

30 August 2013

**NSW Planning Assessment Commission Determination Report
Bodangora Wind Farm Project, Wellington LGA**

Project

The Bodangora Wind Farm Project is a proposal to construct and operate up to 33 wind turbines with a total installed capacity of 120 megawatts, near the small village of Bodangora, approximately 20 km north east of Wellington. The project includes associated infrastructure such as access tracks, road upgrades, a substation and connections between turbines, the substation and the existing 132kV Wellington Beryl transmission line.

Delegation to the Commission

The Commission received the referral to determine the project under delegation from the Minister for Planning and Infrastructure on 17 June 2013.

The Chair of the Planning Assessment Commission, Ms Gabrielle Kibble AO constituted the Commission to determine the project with Mr Garry West and Mr David Johnson.

Department's Assessment Report

The Director-General's Environmental Assessment Report considered the following key issues:

- Operational Noise and Vibration;
- Visual Amenity;
- Flora and Fauna;
- Traffic and Transport; and
- Health.

Other issues considered in the report include: community consultation, justification, soils and water, telecommunications, bushfire safety, aviation safety and decommissioning.

The Department concluded that significant impacts are unlikely, noting the project would be designed to achieve compliance with applicable noise and vibration criteria at non associated dwellings and that the impacts on landscape values as a whole, would be acceptable.

The Department considered that provided the commitments, management measures and stringent requirements of the recommended conditions are implemented, the impacts of the project can be minimised and managed to acceptable levels. On balance the project was found to be justified and in the public interest and was recommended for approval.

Site Visit and Meetings

On 29 July 2013 the Commission visited the Bodangora area to inspect the proposed site of the wind farm.

Following the site visit the Commission travelled to Wellington for meetings held later in the day, which are outlined below.

Meeting with the Proponent

The Proponent explained the site was selected due to the consistent wind in the area and its proximity to existing power infrastructure. It indicated that the site could accommodate twice as many turbines, but that by limiting the number of turbines it had responded to the concerns of residents in reducing impacts on the landscape. The Proponent also suggested

that some of the proposed turbines had been deleted or removed as a result of discussions with landowners and site constraints.

The Commission noted the concerns raised by Mid Western Regional Council in relation to the sourcing and transport of concrete from Mudgee. The Proponent indicated that a local source in Wellington would have ample capacity and that it would prefer to source the concrete locally. The Proponent confirmed it would not be opposed to a condition preventing it from sourcing concrete from the Mid Western Region.

The Commission sought clarification on the plantings proposed to provide screening of the turbines. The Proponent indicated that the plant species selected would depend on the property, the soils and the preference of the landowner.

The Proponent suggested that the 2 km buffer around the wind turbines was very generous and that most Governments around the world require a much smaller 500 to 600 m buffer. The Proponent also noted it has a Voluntary Planning Agreement with Wellington Council and that it would also provide a modest Community fund – 2% of the revenue of one turbine. A viewing platform and interactive centre with information about the system and the performance of the turbines would be provided.

Meeting with Wellington Council

The Commission met with Council's General Manager Mr Michael Tolhurst. Council noted the predominantly rural demographic character of the Local Government Area and Wellington is looking for economic development and anything that can support employment opportunities. In relation to this application, it was noted that while the project may have some positive employment opportunities during construction, the operational phase would only require approximately four people and they would not necessarily be local.

Council has been involved with the application since the beginning and had discussions with both the objectors and supporters. Council acknowledge it is to be assessed as State Significant Development and so it has focused on ensuring that the community would not be disadvantaged if the development was to proceed. In this regard a Voluntary Planning Agreement has been entered into, which would provide for road network infrastructure and ongoing road maintenance and community benefit.

Council raised concerns about the social impacts and the damage done in dividing the community, noting that the Proponent's community consultation had not been to the same standard as that for some other major developments in the region. The cumulative impact with other wind farms being proposed was also acknowledged.

Meeting with Mid Western Regional Council

Mid Western Regional Council accepted an invitation to meet with the Commission as it had made a submission and raised concerns with the application.

Mid Western Council noted it had limited concerns as the project was not within the Mid Western Local Government Area. Nonetheless it noted that there was a suggestion that concrete for the proposal could be sourced from the Mid Western LGA and that 7000 concrete trucks would have considerable impact on the LGA. Council was particularly concerned these trucks would need to travel through town and past schools and particularly sought that truck movements be restricted during school drop off and pick hours. Council also raised concerns that consultation had been limited and it had been surprised to read that concrete may be transported from Mid Western LGA in the Environmental Assessment.

The Commission advised Mid Western Regional Council that both Wellington Council and the proponent had now suggested that concrete would likely be sourced locally, from Wellington.

Public Meeting

From 3 pm on Monday 29 July 2013 the Commission held a public meeting at the Wellington Soldiers Club, 75 Arthur St Wellington. The Commission heard from 35 speakers at the meeting, as listed in Appendix 1. Some speakers supported the proposal, while others raised concerns or objections to the project. Issues raised included those both for and against the proposal and the key points are summarised as follows.

Issues raised in support of the proposal included the need for the project, suggesting that wind turbines reduce greenhouse gas emissions; are a source of renewable energy; and are important for addressing climate change and providing for future generations.

It was suggested that there is a lack of consensus on the negative impacts of wind turbines and that fear campaigns are being funded by competing industries.

The suitability of the site was also raised by some, suggesting it is an ideal site, particularly given its proximity to the electricity grid it would feed into.

It was noted that the proposal is relatively small, compared to some other wind farms proposed and it was suggested that the positioning of turbines had been well planned as they were scattered, rather than clustered.

One speaker noted that the proposal represents a new industry for the area, that the proposal does not provide significant employment or community input, but that it will drought proof a number of host properties and that this is a significant benefit for this rural area.

There were a number of concerns or objections raised. There was particular concern about health impacts from low frequency noise and infrasound. Some objectors suggested there are clear health impacts, while others suggested there is significant uncertainty regarding the health impacts and that the precautionary principle should be applied. It was noted that the National Health and Medical Research Council is currently undertaking a review and other studies such as the one being conducted by the South Australian EPA and the decision of the Victorian Civil and Administrative Tribunal (to adjourn until October 2013 in order allow further evidence in relation to health) were also mentioned. Further, transparent and unbiased, studies of possible side effects were called for, noting a preventative/precautionary approach should be adopted.

Questions were raised regarding the duty of care for children living on host properties in close proximity to the turbines, and for inmates and workers at the Correctional Centre, concerns for health impacts on livestock and wildlife were also raised.

Concerns regarding potential health impacts on inmates and staff at the Wellington Correctional Centre related to suggestions that health impacts from wind turbines are more pronounced in small spaces and for those with mental health problems, both notable at the Correctional Centre. It was also suggested that staff were concerned that potential health and flow on impacts to the operations of the correctional centre had not been specifically assessed or considered.

Impacts on amenity that were raised included noise and visual impacts particularly given the size, scale and industrial qualities of the turbines, and the quiet rural setting they are proposed to occupy. The potential cumulative visual impacts, when considered with other wind farms proposed to be developed in the district, was a common concern for many

speakers. The landscape's capacity to absorb the development was also questioned and it was suggested the turbines would be too tall. Some speakers indicated their homes would be surrounded by turbines should this and other wind farm proposals proceed.

Property values and marketability were expected to be impacted, speakers suggested values had been reduced by 20-30% around other wind farms and noted an example where reduced land values near a wind farm had triggered a reduction in council rates. It was suggested that a reduction in rates payable to Wellington Council may lead to further vulnerability to amalgamation. It was also noted that rural properties represent a significant investment asset, and the sale of the property is relied on as a source of superannuation for many farmers. Some nearby landowners are now concerned the value of their properties will be significantly reduced, or that they will not be able to sell their properties.

Social impacts were said to have already occurred, noting that the proposal has divided the community. The level of community consultation undertaken by the Proponent was criticised and there was also concern that clauses in contracts with host landowners are restrictive. Speakers also questioned the level of community benefit with some suggesting the proposal should include additional local contributions.

Concerns were raised relating to the viability of the wind industry as a renewable energy source, both in relation to subsidies, reliability and the need for backup gas turbines or coal power. The embodied energy of the wind turbines was also questioned.

Bodangora Airport is used on a regular basis for medical and prison purposes. It was suggested that the proposal would also have impacts on the use of the grass landing strip running across the main runway and that the project would restrict future expansion of the airport.

A number of speakers were dissatisfied with the level of information available, requesting that the wind farm noise guidelines be released publicly and noting concerns about the Proponent's assessment including:

- that some properties had been assessed for noise impacts, but not visual impacts;
- that details about potential screening options had not been provided; and
- that the data from noise loggers had not been made available to landowners.

Concerns with the Department's assessment were also raised, particularly that it is considered to be biased and exhibits an ideological commitment to wind farm development. Speakers also suggested that it had not addressed some of the community's concerns and legislation such as the National Electricity Act.

Other issues raised included:

- Concerns about the level of consultation and opportunities to comment;
- Impacts on weather, including temperature and precipitation;
- Flora and Fauna impacts, including threatened species, birds, bats and hollow bearing trees;
- Concerns regarding decommissioning and disposal of the turbines, noting the blades are made of carbon fibre and cannot be recycled;
- Bushfire risks, noting the Rural Fire Service does not have a standard operating procedure for wind farms;
- Suggestions that the site is not suitable for a wind farm;
- Concerns the project is not justified and public interest not established; and
- A preference for alternatives such as nuclear power or solar panels.

A large number of documents were submitted at the public meeting and/or sent by email following the meeting.

Meeting with the Department of Planning and Infrastructure

On 15 August 2013 the Commission met with representatives of the NSW Department of Planning and Infrastructure to discuss the issues raised at the meeting. The Commission noted that considerable concern had been raised at the public meeting.

The Commission noted that speakers had made reference to work dating back to the 1980s relating to noise impacts from NASA wind turbines. The Department advised it was aware of some of this work and suggested that wind turbine technology has improved since this time, noting the turbine support structures were very different (often with a four leg tower) and also noted the controls in the recommended conditions are more stringent than those suggested in these studies. The Department emphasised the fact that turbines would be at least 2 km from any non-associated dwelling and noted that the majority of the studies on impacts from turbines relate to dwellings much closer to the turbines.

The Department also referred to the Victorian Department of Health publication "Wind farms, sound and health: Technical information", which was published earlier this year.

The Commission sought clarification on the potential differences between turbine models and associated impacts. The Department indicated that generally the models available are similar in terms of noise performance, but that it has recommended conditions which set performance based criteria, rather than specifying one model over another.

The Commission noted that speakers at the public meeting had suggested the NSW Valuer General's "Preliminary Assessment of the impact of wind farms on surrounding land values in Australia: NSW Department of Lands" was out of date and should be updated. The Department advised it had no indication that this was being undertaken.

Meeting with NSW Health

On Thursday 22 August 2013 the Commission met with the NSW Health representatives Professor Wayne Smith, Director Environmental Health Branch and Dr Jeremy McNulty, Director Health Protection NSW. NSW Health was very clear in its advice, which is consistent with that of the National Health and Medical Research Council - that there is no published scientific evidence to link wind turbines with adverse health effects.

NSW Health recognised that noise from the turbines may cause some disturbance to people living in very close proximity (less than 700 m from the turbines). It advised that the 2 km buffer provided was highly conservative and represented a very precautionary approach.

In relation to infrasound, NSW Health echoed the advice of the World Health Organization, which has stated that there is no reliable evidence that sounds below the hearing threshold produce physiological or psychological effects.

NSW Health noted that the symptoms reported by residents concerned by wind farms are also reported by those living near other new developments of various kinds. Studies suggest these symptoms are suggestible, i.e. if individuals are expecting to be impacted they will be more likely to report symptoms. It was also suggested that the visibility of the turbines influenced the likelihood of complaints from a neighbour. Sleep disturbance was considered to be a more difficult issue, but was also potentially a result of an individual's broader concerns about a development.

NSW Health noted that the wind industry could improve its approach to community engagement and should be more proactive and transparent in this regard.

In summary NSW Health noted that some noise and associated health impacts could be expected in close proximity to wind turbines, but that the 2 km buffer distance provided in

this instance was considered to be very conservative and precautionary from a health perspective. The Public Statement from the National Health and Medical Research Council is still in place and NSW Health is not aware of any evidence that would call for a change to this advice (that there is no published scientific evidence to positively link wind turbines with adverse health effects).

Commission's consideration

The Commission has carefully considered the proposal, the Director-General's Environmental Assessment Report and the issues raised at the public meeting, in submissions and in the supplementary information/correspondence provided to the Commission.

Health and Noise

One of the primary concerns raised with the proposal related to potential noise impacts and associated health effects. The Commission notes that the noise levels predicted to be produced by the turbines are not expected to exceed 30 dB(A) at any non associated dwelling. Low frequency noise levels are also expected to be well within the levels recommended in the *draft NSW Planning Guidelines for Wind Farms*, at non associated residences, with predictions for less than 52 dB(C). The Department's assessment also indicates that infrasound is not expected to be perceptible at any dwelling.

NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary. The Commission has accepted the advice of NSW Health, noting it is consistent with that of other health authorities, such as the Victorian Department of Health, and is satisfied that the proposal does not represent a health risk to the local community, including those at the correctional centre.

In relation to host properties, the Commission understands that some of the associated dwellings are approximately 400 m from the proposed turbines. While the owners of these associated dwellings have signed agreements with the Proponent regarding the project, some speakers raised concerns about potential health effects on any residents, particularly children. The Commission notes that the Department's recommended conditions require that noise agreements with associated dwellings satisfy the World Health Organisation's *Guidelines for Community Noise* (WHO 1999). The Commission is satisfied this condition recommended by the Department will provide adequate protection against sleep disturbance. As noted previously infrasound is not predicted to be perceptible at any dwelling.

The Commission noted that the noise conditions recommended by the Department of Planning and Infrastructure did not specifically limit low frequency noise. The Commission acknowledges that low frequency noise levels are not expected to exceed 60dB(C) at any non associated dwelling, but given the community's concern about this issue, the Commission considers that it is appropriate to include an additional condition, to safeguard against excessive low frequency noise. Consequently, the Commission has added a condition to ensure that low frequency noise is managed.

Visual

The project will have visual impacts and these were of concern to many speakers at the public meeting, suggesting the area would become industrial in character as a result of the project, and noting the considerable size and scale of the turbines. The visual impacts of the turbines are highly subjective, some people appreciate the aesthetics of the wind turbines, while many people dislike them. Consistent with the Department's recommended condition, the Proponent should be required to provide plantings to screen views from dwellings within 5 km of the turbines, where requested by the landowner. The growth rate and survival of

these plantings will be key to the success of this scheme and the Commission notes the landscape plan includes requirements to monitor and maintain the landscaped areas, to deal with this issue.

As noted in the Department's assessment report, the vegetation screens will not block residential views of the turbines entirely, and the turbines will also be visible from some roads. The Commission notes that some visual impacts will be unavoidable.

Social and Economic impacts

Economic impacts, both negative as well as positive were raised at the public meeting and in submissions and correspondence. The Commission acknowledges that the proposal will have both positive and negative impacts and that some of these have been socially divisive.

All the Government agencies the Commission met with, at both the local and state level agreed that the Proponent and the wind industry more widely could do more in relation to community engagement and consultation. The Commission considers that community consultation is essential and it is clear that more could have been done in this instance. Nonetheless, the Commission has accepted the Department's assessment which found that the residual social and economic impacts do not outweigh the project's broader benefits in terms of renewable energy generation.

Construction traffic

The transport requirements during construction of the project will be considerable, both in relation to the delivery of turbine components and structures, and the materials needed to secure them in place. The Commission acknowledges Mid Western Regional Council's concerns about traffic impacts associated with the sourcing of concrete from its region. The Commission understands the Proponent is pursuing options to source the concrete locally, however, if in due course the proponent wishes to source concrete or its components from the Mid Western LGA the Commission has added a requirement for it to obtain the agreement of Mid Western Council.

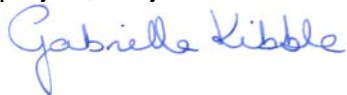
Other Issues

Other issues raised in submissions and at the public meeting have been considered by the Commission and are largely addressed in the Department's Assessment Report. The Commission is satisfied that the recommended conditions provide adequate controls to manage these issues.

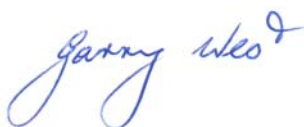
Commission's Determination

The Commission has carefully considered the proposal and its associated impacts. The Commission acknowledges that noise emissions from the turbines will be audible at some surrounding dwellings, but is satisfied that the levels would comply with appropriate standards. The Commission also acknowledges the community's significant concerns about the potential for health impacts, however given the relatively low noise levels to be produced and the generous setback distance between the turbines and non associated dwellings the Commission is satisfied the wind turbines will not impact on human health.

While the project will have some visual and amenity impacts, the project is consistent with Government policies for the generation of renewable energy and complies with the draft NSW Wind Farm Planning Guidelines. Consequently, the Commission has approved the project, subject to conditions



Gabrielle Kibble AO
Member of the Commission



Garry West
Member of the Commission



David Johnson
Member of the Commission

Appendix 1

List of Speakers

PLANNING ASSESSMENT COMMISSION PUBLIC MEETING, BODANGORA WIND FARM PROJECT

Date: Monday 29 July 2013, 3pm

Place: The Wellington Soldiers Club, 75 Arthur St, Wellington

Speakers:

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| 1. Mayor Clr Rod Buhr, Wellington Council | 18. Mr Campbell Gregory |
| 2. Mr Mike Lyons, Bodangora Wind Turbine Awareness Group | 19. Mr Angus Gregory |
| 3. Mr Wayne Bywater, Wellington Correctional Centre | 20. Mr Paul Valley |
| 4. Mr Patrick Bradbery, Central NSW Renewable Energy Co-operative Ltd | 21. Ms Lisa Tayler, Clean Energy Council |
| 5. Mr Roger Everett | 22. Dr Sarah Laurie, Waubra Foundation |
| 6. Ms Lyn Jarvis | 23. Mr Simon Barton |
| 7. Mr Robert Jarvis | 24. Ms Carol Conn |
| 8. Mr David Lyons | 25. Mr Ross Conn |
| 9. Mr Tom Green | 26. Dr John Bosanquet, Wellington Aero Club |
| 10. Mrs Sue Green | 27. Mr Warren Crittle |
| 11. Mr Nickolas Lyons | 28. Mr Rex England |
| 12. Ms Kate Jarvis | 29. Mr Harold Baker |
| 13. Mr Mike Lyons | 30. Mr Robert Sutherland |
| 14. Ms Camille Lang | 31. Ms Linda Lyons |
| 15. Mr Frank Barker | 32. Ms Natalie Lyons |
| 16. Mr Bryan Kiss | 33. Ms Rita Gibbons |
| 17. Mr Steve Lowe | 34. Mr Garry Gibbons |
| | 35. Mr Tony Poole |