff, landing and circling procedures.

A water tower is located at the Airport for bushfire fighting purposes. Bushfires are very common in this area. Water bombing aircraft will have major difficulty in clearing the turbines 4 km away when taking off fully loaded. Bushfire smoke will also compromise visibility, enhancing the risk of collisions with turbines and met towers.

It should also be noted that there are 13 other airstrips on rural properties in the area used by farmers for agricultural purposes – chemical spraying, fertilizer application and firefighting. The wind turbines and met towers, coupled with the rotor wake downdraft from the turbines, will make aerial agricultural applications very hazardous. Note the Aerial Agricultural Association of Australia statement below, strongly opposing a wind farm in such a prime agricultural region:

*“As a result of the overwhelming safety and economic impact of wind farms, AAAA opposes all wind farm developments in areas of agricultural production or elevated bush fire risk” (Aerial Agricultural Association of Australia, March 2011).*

See also Attachment 1 the Aerial Agricultural Association of Australia Wind Farm Policy. We urge extensive dialogue with this industry association before any decision is made on this project.

During cloudy and increment weather landing, takeoff and circling procedures are likely to be compromised by these aerial obstructions. The Department should obtain feedback from Wellington

Council, CASA, Department of Defence, AirServices Aust, Wellington Aeroclub Inc and the Aerial Agricultural Association of Aust before any planning decision on the project is made.

Wake turbulence behind one single wind turbine can extend a significant distance downwind. For “turbines with a diameter of 125 m, **turbulence may be present 2 km downstream**”, posing serious risks to aircraft (see ‘*National Airports Safeguarding Framework: Managing the Risk to Aviation Safety of Wind Turbine Installations*’, page 7). Also, note the following quote:

*‘Rotor wake can contain downdrafts that may exceed the performance of an aircraft particularly those at high operating weights. This hazard, combined with the undulating terrain on the wind farm site, could make aerial application of chemicals difficult on properties near the wind farm, particularly those within 5km downwind from the site’ (Rehbein Airport Consulting, Aeronautical Assessment, 2011).*

As Wellington develops with increases in mining in the area the need for a fully functional airport will only increase. Any threat to safety considerations in the form of wind turbines with a height of up to 150 metres within 5 km of the airport, must be strongly opposed, for the long term safety of users of this multi-purpose facility.

We support Wellington Council’s EA submission expressing similar concerns regarding inadequate impact assessment of aircraft safety in the context of wind turbine towers/blades and met towers being a very serious operating hazard. **We strongly support Wellington Council’s stipulation that no wind turbine be located closer than 5 km to the 13/31 sealed runway so as to minimise significant air safety hazards.**

### **3. Significant road and traffic impacts and funding to address those impacts not quantified.**

Heavy vehicles of 60 m length and up to 160 tonnes on road weight for transformers and up to 80 tonnes on road weight for other heavy components (p 12-6) will seriously compromise and damage the local roads.

The EA (page 16-6) admits there will be “wear & tear” on roads due to heavy vehicle movements. But this ‘wear and tear’ is not quantified in the EA. It needs to be.

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). The roads in the main are narrow and with sharp bends and tree hugging. Intersections are of a similar description.

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.

Identified transport infrastructure limits include:

- Goolma Rd and Gillinghall Rd are under-capacity and the pavement strength and road curvature is not satisfactory (p12-14);
- The left turn into Gillinghall Rd off Goolma Rd needs widening;
- Gillinghall Rd needs capping stone added; and

- the Mitchell Creek concrete bridge on Goolma Rd is under-strength.

Not only will there be oversize and overweight trucks but also heavy concrete trucks making an estimated 3,308 trips (page 12-10), with each turbine footing requiring 110 m3 of concrete .

The proponent promises a maintenance program to ‘ensure road conditions are maintained.’ What does this mean? (page 18-11). What is the scope of the program and who pays? These details need to be included in the EA.

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 Wellington 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.

#### **4. 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. There is one vague and unspecified commitment on page 2-29 which states that the proponent will establish a ‘voluntary community enhancement programme’. What are the details of this? Such details should be spelt out in the EA.

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.

As ratepayers we wish to know now:

- a) What financial contributions will be made for the initial road and associated infrastructure upgrades to facilitate delivery of equipment and supplies during the construction phase , as well as ongoing repair and maintenance over the life of the project?;
- b) What financial contributions will be made for other relevant Council services and infrastructure?
- c) Will the rating for the affected lands be changed from rural to industrial and what will be the rate?; and
- d) How much rates will be paid over the life of the project?

Another relevant topic is waste management. The proposal is not specific on the types and volumes of waste generated by the project. The Department should ascertain:

- a) What types and quantities of wastes require disposal?
- b) What gate fee will Council charge?
- c) What impact will the volumes and types of waste have on landfill filling rates and the life of local waste management facilities? And
- d) What will be the volume, type and destination of the decommissioning waste?

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 Wellington Council’s EA submission requiring 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.

## **5. Aboriginal Heritage Investigations**

We support Wellington Council’s EA submission requiring the proponent to consult with the Administrator of the Wellington Local Aboriginal Land Council and recommend that such consultation and subsequent investigations and site assessment work is completed, with results provided to DPI, well before any project determination is made by the DPI. Similarly the Gallangabang Aboriginal Group needs to be consulted and matters investigated as per above.

## **6. 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 lifestyle) 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 data 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.

With regard to the SA EPA Environmental Noise Guidelines, the proponent advises on page 5-13 that, although the guidelines were updated in 2009 “the proponent has not been directed to follow or to apply the updated guidelines as yet”. So it has used the original 2003 version. In our view it should be required to use the updated version.

Whilst the noise impact assessment is based on Vestas V 112 3 MW model turbines, the EA hedges its bets by consistently stating that ‘the proposed wind farm will involve the construction and operation of up to a maximum of 33 wind turbines, each with a generating capacity of between 2.0 and 4.0 MW and a total installed capacity of up to 120 MW **depending on the turbine model selected and the total number of turbines installed**’ ( Page 1-7). Again, on page 20-12 ‘actual turbine model and number to be installed may vary slightly dependent on the final design conditions’. This is not acceptable. The project must be determined only on using the Vestas V 112 3MW turbine. If the proponent wishes to select a different turbine then the Development Application should be rejected and the EA redone.

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 modelled. 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 DPI 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.

## **7. Visual impact assessment**

We require evidence that the assertions made in the EA are correct. Simply being told 'views of the turbines from dwellings 13 & 13 A are generally screened by a combination of low rises in topography and screen planting' (page 8-23) does not satisfy us and should not satisfy the Department. We wish to see tangible evidence to support the claim, namely photomontages for both dwellings (13 and 13B).

As per the noise impact assessment, the visuals should be conducted on the exact turbine infrastructure to be built and there should be no 'wiggle 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 .

The EA is vague regarding whether the 33 kV cabling *connecting all the turbines* will be overhead or underground. For instance page 1-7 says underground or overhead. Whereas p 3-4, p 3-14, p 3-19 says 37km of *underground* cabling. So which is correct? Clearly if aboveground it will have visual impacts. All such cabling should be below ground.

Similarly the EA is vague regarding whether the 5.8 km of 33 kV power line *connecting the wind farm (turbine no 18) to the proposed substation* is overhead or underground. Page 1-7 says either/or, whereas p 3-4 says *overhead* cabling. Which is correct? And page 3-14 says a 'minimum' of 5.8km of overhead cabling. So what is the maximum and what impact assessment has been done on this matter?

## **8. Planning decision should be deferred until the NSW Wind Farm Planning Guidelines are finalised and adopted.**

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

## **9. Construction uncertainties**

The EA states that based on a 'preliminary assessment' the 132 kV wellington - Beryl transmission line has sufficient capacity to enable the connection of the wind farm (page 2-11). Similar wording occurs on page 3-13, indicating some 'associated technical studies' being undertaken. It is recommended the DPI ascertain what the real situation is and will this connection take place or not? And if insufficient capacity, then what?

On page 3-4 'gravel quarries' are listed as related items of infrastructure. The EA estimates there is a need for 30,000 m3 of gravel for on-site access roads, but is silent on where the material will be

sourced. The EA needs to be definitive as to where the gravel is being sourced and related traffic, road and other impacts carefully quantified.

On page 14-12 there is uncertainty as to whether there will be a concrete batching plant on site or not. Page 3-11 says that concrete will 'most likely' from a batching plant at Maryvale. The DPI needs to confirm what is proposed by the proponent. Again, if offsite there will be very significant traffic and road impacts.

#### **10. Adverse impact on the economic value of land surrounding the Project Site**

As Landowners we are most concerned at the diminution in the value of our property holdings caused by the prospect of having a wind farm in our 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 price reduction of 35%. See Attachment 3.

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 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.

#### **11. Potential impact on fauna on land adjoining the Project Site**

The EA examines the potential impact of turbine blade-strike and the clearance of habitat in the process of constructing wind farm infrastructure, but is silent on the impact noise and sound changes might have on neighbouring bird types and numbers. Overseas studies have shown that various bird species are adversely affected.

For instance, studies of the Sandhill Crane in the Southern High Plains of Texas examined roost occupancy, habitat use and bird behaviour by comparing areas with wind turbines to those without.

Results showed that, apart from the obvious impacts where habitat was destroyed, the birds tended to avoid foraging within 2 kilometres of the wind farms and exhibited a clumped distribution when found near wind farms. Additionally, Cranes foraging within two kilometres of the wind farms spent more of their time being vigilant and less time relaxing than the Cranes outside the two kilometres.

Hence we believe the EA is deficient in not addressing the noise effects of wind turbines on the various species of birds that inhabit the project and adjoining areas. This impact assessment matter should be rectified before DPI makes a decision on the project.

We also support Wellington Council's EA submission wherein it requires the proponent to complete an Environmental Impact Statement for the roadside vegetation affected by construction of new access and transportation routes.

Please see separately attached a report (Attachment 3) prepared by Australian Wildlife Services entitled 'Scientific Review of Flora and Fauna Assessment Methodologies Undertaken for the Bodangora Wind Farm Environmental Assessment'. The independent specialists conclude, inter alia, that the EA:

- Fails to show targeted and stratified surveys for many threatened species potentially or historically occurring; and
- Lacks statistical information regarding the survey work performed.

## **12. Impact on Livestock**

Our agribusiness revolves around the production of sheep for meat and wool for upper end markets both nationally and internationally. For instance, we rug our sheep to enhance their productivity. Our lambing rates are exceptionally high and we seek information from the proponent that the noise impact of the wind turbines will not cause a drop in the rate of conception and live lamb births.

We draw your attention to the evidence from the USA that the Sandhill Crane in the Southern High Plains of Texas, when foraging within two kilometres of the wind farms, spent more of their time being vigilant and less time relaxing than the Cranes outside the two kilometres. Much of our grazing property is within two kms of proposed turbines.

## **13. Inadequate community engagement as identified by the Department of Planning & Infrastructure**

The Director General of the Department of Planning & Infrastructure issued a letter to the proponent dated 16<sup>th</sup> August 2011 expressing concern at the inadequate level of community engagement being undertaken. The Director General was right to issue such a warning letter.

There has at best been token dialogue with the local community. The proponent has not had a face to face meeting or even verbal contact with the Lyons family to discuss how the project might impact on our agribusiness. Furthermore:

- a) The two 'exhibition days' that were held were at a location over 20 km from Wellington, well away from the local area; and
- b) On two separate occasions the local community has requested public meetings be held by the proponent and on both occasions they declined.

We urge the Department to require the proponent to engage formally with a community consultation committee now to modify the proposal and ameliorate the impacts. It is misleading for Infigen to suggest that it fulfilled a genuine community consultation program relating to this project. No community consultation and engagement program has been run that would satisfy the general tenor of the relevant Ku-ring-gai Council Land & Environment Court Case.

We also ask the DPI to seek clarification regarding the situation that a landowner, who recently acquired one of the properties within the project area, finds he has no legal obligation to allow turbines on his land, and is disinclined to do so.

#### **14. Inclusion of a condition to terminate approval if evidence of non-compliance**

If the Government was of a mind to approve the development, then we seek to have a consent condition included that terminates approval to operate a particular turbine or turbines if there is any evidence that those turbines do not comply with the noise and sound limits imposed, and that those conditions are based on a noise assessment standard (SA Noise Guidelines) that has been accepted as valid by the upcoming SA ERD Court hearing - Quinn/Hallett case.

As per the Taralga Landscape Guardians Inc v Minister for Planning and RES Southern Cross Pty Ltd [2007] NSWLEC 59 (12 February 2007) case, is not appropriate for wind farm operators to simply purchase affected properties after the facility is built. Any purchase should be in accordance with compulsory acquisition valuation and procedures.

#### **15. 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.

#### **16. Transparency of DPI deliberations**

We seek full transparency from the Department of Planning & Infrastructure as it deliberates on the wind farm project proposal. To this end, if the Government is of the mind to approve the development then we request receiving a copy of any draft consent conditions at the same time that they are forwarded to the proponent for comment. As potential neighbours we are most keen to be kept fully informed and engaged in this planning decision.

## **17. Conclusion**

We have carefully examined the contents of the EA for the proposed Bodangora Wind Farm and 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 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.

Furthermore, we kindly request an opportunity to meet with DPI officers and officials in due course when the submissions are being evaluated to explain our Submission and to later comment on the proponent's responses.

If you have any queries regarding the abovementioned matters please don't hesitate to contact the undersigned on telephone 02 68 466 351.

Yours sincerely,

(Signed)

Mr & Mrs M Lyons



### Introduction

Windfarms and their pre-construction wind monitoring towers are a direct threat to aviation safety – and especially aerial application. They also pose an economic threat to the industry where the costs of windfarm development—including those of compensation for loss of income—are externalized onto other sectors such as aerial application.

AAAA has developed this policy so as to inform regulators, asset developers and operators alike of the need for action on their part to fulfill their duty of care to Australia's aerial applicators.

### AAAA Windfarm Policy

As a result of the overwhelming safety and economic impact of windfarms and supporting infrastructure on the sector, AAAA **opposes all windfarm developments** in areas of agricultural production or elevated bushfire risk.

In other areas, AAAA is also opposed to windfarm developments unless the developer is able to clearly demonstrate they have:

1. consulted honestly and in detail with local aerial application operators
2. sought and received an independent aerial application expert opinion on the safety and economic impacts of the proposed development
3. clearly and fairly identified that there will be no short or long term impact on the aerial application industry from either safety or economic perspectives and
4. if there is an identified impact on local aerial application operators, provided a legally binding agreement for compensation over a fair period of years for loss of income to the aerial operators affected.
5. Adequately marked any wind infrastructure and advised pilots of its presence .

AAAA believes that the above processes should also apply for all windfarms that have already been approved or erected, especially the establishment of long-term (for the life of the windfarm or until it is removed, whichever is the

longest) binding compensation arrangements for affected aerial application companies.

While it is not AAAA policy to provide specific comment on particular development proposals due to resource limitations, AAAA notes that windfarms can have far-reaching footprints that can remove significant amounts of land from treatment for a considerable distance from the windfarm boundary.

Operational implications of each development will vary enormously depending on the site, the positioning of the turbines, orientation of affected paddocks relative to the turbines, the type of aerial application taking place, the aircraft used, the pilot's experience, the meteorological conditions, the site elevation, the position of any airstrip relative to the turbines and a range of other variables.

However, it is clearly unacceptable that one industry can impose significant safety threats on another, longer established industry with impunity.

AAAA believes that:

- All wind monitoring towers—including guy wires—must be clearly marked to assist pilots to see them
- All wind turbines, wind monitoring towers and associated infrastructure must be required to be removed when no longer in use. A mandatory bond should be levied on all developments to ensure the site can be remediated.

## Recommendations to Government

### Moratorium & National Policy

AAAA recommends to all Governments the establishment of a moratorium on windfarm developments until a national COAG policy on windfarms is established that requires the following to be considered before approval:

- Competing land uses for the particular site.
- Priority for existing long-term land-uses.
- Economic and safety impacts on contracting industries such as aerial application, including the broader implications for thresholds of sustainability for contractors.
- Independent life cycle analysis of windfarms and their overall environmental impact.
- Impact on aviation safety.
- Impact on bushfire preparedness and aerial firefighting.
- Impact on visual pollution / amenity/ tourism.
- Other sources of sustainable energy.

### Transparency

AAAA recommends that any 'special' or 'fast-track' planning processes established for windfarm developments be removed. All windfarm developments should be subject to the full planning processes and community consultation in each State and Territory, including appeal of decisions.

Governments should require public disclosure on a register of payments to landholders made before approval of the windfarm. This will allow other landholders and contractors to be aware of developments.

### Aviation Safety

AAAA recommends that government provide better information to all windfarm developers on their responsibilities for aviation safety, including raising the duty of care requirements established under *Sheather v Country Energy* (NSW Court of Appeals) for owners of assets that pose a known threat to aviation activities to provide for suitable marking and other safety initiatives.

The Commonwealth should establish a head of power to consider and regulate windfarm developments to protect aviation safety. This should include mandatory marking and notification of wind infrastructure and the power to veto proposed developments where they interfere with aviation safety.

CASA should set a much lower than previously used height trigger for notification of tall structure developments - down to 50 feet in an area of known aerial application activity—or by using a

risk assessment based approach.

CASA should work with Airservices Australia and any other relevant agencies to ensure that completed windfarms are included on suitable aviation mapping including WAC charts and topographic maps.

CASA should develop a national tall structures web database that is accessible in real time by all low-level aviation pilots and which captures all wind-monitoring towers as well as completed windfarms. The database should also capture other tall structures such as radio masts etc.

### Background

CASA does not have a clear head of power or a pathway for windfarm developers to ensure the risks their developments are posing are appropriately managed so as to protect legitimate activities of low-level aviation operators.

In particular, previous CASA efforts to address this issue by requiring marking and lighting of certain towers above a certain height and within a certain distance of an airport misses the main risk to aviation and this is the wind monitoring towers as they are frequently lower than the height trigger, but still a threat to legitimate low-level aviation.

Wind monitoring towers are very tall in relation to aerial application operations, are erected within very short timeframes, are extremely difficult for any pilot to identify from the aircraft and are often not notified to aviation users because of the lack of a Government-mandated notification system and the desire of the developers to keep their positions a secret because of commercial issues.

There are two quite distinct issues arising from windfarms that affect aerial application:

- safety of the aircraft and pilot and
- economic impact on aerial applicators.

### Safety Impacts

AAAA's view is that the case of *Sheather v Country Energy* (NSW Court of Appeals) clearly established that anyone with infrastructure posing a threat to aviation must consider the risks that infrastructure poses to aviation safety and respond appropriately through marking or other measures to safeguard aviation operations.

This precedent is of critical relevance to windfarm developers although not apparently widely known to them or acted upon.

### ***Economic Impacts***

Safety is not the only consideration that is imposing additional risk and consequences on the aerial application industry.

The placement of wind farms in areas of highly productive agricultural land is leading to reductions in treatment areas of aerial application companies with no compensation for this externalization of costs by wind farm developers.

For example, placement of a wind farm may affect flight lines and application height or even whether the application can be conducted at all - leading directly to either an increase in cost or a reduction in income - and sometimes both - for aerial application operators.

As windfarm developments increase in number and scale of footprints, the threshold of non-viability of aerial application in an area may be reached where it is simply not economic to base an aircraft there. In a highly seasonal industry such as aerial application, operations may already be close to this threshold and windfarm footprints may compromise the availability of a critical service.

The need to manage spray applications to ensure they are safe may mean that pest outbreaks such as locusts may not be able to be effectively controlled. Windfarms may create significant gaps in large scale treatment plans—leading to a breakdown of an overall campaign against locusts, cereal rust, noxious weeds or other pests with massive economic implications for farmers and the economy.

In particular, AAAA is concerned that not enough consideration is being given through the State planning approval processes to the impacts of windfarms on productive agricultural land and the aerial application industry, remembering that it may not only be the land footprint where the windfarm is sited, but also land surrounding that for some kilometers where aircraft may have to maneuver to conduct aerial application.

At the very least, windfarm developers should be required to pay compensation to aerial applicators where it can be reasonably established that there will be an economic impact imposed on the aerial application company by the wind farm developer.

### ***Operational Impacts***

The following potential impacts on aerial application should be considered by all windfarm developers:

- positioning of wind farms may affect local aerial application operations, depending on the particular site.
- impacts could vary from affecting flight lines to treatment height and accuracy, maneuvering areas and possibly take-off and landing sprints if an airfield is nearby (see for example, CASA CAAP 92-1 for agricultural airstrips – [www.casa.gov.au](http://www.casa.gov.au) – search for CAAP 92-1.)
- it may not be the land or farm that the wind farm is to be situated on that will be affected. Neighbouring farms, especially any with borders close to the windfarm site, may suffer significant impacts by imposed limits on the maneuvering areas of aerial application aircraft.
- a key impact may not be the turbines themselves, but the positioning of any powerline that would lead from the windfarm substation back to the grid, or any other above ground powerline that would be put in to support the development. Any sections of above ground cable should be adequately marked.
- economic impacts could include increased costs due to longer flight times required to maneuver heavily laden aircraft around wind towers, a loss of accuracy due to being required to fly higher for safety reasons, an increase in liability due to the reduction in accuracy, or the complete loss of application jobs due to the landholder not wanting the area covered by windfarms to be treated.

### **AAAA Activities to date**

AAAA has done a lot of work to make it easier to mark guy wires and powerlines – including on wind monitoring towers – through amendment of the national standard on marking of wires so as to use a marker developed by Country Energy (NSW) with the cooperation of AAAA.

There is now little practical reason why wind towers and especially wind monitoring towers should not to be clearly marked.

In addition, AAAA has attempted to provide relevant information to developers through the Wind Energy Association, but this process/ advice is voluntary and consequently will not provide coverage of all developers.

AAAA also passes on information to members that has been provided to it by wind farm developers on the physical location of wind monitoring towers. However, only a few developers provide this information and again there is little doubt that many towers are going up unmarked and unknown until hopefully spotted by pilots during pre-application inspections.

More comprehensive safeguards must include a mandatory national system of communication of the position of all wind monitoring towers and the inclusion of this on a national database accessible by low level pilots.

This is a very real issue for topdressing and fire-bombing operations - as wind monitoring increases, so does the threat to legal aviation activities.

### **AAAA Windfarm Notification Process**

AAAA tries to assist aviation safety by advising those of our members on our email lists of the position of wind monitoring towers and also wind turbines when they are under construction and finally constructed, if advised by windfarm developers.

Windfarm developers are encouraged to provide these details (in lats and longs by email to AAAA) so that AAAA can pass them on to those members.

AAAA provides this facility on the basis of it being information of a general nature only and the understanding that the information, for a range of reasons (including email failure, not all members being covered by email, or non-use by members, or operational shortcomings) will not provide any guarantees of aviation safety.



### **FURTHER INFORMATION**

**If you would like more information on the vital and responsible role the aerial application industry plays:**

**[www.aerialag.com.au](http://www.aerialag.com.au)**

**Or contact us on:  
02 6241 2100 ph.**

**[phil@aerialag.com.au](mailto:phil@aerialag.com.au)**

**AAAA  
PO BOX 353  
Mitchell ACT 2911**

## 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 Seale Street  
Orange NSW 2800  
PO Box 1237  
Orange NSW 2800  
tel: 02 6362 0211  
fax: 02 6363 1495  
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.

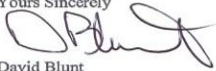
The property was marketed at \$610,000 and subsequently sent to auction on the 23<sup>rd</sup> March, 2009, where it did not sell.

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

Small Pty Ltd trading as  
Ray White Orange  
ABN 55 107 934 807

Orange

**ATTACHMENT 4**

**Scientific Review of Flora & Fauna Assessment Methodologies  
Undertaken for the Bodangora Wind Farm EA.**

See separate pdf file