Contact: Megan Webb
Phone: 02 9383 2113
Fax: 02 9299 9835
Email: megan.webb@planning.nsw.gov.au

Mr Mike Young
Director Resource Assessments
NSW Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

18 June 2015

Dear Mr Young

Subject: Additional information on Gullen Range Wind Farm Modification 1, Upper Lachlan LGA

As discussed at our meeting on Monday, the Commission heard a number of concerns at the public meeting last week and would appreciate some clarification on the following matters.

1. A number of speakers raised concerns about the number of turbines considered in the Department latest assessment report, (i.e. only 9) and questioned how this number was arrived at. The Commission understands that it is being asked to determine the locations of 69 turbines and would appreciate some further advice on the impacts (particularly visual impacts) of the other 60 turbines and how this had been assessed.

2. The Commission notes that a number of speakers raised concerns about the noise impacts of the project. The Commission is interested to understand whether the project is complying with the conditions in the approval. In our discussion you explained that noise impacts are being monitored in an extensive program of measurements, in order to determine whether the project is complying with the approval conditions. At our meeting you advised that monitoring noise from wind farms is complex and different to the monitoring typically undertaken for other noise generating industries (because the sound produced is directly related to the wind conditions). Could you please provide further information on the monitoring being conducted that might be of relevance to the Commission's determination?

3. Associated residences. One speaker at the meeting noted that the agreements in place between certain landowners and the proponent may not relate to all the impacts of the project (i.e. noise, visual intrusion, access issues etc.) Is the Department satisfied that all impacted residences that have not agreed to the impacts, have been included in its assessment of the modification in terms of the various impacts? Could you advise the basis for your considerations regarding this matter?

4. The Commission notes that the existing conditions of approval were the outcome of detailed Land and Environment Court proceedings and judgement. Some of the recommended amendments to the conditions do not appear to relate to the modification application currently before the Commission. Can the Department provide clarification of the reasons for its recommended changes to the conditions?

5. Compliance. The Commission notes that some speakers raised concerns about the project's compliance with the approval. Compliance with the Minister's approval is not a relevant consideration for the Commission, in determining this modification. Nonetheless, the Commission would like to take this opportunity to note the concerns raised by the community, regarding the constructed locations of the turbines, the noise and visual impacts of the turbines, and the size and scale of the switching station.

Should you have any questions on these issues, please contact Megan Webb of the Commission Secretariat, on 9383 2113.

Yours sincerely

Garry West
Member of the Commission

MEMORANDUM
GULLEN RANGE WIND FARM (MP07_0118 MOD 1)

RESPONSE TO PAC REQUEST FOR INFORMATION

1. A number of speakers raised concerns about the number of turbines considered in the Department latest assessment report, (i.e. only 9) and questioned how this number was arrived at. The Commission understands that it is being asked to determine the locations of 69 turbines and would appreciate some further advice on the impacts (particularly visual impacts) of the other 60 turbines and how this had been assessed.

Following the April 2014 assessment and based on its compliance investigations, the Department determined that the movement of 9 of the turbines was inconsistent with the project approval as they had the potential to materially increase the environmental impacts of the project. The impacts associated with these 9 turbines were therefore the focus of the Department's assessment report provided to the PAC in May 2015.

However, the impact of the movement of all 69 relocated turbines was considered in detail in the Department's assessment report provided to the Planning Assessment Commission (PAC) in April 2014.

Although the Department considered the quantitative assessment relating to how far the turbine moved, the key consideration applied by the Department in its assessment was the potential for increased environmental impact, particularly in regard to noise, visual and biodiversity impacts.

The Department considers that it has fully addressed biodiversity in its assessment report in May 2015, but has clarified its consideration of the potential visual and noise impacts of the 60 relocated turbines not covered in detail in its May 2015 report below.

Wind Turbine Locations

The detail of the changes to each turbine location is presented in Appendix C. Table 1 summarises the extent of changes to turbine locations within each of the turbine groups. The average change in distance for each of the turbine group ranges from 26.3 m (Gurrundah group) to 53.7 m (Bannister group). The greatest distance that a wind turbine has moved is 187 m for wind turbine BAN_08.

Table 1: *Summary of Relocated Turbines by Turbine Group (Source Table 2-3 Modification EA)*

	Kialla	*Bannister*	*Pomeroy*	*Gurrundah*	*TOTAL*
Total no. turbines	***2***	***30***	***23***	***18***	***73***
Movement >100 m	-	6	2	1	9
Movement 50-100 m	-	4	6	3	13
Movement <50 m	2	19	14	12	47
Movement = 0		1	1	2	4
Minimum (m)	35.7	0	0	0	
Maximum (m)	43.3	187.0	115.2	101.5	
Average (m)	39.5	53.7	39.2	26.3	

The final design elevations were also surveyed and compared to the approximate elevation provided in the Environmental Assessment (2008). The change in elevation for the wind turbines is summarised in Table 2. The highest increase in elevation is 14.8 m for wind turbine BAN_08.

Table 2: *Extent of Elevation Change for Final Wind Turbine Positions*

Extent of elevation change from approved layout	***No of turbines***
Final turbine position lower	22
Final turbine position 0 – 5 m higher	31
Final turbine position 5 – 10 m higher	15
Final turbine position greater than 10 m higher	5

The dimensions of the installed turbines also differ in the following manner:

- *Height:* slightly smaller wind turbines with blade tip heights of either 126 m or 130 m, rather than 135 m in the Environmental Assessment (2008)
- *Rotor Diameter:* smaller maximum rotor diameter with 82 m or 100 m rather than 105 m in the Environmental Assessment (2008).

Visual Impact

In undertaking its assessment, the Department has relied on the following sources of information:

- Land and Environment Court Judgement (7 May 2010);
- proponent's modification application including the visual assessment;
- proponent's Response to Submissions;
- MSA independent surveyors report commissioned by the Department; and
- the Department's site visits on 9 April 2014,18 July 2014 and 10 June 2015.

The Department presents the visual impacts to residents according to the turbine groups below.

Bannister Turbine Group

A summary of the change to visual impact from the Bannister Turbine Group is provided in Table 3.

Table 3: *Bannister Turbine Group – Visual Impact*

Residences (distance to closest turbine)*	***Photomontage Viewpoint***	***Number of turbines within 2 km that have moved closer to residence****	***Change in closest turbine to residence*** **	***Impact and consideration***
B5 (1.8 km)	Viewpoint B5	One closer (121 m)	121 m closer	• Visual change is not discernible and the closest turbine that moved is largely screened by vegetation. • Landowner has access to landscaping provisions which will mitigate impact.
B7 (1.4km)	Viewpoint B7	Five closer (5 to 77 m).	23 m closer***	• Property is an associated residence accepting all impacts.
B10 (1.5 km)	View Point 4	All further away		• Visual change is not discernible.
B11 (1.8 km)	View Point 4	One closer (4 m).	Further away	• Visual change is not discernible.
B12 (1.6 km)	Viewpoint B5 and B26	Two closer (65 to 166m)	Further away	• Property is now an associated residence accepting all impacts and has a negotiated noise limit.
B13 (1.5 km)	Viewpoint B5	Two closer (110 to 134 m)	134 m closer	• Visual change is not discernible due to high screening around residence.
B14 (1.7 km)	Viewpoint B5	One closer (80 m)	80 m closer	• Visual change is not discernible. • Landowner has access to landscaping provisions which will mitigate impact.
B17 (1.5 km)	Viewpoint 2 and B7	Four closer (5 to 77 m)	15 m closer***	• Property is now an associated residence accepting all impacts.
B19 (1.3 km)	Viewpoint B19	Three closer (20 to 70 m)	Further away	• Visual change is difficult to discern.

Residences (distance to closest turbine)*	***Photomontage Viewpoint***	***Number of turbines within 2 km that have moved closer to residence****	***Change in closest turbine to residence*** **	***Impact and consideration***
B20 (approx. 1.6 km)	Viewpoint 4	All further away****	Further away****	• Visual change is not discernible.
B21 (1.6 km)	Viewpoint 4	All further away	Further away***	• Visual change is not discernible.
B22 (1.6 km)	Viewpoint 4	All further away	Further away***	• Visual change is not discernible.
B23 (1.7 km)	Viewpoint 4	All further away	Further away***	• Visual change is not discernible.
B24 (1.4 km)	Viewpoint 4	Further away	Further away***	• Visual change is not discernible.
B26 (1.8 km)	Viewpoint B26	All further away	Further away	• Visual change is not discernible.
B28 (1.3 km)	Viewpoint B28	Four closer (5 to 161 m)***	161 m closer***	• Visual change is not discernible as buildings and trees provide significant shielding. • Landowner has access to landscaping provisions which will mitigate impact.
B29 (1.1 km)	Viewpoint 1 and B28	Six closer (1 to 161 m)***.	162 m closer***	• Property has been acquired by the proponent.
B30 (1.6 km)	Viewpoint B31	Three closer (22 to 88 m)	76 m closer	• Visual change is difficult to discern. • Landowner has access to landscaping provisions.
B31 (1.6 km)	Viewpoint B31	Four closer (14 to 78 m)***	78 m closer***	• Visual change is difficult to discern. • Landowner has access to landscaping provisions.
B32 (1.5 km)	Viewpoint B31	Four closer (18 to 81 m***)	81 m closer***	• Visual change is difficult to discern. • Landowner has access to landscaping provisions.
B54 (1.7 km)	Viewpoint 4	Further away	Further away	• Visual change is not discernible.
B55 (1.4 km)	Viewpoint 1 and B28	Three closer (20 to 166 m)	166 m closer	• Visual change is not discernible as existing mature vegetation around the residence curtilage would largely screen views. • Landowner has access to landscaping provisions which will mitigate impact.
B77 (1.1 km)	Viewpoint B77	Three closer (38 to 162 m)***	162 m closer***	• Visual change is difficult to discern. • Overall visual change is minor.
B124 (2 km)	Viewpoint 2	Further away***	Further away***	• Overall visual change is not discernible.

Notes:
* Distances for each residence to the closest turbine were sourced from Department commissioned MSA survey and rounded down to the nearest 100 m.
** This data is sourced from the non-associated residence data folder for the Bannister Turbines (Appendix A11-2 in the Modification EA).
*** Distance to closest receiver sourced from Department commissioned MSA survey and differs to data in Bannister Turbines (Appendix A11-2 in the Modification EA).
**** Information based on non-associated residence data folder for the Bannister Turbines (Appendix A11-2 in the Modification EA) for B21 and B22.

In summary:

- the visual impact of the relocated turbines at the vast majority of residences in the Bannister area is not discernible; and
- those residences with a noticeable increase in visual impacts have either been acquired by the proponent, or the landowner has reached an agreement with the proponent to accept the impacts of the wind farm.

Gurrundah Turbine Group

A summary of the change to visual impact from the Gurrundah Turbine Group is provided in Table 4.

Table 4: *Gurrundah Turbine Group Visual Impact*

Residences (distance to closest turbine)*	***Photomontage Viewpoint***	***Number of turbines within 2 km that have moved closer to residence****	***Change in closest turbine to residence*** **	***Impact and consideration***
G26 (1.8 km)	Viewpoint 3 Pomeroy Rd	One closer (16 m)	Further away	• Visual change is not discernible.
G28 (1.9 km)	Viewpoint 3 Pomeroy Rd	No change***	No change	• Visual change is not discernible.
G31 (1.5 km)	Viewpoint G31	All further away	Further away	• Visual change is not discernible.
G32 (1.0 km)	Viewpoint G38	Five closer (1 to 101m)	1m closer	• Visual change is not discernible.
G33 (1.3 km)	Viewpoint 3 and G38	Five closer (2 to 84 m)	Further away	• Visual change is not discernible.
G35 (1.8 km)	Viewpoint G35	Three closer (7 to 31 m).	1 m closer***	• Visual change from GUR_10 is difficult to discern. • Overall visual change is minor.
G36 (1.3 km)	Viewpoint G38	Two closer (9 m)	4 m closer	• Visual change is not discernible.
G38 (1.7 km)	Viewpoint G38	One closer ***	5 m closer	• Visual change is not discernible.
G39 (1.6 km)	Viewpoint 3 Pomeroy Rd	Two closer (1 to 20 m)	20 m closer	• Visual change from GUR_07 is difficult to discern but overall visual impact in the landscape is similar. • Visual change for other turbines is not discernible.
G40 (1.6 km)	Viewpoint 3 Pomeroy Rd	Three closer (2 to 42m)***	42 m closer***	• Visual change from GUR_07 is difficult to discern but overall visual impact in the landscape is similar. • Visual change for other turbines is not discernible.
G43 (1.6 km)	Viewpoint 3 Pomeroy Rd	Four closer (1 to 97 m***)	97 m closer***	• Visual change from GUR_07 is difficult to discern but overall visual impact in the landscape is similar. • Visual change for other turbines is not discernible.

Notes:

* Distances for each residence to the closest turbine was sourced from Department commissioned MSA survey and rounded down to the nearest 100 m.

** This data is sourced from the non-associated residence data folder for the Gurrundah Turbines (Appendix A11-4 in the Modification EA).

*** Distance to closest receiver sourced from MSA survey and differs to data in Gurrundah Turbines (Appendix A11-4 in the Modification EA).

In summary, the relocated turbines would not result in any material increase in visual impacts at residences in the Gurrundah area.

Pomeroy Turbine Group

A summary of the change to visual impact from the Pomeroy Turbine Group is provided in Table 5.

Table 5: *Pomeroy Turbine Group – Visual Impact*

Residences (distance to closest turbine)*	***Photomontage Viewpoint***	***Number of turbines within 2 km that have moved closer to residence****	***Change in closest turbine to residence*** **	***Impact and consideration***
PW4 (1.8 km)	Viewpoint PW3	None closer	Further away	• Visual change is not discernible due existing vegetation and intervening topography. • Landowner has access to landscaping provisions which will further mitigate impact. • The proponent has made a commitment to undertake screening of the substation near property PW4 to minimise visual impacts from several areas within the property where the substation is visible and the Department has incorporated this commitment in the modified conditions.
PW8 (1.6 km)	Viewpoint PW9	Two closer (1 to 9 m)***	9 m closer***	• Visual change is not discernible.
PW9 (1.2 km)	Viewpoint PW9	Four closer (3 to 18 m)	6 m closer	• Visual change is difficult to discern.
PW29 (1.3 km)	Viewpoint PW3	Two closer (43 to 97 m)	Further away	• Visual change is not discernible due to existing vegetation providing screening.
PW34 (0.8 km)	Viewpoint 4 and PW3	Three closer (3 to 124 m)***	124 m closer***	• Property was acquired by the proponent.

Notes:
* Distances for each residence to the closest turbine was sourced from Department commissioned MSA survey and rounded down to the nearest 100 m.
** This data is sourced from the non-associated residence data folder for the Pomeroy Turbines (Appendix A11-3 in the Modification EA).
*** Distance to closest receiver sourced from Department commissioned MSA survey and differs to data in Pomeroy Turbines (Appendix A11-3 in the Modification EA).

In summary:

- the visual impact of the relocated turbines at the majority of residences in the Pomeroy area is not discernible;
- the proponent has made a commitment to undertake screening of the substation near property PW4 to minimise visual impacts from several areas within the property where the substation is visible and the Department has incorporated this commitment in the modified conditions; and
- the proponent has acquired property PW34.

Kialla Turbine Group

A summary of the change to visual impact from the Kialla Turbine Group is provided in Table 6.

Table 6: *Kialla Turbine Group Visual Impact*

Residences (distance to closest turbine)*	***Photomontage Viewpoint***	***Number of turbines within 2km that have moved closer to residence****	***Change in closest turbine to residence*** **	***Impact and consideration***
K1 (1.9 km)	Viewpoint K1	Two closer (7 to 35 m)	Further away	• Visual change is not discernible due to existing vegetation and topographic effects.
K2 (1.0 km)	Viewpoint 6	One closer (43 m)	Further away	• The property was recognised in the Response to Submissions as experiencing a high visual impact. Two turbines are located within 2 km. The final turbine location has moved the closest turbine (KIA_01) 20 m further away (now 1 km away) and the next closest has moved 43 m closer (now 1.1 km away). • Visual change is not discernible. • Landowner has access to landscaping provisions[1] which will mitigate impact.
K3 (1.9 km)	Viewpoint 5	One closer (37 m)***	37 m closer***	• Visual change is not discernible.
K4 (1.5 km)	Viewpoint 6	Two closer (18 to 33 m)***	18 m closer***	• Visual impact not discernible due to intervening topography.
K14 (1.5 km)	Viewpoint 6	One closer (20m)***	20 m closer***	• Visual impact not discernible due to intervening topography.
K18 (1.6 km)	Viewpoint 6	Two closer (19 to 42m)***	19 m closer***	• Visual impact not discernible due to intervening topography.
K19 (1.9 km)	Viewpoint 6	One closer (12 m)***	12 m closer***	• Visual impact not discernible due to intervening topography.
K20 (1.5 km)	Viewpoint 6	Two closer (5 to 39 m)	5 m closer	• Visual impact not discernible due to intervening topography.

Notes:
* Distances for each residence to the closest turbine was sourced from Department commissioned MSA survey and rounded down to the nearest 100 m.
** This data is sourced from the non-associated residence data folder for the Kialla Turbines (Appendix A11-1 in the Modification EA).
*** Distance to closest receiver sourced from Department commissioned MSA survey and differs to data in Kialla Turbines (Appendix A11-1 in the Modification EA.

In summary:

- the visual impact of the relocated turbines at the vast majority of residences in the Kialla area is not discernible; and
- although residence K2 was recognised as having a high visual impact, the resulting visual impact from the modification is considered similar and the landowner has access to the landscaping provisions in Condition 2.2.

[1] Goldwind Australia Pty Ltd, *Supplementary information for Department of Planning and Environment*, April 2015.

Summary

The Department acknowledges that it is possible to notice some minor changes in the visual landscape where constructed turbines have been relocated. However, the Department considers that the relocated turbines have not materially increased visual impacts on any local residents, except in two cases (i.e. residence B12 and B29).

Since the original assessment report (July 2014) was prepared, the proponent has advised that it has:

- acquired property B29; and
- reached a negotiated agreement with the owner of property B12 to accept the impacts of the wind farm "as constructed".

Further, the Department notes that under the existing project approval, landowners of residences within 3 km of the wind farm would be able to access landscaping provisions to screen views of the turbines. With the implementation of the screening, the Department considers that any minor additional visual impacts would be effectively mitigated.

Finally the Department notes that the proponent has made a commitment to provide additional landscaping to minimise the visual impacts of the substation and switching yard on property PW4.

While the proponent was always obliged to screen this infrastructure as best as possible under existing conditions, and to document the specific measures that would be implemented in the Landscape Management Plan for the project, the Department has recommended a new condition to capture the proponent's commitment.

This condition requires the landscaping to be implemented by 31 December 2015, to include mature plantings, and to be maintained for the life of the project.

Noise

The existing project approval requires compliance with the noise limit of 35dB(A); or the existing background noise level ($L_{A90\ (10\text{-}minute)}$) correlated to the integer wind speed at hub height at the wind farm site by more than 5 dB(A) whichever is greater for all non-involved landowners or any other residential receiver in existence or the subject of a valid development consent at 17 August 2010. A non-involved landowner is defined by the Noise Impact Assessment Report (as referenced in the project approval) as a landowner who has not entered into an agreement with a wind farm developer in exchange for financial compensation. These noise limits are the most stringent allowed by the noise guidelines.

Both the Department and the EPA consider that the original and revised Noise Impact Assessments were conducted in accordance with South Australia's *Environmental Noise Guidelines: Wind Farms* (2003), which is the accepted methodology for assessing wind farm noise at non-associated residences in NSW. The Department also commissioned an independent noise assessment by Wilkinson Murray (May 2014) that concluded that the proposed relocation of the turbines had not resulted in a noticeable increase in noise impacts and that the project "as constructed" would be able to meet the noise limits in the project approval.

The Department accepts this conclusion of the independent noise assessment.

Further noise impact assessment prepared in December 2014 by Marshall Day revised the noise predictions on the basis of the layout of 73 turbines and concluded that the proposed turbine models and layout of the Gullen Range wind farms were expected to comply with the noise limits under the project approval.

The Department accepts the conclusion of a range of technical experts that the project is expected to comply with the noise limits under the project approval, and would not change the allowable impact to residences.

Post-commissioning compliance monitoring is currently underway and is expected to be submitted to the Department shortly. Once the report is submitted, it will be carefully reviewed by the Department, in consultation with the EPA.

If any non-compliances are detected, the Department will require the proponent to take corrective action (such as sector management) to ensure compliance.

2. The Commission notes that a number of speakers raised concerns about the noise impacts of the project. The Commission is interested to understand whether the project is complying with the conditions in the approval. In our discussion you explained that noise impacts are being monitored in an extensive program of measurements, in order to determine whether the project is complying with the approval conditions. At our meeting you advised that monitoring noise from wind farms is complex and different to the monitoring typically undertaken for other noise generating industries (because the sound produced is directly related to the wind conditions). Could you please provide further information on the monitoring being conducted that might be of relevance to the Commission's determination?

The Department is aware that some landowners located in the vicinity of wind farm operations are concerned about compliance with the noise conditions.

There are at least two important differences between noise generated by wind turbines and other types of industrial noise, such as mining projects.

First, the noise from turbines increases as the wind speed increases, but so too does background noise. At higher wind speeds, the background noise tends to mask the noise from the turbines, and results in a curved profile of noise impacts, with peak noise impacts generally occurring at around 8 metres per second.

Second, wind turbines are elevated, stationary noise sources that generate consistent noise levels for a given wind speed and direction. Noise generated by other major developments, such as from coal mines, is generated at ground level, is generally highly variable (depending on the type, number and location of specific plant and equipment in use at any one time) and is enhanced during stable atmospheric conditions.

These differences have implications for the regulation and monitoring of noise impacts associated with wind farms.

Because of the required operating conditions, the measurements are generally contaminated by wind noise which cannot be removed by filtering. This problem also causes real time monitoring to be an impractical tool for wind farms.

Finally, it is also important to note that undertaking compliance monitoring for wind farms is more complicated than it is for other developments. Under the *South Australian Environment Protection Authority's Wind Farms – Environmental Noise Guidelines 2003* or updated 2009 guidelines, over 2,000 measurements must be undertaken over a range of wind speeds. It can take several weeks or even months to compile a representative data set in a single location.

The approval for Gullen Range includes a range of noise conditions, which require the proponent to:

- comply with noise criteria at receivers that do not have a noise agreement with the proponent, for each integer wind speed from when the turbine first starts to rotate and generate power, up to the rated power of the turbine;
- measure noise generated by wind farm developments in accordance with the requirements of the South Australian Environment Protection Authority's *Wind Farms – Environmental Noise Guidelines 2003* or as otherwise agreed by the EPA;
- revise the noise assessment for the final turbine model and layout prior to commissioning and prepare a Noise Operating Strategy and implement any necessary mitigation and management measures if operational noise criteria are predicted to be exceeded;
- verify the noise levels being generated by the wind farm development within 3 months of commissioning, prepare a Noise Compliance; and
- prepare and implement a Noise Management Plan for operation to address monitoring requirements and procedure and corrective actions if a non-compliance is detected.

The proponent is currently carrying out compliance monitoring in accordance with its approved Noise Compliance Plan and the relevant South Australian guidelines.

This monitoring is being carried out at the 17 locations where detailed background monitoring was undertaken, and will provide scientifically robust data to enable both the Department and the EPA to determine whether the wind farm is complying with the relevant noise criteria for the wider area.

Although the monitoring results were due to be submitted earlier this year, the Department has given the proponent an extension to be able to collect data across the full range of wind conditions.

As indicated earlier, the Department expects to receiver this report shortly. Once it is received, the Department will review it carefully in consultation with the EPA; and if any non-compliances are detected, the Department will require the proponent to take corrective action to ensure compliance.

3. Associated residences

One speaker at the meeting noted that the agreements in place between certain landowners and the proponent may not relate to all the impacts of the project (i.e. noise, visual intrusion, access issues etc.) Is the Department satisfied that all impacted residences that have not agreed to the impacts, have been included in its assessment of the modification in terms of the various impacts? Could you advise the basis for your considerations regarding this matter?

The Department considers that a property is associated where there is a valid agreement between the subject landowner and the proponent, but only to the extent of the specific terms of the agreement. In other words, it is possible for a property to be associated in respect of hosting infrastructure, but not in respect of accepting the impacts of the wind farm as a whole.

Following the PAC public meeting, the Department sought further clarification from the proponent about properties where the terms of the agreement do not specifically cover all the impacts of the project (see Appendix D).

The Department is satisfied that the agreements with landowners cover all impacts of the project, apart from the following two residences (see Figure 6a in Appendix D):

- B20 – Post; and
- PW37 – Portelli.

B20 - Post

The proponent advises that the agreement with the landowner of this property covers access to a parcel of Crown land within the property boundary where it has installed overhead and underground electricity cables. The agreement does not cover other aspects of the impacts of the wind farm.

Accordingly, the Department has considered the key potential impacts of the wind farm “as constructed” below.

Variations to the noise and visual impacts on property B20 resulting from the turbines constructed in different locations to the approved layout were considered in the Response to Submissions (RTS) for the modification (Goldwind Australia Pty Ltd, June 2014).

The Department’s interpretation of the existing project approval noise limits is that they apply to residence B20. The revised noise assessment in the RTS predicted compliance at residence B20 with the noise criteria in the project approval for residences that do not have noise agreement in place. Both the Department and the EPA consider that the revised Noise Impact Assessments were conducted in accordance with the South Australia’s *Environmental Noise Guidelines: Wind Farms* (2003), which is the accepted methodology for assessing wind farm noise at non-associated residences in NSW. The Department also commissioned an independent noise assessment by Wilkinson Murray (May 2014) that concluded that the proposed relocation of the turbines had not resulted in a noticeable increase in noise impacts and that the project “as constructed” would be able to meet the noise limits in the project approval.

Noise compliance monitoring is currently being carried out at this property, and will be submitted shortly. If this noise monitoring shows any non-compliance at property B20, the Department will require the proponent to take corrective action to ensure compliance.

With respect to the visual impact at B20, five turbines (BAN_26, BAN_27, BAN_28, BAN_29 and BAN_30) are located within 2 km.

Based on the information for nearby residences (i.e. B21 and B22), four turbines have moved further away, in the order of less than 10 m and one remained the same distance from the residence. POM _01

is located approximately 2.9 km from the property, and has not moved towards the residence. Changes to elevations of turbines within 2 km have ranged between 1.2 m to a maximum of 4.5 m.

The Department considers that the turbines constructed in different locations to the approved layout have not caused significant differences to the visual impact predicted for the approved layout at residence B20. Further, the landowner has access to landscaping provisions and with the implementation of the screening, the Department considers that any minor additional visual impacts would be effectively mitigated.

PW37 – Portelli.

PW37 is a new residence approved by a development consent granted by Upper Lachlan Shire Council in July 2011 (i.e. after the wind farm was approved).

The Department's interpretation of the project approval noise limits is that they would not apply to PW37. Nonetheless, the proponent has committed to meeting the same conditions for noise and visual impact as for existing non-associated residences. In order to remove ambiguity, the Department has incorporated this commitment into the modified conditions.

With respect to the visual impact at PW37, the residence is more than 2 km from the closest turbine. This turbine was moved 57 m further away from PW37, and the view to this turbine is obstructed by an intervening building. Consequently, the Department considers that the turbines constructed in different locations have not caused significant differences to the visual impact predicted for the approved layout at PW37. The Department's interpretation of the project approval is that the landscaping provisions do not apply to PW37, however the proponent has committed to providing landscaping at this residence to minimise the visual impact of the project on their property. In order to remove ambiguity, the Department has incorporated this commitment into the modified conditions.

Based on the above consideration, and the information provided by the proponent, the Department is satisfied that all landowners of residences that do not have agreements with the proponent specifically covering noise and visual impacts have been considered, and the turbines constructed in different locations to the approved layout have not resulted in any material increase in visual and/or noise impacts at these residences.

4. The Commission notes that the existing conditions of approval were the outcome of detailed Land and Environment Court proceedings and judgement. Some of the recommended amendments to the conditions do not appear to relate to the modification application currently before the Commission. Can the Department provide clarification of the reasons for its recommended changes to the conditions?

The Department has made a number of recommendations to amend the project approval, but does not consider that these amendments would substantially alter the outcomes of the Land and Environment Court proceedings and judgement.

A summary of the nature and reasoning for the recommended amendments is provided in Table 7.

The recommended conditions contain four changes from the conditions that were sent to the PAC in May 2015. Conditions 2.2 and 2.15 were changed to extend the existing operational noise criteria and landscaping requirements to property PW37, which has been built following the original project approval. Condition 2.3A was changed to reference implementing landscaping treatments by a specified date. Condition 7.7 was changed to include timeframes for preparation of revisions of the decommissioning management plan.

The proponent has no objections to these changes or any of the other recommended conditions.

Table 7: *Summary of amendments to the project approval recommended by the Department*

Condition	***Reasoning for recommended amendment.***
Schedule 1	Simplify and clarify references to the project, including cross reference to new appendices that provide a map of the layout and the land parcels to which the approval applies.
Schedule 2	
Definitions	Update definitions to reflect agency name changes, reference documents associated with the modification application, and include definitions omitted from the original approval (e.g. construction and decommissioning). Clarify the land parcels to which the approval applies and include a copy of the Statement of Commitments in an appendix.
1.1-1.3	Clarify the terms of approval, and align this with contemporary drafting.
2.2	Ensure the landscaping requirements extend to property PW34 which was built following the original project approval.
New Condition 2.3A	The proponent has made a commitment to undertake screening of the substation near property PW4 to minimise visual impacts from several areas within the property where the substation is visible. While the proponent was always obliged to screen this infrastructure and to document specific measures that would be implemented in the Landscape Management Plan, the Department has incorporated the commitment to screen the substation in the modified conditions. The condition includes requirements to carry out the planting by the end of the year, and maintain it over the life of the project.
2.8-2.11	Ensure the same noise and blasting conditions for construction apply to the decommissioning phase of the project given the similarity of the impacts between the two phases of the development.
2.15	Ensure the operational noise criteria apply to property PW37 which has been built following the original project approval.
2.15, 2.20, 2.21	Give the Secretary or the EPA (which regulates the noise impacts from the wind farm) the discretion to vary the specific methodology for monitoring compliance with the conditions over time.
2.35	Ensure the compensatory habitat package, which was approved on 10 September 2012, is updated to incorporate the clearing carried out during the construction of the wind farm. Also to require the proponent to implement the package.
2.49	Extend the road dilapidation obligations for construction to the decommissioning phase of the project.
3.1	Ensure the Bird and Bat Adaptive Management Program is updated following and modification; and ensure this program incorporates specific measures for the Little Eagle.
5.2	Update the requirements to align the requirements for provision of publically available information to reflect contemporary drafting.
5.3,5.4 and 6.1	Ensure the Community Information Plan, Complaints Procedure and Compliance Tracking Program apply to the decommissioning phase of the project.
7.1	Ensure there is an Environmental Representative for the decommissioning phase of the project.
New condition 7.6	Insert a standard condition requiring the OEMP to be reviewed and updated, if necessary, within 3 months of any modification of the project approval.
New condition 7.7	Ensure a stand-alone Decommissioning Environmental Management Plan is prepared and implemented for the project.

5. Compliance.

The Commission notes that some speakers raised concerns about the project's compliance with the approval. Compliance with the Minister's approval is not a relevant consideration for the Commission, in determining this modification. Nonetheless, the Commission would like to take this opportunity to note the concerns raised by the community, regarding the constructed locations of the turbines, the noise and visual impacts of the turbines, and the size and scale of the switching station.

The Department takes its compliance and enforcement role seriously, and has recently increased its compliance resources in the region. This has included the establishment of a compliance branch in the Department's Queanbeyan office, with a specific focus on wind farm projects in the Southern Highlands.

The Department is aware of the concerns of landowners about the project's compliance, and to date has carried out detailed investigations into these concerns.

The Department has carried out a detailed assessment of relocating 69 of the 73 turbines, and has provided these assessments to the PAC. These assessments have concluded that the revised locations of the turbines have not materially changed the impacts of the wind farm at any non-associated residences.

Consequently, the Department has concluded that there would be no utility in issuing an order to require the removal or relocation of the 9 turbines that were constructed in locations that were inconsistent with those locations in the original approval.

In November 2014, the Department investigated Mr Barber's (PW4) claims that the substation and switchyard were inconsistent with the project approval. The investigations found that the substation and switchyard were constructed generally in accordance with the plans in the EIS, as required by the conditions of the project approval and the construction certificate for this infrastructure which was issued on 13 August 2013.

Finally, as indicated earlier in this report, the Department expects to receive the detailed noise compliance monitoring results of the project shortly. Once received, the Department will review the results in consultation with the EPA to determine whether the wind farm is complying with the operational noise criteria. If any non-compliance is detected, the Department will require the proponent to take corrective action to ensure compliance.

The Department will continue to monitor the proponent's compliance with the project approval in accordance with its statutory responsibilities; and investigate any community concerns about the impacts of the wind farm.

APPENDIX A – REVISED NOTICE OF MODIFICATION

Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, the Planning Assessment Commission determines the application referred to in Schedule 1 subject to the conditions in Schedule 2.

Member of the Commission **Member of the Commission**

Sydney 2015

SCHEDULE 1

Project approval 07_0118 for the Gullen Range wind farm and associated infrastructure.

SCHEDULE 2

1. Replace the description of Land in Schedule 1 with the following:

   Land: The Land shown in Appendix 2

2. Replace the description of the Project in Schedule 1 with the following:

   Project: The Gullen Range wind farm and associated infrastructure

3. Update the Table of Contents to reflect the modifications to the approval as a result of this modification.

4. Insert the following definitions after the definition of associated residence in the definitions table:

CEMP	Construction Environmental Management Plan
Construction	The carrying out of works and the erection of buildings and infrastructure covered by this approval.

5. Insert the following definitions after the definition of Council in the definitions table:

Decommissioning	The removal of wind turbines and associated infrastructure under this approval.
DEMP	Decommissioning Environmental Management Plan

6. Delete the definition of DECC and insert the following in the definitions table:

OEH	Office of Environment and Heritage

7. Replace all references to DECC in the project approval with OEH.

8. Replace the definition of Department, the in the definitions table with the following:

Department	The Department of Planning and Environment

9. Delete the definition of Director-General, the and insert the following in the definitions table:

Secretary	Secretary of the Department, or nominee

10. Replace all references to "the Director-General" in the project approval with Secretary.

11. Delete the definition of Director-General's Approval or the agreement or satisfaction of the Director-General in the definitions table.

12. Replace the definition of EA with the following definition:

EA	The environmental assessment titled *Proposed Development of the Gullen Range Wind Farm, Southern Tablelands, New South Wales*, prepared by Epuron and dated July 2008, as subsequently modified by: • Submissions Report; • *Gullen Range Wind Farm – Modification Application – Environmental Assessment*, prepared by Goldwind Australia and dated March 2014; • Associated *Submissions report,* dated June 2014; • *Report to Planning Assessment Commission,* dated August 2014 • *Supplementary information for Department of Planning and Environment prepared by Goldwind Australia,* dated April 2015

13. Remove the words "as part of the Department of Environment and Climate Change" from the definition of EPA in the definitions table.

14. Delete the definition of Month in the definitions table.

15. Insert the following definition in the definitions table:

OEMP	Operation Environmental Management Plan

16. Delete the definition of RTA and insert the following in the definitions table:

RMS	Roads and Maritime Services

17. Replace all references to RTA in the project approval with RMS.

18. Replace the definition of Site in Schedule 2 with the following:

Site	The land referred to in Appendix 2 of the project approval.

19. Replace the definition of Statement of Commitments in the definitions table with the following:

Statement of Commitments	The commitments in Appendix 3 of the project approval.

20. Replace condition 1.1 with the following:

1.1 The Proponent shall carry out the project:
   a) generally in accordance with the EA;
   b) the statement of commitments; and
   c) conditions of this approval.

Note: The general layout of the project is depicted in the figure in Appendix 1.

21. Replace condition 1.2 with the following:

If there is any inconsistency between the documents referred to in condition 1.1, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

22. Replace condition 1.3 with the following:

    1.3 The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:
        a) any strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the requirements in this approval;
        b) any report, reviews or audits commissioned by the Department regarding compliance with this approval; and
        c) the implementation of any actions or measures contained in these documents.

23. In condition 1.5, replace the wording condition 1.1b) with condition 1.1a).

24. Insert the following after condition 2.2(d):

    (e) the owners of PW37

25. Insert the following after condition 2.3

    2.3A By 31 December 2015, unless otherwise agreed by the Secretary, the Proponent shall implement landscaping treatments to screen the substation and associated switching station for the project to the satisfaction of the Secretary. This screening must employ all reasonable and feasible mitigation measures and utilise mature plantings to screen the substation and switching station from the surrounding non-associated property PW4. Following the installation of the screening, the Proponent shall maintain the screening over the life of project.

26. Replace the words Construction Noise before condition 2.8 with Construction and Decommissioning Noise.

27. Insert the following words after the word construction in condition 2.8: or decommissioning.

28. Insert the following words after the word construction in the first clause of condition 2.9 and in part b) of the condition: or decommissioning.

29. Insert the following words after the word construction in condition 2.10: or decommissioning.

30. Replace the words Construction Blasting before condition 2.11 with Construction or Decommissioning Blasting.

31. Insert the following words after the word construction in condition 2.11: or decommissioning.

32. Insert the following words at the end of the first paragraph of condition 2.15: (but including PW37).

33. Insert the following words at the end of the second paragraph of condition 2.15: or as otherwise agreed with the EPA.

34. Insert the following words at the end of condition 2.19: or as otherwise agreed with the EPA.

35. Insert the following words at the end of condition 2.20: or as otherwise agreed by the Secretary.

36. Insert the following words at the end of the second paragraph of condition 2.21: or as otherwise agreed with the EPA.

37. Replace the first sentence of condition 2.35 with the following

    2.35 By the 31 December 2015, unless otherwise agreed with the Secretary, the Proponent shall revise the proposed compensatory habitat package to offset in perpetuity the value of habitat lost as a result of the project, in consultation with OEH, and to the satisfaction of the Secretary

38. Insert the following at the end of condition 2.35:

    Once the Secretary has endorsed the compensatory habitat package, the Proponent shall implement the package to the satisfaction of the Secretary.

39. Replace the words construction and operation in condition 2.44 with construction, operation and decommissioning.

40. Replace the first paragraph of condition 2.49 with the following:

    Upon determining the haulage route(s) for the construction or decommissioning of the project, the Proponent shall:

    a) commission a qualified person to undertake a Road Dilapidation Report of all roads proposed to be used for construction or decommissioning activities in consultation with relevant road authorities. The Report shall assess the current condition of the relevant roads; and

    b) following completion of the construction or decommissioning of the project, a subsequent Road Dilapidation Report shall be prepared to assess any damage that may have resulted due to traffic and transport related to the construction or decommissioning of the project.

41. Replace the words Department of Water and Energy in condition 2.58 with NSW Office of Water

42. Replace the first sentence of condition 3.1 with the following:

    The Proponent shall prepare and implement a **Bird and Bat Adaptive Management Program** for the project to the satisfaction of the Secretary. This program must be submitted to the Secretary for approval prior to construction, and be updated by 31 December 2015, unless otherwise agreed by the Secretary. The program must be prepared in consultation with OEH, and take into account the bird/bat monitoring methods identified in the current editions of AusWEA *Best Practice Guidelines for the Implementation of Wind Energy Projects in Australia* and *Wind Farm and Birds: Interim Standards for Risk Assessment.*

43. Insert the following after the words Powerful Owl in condition 3.1d): the Little Eagle,.

44. Delete the following from the heading to condition 3.2: - Operation.

45. Replace the words condition 7.3a) and 7.5a) in condition 3.2 with the following: conditions 7.3a), 7.5a) and 7.7a).

46. Replace the words condition 14.3 in condition 3.3e) with condition 5.4.

47. Insert the following after the words condition 7.2 in the first sentence of condition 4.1: or the Decommissioning Environmental Management Plan required under condition 7.7.

48. Insert the following words after the word CEMP in the second paragraph of condition 4.1: or DEMP.

49. Replace the words construction or operation in the second paragraph of condition 4.1 with construction, operation or decommissioning.

50. Delete the last paragraph of condition 4.1.

51. Replace condition 5.2 with the following:

    5.2 The Proponent shall:

    a) make the following information publicly available on its website:
    - EA;
    - current statutory approvals for the project, including this project approval and any environment protection licence;
    - approved plans or programs required under the conditions of this approval;
    - a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the requirements of the various plans and programs required under the conditions of this approval;
    - a complaints register, which is updated on a monthly basis;
    - any environmental audit of the project, including the Proponent's response to the recommendations in any audit report; and

    b) keep this information up to date,

    to the satisfaction of the Secretary.

52. Replace the first sentence of condition 5.3 with the following:

The Proponent shall prepare and implement a **Community Information Plan** to the satisfaction of the Secretary. This plan must set out the community communications and consultation processes to be undertaken during the construction, operation and decommissioning of the project.

53. Insert the following note at the end of condition 5.3

Note: With the agreement of the Secretary, an update of the approved Community Information Plan (August 2012) can satisfy the requirements of this condition.

54. Insert the following after the word Construction in condition 5.3 a), b), c) and d): or decommissioning.

55. Replace the words within the brackets in the first sentence of condition 5.4 with the following: including construction, operation and decommissioning.

56. Replace the words construction and operational activities within condition 5.4a) with the following: construction, operation and decommissioning activities.

57. Delete the last sentence of condition 5.4.

58. Replace the words condition 1.1b) in condition 5.6 with condition 1.1a).

59. Replace the words construction and operation in the first sentence of condition 6.1 with the following words: construction, operation or decommissioning.

60. Replace condition 6.1 b) with the following:

    provisions for periodic reporting of the compliance status to the Secretary including at least prior to the commencement of construction of the project, prior to the commencement of operation of the project, and prior to the commencement of decommissioning,

61. Replace condition 6.1 f) with the following:
    provisions for reporting environmental incidents to the Secretary during construction, operation and decommissioning

62. Replace the first two sentences of condition 7.1 with the following:

    Prior to the commencement of the construction, operation or decommissioning of the project, the Proponent shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s) independent of the construction, operation or decommissioning personnel. The Proponent shall employ the Environmental Representative(s) for the relevant stage of the project, or as otherwise agreed by the Secretary.

63. Delete condition 7.2 c).

64. Replace the words condition 2.14 in condition 7.5 a) i) with condition 2.15.

65. Replace the words condition 2.26 in condition 7.5 b) i) with condition 2.35.

66. Replace condition 7.6 with the following:

    Within 3 years of the commencement of the operation of the project, or within 3 months of the approval of any modification to this approval, the Proponent shall review, and if necessary, revise the OEMP to the satisfaction of the Secretary. Following approval, the Proponent shall implement the updated OEMP to the satisfaction of the Secretary.

67. Insert the following after condition 7.6:

Decommissioning Environmental Management Plan

7.7 The Proponent shall prepare and implement a **Decommissioning Environmental Management Plan** for the project in accordance with the *Guideline for the Preparation of Environmental Management Plans* (DUAP 2004), or its latest revision, by 30 June 2016 and revised every 3 years thereafter, or as otherwise agreed by the Secretary. The plan must include:

a) a description of all activities to be undertaken on the site during decommissioning including an indication of stages of decommissioning, where relevant;
b) statutory and other obligations that the Proponent is required to fulfill during decommissioning including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
c) details of how the environmental performance of the decommissioning works will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:
    i) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction activities, particularly during any construction works at or near drainage lines; and
    ii) measures to monitor and manage dust emissions.
d) a description of the roles and responsibilities for all relevant employees involved in the decommissioning of the project;
e) complaints handling procedures during decommissioning; and
f) the Management Plans listed under condition 7.8 of this approval.

68. Insert the following after condition 7.7:

7.8 As part of the DEMP required under condition 7.7 of this approval, the Proponent must prepare and implement, but is not limited to, the management plans referred to in condition 7.3. For the purpose of this condition, all references to construction in condition 7.3 must be replaced with decommissioning.

69. Insert the following at the end of the approval:

APPENDIX 1
PROJECT LAYOUT

Figure A1-1 Project Layout – Northern Turbines

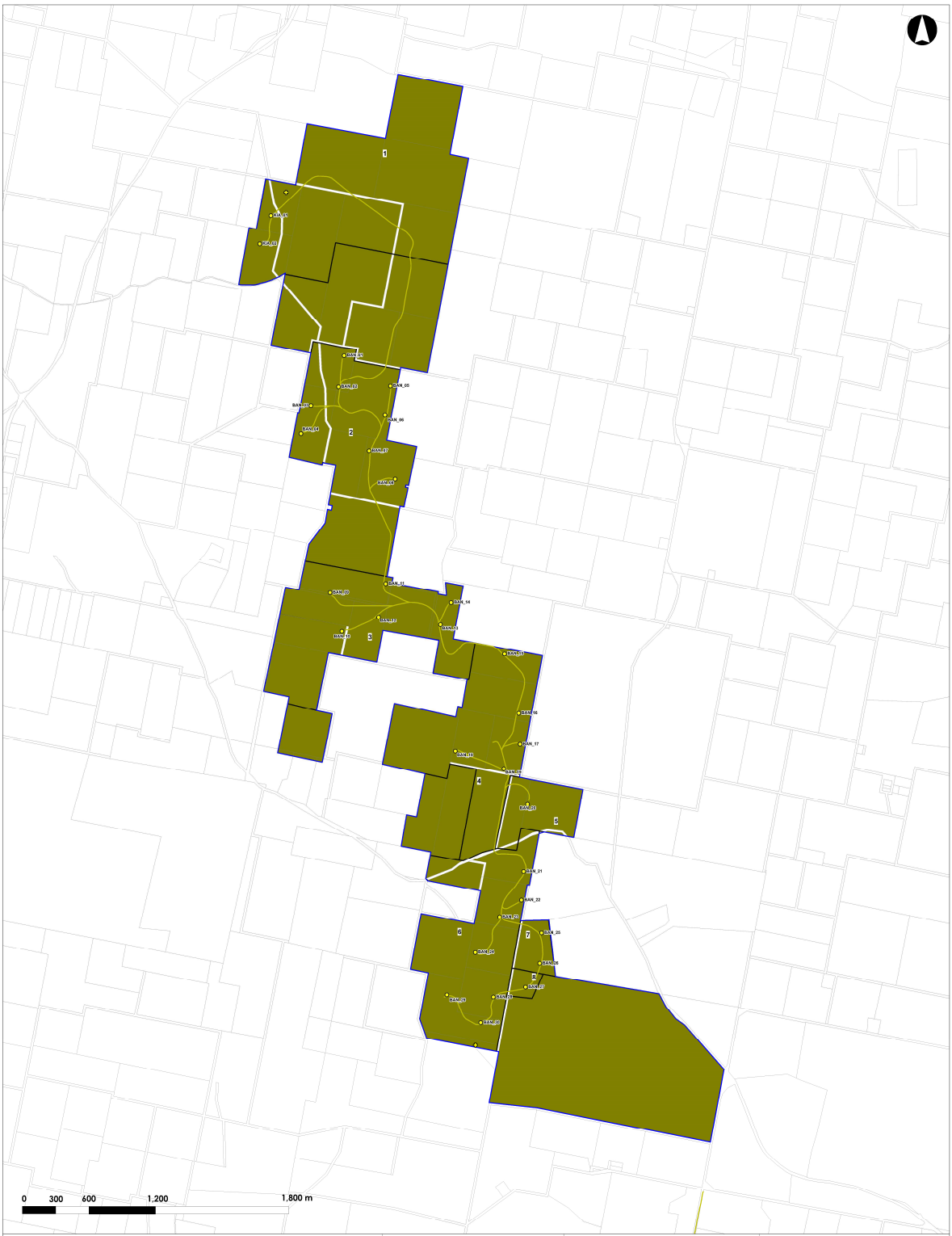


Figure A1-2 Project Layout – Southern Turbines

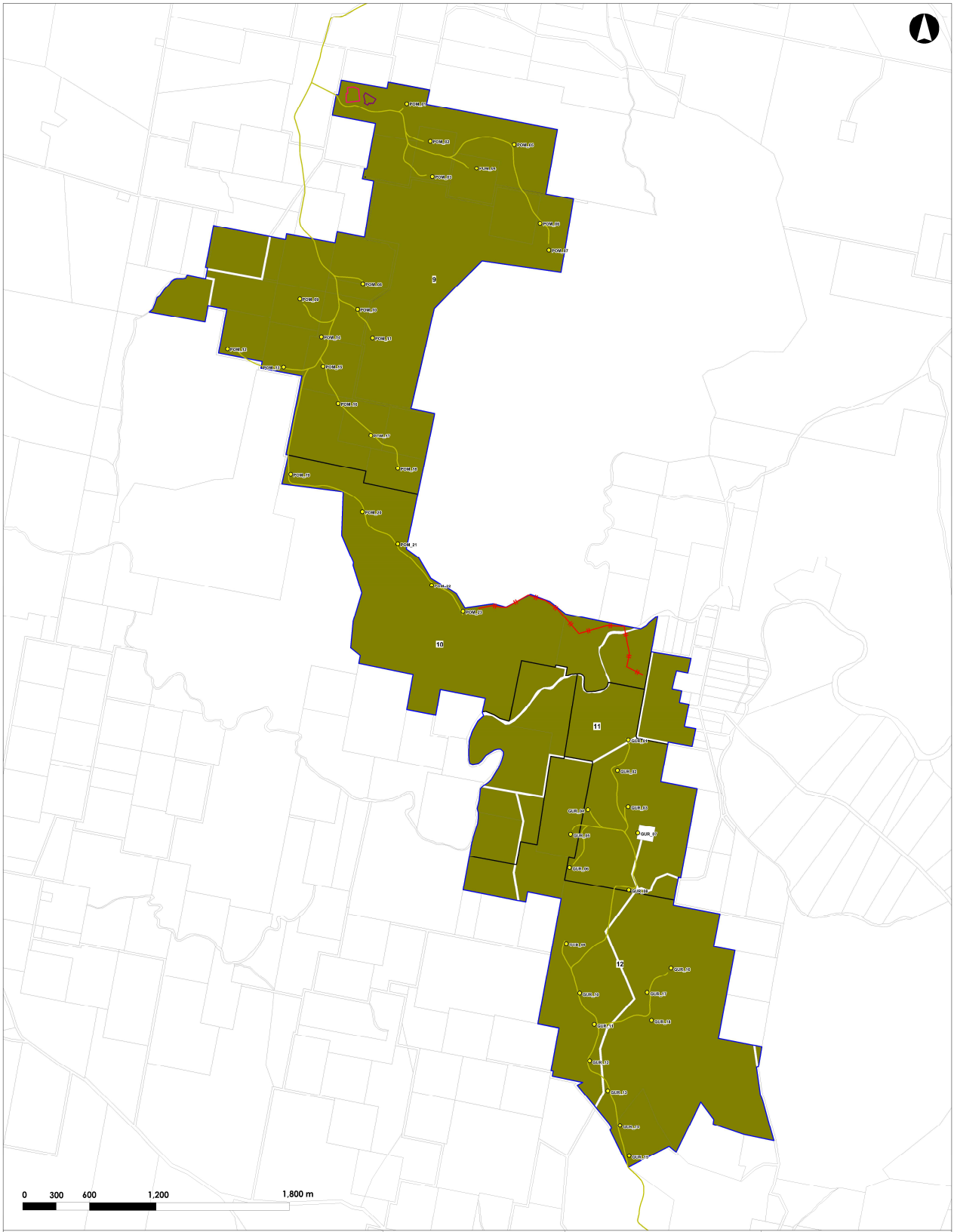


Table A1-1Turbine Locations and Levels

Turbine	Final Design Coordinates and elevation		
Name	Easting	Northing	Level Base of Tower
KIA_01	722206	6178258	987.4
KIA_02	722106	6178003	968.2
BAN_01	722867	6177000	961.1
BAN_02	722816	6176718	960.9
BAN_03	722567	6176552	959.4
BAN_04	722477	6176299	957.8
BAN_05	723284	6176726	964.5
BAN_06	723235	6176463	971.7
BAN_07	723092	6176141	973.0
BAN_08	723327	6175886	1001.0
BAN_09	722740	6174867	952.9
BAN_10	722846	6174519	959.1
BAN_11	723242	6174950	964.2
BAN_12	723177	6174649	968.2
BAN_13	723736	6174579	960.3
BAN_14	723832	6174779	974.4
BAN_15	724314	6174314	965.9
BAN_16	724441	6173780	971.9
BAN_17	724453	6173505	975.6
BAN_18	723870	6173444	957.4
BAN_19	724307	6173286	969.3
BAN_20	724521	6172964	970.8
BAN_21	724485	6172357	968.7
BAN_22	724466	6172100	981.6
BAN_23	724269	6171949	975.8
BAN_24	724049	6171628	955.8
BAN_25	724647	6171804	986.3
BAN_26	724630	6171532	985.6
BAN_27	724502	6171321	980.5
BAN_28	724213	6171232	973.0
BAN_29	723793	6171252	959.5
BAN_30	724099	6171000	955.16
POM_01	725833	6166934	898.7
POM_02	726044	6166594	888.8
POM_03	726063	6166277	884.2
POM_04	726461	6166355	873.2
POM_05	726800	6166565	865.1
POM_06	727033	6165858	862.6
POM_07	727112	6165618	845.0
POM_08	725438	6165310	888.2
POM_09	724870	6165173	883.0
POM_10	725390	6165082	892.5

Turbine	Final Design Coordinates and elevation		
Name	Easting	Northing	Level Base of Tower
POM_11	725525	6164826	889.9
POM_12	724220	6164723	890.6
POM_13	724725	6164560	888.4
POM_14	725064	6164835	892.1
POM_15	725079	6164566	901.8
POM_16	725216	6164233	893.4
POM_17	725509	6163949	865.0
POM_18	725752	6163649	850.0
POM_19	724788	6163595	899.0
POM_20	725434	6163257	833.7
POM_21	725752	6162969	828.0
POM_22	726057	6162593	821.6
POM_23	726339	6162361	812.0
GUR_01	727827	6161200	787.2
GUR_02	727730	6160921	805.1
GUR_03	727826	6160598	820.4
GUR_04	727464	6160571	799.1
GUR_05	727307	6160350	816.2
GUR_06	727298	6160051	779.6
GUR_07	727912	6160363	836.3
GUR_08	727832	6159846	773.0
GUR_09	727269	6159369	811.3
GUR_10	727389	6158918	819.9
GUR_11	727520	6158639	833.1
GUR_12	727479	6158308	839.1
GUR_13	727642	6158039	824.1
GUR_14	727753	6157727	832.2
GUR_15	727834	6157450	833.9
GUR_16	728211	6159145	785.9
GUR_17	727997	6158925	803.5
GUR_18	728036	6158675	811.0

APPENDIX 2
LAND TITLE DESCRIPTIONS

Table A2-1 Land Title details for Project Area

Lot(s)	DP
8	754115
376	754115
377, 380, 381,382, 383, 398	754115
332	754115
392	754115
346	754115
140, 331	754115
2	842234
141	754115
145	754115
196	754115
349	754115
85, 195, 257	754115
23	112125
131, 171	754115
319	754115
302	754115
173	754115
174	754115
172	754115
96	750043
1	252162
26	754115
177	754115
170	754115
178	754115
246	754115
90	754126
124	754126
1	1192408
10	1177500
11	1177500
12	1177500
2	1168750
3	
1	1170080
147	750043
148	
75	
89	
159	
205	
144	
202	
149	
204	
203	
67, 68, 126, 127, 132, 206, 207	
139	750043
135, 146	750043
168	750043

Lot(s)	DP
231	750019
198	750019
234	722774
155	750019
173	750019
2	1172409

Table A2-2 Land Title details for Easement Lands

Lot(s)	DP
4	1168750
100	1026064
130, 131, 142	750043
1	1031856
146, 170	750019
347, 379, 391	754115
13	1177500
103	750043
44	750043

Including all crown roads within the project boundaries

APPENDIX 3
STATEMENT OF COMMITMENTS

Appendix 11 of Submissions Report for Modification Application (Mod_1)

1.1 Appendix: Revised Statement of Commitments in full – 3 June 2014

1.1.1 Visual

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
1.	Visual impact to nearby properties	Minimise the view of infrastructure	• The Proponent would determine the extent of planting with residents of properties within 3km of a wind turbine. This would include a site visit. Any such offer would remain in place for a period of 1 year after project construction. Screening options are detailed in Attachment 3.	The Proponent	During Construction and Operation	CEMP OEMP	Minimise complaints by residents within 3km
1a			Landscaping will be provided as per the GRWFPL Landscaping Management Plan and in consultation with landowners.	Proponent		Cond 7.5(b) and LMP	

1.1.2 Noise

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
2.	Construction noise exceedance	Minimisation	• Limit hours of high noise generating activities	The Proponent	Construction	CEMP	Minimise noise complaints
3.	Construction noise exceedance	Minimisation	• Establish communication with relevant authorities and local residents	The Proponent	Construction	CEMP	Minimise noise complaints
4.	Construction noise exceedance	Minimisation	• Adoption of a site representative responsible for noise and vibration issues	The Proponent	Construction	CEMP	Fast response to all complaints

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
5.	Construction noise exceedance	Minimisation	• The contractor would select appropriate machinery for the proposed works. This machinery would have low inherent potential for noise generation where practicable	The Proponent	Construction	CEMP	Compliance with DECC *Environmental Noise Control Manual*
5a	Construction noise exceedance	Minimisation	• An onsite representative to meet with residents at their property to discuss the noise issues experienced	The Proponent	Operation	DPE	
6.	Construction noise exceedance	Minimisation	• Where necessary, barriers would be erected around potentially high noise generating areas including generator and high duty compressors	The Proponent	Construction	CEMP	Minimise noise complaints
7.	Construction noise exceedance	Minimisation	• Appropriate siting of noisy machinery. This siting would be as far away from the nearest receiver as possible	The Proponent	Construction	CEMP	Minimise noise complaints
8.	Operational noise exceedance	Compliance	• Further noise assessment would be required to be carried out on the turbine ultimately selected for construction and on the final layout proposed taking into account any minor changes in turbine location to ensure compliance with SA EPA noise guidelines	Noise consultant	Post final site layout and turbine selection	DPE EPA	Compliance with SA EPA noise guidelines
9.	Noise exceedance	Compliance	• Develop and implement an operational noise compliance testing program. This is included in OEMP that has been approved.	Noise consultant	Once all turbines are operational	DPE EPA	Compliance with SA EPA noise guidelines
10.	Noise exceedance	Compliance	• If operational monitoring identifies exceedances, the Proponent would give consideration to providing mechanical ventilation (to remove requirement for open windows), building acoustic treatments (improved glazing) or using turbine control features to manage excessive noise under particular conditions. (Noise Management Plan)	The Proponent	Once all turbines are operational	NMP DPE EPA	Compliance with SA EPA noise guidelines

1.1.3 Biodiversity

Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
11. Mod	Loss of biodiversity value	Avoid direct and indirect impact	• Infrastructure (including turbines, powerlines, access roads, construction works areas and crane pads) would be located to avoid dense woodland/forest, impacts to woodland/forest in all other cases would be minimised through rigid site controls established in the CEMP to minimise clearing. Any loss of native vegetation would be offset in accordance with SoC16.	The Proponent	Development of site layout	DPE OEH	Minimise clearing
12. Mod	Loss of biodiversity value	Minimise impact	• The Proponent would locate the electricity corridor required at the Gurrundah property using Option 2 (as shown in figure 7-10 of the EA). The width of the corridor would be minimised and impacts to native vegetation offset in accordance with SoC16.	The Proponent	During construction	DPE OEH	Minimise clearing of mature vegetation
13. Mod	Loss of biodiversity value	Avoid direct and indirect impact	• Impacts to isolated mature trees (>60cm diameter at breast height) in cleared areas would be minimised through rigid site controls established in the CEMP to minimise clearing. Where trees cannot be avoided these would be offset in accordance with SoC16.	The Proponent	Development of site layout	DPE OEH	Minimise clearing of mature vegetation
14.	Loss of biodiversity value	Avoid direct and indirect impact	• The final infrastructure layout would avoid areas identified as constraints (refer to constraints maps, Figures 7-6 – 7-9 this EA, and Attachment 3.3)	The Proponent	Development of site layout	DPE OEH	Adherence to biodiversity constraints maps
15.	Loss of biodiversity value	Avoid direct and indirect impact	• A flora assessment would be conducted as part of the construction environmental management plan, to microsite infrastructure such as tracks away from better quality patches of understorey.	Proponent	During construction	ER	Adherence to flora assessment recommendations
16. Mod	Loss of biodiversity value	Compensate for biodiversity impact	• The Proponent would commit to offsets determined by suitably qualified experts on the basis of the quantum of vegetation to be removed, pending development of the final infrastructure layout. The offset plan would be established in perpetuity. • A Conservation Property Vegetation Plan (CPVP) area has been defined and actions for this area will be finalized in consultation with OEH and CMA.	Proponent Proponent	During construction Commission-ing	DPE OEH OEH/CMA	Biodiversity Assessment used as guidance to determine appropriate offsets
16a	Loss of biodiversity value	Compensate for biodiversity impact	• A review of impacts during construction will be undertaken and assessed against the offset to ensure that the offset is adequate	The Proponent	Post construction	GRWFPL	Ecologist review

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
17.	Loss of biodiversity value	Minimise impact	• Weed and sediment erosion controls would be implemented to prevent onsite habitat degradation during and following the proposed works. A Construction Environmental Plan would be the appropriate vehicle for these controls. Weeds such as serrated tussock would be treated before the commencement of works to avoid spreading the infestation	The Proponent	During construction	DPE OEH	Minimise indirect biodiversity impacts
18.	Loss of biodiversity value	Minimise impact	• All areas of disturbed soil would be rehabilitated progressively as soon as practicable after disturbance, in order to resist erosion and colonisation by weeds. This may require restricting stock access and implementing revegetation activities	The Proponent	During construction	DPE OEH	Rapid rehabilitation of disturbed areas
19. Mod	Loss of biodiversity value	Minimise impact	• Where the initial monitoring program demonstrates a need, the Proponent will liaise with landowners to negotiate to fill in dams within 100m of a turbine on involved properties to reduce the potential to attract birds and bats which might collide with turbines. Dams removed due to site development would be reinstated in more appropriate locations to retain this habitat resource onsite.	The Proponent	During construction	DPE OEH	Minimise bird and bat collisions
20. Mod	Loss of biodiversity value	Avoid or minimise impact	• Final site inspections would be undertaken for the electricity corridor between Pomeroy and Gurrundah to allow micro-siting of the corridor in areas of least vegetation. If the alternative access off Prices Lane to Pomeroy becomes the preferred option and also if the western access option (a paper road) to Gurrundah becomes the preferred option final inspections would also be undertaken in these areas.	Ecological consultant	Prior to construction	DPE OEH	Minimise direct biodiversity impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
21. Mod	Loss of biodiversity value	Minimise impact	Implementation of design measures: • Aviation lighting would be minimised in number and fitted to reduce their ability to attract migrating birds and insects. Red lights are preferred, with the least number of flashes per minute. Cowls may also shield the light when viewed from the ground and reduce potential to attract wetland birds taking off at dusk • Guy lines would not be fitted to wind turbine towers. Guy lines will be avoided on other associated structures, where practical. • The turbine towers would not provide perching opportunities • Electrical connection lines would be installed underground where practical • Power poles and overhead powerlines would be designed to be bird-safe using measures such as flags or marker balls, large wire size, wire insulation, wire and conductor spacing	The Proponent	During infrastructure and materials selection	DPE OEH	Minimise bird and bat collisions
22.	Loss of biodiversity value	Minimise impact	Pest Animal Control Program • To reduce the attractiveness of the site to foraging raptors, rabbits would be controlled on the turbine ridges, carrion would be removed from the site as quickly as possible	The Proponent	During operation	DPE OEH	• Minimise bird and bat collisions
23. Mod	Loss of biodiversity value	Minimise impact	Bird and Bat Monitoring Program • Pre-construction surveying would be undertaken to assist in managing bird and bat impacts (Powerful Owl would be a key species in this Pre-construction surveying). Results would be incorporated into the ongoing monitoring program • A monitoring program would be designed to document mortalities, remove carcasses and assess the effectiveness of controls in accordance with Section 9.3.1 • If mortalities exceed a pre-determined threshold (set out in the monitoring program), additional mitigation measures would be considered, such as diversion structures, turning off turbines at critical times, further habitat modification and enhancement of off-site habitats	Ecological consultant	Designed prior to operation Implemented during operation	DPE OEH	Minimise bird and bat collisions
24.	Loss of biodiversity value	Avoid or minimise impact	• A flora and fauna assessment would be undertaken prior to decommissioning to identify biodiversity constraints	Ecological consultant	Prior to decommissioning	DPE OEH	Minimise biodiversity impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
25.	Loss of biodiversity value	Avoid or minimise impact	• Weed and sediment erosion control principles would be developed and implemented	Ecological consultant and the Proponent	Prior to decommissioning	DPE OEH	Minimise indirect biodiversity impacts
26. Mod	Loss of biodiversity value	Avoid or minimise impact	• Disturbed ground would be stabilised and rehabilitated following works	The Proponent	After decommissioning	ER DPE OEH	Rapid rehabilitation of disturbed areas

1.1.4 Aboriginal archaeology

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
27.	Loss of Aboriginal heritage items	Minimise impact	• The Pejar LALC propose to collect artefacts located within proposed impact areas as a form of mitigation prior to the commencement of construction • The Onerwal LALC is the relevant LALC for the Gurrundah area.	Pejar and Onerwal LALCs in consultation with Proponent	Prior to construction	DPE OEH	Liaison with Pejar and Onerwal LALC
28.	Loss of Aboriginal heritage items	Minimise impact	• An Aboriginal Heritage Management Plan would be prepared, pending Project Approval and prior to any impact, which outlines the strategy of artefact collection, s85A NPW Act (transfer of Aboriginal objects) procedures, and contingencies for unexpected finds such as skeletal remains.	The Proponent / Archaeologist	Prior to construction	DPE OEH	Liaison with Archaeologist, OEH and LALCs
28a	AHMP update	Minimise impact	• The AHMP has been updated in association with the Modification Application and has been sent to LALCs and OEH for review. • GRWFPL has completed and submitted all Aboriginal Site Impact Recording (ASIR) Forms	Proponent / Archaeologist		DPE/OEH	Liaison with OEH and LALCs

1.1.5 Aircraft hazards

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
29.	Creation of hazard	Minimise risk	• The Proponent would install obstacle marking as required by CASA. • Obstacle lighting has not been required.	The Proponent	During construction	DPE in consultation with CASA	CASA signoff
30.	Creation of hazard	Minimise risk	• The Proponent would provide to the RAAF Aeronautical Information Service (AIS), CASA and Air Services Australia the location and height details once the final position of the wind turbines have been determined and before construction commences. After construction is complete, "as constructed" details would also be provided to AIS	The Proponent	Prior to construction	DPE in consultation with RAAF	Signoff by AIS and Air Services Australia
31. Mod	Creation of hazard	Minimise risk	• The Proponent would notify known users of the Crookwell and Ashwell Airstrips of the location of the wind turbines and any changes to operational procedures. The Proponent, with assistance from its specialist aviation consultant would assist the aerodrome operator and/or local aircraft operators to develop or amend procedures for safe operations on or within the vicinity of the aerodrome, taking into account the location of the turbine.	The Proponent	Prior to construction	DPE	Direct notification of users
32.	Creation of hazard	Minimise risk	• The Proponent would notify other operational information providers such as the Aircraft Owners and Operators Association and Flight Ace of the location of wind turbines in close proximity to Crookwell and Ashwell Airstrips	The Proponent	Prior to construction	DPE	Direct notification of operational information providers
33.	Creation of hazard	Minimise risk	• A briefing sheet including a description and an aerial view of the proposed development, expected construction times, extent of the development, lighting, likely operational impacts and contact details of the developer would be distributed widely.	The Proponent	Prior to construction	DPE	Advertised through local channels

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
34.	Creation of hazard	Minimise risk	The Proponent would provide the following advice to the relevant stakeholders, prompting them to undertake the specified actions: • That Crookwell Airstrip consider formalising guidance to airstrip users regarding takeoff and landing procedures giving due consideration to the location of wind turbines and other obstacles, surrounding terrain, aircraft performance, prevailing conditions, runway physical characteristics, regulatory requirements and any other operational limitations • That Upper Lachlan Shire Council's Information Sheet for Crookwell Airstrip be updated to include reference to the location of wind turbines in close proximity to the airstrip	The Proponent	Prior to construction	DPE	Direct communication

1.1.6 Communications

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
35.	Deterioration of signal strength	No deterioration of signal strength	<u>Television and radio broadcast services</u> • Use of primarily non-metallic turbine blades • Use, wherever practical, of equipment complying with the Electromagnetic Emission Standard, AS/NZS 4251.2:1999	The Proponent	Prior to construction	DPE	Adherence to standard

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
35a	Deterioration of Signal Strength	No deterioration of signal strength	The Proponent would install a Radio/Television antennae in the vicinity of Crookwell which would improve the Radio/Television signal strength for the area surrounding the wind farm and for Crookwell. The commitment above has been modified after consultation with ULSC as follows: • GRWFPL will provide funding for a suitable technical and commercial upgrade at an existing ULSC communications mast. • The funding may up to $100,000. The funding will independent of contributions to the Community Enhancement Fund. • ULSC will be responsible for the construction, operation and maintenance of the new antennae facility.	The Proponent and ULSC	Operation	ULSC	No detected deterioration in signal strength, post mitigation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
36. Mod	Deterioration of signal strength	No deterioration of signal strength	Television and radio broadcast services • Prior to the erection of any wind turbine generators on the site, the Proponent has undertaken an assessment of the existing quality of the television/radio transmission available at a representative sample of residential dwellings located within five kilometres of a wind turbine. • The Proponent will undertake further assessment of television/radio reception following commencement of operation to determine any loss in television signal. • In the event that television interference (TVI) is experienced by existing receivers in the vicinity of the wind farm, the source and nature of the interference would be investigated by the Proponent. • Should investigations determine that the cause of the interference can be reasonably attributable to the wind farm, the Proponent would put in place mitigation measures at each of the affected receivers in consultation and agreement with the landowners. Specific mitigation measures may include: • Modification to, or replacement of receiving antenna • Provision of a land line between the effected receiver and an antenna located in an area of favourable reception • Improvement of the existing antenna system • Installation of a digital set top box or • In the event that interference cannot be overcome by other means, negotiating an arrangement for the installation and maintenance of a satellite receiving antenna at the Proponents cost	The Proponent	Prior to construction and commencement of operation	DPE	No detected deterioration in signal strength, post mitigation
37.	Deterioration of signal strength	No deterioration of signal strength	Mobile phone (and wireless broadband) services • The Proponent will consult with Wirefree to avoid impacts to wireless broadband service	The Proponent	At the commencement of construction	DPE	Direct consultation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
38.	Deterioration of signal strength	No deterioration of signal strength	Radio communications services • The Proponent has made provisions for a 100m corridor for the RFS links from Mt Martin to Mt Gray. In the event that any issues with license links are identified as a result of the wind farm, whether prior to or post construction, the proponent would consult with the operator and undertake appropriate remedial measures, which may include: • Modifications to or relocation of the existing antennae • Installation of a directional antennae and/or • Installation of an amplifier to boost the signal	The Proponent And RFS	At the commencement of operation	DPE	No detected deterioration in signal strength, post mitigation
38a.			GRWFPL provided additional assessment of potential for impacts to point to point services to relevant stakeholders and will consult further with RFS in respect of its service between Mt Mary and Mt Gray.	Proponent and RFS	Commencement of operation	DPE	No impact on service, Mt Mary to Mt Gray.

1.1.7 Electromagnetic fields (EMFs)

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
39.	Exposure from EMFs	Minimise exposure	• The substation would be designed in accordance with all applicable codes and industry best practice standards in Australia	The Proponent	Pre construction design phase	DPE	Adherence to standard
40.	Exposure from EMFs	Minimise exposure	• The turbines, control building, substation and transmission lines would be located at appropriate distances from residences, farm shed and yards in order to reduce the potential for both chronic and acute exposure	The Proponent	Pre construction design phase	DPE	Adherence to ARPANSA guidelines

1.1.8 Traffic and transport

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
			General measures:				
41.	Safety and asset protection	Minimise risks	• Use of a licensed haulage contractor with experience in transporting similar loads, to be responsible for obtaining all required approvals and permits from the RMS and Councils and for complying with conditions specified in the approvals	The Proponent	Prior to construction	CEMP	Written confirmation of license and experience, including referees
42.	Safety and asset protection	Minimise risks	• Development of a **Traffic Management Plan** to include scheduling of deliveries, managing timing of transport through Goulburn and Crookwell to avoid peak hours (beginning/end of the school day), limiting the number of trips per day, undertaking community consultation before and during all haulage activities (including with neighbouring landowners and landowners adjoining access roads), designing and implementing temporary modifications to intersections and street furniture , restoring all changes to their original condition and managing the haulage process	The Proponent	Prior to construction	CEMP	Develop TMP in accordance with Traffic Impact Study, Attachment 3.7
43.	Safety and asset protection	Minimise risks	• Implementation of all aspects of the **Traffic Management Plan** in coordination with the Councils and RMS	The Proponent	During construction	CEMP	Adherence to TMP
44.	Safety and asset protection	Minimise risks	• Providing a dedicated telephone contacts list to enable any issues or concerns to be rapidly identified and addressed	The Proponent	Prior to construction	CEMP	Rapid response to queries
45.	Safety and asset protection	Minimise risks	• Installing required signage to direct traffic flows appropriately during haulage through Goulburn and Crookwell	The Proponent	During construction	CEMP	Timely provision of signage

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
46.	Safety and asset protection	Minimise risks	• Reinstating pre-existing conditions after temporary modifications to the roads and pavement along the route.	The Proponent	During construction	CEMP	Dilapidation report adhered to
47.	Safety and asset protection	Minimise risks	• Undertaking forward planning to ensure equipment transportation complies with requirements of the management plan, RMS and Council	The Proponent	Prior to construction	CEMP	Minimise complaints from road users and risks associated with transport
48.	Safety and asset protection	Minimise risks	• The extent of road upgrades, including realignments and paving upgrades, would be determined by a qualified traffic consultant, in consultation with the RMS and Council	The Proponent	During construction	CEMP	Minimise complaints from road users and risks associated with transport
49.	Safety and asset protection	Minimise risks	• The Proponent would prepare road dilapidation reports covering pavement and drainage structures in consultation with Council, for the construction (and decommissioning) route prior to the commencement of construction (and decommissioning) and after construction (and decommissioning) is complete. Any damage resulting from the construction (or decommissioning) traffic, except that resulting from normal wear and tear, would be repaired at the Proponent's cost. Alternatively, the Proponent may negotiate an alternative for road damage with the relevant roads authority. The decision to provide a seal needs to be balanced against the cost of maintenance on the gravel surface. • Road condition would be inspected throughout construction to ensure that impacts are addressed as they occur. This would be undertaken at regular intervals by the site manager and council roads engineer	The Proponent in consultation with Councils	Prior to construction	CEMP	Dilapidation report adhered to Ongoing contact with roads authorities

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
50.	Safety and asset protection	Minimise risks	• A speed limit would be placed on some of the roads near dwellings or sub standard junctions. The speed restriction would be included in the **Traffic Management Plan** to be submitted to Council	The Proponent in consultation with Council and RTA	Prior to construction	CEMP	Adherence to TMP
51.	Safety and asset protection	Minimise risks	• A procedure would be established to monitor the traffic impacts during construction, such as noise, dust nuisance and travel times and work methods modified to reduce the impacts	The Proponent	Prior to construction	CEMP	Minimise complaints from road users and risks associated with transport
52.	Safety and asset protection	Minimise risks	• A procedure would be established to inform vehicle operators on the precise timing of school buses	The Proponent	Prior to construction	CEMP	Protocols set out in CEMP
53.	Safety and asset protection	Minimise risks	• Regular monitoring and scheduled maintenance of gravel pavements such as grading, dust suppression and drainage control would take place during the construction period	The Proponent	Construction	CEMP	Protocols set out in CEMP
54.	Safety and asset protection	Minimise risks	• Signposting to warn horse riders of construction traffic and slashing of vegetation from verges on the Bi-Centennial Route to allow horses to move off the road when vehicles approach	The Proponent in consultation with Council	Prior to construction	CEMP	Timely provision of signage
			Additional location specific measures				
55.	Safety and asset protection	Minimise risks	*Hume Highway Junction at Breadalbane* • Speed controls. The Roads and Maritime Services are generally not in favour of speed restrictions on the Hume Highway because of the loss in efficiency of the route. However, the use of speed controls for specific short-term activities may be included in a traffic control plan or other temporary traffic control measures	The Proponent in consultation with RMS	Prior to construction	CEMP	Adherence to TMP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
56.	Safety and asset protection	Minimise risks	*Crookwell Road* • The business owners, retailers etc in the main street of Crookwell would be made aware of the timing for heavy, over-mass and over-dimensional vehicles	The Proponent	Prior to construction	CEMP	Timely notification
57.	Safety and asset protection	Minimise risks	*Grabben Gullen Road* • The junction is to be designed and constructed in consultation with Upper Lachlan Shire Council and the Roads and Traffic Authority	The Proponent	Prior to construction	CEMP	Adherence to TMP
58.	Safety and asset protection	Minimise risks	*Range Road* • The new junction required to be constructed on Range Road would be designed and constructed in consultation with Upper Lachlan Shire Council	The Proponent in consultation with RTA	Prior to construction	CEMP	Adherence to TMP
59.	Safety and asset protection	Minimise risks	*Gurrundah Road* The new junction required to be constructed on Range Road would be designed and constructed in consultation with Upper Lachlan Shire Council	The Proponent in consultation with RTA	Prior to construction	CEMP	Adherence to TMP
60.	Safety and asset protection	Minimise risks	*Range Road* • Consideration would be given to the reconstruction and sealing of the 1.8km length of unsealed pavement which would include the proposed junctions	The Proponent in consultation with RTA	Prior to construction	CEMP	Adherence to TMP
61.	Safety and asset protection	Minimise risks	*Range Road* • The shadow flicker effects would be monitored following commissioning and any remedial measures to address concerns would be developed in consultation with the RMS and the Department of Planning	The Proponent	Operation	CEMP	Shadow flicker controlled (via roadside planting if required)
62.	Safety and asset protection	Minimise risks	*Bannister Lane, Storriers Lane, Prices Lane* • A program would be established to consult with all of the road users and residents in the area particularly those living in the residences close to the roads	The Proponent in consultation with RMS and Council	Prior to construction	CEMP	Timely notification and consultation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
63.	Safety and asset protection	Minimise risks	*Gurrundah Road* • The junction is to be designed and constructed in consultation with Upper Lachlan Shire Council	The Proponent in consultation with Council	Prior to construction	CEMP	Adherence to TMP
64.	Safety and asset protection	Minimise risks	*Breadalbane to Gurrundah Road* • A procedure would be established for all over-dimensioned vehicles associated with the Gullen Range wind farm project to make contact with a railway service to establish approximate timing of trains so that crossings could be made during the safer periods. The need to always visually check for the approach of trains would be stressed to vehicle operators	The Proponent	Prior to construction	CEMP	Adherence to TMP

1.1.9 Fire and bushfire impacts

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
65.	Increase risk of fire ignition or spread	Minimise risks	• The Rural Fire Service and NSW Fire Brigade would be consulted in regard to the adequacy of bushfire prevention measures to be implemented on site during construction, operation and decommissioning. These measures would in particular cover hot-work procedures, asset protection zones, safety, communication, site access and response protocols in the event of a fire originating in the wind farm infrastructure, or in the event of an external wildfire threatening the wind farm or nearby properties	The Proponent	Prior to construction	DoP	Timely notification and consultation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
65a	Increase risk of fire ignition or spread	Minimise risk	• The Proponent will investigate the potential to house an RFS hall within the Wind Farm or at a suitable location identified in consultation with RFS near to the wind farm. This facility could also be used as a community hall. o The Proponent would offer the land to the RFS in perpetuity. o The construction, operation and maintenance of the RFS station would be the responsibility of the RFS	The Proponent	Operation	Proponent	Adherence to RFS guidelines for fire safety
66.	Increase risk of fire ignition or spread	Minimise risks	• Flammable materials and ignition sources brought onto the site, such as hydrocarbons, would be handled and stored as per manufacturer's instructions	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
67.	Increase risk of fire ignition or spread	Minimise risks	• During the construction phase, appropriate fire fighting equipment would be held onsite when the fire danger is very high to extreme, and a minimum of one person on site would be trained in its use. The equipment and level of training would be determined in consultation with the local RFS	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
68.	Increase risk of fire ignition or spread	Minimise risks	• The substation facility would be bunded with a capacity exceeding the volume of the transformer oil to contain the oil in the event of a major leak or fire. The facility would be regularly inspected and maintained to ensure leaks do not present a fire hazard, and to ensure the bunded area is clear (including removing any rainwater)	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
69.	Increase risk of fire ignition or spread	Minimise risks	• The substation would be surrounded by a gravel and concrete area free of vegetation to prevent the spread of fire from the substation and reduce the impact of bushfire on the structure. The substation area would also be surrounded by a security fence as a safety precaution to prevent trespassers and stock ingress	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
70.	Increase risk of fire ignition or spread	Minimise risks	• Asset protection zones, based on the RFS *Planning for Bushfire Protection*, would be maintained around the control room, sub-station and in electricity transmission easements. Workplace health and safety protocols would be developed to minimise the risk of fire for workers during construction and during maintenance in the control room and amenities	The Proponent	During construction	CEMP	Adherence to RFS *Planning For Bushfire Protection*

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
71.	Increase risk of fire ignition or spread	Minimise risks	• Fire extinguishers would be stored onsite in the control building and within the substation building	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
72.	Increase risk of fire ignition or spread	Minimise risks	• Shut down of turbines would commence if components reach critical temperatures or if directed by the RFS in the case of a nearby wildfire being declared (an all hours contact point would be available to the RFS during the bushfire period). Remote alarming and maintenance procedures would also be used to minimise risks	The Proponent	Operation	OEMP	All hours contact point provided to RFS. Remote alarming installed
73.	Increase risk of fire ignition or spread	Minimise risks	• Overhead transmission easements would be periodically inspected to monitor regrowth of encroaching vegetation	The Proponent	Operation	OEMP	Compliance with Transgrid easement maintenance protocols.

1.1.10 Hydrology

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
74.	Water extraction	Not deplete local supplies	• Water would be sourced from an onsite bore (Pomeroy) as well as other local sources including onsite dams. It would be reused where possible to reduce the total amount required. No water would be sourced from creeks or rivers without relevant permits being sought. No water would be or discharged into creeks, rivers or drainage lines without relevant permits	The Proponent	Construction	CEMP	Minimise water use, maximise reuse onsite,
75.	Deterioration of water quality	Minimise risk	• All vehicles onsite would follow established trails and minimise onsite movements	The Proponent	Construction and operation	CEMP and OEMP	Protocols set out in CEMP and OEMP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
76.	Deterioration of water quality	Minimise risk	• Machinery would be operated and maintained in a manner that minimises risk of hydrocarbon spills	The Proponent	Construction and operation	CEMP and OEMP	Protocols set out in CEMP and OEMP
77.	Deterioration of water quality	Minimise risk	• Maintenance or re-fuelling of machinery would be carried out on hard-stand areas (i.e. existing or proposed road surface or hard-stand areas beneath turbines). Where possible, maintenance and re-fuelling would not occur on areas that either contain native vegetation, or would be revegetated	The Proponent	Construction and operation	CEMP and OEMP	Protocols set out in CEMP and OEMP
78.	Deterioration of water quality	Minimise risk	• The concrete batching plants would contain settling ponds sufficient to capture all concrete wash. Wash water would be recycled onsite (in cement mix, road base and dust control) and would not be released. The Batching Plants have been removed from site.	The Proponent	Construction	CEMP	Protocols set out in CEMP
79.	Deterioration of water quality	Minimise risk	• Waste sludge would be recovered from the settling pond and used in the production of road base manufactured onsite. The waste material would be taken from the batching plant to be blended in the road base elsewhere onsite	The Proponent	Construction	CEMP	Minimise waste, maximise reuse
80.	Deterioration of water quality	Minimise risk	• The concrete batching plant areas would be fully remediated at the completion of the construction phase	The Proponent	Completion of construction	CEMP	Stable and revegetated
81.	Deterioration of water quality	Minimise risk	• Dust suppression would be carried out where required. Central to controlling dust are means to determine when dust suppression is required and having adequate access to water or chemical dust suppression alternatives to control dust. These specifications would be included in the **Construction Environmental Management Plan** prepared for the project prior to construction	The Proponent	Construction	CEMP	Minimise dust complaints

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
82.	Deterioration of water quality	Minimise risk	Sediment and erosion would be controlled as part of a formal **Sediment / Erosion Control Plan (SECP)**, as a sub plan of the **Construction Environmental Management Plan**. This plan would include the following provisions: • Sediment traps would be installed wherever there is potential for sediment to collect and enter waterways • Stockpiles generated as a result of construction activities would be bunded with silt fencing, (hay bales or similar) to reduce the potential for runoff from these areas • Soil and water management practices would be guided by the Best Practice guidelines contained within *Soils and Construction Vol. 1* (Landcom 2004)	The Proponent	Construction	CEMP	Adherence to SECP
83.	Deterioration of water quality	Minimise risk	• A **Water Management Strategy** would be developed for the site as part of the Construction and Operational Environmental Management Plans. This would aim to integrate the total water cycle of the site in terms of water supply, stormwater and wastewater, and maximise the use of best management practice techniques for stormwater and wastewater management. Devices such as swales to disperse rather than concentrate runoff would be implemented. Water use would be minimised by maximising reuse. Detailed measures would be devised in conjunction with the development of the construction drawings.	The Proponent	Construction and Operation	CEMP and OEMP	Best practice water management devices
84.	Deterioration of water quality	Minimise risk	A **Site Restoration Plan (SRP)** would be prepared as part of the **Construction Environmental Management Plan**. This would set out protocols for restoration works including: • Site preparation • Stabilisation • Revegetation • Monitoring	The Proponent	Construction	CEMP	Adherence to SRP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
85.	Deterioration of water quality	Minimise risk	The contractor would prepare and implement a **Spill Control Plan,** as a sub-plan of the **Construction Environmental Management Plan.** It would: • Identify persons responsible for implementing the plan if a spill of a dangerous or hazardous chemical/waste would occur • Material Safety Data Sheets (MSDS) for all chemical inventories would be located on site and readily available • Where chemicals are used, their application and disposal would comply with manufacturers recommendations • Any spill that occurs, regardless of size or type of spill, would be reported to the Construction Manager • The event and clean up processes would be recorded. Information that would be recorded in the event of spill would include time and date of spill, type of chemical or waste spilt, approximate volume spilt, general area in which the spill occurred, corrective actions applied, and disposal of spilt material • Spill protocols in this plan would dictate when the EPA would be notified • Chemical / fuel storage areas would be identified, and be bunded to prevent loss of any pollutants • Hydrocarbon spill kits would be stored at the site. A number of site staff are to be trained in the use of the spill kits	The Proponent	Construction	CEMP	Adherence to Spill Control Plan. Minimise spills. Rapid response to spill, involving the EPA as required.
86.	Deterioration of water quality	Minimise risk	• Infrastructure would be bunded to ensure that the amounts of oil could be fully contained in the event of a leak. Bunding provisions would be regularly inspected	The Proponent	Operation	OEMP	Bunding adequate to contain fluids
87.	Deterioration of water quality	Minimise risk	• Septic systems, if installed, would meet Upper Lachlan Council standards	The Proponent	Operation	OEMP	Adherence to Council standards

1.1.11 Mineral exploration

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
88.	Conflict with mineral exploration	Minimise conflict	• The Proponent would liaise with the current mineral lease holders, providing a final turbine and infrastructure layout, prior to the construction phase	The Proponent	Prior to construction	DoP	Timely notification and liaison
89.	Conflict with mineral exploration	Minimise conflict	• The Proponent would liaise with the current mineral lease holders during the construction phase, to ensure that where possible, the works program does not unnecessarily interfere with planned exploration activities.	The Proponent	Construction	DoP	Timely notification and liaison
90.	Conflict with mineral exploration	Facilitate access	• The Proponent would liaise with the involved land owners and current mineral lease holders prior to rehabilitation, to ensure that any project access roads that they may wish to retain are retained. Several of these access roads are likely to be of benefit both to routine agricultural activities as well as to exploration activities onsite	The Proponent	Construction	DoP	Timely notification and liaison

1.1.12 Economic

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
91.	Affect on local economy	Maximise positive effect of proposal	• The Proponent would liaise with local industry representatives to maximise the use of local contractors and manufacturing facilities in the construction and decommissioning phases of the project	The Proponent	Prior to construction	DoP	Timely notification and liaison
92.	Affect on local activities	Minimise disruption	• Co-ordinate construction activities with local events. Gullen Range Wind Farm Pty Ltd would liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works	The Proponent	Prior to construction	DoP	Timely notification and liaison

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
92a	Affect on local economy	Minimise impacts	• Where feasible/reasonable the Proponent would implement a Sustainable Procurement Strategy with the goal of increasing local (regional and national) products required for the construction and operation of the wind farm	The Proponent	Ongoing	Project Manager	% of local regional products
92b	Local opportunities	Maximise local opportunities	• The Proponent would source services from the local area including but not limited to: o Staff o Suppliers o Materials o Services o Food and consumables	The Proponent	Ongoing	Project Manager	% of local employment

1.1.13 Community wellbeing

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
93.	Community division	Provide accurate information	• Dissemination of accessible and independent information on wind farm impacts	The Proponent	Prior to construction	DPE	Timely dissemination of information
94.	Community division	Provide accurate information	• Monitoring information collected during the operation of the wind farm would be made publicly available	The Proponent	Operation	DPE	Timely dissemination of information
95.	Community division	Equitable distribution of benefits	• Gullen Range wind farm would address the potential for wider adverse community impacts by way of a Community Enhancement Program as presented in Section 4.4.2.	The Proponent	Prior to construction	DPE in consultation with the ULSC	Agreement on amount and conditions of fund

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
							achieved, in accordance with Council policy
95a	Community division	Maximise Benefits	• The Proponent would investigate and where feasible purchase a property for the use of the Public as a community hall. This may combine with Commitment 65a as a shared facility. • The community hall would be run by a panel of community members for the benefit of local people and events	The Proponent		ULSC	
95b	Community division	Provide accurate information and education	• The Proponent would provide a community education program for local schools which would include: o Visits to the wind farm o Information on renewable energy o Information on climate change issues	The Proponent	Operation	DPE	
95c	Community division	Provide accurate information and education	• The Proponent would hold an annual 'open day' at the wind farm to allow the public to visit the facility	The Proponent	Operation	DPE	
95d	Community division	Better community relationship	• The proponent will strengthen its relationship with the community by improving its consultation efforts and undertaking regular interface with neighbours within 2km of the wind farm.	The Proponent	Operation	DPE	Evidence of consultation by GRWFPL
95e	Community division	Provide accurate information and education	• The proponent would provide an annual public report on the environmental and social performance of the wind farm and the consultation activities undertaken for the year	The Proponent	Operation	DPE	Annual Report issued to public

1.1.14 Tourism

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
96.	Affect on local activities	Minimise disruption	• Co-ordinate construction activities with local events. Gullen Range Wind Farm Pty Ltd would liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works	The Proponent	Prior to construction	DPE	Timely notification and liaison
97.	Affect on local activities	Maximise benefits	• The Proponent would work with the involved landowners, the community and Upper Lachlan Shire Council to allow for the development of the wind farm as a tourist attraction, if this option becomes desirable to these three parties.	The Proponent	Operation	DPE	Liaison as required

1.1.15 Agricultural impacts

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
98.	Affect on current local land use	Minimise disruption	• A **Traffic Management Plan** would be developed and would include provisions for construction traffic on access roads where stock may be grazing. These may include specifications for safe speed limits and provision of a construction timetable to affected landowners	The Proponent	Construction	CEMP	Adherence to TMP
99.	Affect on current local land use	Minimise disruption	• Stock would be restricted from works areas where there is a risk stock injury. For example, near excavated trenches and within high traffic areas	The Proponent	Construction	CEMP	Adherence to TMP
100.	Affect on current local land use	Maximise benefits	• Liaison would be undertaken with involved landowners to explore the possibility of enhancing the native component of the understorey in pasture production. This could be incorporated into the site restoration plan which would dictate protocols for the rehabilitation of areas disturbed during construction	The Proponent	Construction	CEMP	Liaison as required
101.	Affect on current local land use	Maximise benefits	• Stock would be restricted from areas being rehabilitated, until surfaces are able to withstand resumed grazing	The Proponent	Construction	CEMP	Protocols set out in SRP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
102.	Affect on current local land use	Minimise risks	• Liaison would be undertaken with involved landowners to restrict stock access within construction zones during the construction and decommissioning phases. This is aimed at reducing potential for collision and ensuring stock are not able to escape during construction	The Proponent	Construction	CEMP	Timely notification and liaison
103.	Affect on current local land use	Minimise disruption	• Liaison would be undertaken with neighbouring landowners and landowners adjoining access roads, to provide information about the timing and routes to be used during construction and decommissioning. This could be in the form of advertising and provision of a contact point for further inquiries. The aim would be to reduce the risk of interference with agricultural activities on affected roads and road verges.	The Proponent	Construction	CEMP	Timely notification
104.	Affect on current local land use	Minimise risks	• The **Traffic Management Plan (TMP)** would contain procedures to manage horse riders using the Bicentennial National Trail during the construction period including keeping the verge of the road clear for riders to allow riders to move off the road. This would include ongoing consultation and liaison with the BNT co-ordinator	The Proponent	Operation	OEMP	Adherence to TMP

1.1.16 Health and safety: construction activities

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
105.	Safety of persons or stock	Minimise risks	A detailed **Health and Safety Plan (H&SP)** would be prepared, as a sub plan of the **Construction Environmental Management Plan**, identifying hazards associated with construction works, the risks of the identified hazards occurring and appropriate safeguards would be prepared prior to the commencement of construction works. Additionally: • The plan would incorporate standard work place practices, such as restraints, fall arrest systems, protective clothing and procedures that enable infrastructure to remain stationary during specific activities • Emergency response protocols and equipment and reminders of the requirement for workers to take responsibility for their safety would be implemented • All site workers are to be inducted to the site on their first day of	The Proponent	Construction	CEMP	Adherence to H&SP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
			employment. The induction would include a detailed briefing of the health and safety plan • Workplace health and safety protocols would be developed to minimise the risk as a result of the ignition of fire from and to workers during construction and during maintenance in the control room and amenities				
106.	Safety of persons or stock	Minimise risks	• Liaison would occur between property owners and construction staff in relation to land and stock management during construction (during construction and decommissioning, stock would be excluded from the works area - this would exclude road works)	The Proponent	Construction	CEMP	Timely notification and liaison
107.	Safety of persons or stock	Minimise risks	• Site fencing would be installed where there is a risk to the safety of the general public (i.e. when the trench is left open for extended periods)	The Proponent	Construction	CEMP	Adherence to H&SP
108.	Safety of persons or stock	Minimise risks	• Employee safety would be managed through the application a **Health and Safety Plan**	The Proponent	Operation	OEMP	Adherence to H&SP

1.1.17 Health and safety: shadow flicker

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
109.	Safety / nuisance to persons or stock	Minimise risks	• If shadow flicker is found to be a nuisance to residents, conditions would be pre-programmed into the control system and individual wind turbines automatically shut down whenever these conditions are present	The Proponent	Operation	OEMP	Minimise complaints
110.	Safety of persons or stock	Minimise risks	• Shadow flicker effects on motorists using Range Road would be monitored following commissioning and any remedial measures to address concerns would be developed in consultation with the RTA and the Department of Planning	The Proponent	Operation	OEMP in consultation with the RTA and the Department of Planning	Minimise shadow flicker on this section of road

1.1.18 Health and safety: stability of turbines

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
111.	Safety of persons or stock	Minimise risks	• Obtain and implement sound geotechnical advice during construction, choice of a reliable turbine and proper installation and maintenance of the turbines	The Proponent	Construction	DPE	Adherence to geotechnical report conclusions

1.1.19 Historic heritage

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
112.	Deterioration of heritage items	Minimise risks	• Inform the Upper Lachlan Shire Council, Goulburn-Mulwaree Council and the NSW Heritage Office of the proximity of final access routes	The Proponent	Construction	DPE	Timely notification and liaison
113.	Deterioration of heritage items	Minimise risks	• Building design, materials and colour would be appropriate to the heritage values of the area	The Proponent	Prior to construction	DPE	Signoff from Landscape Architect
114.	Deterioration of heritage items	Minimise risks	• Underground rather than overhead transmission would be used where possible and where it would not result in inappropriate risks to soils and land forms. Although extensive existing electricity transmission infrastructure is present on the site and to the south, the cumulative impact of the development would be reduced where possible	The Proponent	Prior to construction	DPE	Minimal overhead transmission

1.1.20 Physical impacts: air quality

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
115.	Air quality	Minimise risks	• Subsoil would be separated from topsoil for rehabilitation purposes. All topsoil from the excavation sites would be stockpiled and replaced to its original depth for seeding and fertilising. On steep slopes, topsoil would need to be stabilised using, for example, jute matting. Any excess subsoil would be removed from the site and disposed of at an appropriate fill storage site	The Proponent	Construction	CEMP	Protocols set out in CEMP
116.	Air quality	Minimise risks	• Any material stockpiled as would be covered with plastic, seeded or otherwise bound to reduce dust. Dust levels at stockpile sites would be visually monitored. Dust suppression (eg. water sprays) would be implemented if required	The Proponent	Construction	CEMP	Protocols set out in CEMP
117.	Air quality	Minimise risks	• Product stockpiles would be protected from prevailing weather conditions	The Proponent	Construction	CEMP	Protocols set out in CEMP
118.	Air quality	Minimise risks	• During dry, windy periods a water cart or alternative chemical dust suppression would be available and applied to works areas generating dust. Means to determine when action is required would be detailed in the **Construction Management Plan**	The Proponent	Construction	CEMP	Protocols set out in CEMP
119.	Air quality	Minimise risks	• Should blasting be required, it would be carried out in accordance with all relevant statutory requirements	The Proponent	Construction	CEMP	Adherence to ANZECC guidelines
120.	Air quality	Minimise risks	• Residences within 1km of blasting activities would be informed prior to blasting	The Proponent	Construction	CEMP	Timely notification
121.	Air quality	Minimise risks	• Dust filters would be installed on silos, where required	The Proponent	Construction	CEMP	Minimal dust complaints

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
122.	Air quality	Minimise risks	Sediment and erosion would be controlled as part of a formal **Sediment / Erosion Control Plan (SECP)**. This plan would include the following provisions: • Sediment traps would be installed wherever there is potential for sediment to collect and enter waterways • On the steeper slopes check banks would be installed across the trenchline, as appropriate, following closure of the trench. These would discharge runoff to areas of stable vegetation • Stabilisation would be undertaken as soon as practicable during construction. Furthermore, rehabilitation of disturbed ground would be carried out at the completion of construction works • Stockpiles generated as a result of construction activities would be bunded with silt fencing, (hay bales or similar) to reduce the potential for runoff from these areas • Soil and water management practices would be guided by the Best Practice guidelines contained within *Soils and Construction Vol. 1* (Landcom 2004)	The Proponent	Construction	CEMP	Adherence to SECP
123.	Air quality	Minimise risks	A **Traffic Management Plan (TMP)** would be developed and would include strategies to reduce the number of vehicle movements to, from and across the sites. These would include: • Only machinery compliant with emission standards would be used • Vehicles and motorised equipment would be maintained so that emissions are minimised • Machinery and vehicles would not be left running or idling when not in use	The Proponent	Construction	CEMP	Adherence to TMP

1.1.21 Physical impacts: soils and landforms

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
124.	Soil loss or	Minimise risks	• Concrete wash would be deposited in an excavated area,	The	Construction	CEMP	No effect on

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
	stability of landform loss		below the level of the topsoil, or in an approved landfill site. Where possible, waste water and solids would be reused onsite	Proponent			waterways or top soil
125.	Soil loss or stability of landform loss	Minimise risks	• Tracks would be graded to enhance their stability	The Proponent	Construction	CEMP	Adherence to SECP
126.	Soil loss or stability of landform loss	Minimise risks	• Access routes and tracks would be confined to already disturbed areas, where possible	The Proponent	Construction	CEMP	Minimise disturbance area
127.	Soil loss or stability of landform loss	Minimise risks	• ANZECC guidelines for control of blasting impact at residences would be adhered to if blasting is required	The Proponent	Construction	CEMP	Adherence to ANZECC guidelines

1.1.22 Resource impacts

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
128.	Waste generation	Minimise waste and maximise recycling of materials	• Waste would be reused or recycled whenever possible. Separate recyclable materials receptacles would be provided (eg. For glass, plastics and aluminium)	The Proponent	Construction and operation	CEMP and OEMP	Waste streams identified, Waste Hierarchy implemented
129.	Waste generation	Appropriate disposal of waste	• Packaging materials and general construction wastes would be disposed of, with Council's approval, at Council operated waste disposal centres	The Proponent	Construction and operation	CEMP and OEMP	Waste streams identified, Waste Hierarchy implemented

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
130.	Waste generation	Appropriate disposal of waste	• Toilet facilities would be provided for onsite workers and sullage from contractor's pump out toilet facilities would be disposed at the local sewage treatment plants or other suitable facility agreed to by Council	The Proponent	Construction and operation	CEMP and OEMP	Council approved disposal
131.	Waste generation	Minimise waste and maximise recycling of materials	• Surplus topsoil would be stockpiled on site during construction, and following construction would be spread on the site (particularly over former hardstand areas and access roads) to assist with revegetation	The Proponent	Construction	CEMP	SRP adhered to
132.	Waste generation	Minimise waste and maximise recycling of materials	• Excavated material would be used in road base construction and as aggregate for footings where possible. Surplus material would be disposed of in appropriate locations on site (on agreement with the landowner), finished with topsoil, and revegetated	The Proponent	Construction	CEMP	Maximum reuse of excavated material
133.	Waste generation	Appropriate disposal of waste	• Risk of chemical spills would be minimised and protocols would be in place to ensure prompt and effective clean up of any accidental spills	The Proponent	Construction and operation	CEMP and OEMP	Adherence to Spill Control Plan. Minimise spills. Rapid response to spill, involving the EPA as required.
134.	Waste generation	Appropriate disposal of waste	• No permanent waste disposal would be utilised onsite	The Proponent	Construction and operation	CEMP and OEMP	Waste disposal protocols set out in CEMP and OEMP adhered to

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
135.	Waste generation	Appropriate disposal of waste	• The contractor would implement a Spill Control Plan as part of its Erosion and Sediment Control Plan. Spill Control Plans would identify persons responsible for implementing the plan if a spill of a dangerous or hazardous waste should occur. Any spill that occurs, regardless of size or type of spill, would be reported to the Construction Manager. The event and clean up processes would be recorded. Spill protocols in the plan would dictate when the EPA should be notified	The Proponent	Construction and operation	CEMP and OEMP	Adherence to Spill Control Plan. Minimise spills. Rapid response to spill, involving the EPA as required.

1.1.23 Cumulative impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
136.	Cumulative noise	Minimise risk of construction noise criteria exceedence	Construction noise • If an additional project proposes concurrent construction timing as the proposed Gullen Range wind farm, the Proponent would enter into liaison to ensure that additional construction noise issues were addressed	The Proponent	Construction and operation	CEMP and OEMP	Rapid response to complaints, adherence to SA EPA guidelines
137.	Cumulative traffic and infrastructure	Minimise disruption	Traffic and infrastructure • If an additional project proposed concurrent construction timing on access routes nominated by the Gullen Range wind farm, the Proponent would enter into liaison to ensure that additional traffic and transport issues were addressed	The Proponent	Construction and operation	CEMP and OEMP	Timely notification and liaison with road authorities and second proponent
138.	Cumulative economic	Maximise local skill use	Economic • Liaison would continue with local economic development bodies to	The Proponent	Construction and operation	DPE	Timely notification

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
			ensure the potential for local skill use and manufacturing is maximised				and liaison
139.	Impact on future rural subdivisions	Minimise risks	Future Rural Subdivisions The Proponent will provide reasonable and feasible noise mitigation measures to achieve a noise criterion ($LA_{eq\ (10\text{-}minute)}$) of 30dB(A) inside bedrooms (as outlined in the Guidelines for Community Noise (WHO, 1999) for no more than one dwelling on each parcel of land that: • Is not associated with the project; • Was lawfully in existence at the date of the approval; • Was lawfully permitted to be developed for the purpose of a residential dwelling at the date of the approval; • Is or was the subject of a valid construction certificate for a residential dwelling, lodged with the consent or a certifying authority within three years of the date of approval; and • Would, but for the requirements of this condition, experience noise contributions from the project at the approved location of the residential dwelling in excess of the noise limits recommended in the SA EPA guidelines. •	The Proponent	Operation	DoP	Minimise impacts
140.	Impact on local water supplies	Comply with water authority	• No ground water would be sourced without relevant permits being sought.	The Proponent	Prior to construction	CEMP	Relevant approvals obtained
141.	Impact on groundwater	Minimise risks	• Undertake geotechnical investigations to ensure that the project would have no material adverse effect on groundwater/aquifers as a result of blasting activities.	The Proponent	Detailed design phase	CEMP	No detectable impact on groundwater
142.	Loss of biodiversity value	Avoid or minimise impact	• *During the detailed design phase, a copy of the plans of the final infrastructure layout (including all turbines, hard stand areas, buildings, tracks, power lines and associated infrastructure) would be provided to DoP to demonstrate the achievement of biodiversity SoCs in the EA.*	Ecological consultant	Prior to construction	DPE	Minimise direct biodiversity impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
143.	Loss of biodiversity value	Avoid or minimise impact	• Additional targeted surveying (utilising 'Spider hole' pitfall traps) would be carried in works area likely to be impacted by GUR-08 infrastructure to establish if the Grassland Earless Dragon utilises this habitat at Gurrundah. If it is identified as occurring, turbine infrastructure would be relocated to avoid this habitat, and a buffer of at least 25 metres maintained	Ecological consultant	Prior to construction	DPE OEH	Minimise direct biodiversity impact
144.	Safety and asset protection	Minimise risks	• If haulage is proposed on routes that have not been assessed as part of the EA, assessment would be undertaken, in consultation with the Department of Planning, the roads authority and Council, prior to its inclusion in the haulage route. This would be completed as part of the Construction Environmental Management Plan.	The Proponent	During construction	CEMP	Minimise impacts on road users

APPENDIX B – REVISED CONSOLIDATED CONDITIONS OF APPROVAL

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning, the Planning Assessment Commission determines the application referred to in Schedule 1 subject to the conditions in Schedule 2.

These conditions are required to:
- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Red type represents the July 2015 modification (MOD 1)

Member of the Commission **Member of the Commission**

Sydney 2015 File No: S07/00846

SCHEDULE 1

Application No:	07_0118
Proponent:	Gullen Range Wind Farm Pty Ltd
Approval Authority:	Minister for Planning
Land:	The Land shown in Appendix 2
Project:	The Gullen Range wind farm and associated infrastructure
Major Project:	The project was declared a Major Project under section 75B(1)(a) of the *Environmental Planning and Assessment Act 1979*, because it is development of a kind described in clause 24 of Schedule 1 of *State Environmental Planning Policy (Major Projects) 2005.*

KEY TO CONDITIONS

SCHEDULE 2

Associated property	A property comprising one or more lots, that is owned, leased or otherwise lawfully used by the Proponent or where there is a written agreement between the owner of the property and the Proponent (but only during the currency of the agreement) that part of the property in relation to which the agreement is established.
Associated residence	A residence within a property, comprising one or more lots, that is owned, leased or otherwise lawfully used by the Proponent or where there is a written agreement between the owner of the property and the Proponent (but only during the currency of the agreement) that part of the property in relation to which the agreement is established.
CEMP	Construction Environmental Management Plan
Construction	The carrying out of works and the erection of buildings and infrastructure covered by this approval
Council	Refers to both Upper Lachlan Shire Council and Goulburn Mulwaree Council unless otherwise stated
Decommissioning	The removal of wind turbines and associated infrastructure under this approval.
DEMP	Decommissioning Environmental Management Plan
Department	The Department of Planning and Environment
Dust	Any solid material that may become suspended in air or deposited
EA	The environmental assessment titled *Proposed Development of the Gullen Range Wind Farm, Southern Tablelands, New South Wales*, prepared by Epuron and dated July 2008, as subsequently modified by: • Submissions Report; • *Gullen Range Wind Farm – Modification Application – Environmental Assessment*, prepared by Goldwind Australia and dated March 2014; • Associated *Submissions report dated June 2014;* • *Report to Planning Assessment Commission, August 2014* • *Supplementary information for Department of Planning and Environment* prepared by Goldwind Australia and dated April 2015
EPA	Environment Protection Authority
Minister, the	Minister for Planning
OEH	Office of Environment and Heritage
OEMP	Operation Environmental Management Plan
Operation	The point at which turbines approved or at which all turbines of the project constructed in any stage (pursuant to condition 1.8) are practically complete and ready for operation for the purpose of generating electricity.
Proponent	Gullen Range Wind Farm Pty Ltd
Reasonable and feasible	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. **Feasible** relates to engineering considerations and what is practical to build. **Reasonable** relates to the application of judgement in arriving at a decision, taking into account mitigation benefits and cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.

RFS	The New South Wales Rural Fire Service
RMS	Roads and Maritime Services
Secretary	Secretary of the Department, or nominee
Site	The land referred to in Appendix 2 of the project approval.
Statement of Commitments	The commitments in Appendix 3 of the project approval
Submission Report	*Proposed Development of the Gullen Range Wind Farm, Southern Tablelands, New South Wales Response to Submissions to the Environmental Assessment*, prepared by Epuron Pty Ltd and dated November 2008

1. ADMINISTRATIVE CONDITIONS

Terms of Approval

1.1 The Proponent shall carry out the project:

a) generally in accordance with the EA;
b) the statement of commitments; and
c) conditions of this approval.

Note: The general layout of the project is depicted in the figure in Appendix 1.

1.2 If there is any inconsistency between the documents referred to in condition 1.1, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

1.3 The Proponent shall comply with any reasonable requirement/s of the Secretary arising from the Department's assessment of:

a) any strategies, plans, programs, reviews, audits or correspondence that are submitted in accordance with the requirements in this approval;
b) any report, reviews or audits commissioned by the Department regarding compliance with this approval; and
c) the implementation of any actions or measures contained in these documents.

Modifications to the Scope of the Project

1.4 Pursuant to section 75J(4) of the *Environmental Planning and Assessment Act 1979* the project is modified to delete the following turbines from the scope of the project: KIA_03, KIA_04, KIA_05, KIA_06, KIA_07, KIA_08, KIA_09, KIA_10, KIA_11, KIA_12 and KIA_14. This approval does not authorise construction of these turbines.

Note: the turbines referred to under condition 1.4 have been removed from the project based on a precautionary approach with respect to potential aviation hazards associated with the project, and for potential users of the Crookwell Airstrip. Turbines have been selected for deletion from the project based on the Inner Horizontal and Conical Surfaces identified for a Code 2, Non-instrument runway under *Manual of Standards Part 139 – Aerodromes* (Version 1.4) (Civil Aviation Safety Authority, April 2008).

1.5 Pursuant to section 75J(4) of the *Environmental Planning and Assessment Act 1979* the project is modified to remove the ability of the Proponent to relocate turbines from the locations indicated in the document referred to under condition 1.1a) by up to 250 metres, without further assessment and approval in accordance with the requirements of the *Environmental Planning and Assessment Act 1979*.

Limits of Approval

1.6 This approval shall lapse five years after the date on which it is granted unless the Proponent has confirmed to the satisfaction of the Secretary that orders have been placed for wind turbines, or demonstrated that work subject of this approval has been completed on the site before that time.

Statutory Requirements

1.7 The Proponent shall ensure that all licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent shall ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the project.

1.8 The Proponent may elect to construct the project in stages. In this case, these conditions of approval may be complied with separately for each stage, as relevant.

Decommissioning

1.9 Within one year of decommissioning, the site shall be returned, as far as practicable, to its condition prior to the commencement of construction. All wind turbines and associated above ground structures (i.e. not including turbine foundations) including but not necessarily limited to, the substation, the control and facilities building and electrical infrastructure shall be removed from the site unless otherwise agreed by the Secretary, except where the substation, control room or overhead electricity lines are transferred to or in the control of the local electricity network operator. All other elements associated with the project, including site roads, shall be removed unless otherwise agreed to by relevant the landowner(s).

1.10 If any wind turbine is not used for the generation of electricity for a continuous period of 12 months, it shall be decommissioned by the Proponent, unless otherwise agreed by the Secretary. The Proponent shall keep independently-verified annual records of the use of wind turbines for electricity generation. Copies of these records shall be provided to the Secretary upon request. The relevant wind turbine and any associated infrastructure is to be dismantled and removed from the site by the Proponent within 24 months from the date that the wind turbine was last used to generate electricity.

1.11 Prior to the commencement of construction, the Proponent shall provide written evidence to the satisfaction of the Secretary that the lease agreements with the site landowners have adequate provisions to require that decommissioning occurs in accordance with this approval.

2. SPECIFIC ENVIRONMENTAL CONDITIONS

Visual Amenity

Landscaping Requirements

2.1 Prior to the commencement of Operation, the Proponent shall consult with Council and the RMS in relation to the need to provide landscaping screening measures along public road reserves such as but not limited to Range Road, Storriers Lane, Bannister Lane and Grabben Gullen Road and shall report to the Secretary on the outcomes of this consultation. The Proponent shall implement landscaping screening measures in accordance with the Secretary's requirements.

2.2 Not more than six months prior to the commencement of Operation, the Proponent shall notify in writing:

a) all owners of existing or approved residential dwellings that are located within three kilometres of the project;
b) all owners of approved subdivision allotment where there is an approved dwelling entitlement, where such subdivision allotments were approved by the date of approval of the project that are located within three kilometres of the project;
c) the owners of Lot 55 of DP 754115;
d) but excluding the owners of Lot 118 of DP 1116333 and Lot 121 of DP 754115 and the owners of Lots 143 and 303 of DP 754115, Lot 2 of DP 541500 and Lot 2 of DP 541499
e) the owners of PW37

that they may be eligible to have landscaping treatment on their property in order to minimise the visual impact of the project on their property.

2.3 Any such owner (or their successors) who may potentially be eligible to have landscaping treatment (as they have views or likely views of a turbine(s) on their property pursuant to clause 2.2 may, no later than six months after the commencement of operation, advise the Proponent whether access to their property for landscaping assessment is granted and request the Proponent to investigate such ways of minimising the visual impact of the project on their property. The Proponent shall:

a) within fourteen (14) days of receiving the request, commission a suitably qualified person approved by the Secretary, to:

i) inspect the relevant property and determine whether the property is eligible to have landscaping treatment under condition 2.2; and

ii) investigate reasonable and feasible measures to minimise the visual impacts of the project on the landowner's property using landscape treatments, if that qualified person determines the property is eligible to have landscaping treatment;

b) ensure that the qualified person provides a landscaping plan detailing the matters investigated and consequential recommendations within twelve (12) weeks of receiving such request; and

c) provide the landowner with a copy of the landscaping plan, including suggested landscape treatment measures, within fourteen (14) days of receiving the plan.

Should the parties be unable to reach agreement within one month of receiving the request referred to at a) above whether the property is eligible to have landscaping treatment pursuant to condition 2.2, then either party may refer the matter to the Secretary for resolution. The Secretary's decision on such a referral shall be final and binding on the parties.

Landscaping treatments shall be agreed within one month of the landowner receiving a copy of the visual impact mitigation report. The Proponent shall implement the agreed measures with all landscaping being completed within three months (where practical). The Proponent shall maintain these measures, at their cost, for a period of two years. Access and notification arrangements are to be negotiated between the parties.

Landscape treatments shall include, but not be limited to, site preparation stock and rabbit-proof fencing, selection and planting of appropriate species decided by both parties, watering, weed control and the replacement of failed plants.;

Should the parties be unable to reach agreement, within three months of an eligible landowner receiving a copy of a landscaping plan in accordance with condition 2.3(c) above, on the scope of and/or timing of implementation of landscaping treatments, then either party may refer the matter to the Secretary for resolution. The Secretary's decision on such a referral shall be final and binding on the parties.

2.3A By 31 December 2015, unless otherwise agreed by the Secretary, the Proponent shall implement landscaping treatments to screen the substation and associated switching station for the project to the satisfaction of the Secretary. This screening must employ all reasonable and feasible mitigation measures and utilise mature plantings to screen the substation and switching station from the surrounding non-associated property PW4. Following the installation of the screening, the Proponent shall maintain the screening over the life of project.

Turbine External Design

2.4 Wind turbine generators shall be painted matte off-white/grey. The blades shall be finished with a surface treatment that minimises any potential for glare or reflection.

2.5 No advertising, signs or logos shall be mounted on the turbines, except where required for safety purposes. A corporate logo may be placed on the turbines provided it is not distinguishable by the naked eye from any publicly accessible location or from any properties not being an associated property.

Lighting

2.6 No external lighting other than low intensity security night lighting of infrastructure associated with the project, including wind turbine generators is permitted; unless otherwise agreed or directed by the Secretary.

Shadow-flicker

2.7 Shadow flicker arising from the operation of the project shall not exceed 30 hours/annum at any residence not being an associated residence..

Noise Impacts

Construction and Decommissioning Noise

2.8 The Proponent shall only undertake construction or decommissioning activities associated with the project that would generate an audible noise at any residential premises during the following hours:

a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;
b) 8:00 am to 1:00 pm on Saturdays; and
c) at no time on Sundays or public holidays.

This condition does not apply in the event of a direction from police or other relevant authority for safety reasons, or emergency work to avoid the loss of lives, property and/or to prevent environmental harm.

2.9 The hours of construction or decommissioning activities specified under condition 2.8 of this approval may be varied with the prior written approval of the Secretary. Any request to alter the hours of construction or decommissioning specified under condition 2.8 shall be:

a) considered on a case-by-case basis; and
b) accompanied by details of the nature and need for activities to be conducted during the varied construction or decommissioning hours and any other information necessary to reasonably determine that activities undertaken during the varied construction or decommissioning hours will not adversely impact on the acoustic amenity of receptors in the vicinity of the site; and
c) affected residential receivers being informed of the timing and duration of work approved under this condition at least 48 hours before that work commences.

2.10 During construction or decommissioning, the Proponent shall minimise noise emissions from plant and equipment operated on the site by installing and maintaining, wherever practicable, efficient silencers, low-noise mufflers (residential standard) and replacement of reversing alarms on vehicles with alternative silent measures, such as flashing lights

Construction or Decommissioning Blasting

2.11 Blasting associated with the construction or decommissioning of the project shall only be undertaken during the following hours:

a) 9:00 am to 5:00 pm, Mondays to Fridays, inclusive;
b) 9:00 am to 1:00 pm on Saturdays; and
c) at no time on Sundays or public holidays.

2.12 The Proponent shall ensure that air blast overpressure generated by blasting associated with the project does not exceed the criteria specified in Table 1 when measured at the most-affected residential or sensitive receiver.

Table 1 – Airblast Overpressure Criteria

Air blast Overpressure (dB(Lin Peak))	Allowable Exceedance
115	5% of total number of blasts over a 12 month period
120	Never

2.13 The Proponent shall ensure that the ground vibration generated by blasting associated with the project does not exceed the criteria specified in Table 2 when measured at the most-affected residential or sensitive receiver.

Table 2 – Peak Particle Velocity Criteria

Peak Particle Velocity Criteria (mms^{-1})	Allowable Exceedance
5	5% of total number of blasts over a 12 month period
10	Never

2.14 Prior to each blasting event, the Proponent shall notify the relevant local council and potentially-affected landowners, including details of time and location of the blasting event and providing a contact point for inquiries and complaints.

Operational Noise Criteria

2.15 Subject to conditions 2.15 to 2.20 the Proponent shall design, operate and maintain the project to ensure that the equivalent noise level ($L_{Aeq\ (10\text{-}minute)}$) from the project does not exceed at each of the residential receiver locations identified in Section 5 of the Noise Impact Assessment prepared by Marshall Day Acoustics, dated 5 June 2008 (Section 3.2 of EA Attachments), or any other residential receiver in existence or the subject of a valid development consent at the date of this approval (but including PW37):

a) 35 dB(A); or
b) the existing background noise level ($L_{A90\ (10\text{-}minute)}$) correlated to the integer wind speed at hub height at the wind farm site by more than 5 dB(A).

whichever is the greater, for each integer wind speed (measured at hub height) from cut-in to rated power of the wind turbine generator, when determined in accordance with the methodology provided in the *Wind Farms: Environmental Noise Guidelines* (SA EPA, 2003) (**'SA Guidelines 2003'**) or as otherwise agreed with the EPA.

2.16 The Proponent shall prepare a revised Noise Assessment for the final turbine model and turbine layout selected, which shall be submitted to the Secretary prior to commissioning of the wind turbines. The assessment shall demonstrate consistency with the EA and the ability of the final turbine model and layout to meet the requirements of condition 2.15. The revised Noise Assessment shall include the following:

a) noise predictions of the final turbine model and layout selected at each of the receiver locations;

b) method and modelling inputs employed to carry out the noise level predictions according to the SA Guidelines 2003 except that all sounds power levels and wind speeds shall be referenced to hub height;

c) an assessment of the suitability of background noise level data to cover the range of wind speeds and directions generally expected at the site; and

d) noise predictions shall be conducted by an acoustic engineer defined for the purposes of this condition as an engineer who is eligible for membership of both the Australian Acoustical Society and the Institution of Engineers Australia.

2.17 Where noise predictions are found to exceed the limits specified in condition 2.15 the Proponent shall develop and implement a Noise Operating Strategy that identifies specific methods of noise reductions to restore the levels back to the limits in Condition 2.15 at any

receiver location for all wind directions including worst case-scenarios. The strategy shall include noise modelling verification that demonstrates the predicted noise reductions can be achieved,

2.18 Noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 20 metres of the dwelling, where the dwelling is more than 20 metres from the boundary, to determine compliance with the noise level limits in conditions 2.15 and 2.16. Under this Condition "dwelling" means one in existence or the subject of a valid development consent at the date of this approval.

2.19 For the purposes of conditions 2.15 and 2.16 of this approval, 5 dB(A) shall be applied to measured noise levels where tonality is present. The presence of tonality shall be determined using the methodology detailed in Wind Turbine Generator Systems- Part 11: Acoustic Noise Measurement Techniques IEC 61400-11:2002 or its latest edition or as otherwise agreed with the EPA.

2.20 Notwithstanding conditions 2.15 and 2.16 of this approval, the noise limits specified under those conditions do not apply to any residence where a noise agreement is in place between the Proponent and the respective owner(s) of those residences in relation to noise impacts and/or noise limits. For this condition to take effect, the noise agreements shall satisfy the requirements of Guidelines for Community Noise (WHO, 1999) and Section 2.3 of the SA Guidelines 2003 or as otherwise agreed by the Secretary.

Verification of Operational Noise Performance

2.21 The Proponent shall prepare a Noise Compliance Plan which shall be submitted to the Secretary prior to commissioning of the wind turbines. The Noise Compliance Plan shall include, but not be limited to:

a) an assessment of the performance of the project against the noise predictions contained in conditions 2.15 and 2.16;

b) a commitment to operate the Project in accordance with any Noise Operating Strategy that is implemented in accordance with condition 2.17;

c) a commitment that noise compliance monitoring will be undertaken within three months of the commissioning of the wind turbines. If prevailing meteorological conditions do not allow the required monitoring to be undertaken in this period, the Secretary shall be notified and an extension of time may be sought; and

d) a requirement that all noise compliance monitoring results are submitted to the Secretary within one month of completion of the monitoring. The Secretary may request that additional noise compliance monitoring be undertaken and completed within a specified timeframe.

The Noise Compliance Assessment shall be undertaken generally in accordance with the procedures presented in SA Guidelines 2003, except that all sounds power levels and wind speeds shall be referenced to hub height unless otherwise agreed with the EPA.

2.22 In the event that the Noise Compliance Plan indicates that noise from the wind turbines exceeds the noise limits specified under conditions 2.15 and 2.16, as relevant, the Proponent shall investigate and propose mitigation and management measures to achieve compliance with the noise limits. Details of the remedial measures and a timetable for implementation must be submitted to the Secretary for approval within such period as the Secretary may require. Remedial measures shall include, in the first instance, all reasonable and feasible measures to reduce noise from the project, including but not necessarily limited to reduced operation of wind turbines. Once all reasonable and feasible source controls are exhausted, remedial measures may include offering building acoustic treatments and/or noise screening to affected residences, but may only be used to address noise limit exceedances at the absolute discretion of the relevant landowner. The Proponent shall also

demonstrate that the relevant landowner/resident has been made fully aware of the noise and other implications of making any agreement.

If there is no such agreement with the relevant landowner, then the turbine(s) causing the exceedance(s) of the noise limits must be turned off until the turbine(s) can be operated in accordance with this approval.

2.23 The Proponent shall provide written notice to all landowners that are entitled to rights under condition 2.22within 21 days of determining the landholdings to which these rights apply. For the purpose of condition 2.22, this condition only applies where operational noise levels have been confirmed in accordance with the conditions 2.15 and 2.16.

2.24 The Proponent shall bear the costs of any additional at-receiver mitigation measures implemented at an affected landowner or property.

Land Acquisition and Criteria

2.25 Should the Proponent determine to proceed with any or all of turbines listed in Table 3, the Proponent shall notify in writing the owner of each of the Lots listed in the corresponding row of the specific turbine(s) it intends to proceed with and that it is initiating the acquisition process.

Table 3 – Turbines to be deleted or landholdings to be acquired

Turbines to be deleted	**or**	**Property to be acquired**	**Relevant Lot and DP numbers**
BAN_20, BAN_21, BAN_22		B33	1/568887
BAN_22, BAN_23, BAN_24		Daniel Hewitt	55/754115
BAN_14, BAN_15		G&S Price Jones	111/750042
POM_01		Johnson	53/750043 44/750043 103/750043
POM_12, POM_13, POM_14, POM_15 POM_16, POM_19 POM_20		Kings' Lot 6	*See note below*
POM_12, POM_13, POM_14, POM_15, POM_16, POM_19 POM_20		Kings' Lot 7	*See note below*
POM_12, POM_13, POM_14, POM_15, POM_16, POM_19 POM_20		Kings' Lot 8	*See note below*
POM_19, POM_20, POM_21		Kings' Lot 9	*See note below*
POM_19, POM_20, POM_21		Kings' Lot 10	*See note below*
POM_19, POM_20, POM_21		Kings' Lot 11	*See note below*
BAN_24		Montgomery (B121a)	1/783347
BAN_29		Montgomery (B122a)	54/754115
BAN_22, BAN_25, BAN_26		Picker-Wales	1/810446

Note: on 24 July 2008, Upper Lachlan Shire Council granted development consent (230/07) for the creation of a 20-lot subdivision and dwelling entitlements on the following land: Lots 1 and 2 DP57829, Lots 1 and 2 DP937271, Lot 3 DP974080, Lot 101 DP1096412, Lot 1 DP111454, Lot 104 DP750043, Lots 1 and 2 DP547768, Lot 1 DP64411, Lots 29, 37, 42, 46, 55, 65, 165 and 204 DP750019

Note: The lots listed in Table 3 include any unmade Crown roads adjoining the lots which are purchased by the current or future landowners, including but not limited to unmade Crown roads adjoining the Kings' lots 6 to 8 which the Kings are in the process of purchasing.

2.26 At the request of the owner(s) of any of the Lots notified under condition 2.25 if such a request is made within three months of the date of service of the notification required under condition 2.25 and provided that this approval or/and (in relation to any Kings' Lots referred to in Table 3 of condition 2.25) development consent 230/07 has not lapsed or been surrendered within that time, the Proponent shall proceed to acquire the relevant landholdings referred to in the owner(s)' request under this condition.

2.27 Within three months of receiving a written request from a landowner with acquisition rights under conditions 2.26 of this approval, the Proponent shall make a binding written offer to purchase the land specified in the request to the landowner with such offer to remain open for a period of three months after receipt and shall not be reduced, based on:

a) the current market value of the landowner's interest in the land at the date of the written request, as if the land was unaffected by the project, having regard to the:
   i) existing and permissible use of the land, in accordance with applicable planning instruments at the date of the written request; and
   ii) presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date;
b) the reasonable costs associated with obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is acquired; and
c) reasonable compensation for any disturbance caused by the land acquisition process.

If after three months of receipt of the Proponent's offer above the Proponent and landowner cannot agree on the acquisition price of the land, including costs and compensation under b) and c) above, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution.

Upon receiving such a request, the Secretary shall request the President of the New South Wales Division of the Australian Property Institute to appoint a suitably qualified and experienced independent valuer, being a Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, including the reasonable compensation for disturbance caused by the land acquisition process associated with c) above, and/or terms upon which the land is to be acquired. This process is to be completed within three months of Secretary receiving any such request.

Within 14 days of receiving the independent valuer's determination, the Proponent shall make a binding written offer (including as to the reasonable costs and compensation under b) and c) above), which shall remain open for a period of three months after receipt and shall not be reduced, to purchase the land at a price not less than the independent valuer's determination and otherwise on the terms specified in the determination.

If the landowner refuses to accept this offer within three months of the date of receipt of the Proponent's offer, the Proponent's obligations to acquire the land concerned shall cease,.

If the landowner accepts either of the offers above and thereafter the Proponent fails to acquire the land on terms consistent with the relevant offer within three months of acceptance, the relevant turbines are to be deleted.

2.28 The Proponent shall bear the reasonable costs of any valuation or survey assessment requested by the independent valuer or the Secretary and the costs of determination referred to under condition 2.27.

2.29 If the Proponent and landowner agree that only part of that landowner's property shall be acquired, then the Proponent shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

2.30 If the Proponent has not initiated the acquisition process referred to in condition 2.25 for any Lot specified in any request under condition 2.26 by 26 June 2013 or prior to the

commencement of any construction activities in the relevant sector of the project; whichever occurs earliest, the relevant nominated turbine(s) relating to that Lot identified in condition 2.25 are to be deleted from the project.

2.31 If the Proponent has initiated the acquisition process referred to in condition 2.25 by the earlier of the dates determined in accordance with condition 2.30 and the owners of the relevant Lot to be acquired notify the Proponent in writing that they do not consent to their Lot being acquired, or fail to provide a written request to the Proponent for all or part of their land to be acquired in accordance with condition 2.26, then the requirement either to acquire that land under condition 2.25, or to delete the nominated relevantly applicable turbine from the project under condition 2.30 lapses.

2.32 Conditions 2.25-2.30 of this approval are to apply to the landowners of Lots 105, 106, 112, 113, 195, 227 and 253 of DP 7540042 and Lots 247, 304, 355 and 366 of DP7541115 if:

a) turbines BAN_14 and BAN_15 are not deleted by 26 June 2013; and
b) aviation hazard lighting is required to be installed on any turbines in the project.

Flora and Fauna Impacts

2.33 The Proponent shall not operate wind turbines POM_03, POM_04, POM_06, and POM_07 between one hour before sunset and one after sunrise during the period 30 November to 31 March, unless the Proponent demonstrates to the satisfaction of the Secretary that operation during these periods will not adversely impact on Powerful Owl juvenile dispersion. In undertaking such a demonstration, the Proponent shall undertake the following:

a) monitoring of the dispersion Powerful Owl juveniles in and around the site, to be conducted by an independent specialist approved by the Secretary;
b) preparation of a report to be submitted to the Secretary presenting the outcomes of monitoring and impacts to the Powerful Owl juvenile dispersion in and around the site; and
c) conclusively demonstrating to the satisfaction of the Secretary that the dispersion of Powerful Owl juveniles in and around the site will not be adversely impacted by the project.

2.34 The Proponent shall ensure that during the construction of wind turbine BAN_14, including construction and/ or installation of any ancillary facilities and any site access arrangements, the following requirements are met:

a) vegetation defined as all or part of an Endangered Ecological Community shall not be cleared, modified or otherwise directly impacted as a result of the works;
b) access to the construction site shall be clearly demarcated to minimise the potential for impacts on local vegetation;
c) disturbed areas shall be stabilised and rehabilitated following the conclusion of construction works; and
d) an independent qualified ecologist shall attend all site works to advise on mitigation, management and monitoring measures that shall be applied to comply with this condition of approval.

2.35 By the 31 December 2015, unless otherwise agreed with the Secretary, the Proponent shall revise the proposed compensatory habitat package to offset in perpetuity the value of habitat lost as a result of the project, in consultation with OEH, and to the satisfaction of the Secretary. Unless otherwise agreed to by the Secretary, the package shall comprise:

a) a minimum of 2:1 'like for like' offset of the vegetation communities to be removed or otherwise disturbed on site utilising a "Worst Case Scenario" impact assessment; or
b) the implementation of in kind management measures or funding for such measures as agreed to by OEH; or a combination of the measures specified in a) and b).

Once the Secretary has endorsed the compensatory habitat package, the Proponent shall implement the package to the satisfaction of the Secretary.

2.36 The Proponent shall make a financial contribution of $1500.00 to the NSW Wildlife Information and Rescue Service for each death of a Powerful Owl that has reasonably been

attributed to the carrying out of the project. The financial contribution must be paid by the Proponent within one month of the Proponent becoming aware of the death. The contribution must be adjusted to take account of any increase in the Consumer Price Index (All Groups Index for Sydney) over time, commencing at the September 2010 quarter.

2.37 The Proponent shall make a financial contribution of $1500.00 to the NSW Wildlife Information and Rescue Service for each death of the Wedge-tailed Eagle that has reasonably been attributed to the carrying out of the project. The financial contribution must be paid by the Proponent within one month of the Proponent becoming aware of the death. The contribution must be adjusted to take account of any increase in the Consumer Price Index (All Group Index for Sydney) over time, commencing at the September 2010 quarter.

2.38 In order to avoid the Endangered Ecological Community of vegetation in the southern portion of the Pomeroy site, proposed cabling Option 2 shall be utilised.

2.39 Gurrundah Creek shall be surveyed by a suitably qualified ecologist for the presence of Platypus. Subject to identification of the species, any construction works in the vicinity of the creek shall be conducted in accordance with the Flora and Fauna Management Plan contained in condition 7.3 such that negative impacts to the species are mitigated.

2.40 Prior to the commencement of construction, clearly defined work areas (including access trails) must be established using a combination of posts, fencing or markers, and suitably marked up maps as appropriate. All on-site construction movements are to be restricted to these areas, to prevent uncontrolled or inadvertent access by vehicles or construction personnel to vegetation and fauna habitat to be protected under this approval.

Aviation

2.41 Prior to the commencement of operation, the following information shall be provided by the Proponent to the Civil Aviation Safety Authority, Commonwealth Department of Defence and Airservices Australia to inform these agencies of the wind farms location:

a) "as constructed" coordinates in latitude and longitude of each wind turbine generator;
b) final height of each wind turbine generator in Australian Height Datum; and
c) ground level at the base of each wind turbine generator in Australian Height Datum.

2.42 The Proponent shall notify all known users of the Crookwell, Ashwel and Kings' Airstrips of the location of the wind turbines and any changes to operational procedures.

Bushfire Risk

2.43 Throughout the life of the project, the Proponent shall regularly consult with the local RFS to ensure its familiarity with the project, including the construction timetable and the final location of all infrastructure on the site. The Proponent shall comply with any reasonable request of the local RFS to reduce the risk of bushfire and to enable fast access in emergencies.

2.44 The Proponent shall:

a) ensure there is appropriate fire-fighting equipment held on site to respond to any fires that may occur at the site during construction, operation and decommissioning of the project; and
b) assist the RFS and emergency services as much as possible if there is a fire on-site during the project.

2.45 The Proponent shall prepare, in consultation with the local RFS, a **Bushfire Risk Management Plan** based on the guidelines *Planning for Bushfire Protection* (RFS, 2001 or its latest edition). The Plan shall include, but not necessarily be limited to:

a) details of the bushfire hazards and risks associated with the project;
b) mitigation measures including contingency plans;
c) procedures and programs for liaison and regular drills with the local RFS; and
d) procedures for regular fire prevention inspections by the local RFS and implementation of any recommendations

Bunding and Spill Management

2.46 The Proponent shall store and handle all dangerous goods (as defined by the Australian Dangerous Goods Code) and combustible liquids, strictly in accordance with:

a) all relevant Australian Standards;

b) a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and

c) the EPA's Environment Protection Manual Technical Bulletin *Bunding and Spill Management*

In the event of an inconsistency between requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency.

Safety Management System

2.47 At least two months prior to the commencement of commissioning, the Proponent shall prepare a report outlining a comprehensive Safety Management System, covering all on-site systems related to ensuring the safe operation of the project. The report must clearly specify all safety related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to the procedures. Records must be kept at the Site and must be available for inspection by the Department upon request. The Safety Management System must be developed in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 9, 'Safety Management'*, and should include:

a) procedures and programs for the maintenance and testing of the safety related equipment to ensure its integrity over the life of the project; and

b) an outline of a documented procedure for the management of change.

Traffic and Transport Impacts

2.48 The Proponent shall apply for a Road Occupancy Licence from the RMS Traffic Operations Unit prior to commencing work within the classified road reserve or within 100 metres of traffic signals. The application shall be accompanied by a Traffic Control Plan to be prepared by a person who is certified to prepare Traffic Control Plans.

2.49 Upon determining the haulage route(s) for the construction or decommissioning of the project, the Proponent shall:

a) commission a qualified person to undertake a Road Dilapidation Report of all roads proposed to be used for construction or decommissioning activities in consultation with relevant road authorities. The Report shall assess the current condition of the relevant roads; and

b) following completion of the construction or decommissioning of the project, a subsequent Road Dilapidation Report shall be prepared to assess any damage that may have resulted due to traffic and transport related to the construction or decommissioning of the project.

The Proponent shall commit to restore the relevant roads to a state, described in the original Road Dilapidation report. The cost of any restorative work described in the subsequent Report or recommended by the relevant road authorities after review of the subsequent Report, shall be funded by the Proponent. Such work shall be undertaken at a time as agreed upon between the Proponent and the relevant road authorities. In the event of a dispute between the parties with respect to the extent of restorative work that may be required under this condition, any party may refer the matter to the Secretary for resolution. The Secretary's determination of any such dispute shall be final and binding on the parties.

2.50 Heavy vehicle access to Ross Bridge will not be permitted for approximately 12 months from the 23 September 2008 as the bridge is undergoing maintenance.

2.51 Prior to the commencement of any works that are part of or extending from Prices Lane, the Proponent is required to obtain the consent of the Surveyor General and a licence under the *Crown Lands Act 1989*.

2.52 Grabben Gullen Road, Gurrundah Road and Range Road junctions shall be designed and constructed in consultation with Upper Lachlan Shire Council.

2.53 Prior to the commencement of construction, the Proponent shall upgrade all site access roads for temporary use by heavy vehicles to a standard endorsed by the Council to the reasonable and feasible requirements of the Council.

Electromagnetic Interference

Television and Radio Interference

2.54 Prior to the commencement of commissioning of the project, the Proponent shall undertake an assessment of the existing quality of the television/radio transmission available at a representative sample of residential dwellings located within 5 kilometres of any wind turbine.

2.55 The Proponent shall undertake reasonable and feasible mitigation to rectify any television/radio transmission problems reasonably attributable to the project at any residential dwelling located within five kilometres of a wind turbine. Such measures may include:

a) modification to or replacement of receiving antenna;
b) installation and maintenance of a parasitic antenna system;
c) provision of a land line between the affected receiver and an antenna located in an area of favourable reception; or
d) other feasible measures.
e) if interference cannot be overcome by the measures outlined in a) to d),the Proponent shall negotiate with the impacted landowner about installing and maintaining a satellite receiving antenna.

Any requested works shall be completed within three months of the completion of the relevant television and/or radio reception assessment, unless otherwise agreed by the landowner. The Proponent shall be responsible for all reasonable costs associated with undertaking any mitigation measures.

Radio Communication

2.56 In the event that any issue with radio communication service links (installed before construction of the project) arise as a result of the project (such as obstruction of transmission paths), the Proponent shall consult with the operator and undertake appropriate remedial measures to rectify any issue. Such measures may include:

a) modification to or relocation of the existing antennae;
b) installation of a directional antennae; and/ or
c) installation of an amplifier to boost the signal strength.

Soil and Water Quality Impacts

2.57 Except as may be expressively provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* which prohibits the pollution of waters.

2.58 Prior to the commencement of construction the Proponent must indicate to the Secretary in consultation with the NSW Office of Water; The details of which water sources are to be used, from which property, for which purpose and the volume and time period required to utilise the water.

2.59 Soil disturbing activities of any nature are not permitted in the classified Crown Road reserve between Gurrundah Creek and ten metres upslope from the northern end of the abandoned sheep dip site located on the “Hillview” property, being Lot 206 DP750043, other than any soil sampling activities being carried out by a suitable qualified person to identify whether any soil contamination is present.

Heritage Impacts

2.60 If during the course of construction the Proponent becomes aware of any previously unidentified Aboriginal object(s), all work likely to affect the object(s) must cease immediately

and the OEH informed in accordance with the *National Parks and Wildlife Act 1974*. Works must not recommence until written authorisation from OEH is received by the Proponent.

2.61 If during the course of construction the Proponent becomes aware of any unexpected historical relic(s), all work likely to affect the relic(s) must cease immediately and the Heritage Office notified in accordance with the *Heritage Act 1977*. Works shall not recommence until the Proponent receives written authorisation from the Heritage Office.

Waste Generation and Management

2.62 The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal or any waste generated on site to be disposed of at the site, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.

2.63 The Proponent shall ensure that all liquid and / or non-liquid waste generated and / or stored on the site is assessed and classified in accordance with *Waste Classification Guidelines Part 1: Classifying Waste* (DECC, 2008), or any future guideline that may supersede that document.

3. ENVIRONMENTAL MONITORING AND AUDITING

Bird and Bat Monitoring

3.1 The Proponent shall prepare and implement a **Bird and Bat Adaptive Management Program** for the project to the satisfaction of the Secretary. This program must be submitted to the Secretary for approval prior to construction, and be updated by 31 December 2015 unless otherwise agreed by the Secretary. The program must be prepared in consultation with OEH, and take into account the bird/bat monitoring methods identified in the current editions of AusWEA *Best Practice Guidelines for the Implementation of Wind Energy Projects in Australia* and *Wind Farm and Birds: Interim Standards for Risk Assessment.* The Program shall be implemented by a suitably qualified expert, approved by the Secretary. The Program shall incorporate Monitoring, and a Decision Matrix that clearly sets out how the Proponent will respond to the outcomes of monitoring. It must:

a) incorporate an ongoing role for the suitably qualified expert;

b) set out monitoring requirements in order to assess the impact of the project on bird and bat populations, including details on survey locations, parameters to be measured, frequency of surveys and analyses and reporting. The monitoring program must be capable of detecting any changes to the population of birds and/ or bats that can reasonably be attributed to the operation of the project, that is, data may be required to be collected prior to the commencement of construction. The requirements must also account for natural and human changes to the surrounding environment that might influence bird and/ or bat behaviour such as changes in land use practices, and significant changes in water levels in nearby water bodies;

c) incorporate a decision making framework that sets out specific actions and when they may be required to be implemented to reduce any impacts on bird and bat populations that have been identified as a result of the monitoring;

d) identify 'at risk' bird and bat groups such as the Powerful Owl, the Little Eagle, the Common Bent-wing Bat, the Large –footed Myotis and the Eastern False Pipistrelle and include monthly mortality assessments and periodic local population censuses and bird utilisation surveys;

e) identify potential mitigation measures and implementation strategies in order to reduce impacts on birds and bats such as minimising the availability of raptor perches, swift carcass removal, pest control including rabbits, use of deterrents, and sector management including switching off turbines that are predicted to or have had an unacceptable impact on bird/ bat mortality at certain times; and

f) identify matters to be addressed in periodic reports in relation to the outcomes of monitoring, the application of the decision making framework, the need for mitigation measures, progress with implementation of such measures, and their success.

The Reports referred to under part f) shall be submitted to the Secretary on an annual basis, from the commencement of operation, and shall be prepared within two months of the end of the reporting period. The Secretary may vary the reporting requirement or period by notice in writing to the Proponent.

The Proponent is required to implement reasonable and feasible mitigation measures as identified under part e) where the need for further action is identified through the Bird and Bat Adaptive Management Program, or as otherwise agreed with the Secretary.

Noise Monitoring

3.2 Noise compliance monitoring shall be conducted in accordance with the Noise Management Plan under conditions 7.3a), 7.5a) and 7.7a), or as directed by the Secretary in response to noise complaints.

Independent Environmental Auditing

3.3 Within two years of the commencement of Operation of the project, and then as may be directed by the Secretary, the Proponent shall commission an independent person or team to undertake an **Environmental Audit** of the project. The independent person or team shall be approved by the Secretary prior to the commencement of the Audit. The Audit must:

a) be carried out in accordance with ISO 19011:2002 - Guidelines for Quality and or Environmental Management Systems Auditing;
b) assess compliance with the requirements of this approval, and other licences and approvals that apply to the project;
c) assess the environmental performance of the project against the predictions made and conclusions drawn in the documents referred to under condition 1.1 of this approval;
d) review the effectiveness of the environmental management of the project, including any environmental impact mitigation works; and
e) review the adequacy of the Proponent's response to any complaints made about the project through the Complaints Register required under condition 5.4

An **Environmental Audit Report** must be submitted for comment to the Secretary within two months of the completion of the Audit, detailing the findings and recommendations of the Audit and including a detailed response from the Proponent to any of the recommendations contained in the Report.

4. ANCILLARY FACILITIES

4.1 The sites for Ancillary Facilities must satisfy the following criteria unless otherwise approved through the Construction Environmental Management Plan required under condition 7.2 or the Decommissioning Environmental Management Plan required under condition 7.7:

a) be located within the site;
b) have ready access to the road network;
c) be located to minimise the need for heavy vehicles to travel through residential areas;
d) be sited on relatively level land;
e) be separated from nearest residences by at least 200 m (or at least 250 m for a temporary batch plant);
f) be located above the 20 ARI flood level unless a contingency plan to manage flooding is prepared and implemented;
g) not require vegetation clearing beyond that already required for the project; and
h) not affect the land use of adjacent properties.

The location of the Ancillary Facilities must be identified in the CEMP or DEMP and must include an analysis against the above criteria. Where these criteria cannot be met, the CEMP must demonstrate there will be no adverse impacts from the Ancillary Facility's construction, operation or decommissioning.

5. COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

5.1 Subject to confidentiality, the Proponent shall make all documents required under this approval available for public inspection on request.

Provision of Electronic Information

5.2 The Proponent shall:

a) make the following information publicly available on its website:

- EA;
- current statutory approvals for the project, including this project approval and any environment protection licence;
- approved plans or programs required under the conditions of this approval;
- a comprehensive summary of the monitoring results of the project, which have been reported in accordance with the requirements of the various plans and programs required under the conditions of this approval;
- a complaints register, which is updated on a monthly basis;
- any environmental audit of the project, including the Proponent's response to the recommendations in any audit report; and

b) keep this information up to date,

to the satisfaction of the Secretary.

Community Information Plan

5.3 The Proponent shall prepare and implement a **Community Information Plan** to the satisfaction of the Secretary. This plan must set out the community communications and consultation processes to be undertaken during the construction, operation and decommissioning of the project. The Plan must include but not be limited to:

a) procedures to inform the local community of planned investigations and Construction or decommissioning activities, including blasting works;

b) procedures to inform the relevant community of Construction or decommissioning traffic routes and any potential disruptions to traffic flows and amenity impacts;

c) procedures to consult with local landowners with regard to Construction or decommissioning traffic to ensure the safety of livestock and to limit disruption to livestock movements;

d) procedures to inform the community where work has been approved to be undertaken outside the normal Construction or decommissioning hours, in particular noisy activities;

e) procedures to inform and consult with those landowners who are eligible for landscaping on their property as determined under condition 2.2 of this approval; and

f) procedures to notify relevant landowners of the process available to review potential impacts on radio and television transmission.

Note: With the agreement of the Secretary, an update of the approved Community Information Plan (August 2012) can satisfy the requirements of this condition.

Complaints Procedure

5.4 Prior to the commencement of construction of the project, the Proponent shall ensure that the following are available for community complaints for the life of the project (including construction, operation and decommissioning):

a) a 24-hour telephone number on which complaints about construction, operation and decommissioning activities at the site may be registered;

b) a postal address to which written complaints may be sent; and

c) an email address to which electronic complaints may be transmitted.

The telephone number, the postal address and the e-mail address must be advertised in a newspaper circulating in the locality on at least one occasion prior to the commencement of construction and at six-monthly intervals thereafter. These details must also be provided on the Proponent's internet site.

5.5 The Proponent shall record details of all complaints received through the means listed under condition 5.4 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:

a) the date and time, where relevant, of the complaint;
b) the means by which the complaint was made (telephone, mail or email);
c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
d) the nature of the complaint;
e) any action(s) taken by the Proponent in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the Secretary upon request.

Community Enhancement Program

5.6 Prior to the commencement of construction of the project, the Proponent shall prepare and submit for the approval of the Secretary, a **Community Enhancement Program**, (as generally described in the Environmental Assessment referred to in condition 1.1a) of this approval, in so far as it is consistent with the terms contained in this condition) with the aim of funding community enhancement measures to the benefit of the local community that consists of the following components:

1. a Clean Energy Program to support the installation of residential clean energy improvements, (as generally described in the Environmental Assessment referred to in condition 1.1a) of this approval, in so far as it is consistent with the terms contained in this condition); and
2. a Community Fund, to provide funds to undertake initiatives which provide a direct benefit to the local community.

The Community Enhancement Program shall be developed in consultation with the Upper Lachlan Shire Council, the Goulburn Mulwaree Council and the local community and provide details of:

a) the process by which the program's funds would be administered, including mechanisms for accounting and reporting;
b) how measures and initiatives to be funded by the program would be identified, assessed, prioritised and implemented over the life of the project; and
c) any other terms agreed to by the parties.

The Proponent shall each year contribute the sum of $1666 per constructed turbine to the Community Enhancement Program, commencing upon commissioning of the project until the end of its life. The contribution shall be adjusted to take account of any increase in the Consumer Price Index (All Groups Index for Sydney) over time, commencing at the September 2010 quarter.

The Community Enhancement Program shall not require any financial contribution from any recipient of the scheme nor shall the program be conditional on the extent of government subsidies or rebates available for measures to be funded by the program.

6. COMPLIANCE TRACKING PROGRAM

6.1 Prior to the commencement of construction, the Proponent shall develop and implement a **Compliance Tracking Program** for the project, to track compliance with the requirements of this approval during the construction, operation or decommissioning of the project and shall include, but not necessarily limited to:

a) provisions for an Annual Environmental Management Report (AEMR) that is to be prepered and submitted to the Secretary throughout the operational life of the project. The AEMR must review the performance of the project against the Operational

Environmental management Plan, the conditions of this approval and other licences and approvals relating to the project.

b) provisions for periodic reporting of the compliance status to the Secretary including at least prior to the commencement of construction of the project, prior to the commencement of operation of the project and prior to the commencement of decommissioning,

c) a program for independent environmental auditing in accordance with *AS/NZ ISO 19011:2003 - Guidelines for Quality and/or Environmental Management Systems Auditing*;

d) procedures for rectifying any non-compliance identified during environmental auditing or review of compliance;

e) mechanisms for recording environmental incidents and actions taken in response to those incidents;

f) provisions for reporting environmental incidents to the Secretary during construction operation and decommissioning; and

g) provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.

7. ENVIRONMENTAL MANAGEMENT

Environmental Representative

7.1 Prior to the commencement of the construction, operation or decommissioning of the project, the Proponent shall nominate for the approval of the Secretary a suitably qualified and experienced Environmental Representative(s) independent of the construction, operation or decommissioning personnel. The Proponent shall employ the Environmental Representative(s) for the relevant stage of the project, or as otherwise agreed by the Secretary. The Environmental Representative(s) shall be the Proponent's principal point of advice in relation to the environmental performance of the project and shall have responsibility for:

a) overseeing the implementation of all environmental management plans and monitoring programs required under this approval, and advise the Proponent upon the achievement of these plans/programs;

b) considering and advising the Proponent on its compliance obligations against all matters specified in the conditions of this approval and the Statement of Commitments as referred to under condition of this approval, permits and licences; and

c) having the authority and independence to recommend to the Proponent reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and, failing the effectiveness of such steps, to recommend to the Proponent that relevant activities are to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur.

Construction Environmental Management Plan (CEMP)

7.2 The Proponent shall prepare and implement a **Construction Environmental Management Plan** in accordance with the *Guideline for the Preparation of Environmental Management Plans* (DUAP 2004) or its latest revision. The plan must include but not be necessarily be limited to:

a) a description of all activities to be undertaken on the site during construction including an indication of stages of construction, where relevant;

b) statutory and other obligations that the Proponent is required to fulfil during construction including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;

c) (deleted)

d) details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:

   i) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction activities, particularly during any construction works at or near drainage lines; and

   ii) measures to monitor and manage dust emissions.

e) a description of the roles and responsibilities for all relevant employees involved in the construction of the project; and
f) complaints handling procedures during construction.
g) the Management Plans listed under condition 7.3 of this approval.

The Plan shall be submitted for the approval of the Secretary no later than one month prior to the commencement of any construction works associated with the project, or within such period otherwise agreed by the Secretary. Construction works shall not commence until written approval has been received from the Secretary. Upon receipt of the Secretary's approval, the Proponent must make the Plan Publicly available as soon as practicable.

7.3 As part of the Construction Environmental Management Plan required under condition 7.2 of this approval, the Proponent must prepare and implement, but is not limited to, the following Management Plans:

a) a **Noise Management Plan** to detail measures to minimise noise emissions associated with the construction of the project. The Plan must include, but not necessarily be limited to:
   i) identification of all major sources of noise that may be emitted as a result of the Construction of the project;
   ii) specification of the noise criteria as it applies to a particular activity;
   iii) identification and implementation of best practice management techniques for minimisation of noise and vibration emissions;
   iv) procedures for the monitoring of noise emissions; and
   v) description of the procedures to be undertaken if any non-compliance is detected.

b) a **Traffic Management Plan** to outline measures for the management and coordination of road works required under this approval and to minimise potential conflicts between different user groups. The Plan must be prepared in consultation with the RMS and Council and must include, but not necessarily be limited to:
   i) details of measures to minimise interactions between the project and other users of the roads such as the use of fencing, lights, barriers, traffic diversions etc;
   ii) procedures for informing the public where any road access will be restricted as a result of the project;
   iii) procedures to inform vehicle drivers and Crookwell Road business owners of the traffic routes to be used by heavy vehicles associated with the project;
   iv) procedures to manage construction traffic to ensure the safety of livestock and to minimise disruption to livestock, and school children and limit disruption to school bus timetables;
   v) speed limits to be observed along routes to and from the site and within the site;
   vi) minimum requirements for vehicle maintenance to address noise and exhaust emissions, particularly along roads in close proximity to residences;
   vii) precautionary measures such as signage to warn users of the Bicentennial National Trail about the construction activities for the project;
   viii) details of the expected behavioural requirements for vehicle drivers travelling to and from the site and within the site; and
   ix) prohibition of heavy vehicle access to Ross Bridge.

c) a **Flora and Fauna Management Plan** to outline measures to protect and minimise loss of native vegetation and native fauna habitat as a result of construction of the project. The Plan must include, but not necessarily be limited to:
   i) plans showing terrestrial vegetation communities; important flora and fauna habitat areas;
   ii) locations where threatened species, populations or ecological communities have been recorded or are likely to occur; and areas to be cleared. The plans must also identify vegetation adjoining the site where this contains important habitat areas and/or threatened species, populations or ecological communities;
   iii) methods to manage impacts on flora and fauna species (terrestrial and aquatic) and their habitat which may be directly or indirectly affected by the project, such as location of fencing, procedures for clearing of vegetation or soil and procedures for re-locating hollows or installing nesting boxes.

iv) rehabilitation details, such as use of locally native species in rehabilitation and landscaping works and methods to re-use topsoil and cleared vegetation;
v) the impact avoidance and mitigation measures outlined in section 4 of the EA;
vi) a Weed Management Strategy; and
vii) a program for reporting on the effectiveness of terrestrial flora and fauna management measures. Management methods must be reviewed where found to be ineffective.

Operation Environmental Management Plan (OEMP)

7.4 The Proponent shall prepare and implement an **Operation Environmental Management Plan** in accordance with the Department's publication entitled *Guideline for the Preparation of Environmental Management Plans* (2004) or its latest revision. The Plan shall include but not necessarily be limited to:

a) identification of all statutory and other obligations that the Proponent is required to fulfil in relation to the operation of the development, including all consents, licences, approvals and consultations;
b) a management organisational chart identifying the roles and responsibilities for all relevant employees involved in the operation of the project;
c) overall environmental policies and principles to be applied to the operation of the project;
d) standards and performance measures to be applied to the project, and means by which environmental performance can be periodically reviewed and improved, where appropriate;
e) management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval;
f) the Management Plans listed under condition 7.5 of this approval; and
g) the environmental monitoring requirements outlined under this approval.

The Plan shall be submitted for the approval of the Secretary no later than one month prior to the commencement of Operation of the project or within such period as otherwise agreed by the Secretary. Operation must not commence until written approval has been received from the Secretary. Upon receipt of the Secretary's approval, the Proponent shall make the Plan publicly available as soon as practicable.

7.5 As part of the Operation Environmental Management Plan required under condition 7.4, the Proponent shall prepare and implement, but is not limited to the following Management Plans:

a) a **Noise Management Plan** to outline measures to minimise noise emissions from the operation of the project. The Plan must include, but not necessarily be limited to:
   i) details of procedures to ensure ongoing compliance with the operational noise limits specified in condition 2.15 as they apply to identified receptors. This should include identification of monitoring requirements;
   ii) identification and implementation of best practice management techniques for minimisation of noise emissions where reasonable and feasible;
   iii) measures to be undertaken to rectify annoying characteristics resulting from the operation of the project such as, but not limited to, infrasound or adverse mechanical noise from component failure; and
   iv) procedures and corrective actions to be undertaken if non-compliance is detected.
b) a **Landscape Management Plan** to outline measures to ensure appropriate development and maintenance of landscaping on the site to address the visual impacts arising from the project including, turbines, site access roads, substation and control and facilities building, as far as is reasonable and feasible. The Plan must be prepared by a qualified landscape architect and meet the requirements of Council, should there be any. The Plan must include, but not necessarily be limited to:
   i) measures associated with the biodiversity offset package required under condition 2.35 and any remnant vegetation onsite;
   ii) details of landscaping to be undertaken at the site including locations for planting;
   iii) maximisation of use of flora species that are native to the locality and with low maintenance requirements;

iv) a program for the removal of weeds introduced or spread as a result of the development at the site; and
v) a program for maintenance of all landscaped areas on the site to ensure these areas are kept in a tidy, healthy state.

7.6 Within 3 years of the commencement of the operation of the project, or within 3 months of the approval of any modification to this approval, the Proponent shall review, and if necessary, revise the OEMP to the satisfaction of the Secretary. Following approval, the Proponent shall implement the updated OEMP to the satisfaction of the Secretary.

Decommissioning Environmental Management Plan

7.7 The Proponent shall prepare and implement a Decommissioning Environmental Management Plan for the project in accordance with the Guideline for the Preparation of Environmental Management Plans (DUAP 2004), or its latest revision, by 30 June 2016 and revised every 3 years thereafter, or as otherwise agreed by the Secretary. The plan must include:

a) a description of all activities to be undertaken on the site during decommissioning including an indication of stages of decommissioning, where relevant;
b) statutory and other obligations that the Proponent is required to fulfill during decommissioning including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
c) details of how the environmental performance of the decommissioning works will be monitored, and what actions will be taken to address identified adverse environmental impacts. In particular, the following environmental performance issues shall be addressed in the Plan:
    i) measures to monitor and minimise soil erosion and the discharge of sediment and other pollutants to lands and/ or waters during construction activities, particularly during any construction works at or near drainage lines; and
    ii) measures to monitor and manage dust emissions.
d) a description of the roles and responsibilities for all relevant employees involved in the decommissioning of the project;
e) complaints handling procedures during decommissioning; and
f) the Management Plans listed under condition 7.8 of this approval.

7.8 As part of the DEMP required under condition 7.7 of this approval, the Proponent must prepare and implement, but is not limited to, the management plans referred to in condition 7.3. For the purpose of this condition, all references to construction in condition 7.3 must be replaced with decommissioning.

8. ENVIRONMENTAL REPORTING

Incident Reporting

8.1 The Proponent shall notify the Secretary and any relevant Government authority of any incident with actual or potential significant off-site impacts on people or the biophysical environment as soon as practicable after the occurrence of the incident ("initial notification"). The Proponent must provide written details ("written report") of the incident to the Secretary and any relevant Government authority within seven days of the date on which the incident occurred.

8.2 The Proponent shall meet the requirements of the Secretary to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition 8.1 of this approval, within such period as the Secretary may require.

Tim Moore
Senior Commissioner

Judy Fakes
Commissioner of the Court

APPENDIX 1
PROJECT LAYOUT

Figure A1-1 Project Layout – Northern Turbines

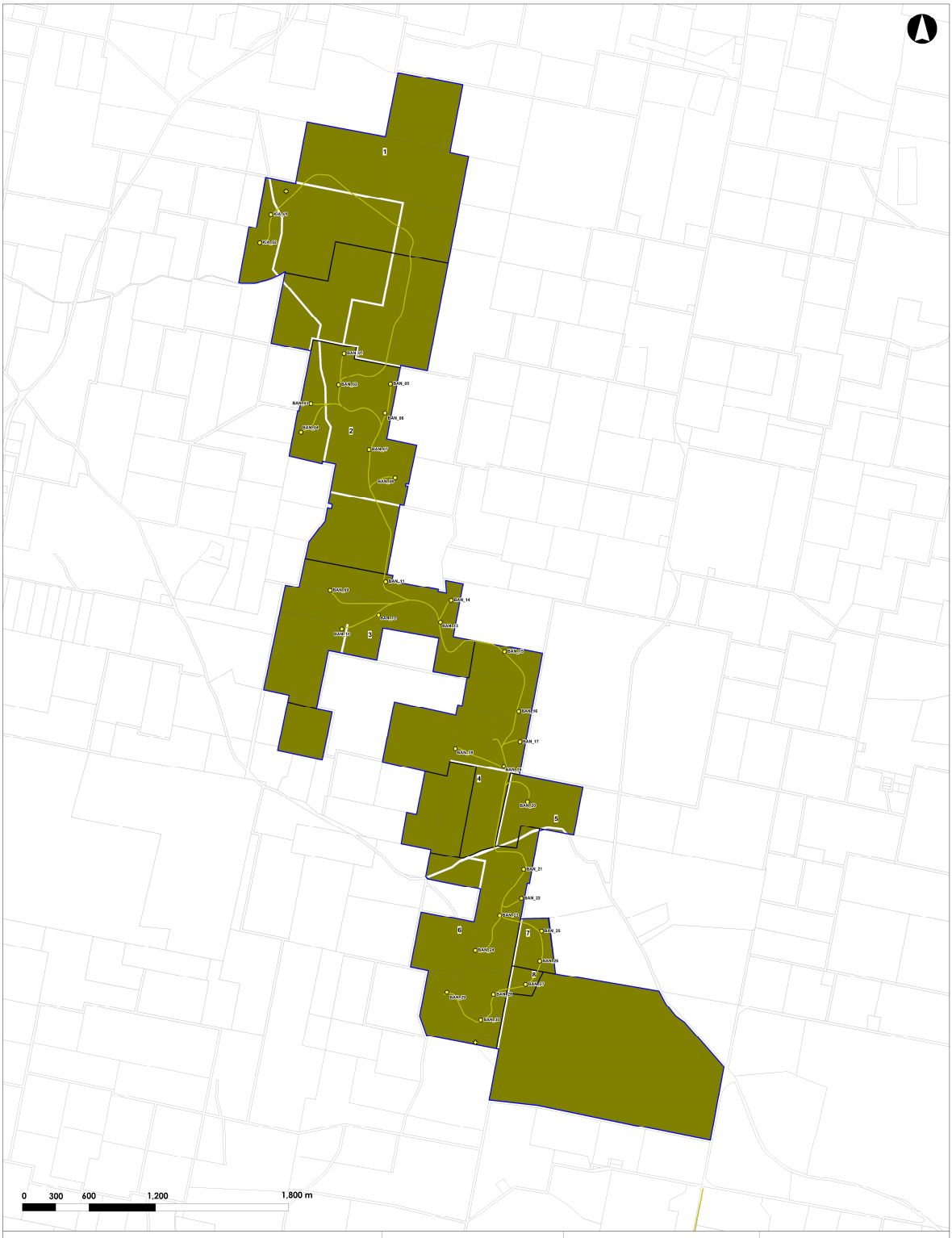


Figure A1-2 Project Layout – Southern Turbines

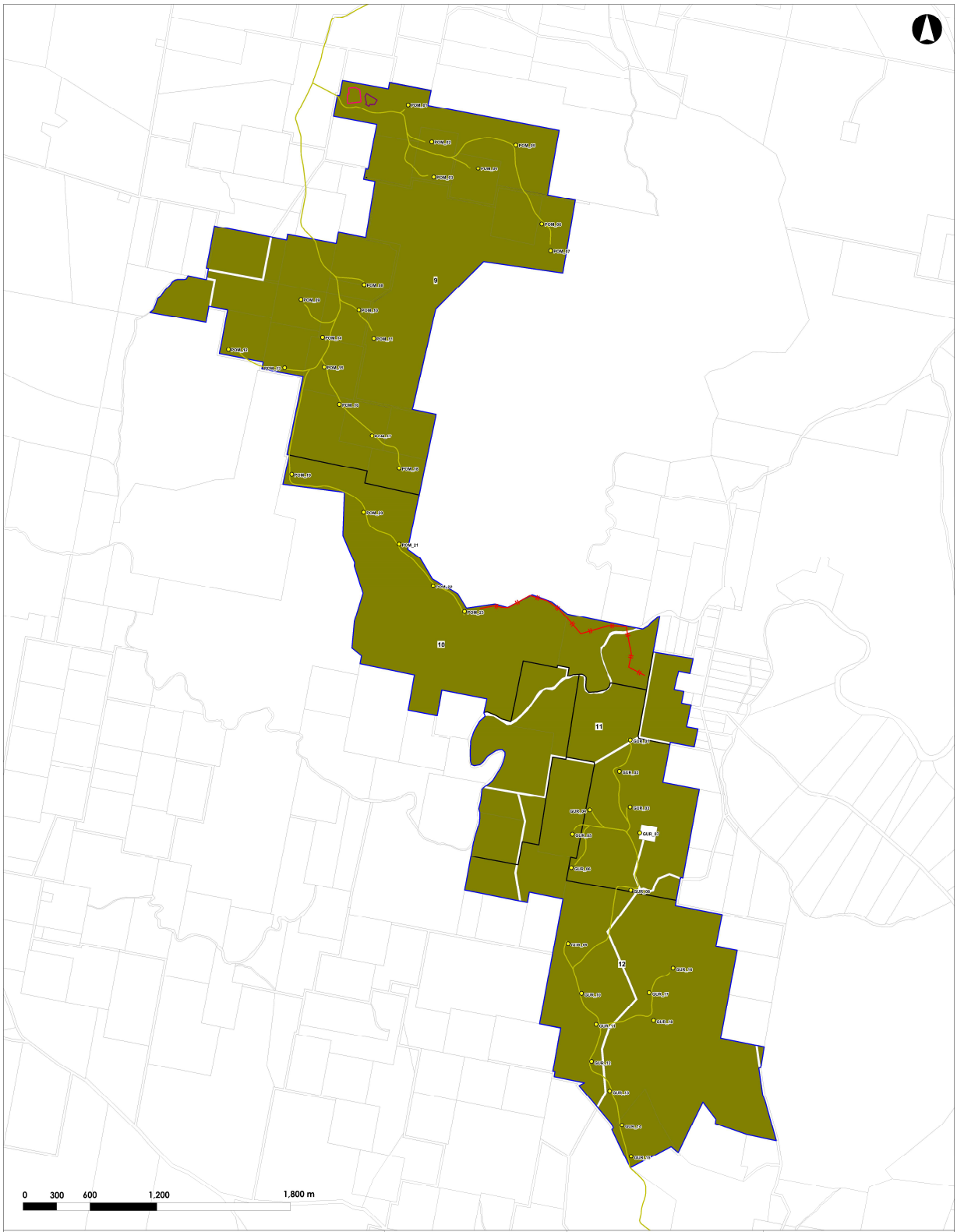


Table A1-1Turbine Locations and Levels

Turbine	Final Design Coordinates and elevation	
Name	Easting	Northing
KIA_01	722206	6178258
KIA_02	722106	6178003
BAN_01	722867	6177000
BAN_02	722816	6176718
BAN_03	722567	6176552
BAN_04	722477	6176299
BAN_05	723284	6176726
BAN_06	723235	6176463
BAN_07	723092	6176141
BAN_08	723327	6175886
BAN_09	722740	6174867
BAN_10	722846	6174519
BAN_11	723242	6174950
BAN_12	723177	6174649
BAN_13	723736	6174579
BAN_14	723832	6174779
BAN_15	724314	6174314
BAN_16	724441	6173780
BAN_17	724453	6173505
BAN_18	723870	6173444
BAN_19	724307	6173286
BAN_20	724521	6172964
BAN_21	724485	6172357
BAN_22	724466	6172100
BAN_23	724269	6171949
BAN_24	724049	6171628
BAN_25	724647	6171804
BAN_26	724630	6171532
BAN_27	724502	6171321
BAN_28	724213	6171232
BAN_29	723793	6171252
BAN_30	724099	6171000
POM_01	725833	6166934
POM_02	726044	6166594
POM_03	726063	6166277
POM_04	726461	6166355
POM_05	726800	6166565
POM_06	727033	6165858
POM_07	727112	6165618
POM_08	725438	6165310
POM_09	724870	6165173
POM_10	725390	6165082
POM_11	725525	6164826
POM_12	724220	6164723
POM_13	724725	6164560
POM_14	725064	6164835

POM_15	725079	6164566
POM_16	725216	6164233
POM_17	725509	6163949
POM_18	725752	6163649
POM_19	724788	6163595
POM_20	725434	6163257
POM_21	725752	6162969
POM_22	726057	6162593
POM_23	726339	6162361
GUR_01	727827	6161200
GUR_02	727730	6160921
GUR_03	727826	6160598
GUR_04	727464	6160571
GUR_05	727307	6160350
GUR_06	727298	6160051
GUR_07	727912	6160363
GUR_08	727832	6159846
GUR_09	727269	6159369
GUR_10	727389	6158918
GUR_11	727520	6158639
GUR_12	727479	6158308
GUR_13	727642	6158039
GUR_14	727753	6157727
GUR_15	727834	6157450
GUR_16	728211	6159145
GUR_17	727997	6158925
GUR_18	728036	6158675

APPENDIX 2
LAND TITLE DESCRIPTIONS

Table A2-1 Land Title details for Project Area

Lot(s)	DP
8	754115
376	754115
377, 380, 381,382, 383, 398	754115
332	754115
392	754115
346	754115
140, 331	754115
2	842234
141	754115
145	754115
196	754115
349	754115
85, 195, 257	754115
23	112125
131, 171	754115
319	754115
302	754115
173	754115
174	754115
172	754115
96	750043
1	252162
26	754115
177	754115
170	754115
178	754115
246	754115
90	754126
124	754126
1	1192408
10	1177500
11	1177500
12	1177500
2	1168750
3	
1	1170080
147	750043
148	
75	
89	
159	
205	
144	
202	
149	
204	
203	
67, 68, 126, 127, 132, 206, 207	
139	750043
135, 146	750043
168	750043
231	750019
198	750019
234	722774
155	750019
173	750019

Lot(s)	DP
2	1172409

Table A2-2 Land Title details for Easement Lands

Lot(s)	DP
4	1168750
100	1026064
130, 131, 142	750043
1	1031856
146, 170	750019
347, 379, 391	754115
13	1177500
103	750043
44	750043

Including all crown roads within the project boundaries

APPENDIX 3
STATEMENT OF COMMITMENTS

Appendix 11 of Submissions Report for Modification Application (Mod_1)

1.1 Appendix: Revised Statement of Commitments in full – 3 June 2014

1.1.1 Visual

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
1.	Visual impact to nearby properties	Minimise the view of infrastructure	• The Proponent would determine the extent of planting with residents of properties within 3km of a wind turbine. This would include a site visit. Any such offer would remain in place for a period of 1 year after project construction. Screening options are detailed in Attachment 3.	The Proponent	During Construction and Operation	CEMP OEMP	Minimise complaints by residents within 3km
1a			Landscaping will be provided as per the GRWFPL Landscaping Management Plan and in consultation with landowners.	Proponent		Cond 7.5(b) and LMP	

1.1.2 Noise

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
2.	Construction noise exceedance	Minimisation	• Limit hours of high noise generating activities	The Proponent	Construction	CEMP	Minimise noise complaints
3.	Construction noise exceedance	Minimisation	• Establish communication with relevant authorities and local residents	The Proponent	Construction	CEMP	Minimise noise complaints
4.	Construction noise exceedance	Minimisation	• Adoption of a site representative responsible for noise and vibration issues	The Proponent	Construction	CEMP	Fast response to all complaints

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
5.	Construction noise exceedance	Minimisation	• The contractor would select appropriate machinery for the proposed works. This machinery would have low inherent potential for noise generation where practicable	The Proponent	Construction	CEMP	Compliance with DECC *Environmental Noise Control Manual*
5a	Construction noise exceedance	Minimisation	• An onsite representative to meet with residents at their property to discuss the noise issues experienced	The Proponent	Operation	DPE	
6.	Construction noise exceedance	Minimisation	• Where necessary, barriers would be erected around potentially high noise generating areas including generator and high duty compressors	The Proponent	Construction	CEMP	Minimise noise complaints
7.	Construction noise exceedance	Minimisation	• Appropriate siting of noisy machinery. This siting would be as far away from the nearest receiver as possible	The Proponent	Construction	CEMP	Minimise noise complaints
8.	Operational noise exceedance	Compliance	• Further noise assessment would be required to be carried out on the turbine ultimately selected for construction and on the final layout proposed taking into account any minor changes in turbine location to ensure compliance with SA EPA noise guidelines	Noise consultant	Post final site layout and turbine selection	DPE EPA	Compliance with SA EPA noise guidelines
9.	Noise exceedance	Compliance	• Develop and implement an operational noise compliance testing program. This is included in OEMP that has been approved.	Noise consultant	Once all turbines are operational	DPE EPA	Compliance with SA EPA noise guidelines
10.	Noise exceedance	Compliance	• If operational monitoring identifies exceedances, the Proponent would give consideration to providing mechanical ventilation (to remove requirement for open windows), building acoustic treatments (improved glazing) or using turbine control features to manage excessive noise under particular conditions. (Noise Management Plan)	The Proponent	Once all turbines are operational	NMP DPE EPA	Compliance with SA EPA noise guidelines

1.1.3 Biodiversity

Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
11. Mod	Loss of biodiversity value	Avoid direct and indirect impact	• Infrastructure (including turbines, powerlines, access roads, construction works areas and crane pads) would be located to avoid dense woodland/forest, impacts to woodland/forest in all other cases would be minimised through rigid site controls established in the CEMP to minimise clearing. Any loss of native vegetation would be offset in accordance with SoC16.	The Proponent	Development of site layout	DPE OEH	Minimise clearing
12. Mod	Loss of biodiversity value	Minimise impact	• The Proponent would locate the electricity corridor required at the Gurrundah property using Option 2 (as shown in figure 7-10 of the EA). The width of the corridor would be minimised and impacts to native vegetation offset in accordance with SoC16.	The Proponent	During construction	DPE OEH	Minimise clearing of mature vegetation
13. Mod	Loss of biodiversity value	Avoid direct and indirect impact	• Impacts to isolated mature trees (>60cm diameter at breast height) in cleared areas would be minimised through rigid site controls established in the CEMP to minimise clearing. Where trees cannot be avoided these would be offset in accordance with SoC16.	The Proponent	Development of site layout	DPE OEH	Minimise clearing of mature vegetation
14.	Loss of biodiversity value	Avoid direct and indirect impact	• The final infrastructure layout would avoid areas identified as constraints (refer to constraints maps, Figures 7-6 – 7-9 this EA, and Attachment 3.3)	The Proponent	Development of site layout	DPE OEH	Adherence to biodiversity constraints maps
15.	Loss of biodiversity value	Avoid direct and indirect impact	• A flora assessment would be conducted as part of the construction environmental management plan, to microsite infrastructure such as tracks away from better quality patches of understorey.	Proponent	During construction	ER	Adherence to flora assessment recommendations
16. Mod	Loss of biodiversity value	Compensate for biodiversity impact	• The Proponent would commit to offsets determined by suitably qualified experts on the basis of the quantum of vegetation to be removed, pending development of the final infrastructure layout. The offset plan would be established in perpetuity. • A Conservation Property Vegetation Plan (CPVP) area has been defined and actions for this area will be finalized in consultation with OEH and CMA.	Proponent Proponent	During construction Commission-ing	DPE OEH OEH/CMA	Biodiversity Assessment used as guidance to determine appropriate offsets
16a	Loss of biodiversity value	Compensate for biodiversity impact	• A review of impacts during construction will be undertaken and assessed against the offset to ensure that the offset is adequate	The Proponent	Post construction	GRWFPL	Ecologist review

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
17.	Loss of biodiversity value	Minimise impact	• Weed and sediment erosion controls would be implemented to prevent onsite habitat degradation during and following the proposed works. A Construction Environmental Plan would be the appropriate vehicle for these controls. Weeds such as serrated tussock would be treated before the commencement of works to avoid spreading the infestation	The Proponent	During construction	DPE OEH	Minimise indirect biodiversity impacts
18.	Loss of biodiversity value	Minimise impact	• All areas of disturbed soil would be rehabilitated progressively as soon as practicable after disturbance, in order to resist erosion and colonisation by weeds. This may require restricting stock access and implementing revegetation activities	The Proponent	During construction	DPE OEH	Rapid rehabilitation of disturbed areas
19. Mod	Loss of biodiversity value	Minimise impact	• Where the initial monitoring program demonstrates a need, the Proponent will liaise with landowners to negotiate to fill in dams within 100m of a turbine on involved properties to reduce the potential to attract birds and bats which might collide with turbines. Dams removed due to site development would be reinstated in more appropriate locations to retain this habitat resource onsite.	The Proponent	During construction	DPE OEH	Minimise bird and bat collisions
20. Mod	Loss of biodiversity value	Avoid or minimise impact	• Final site inspections would be undertaken for the electricity corridor between Pomeroy and Gurrundah to allow micro-siting of the corridor in areas of least vegetation. If the alternative access off Prices Lane to Pomeroy becomes the preferred option and also if the western access option (a paper road) to Gurrundah becomes the preferred option final inspections would also be undertaken in these areas.	Ecological consultant	Prior to construction	DPE OEH	Minimise direct biodiversity impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
21. Mod	Loss of biodiversity value	Minimise impact	Implementation of design measures: • Aviation lighting would be minimised in number and fitted to reduce their ability to attract migrating birds and insects. Red lights are preferred, with the least number of flashes per minute. Cowls may also shield the light when viewed from the ground and reduce potential to attract wetland birds taking off at dusk • Guy lines would not be fitted to wind turbine towers. Guy lines will be avoided on other associated structures, where practical. • The turbine towers would not provide perching opportunities • Electrical connection lines would be installed underground where practical • Power poles and overhead powerlines would be designed to be bird-safe using measures such as flags or marker balls, large wire size, wire insulation, wire and conductor spacing	The Proponent	During infrastructure and materials selection	DPE OEH	Minimise bird and bat collisions
22.	Loss of biodiversity value	Minimise impact	Pest Animal Control Program • To reduce the attractiveness of the site to foraging raptors, rabbits would be controlled on the turbine ridges, carrion would be removed from the site as quickly as possible	The Proponent	During operation	DPE OEH	• Minimise bird and bat collisions
23. Mod	Loss of biodiversity value	Minimise impact	Bird and Bat Monitoring Program • Pre-construction surveying would be undertaken to assist in managing bird and bat impacts (Powerful Owl would be a key species in this Pre-construction surveying). Results would be incorporated into the ongoing monitoring program • A monitoring program would be designed to document mortalities, remove carcasses and assess the effectiveness of controls in accordance with Section 9.3.1 • If mortalities exceed a pre-determined threshold (set out in the monitoring program), additional mitigation measures would be considered, such as diversion structures, turning off turbines at critical times, further habitat modification and enhancement of off-site habitats	Ecological consultant	Designed prior to operation Implemented during operation	DPE OEH	Minimise bird and bat collisions
24.	Loss of biodiversity value	Avoid or minimise impact	• A flora and fauna assessment would be undertaken prior to decommissioning to identify biodiversity constraints	Ecological consultant	Prior to decommissioning	DPE OEH	Minimise biodiversity impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
25.	Loss of biodiversity value	Avoid or minimise impact	• Weed and sediment erosion control principles would be developed and implemented	Ecological consultant and the Proponent	Prior to decommissioning	DPE OEH	Minimise indirect biodiversity impacts
26. Mod	Loss of biodiversity value	Avoid or minimise impact	• Disturbed ground would be stabilised and rehabilitated following works	The Proponent	After decommissioning	ER DPE OEH	Rapid rehabilitation of disturbed areas

1.1.4 Aboriginal archaeology

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
27.	Loss of Aboriginal heritage items	Minimise impact	• The Pejar LALC propose to collect artefacts located within proposed impact areas as a form of mitigation prior to the commencement of construction • The Onerwal LALC is the relevant LALC for the Gurrundah area.	Pejar and Onerwal LALCs in consultation with Proponent	Prior to construction	DPE OEH	Liaison with Pejar and Onerwal LALC
28.	Loss of Aboriginal heritage items	Minimise impact	• An Aboriginal Heritage Management Plan would be prepared, pending Project Approval and prior to any impact, which outlines the strategy of artefact collection, s85A NPW Act (transfer of Aboriginal objects) procedures, and contingencies for unexpected finds such as skeletal remains.	The Proponent / Archaeologist	Prior to construction	DPE OEH	Liaison with Archaeologist, OEH and LALCs
28a	AHMP update	Minimise impact	• The AHMP has been updated in association with the Modification Application and has been sent to LALCs and OEH for review. • GRWFPL has completed and submitted all Aboriginal Site Impact Recording (ASIR) Forms	Proponent / Archaeologist		DPE/OEH	Liaison with OEH and LALCs

1.1.5 Aircraft hazards

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
29.	Creation of hazard	Minimise risk	• The Proponent would install obstacle marking as required by CASA. • Obstacle lighting has not been required.	The Proponent	During construction	DPE in consultation with CASA	CASA signoff
30.	Creation of hazard	Minimise risk	• The Proponent would provide to the RAAF Aeronautical Information Service (AIS), CASA and Air Services Australia the location and height details once the final position of the wind turbines have been determined and before construction commences. After construction is complete, "as constructed" details would also be provided to AIS	The Proponent	Prior to construction	DPE in consultation with RAAF	Signoff by AIS and Air Services Australia
31. Mod	Creation of hazard	Minimise risk	• The Proponent would notify known users of the Crookwell and Ashwell Airstrips of the location of the wind turbines and any changes to operational procedures. The Proponent, with assistance from its specialist aviation consultant would assist the aerodrome operator and/or local aircraft operators to develop or amend procedures for safe operations on or within the vicinity of the aerodrome, taking into account the location of the turbine.	The Proponent	Prior to construction	DPE	Direct notification of users
32.	Creation of hazard	Minimise risk	• The Proponent would notify other operational information providers such as the Aircraft Owners and Operators Association and Flight Ace of the location of wind turbines in close proximity to Crookwell and Ashwell Airstrips	The Proponent	Prior to construction	DPE	Direct notification of operational information providers
33.	Creation of hazard	Minimise risk	• A briefing sheet including a description and an aerial view of the proposed development, expected construction times, extent of the development, lighting, likely operational impacts and contact details of the developer would be distributed widely.	The Proponent	Prior to construction	DPE	Advertised through local channels

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
34.	Creation of hazard	Minimise risk	The Proponent would provide the following advice to the relevant stakeholders, prompting them to undertake the specified actions: • That Crookwell Airstrip consider formalising guidance to airstrip users regarding takeoff and landing procedures giving due consideration to the location of wind turbines and other obstacles, surrounding terrain, aircraft performance, prevailing conditions, runway physical characteristics, regulatory requirements and any other operational limitations • That Upper Lachlan Shire Council's Information Sheet for Crookwell Airstrip be updated to include reference to the location of wind turbines in close proximity to the airstrip	The Proponent	Prior to construction	DPE	Direct communication

1.1.6 Communications

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
35.	Deterioration of signal strength	No deterioration of signal strength	<u>Television and radio broadcast services</u> • Use of primarily non-metallic turbine blades • Use, wherever practical, of equipment complying with the Electromagnetic Emission Standard, AS/NZS 4251.2:1999	The Proponent	Prior to construction	DPE	Adherence to standard

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
35a	Deterioration of Signal Strength	No deterioration of signal strength	The Proponent would install a Radio/Television antennae in the vicinity of Crookwell which would improve the Radio/Television signal strength for the area surrounding the wind farm and for Crookwell. The commitment above has been modified after consultation with ULSC as follows: • GRWFPL will provide funding for a suitable technical and commercial upgrade at an existing ULSC communications mast. • The funding may up to $100,000. The funding will independent of contributions to the Community Enhancement Fund. • ULSC will be responsible for the construction, operation and maintenance of the new antennae facility.	The Proponent and ULSC	Operation	ULSC	No detected deterioration in signal strength, post mitigation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
36. Mod	Deterioration of signal strength	No deterioration of signal strength	Television and radio broadcast services • Prior to the erection of any wind turbine generators on the site, the Proponent has undertaken an assessment of the existing quality of the television/radio transmission available at a representative sample of residential dwellings located within five kilometres of a wind turbine. • The Proponent will undertake further assessment of television/radio reception following commencement of operation to determine any loss in television signal. • In the event that television interference (TVI) is experienced by existing receivers in the vicinity of the wind farm, the source and nature of the interference would be investigated by the Proponent. • Should investigations determine that the cause of the interference can be reasonably attributable to the wind farm, the Proponent would put in place mitigation measures at each of the affected receivers in consultation and agreement with the landowners. Specific mitigation measures may include: • Modification to, or replacement of receiving antenna • Provision of a land line between the effected receiver and an antenna located in an area of favourable reception • Improvement of the existing antenna system • Installation of a digital set top box or • In the event that interference cannot be overcome by other means, negotiating an arrangement for the installation and maintenance of a satellite receiving antenna at the Proponents cost	The Proponent	Prior to construction and commencement of operation	DPE	No detected deterioration in signal strength, post mitigation
37.	Deterioration of signal strength	No deterioration of signal strength	Mobile phone (and wireless broadband) services • The Proponent will consult with Wirefree to avoid impacts to wireless broadband service	The Proponent	At the commencement of construction	DPE	Direct consultation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
38.	Deterioration of signal strength	No deterioration of signal strength	Radio communications services • The Proponent has made provisions for a 100m corridor for the RFS links from Mt Martin to Mt Gray. In the event that any issues with license links are identified as a result of the wind farm, whether prior to or post construction, the proponent would consult with the operator and undertake appropriate remedial measures, which may include: • Modifications to or relocation of the existing antennae • Installation of a directional antennae and/or • Installation of an amplifier to boost the signal	The Proponent And RFS	At the commencement of operation	DPE	No detected deterioration in signal strength, post mitigation
38a.			GRWFPL provided additional assessment of potential for impacts to point to point services to relevant stakeholders and will consult further with RFS in respect of its service between Mt Mary and Mt Gray.	Proponent and RFS	Commencement of operation	DPE	No impact on service, Mt Mary to Mt Gray.

1.1.7 Electromagnetic fields (EMFs)

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
39.	Exposure from EMFs	Minimise exposure	• The substation would be designed in accordance with all applicable codes and industry best practice standards in Australia	The Proponent	Pre construction design phase	DPE	Adherence to standard
40.	Exposure from EMFs	Minimise exposure	• The turbines, control building, substation and transmission lines would be located at appropriate distances from residences, farm shed and yards in order to reduce the potential for both chronic and acute exposure	The Proponent	Pre construction design phase	DPE	Adherence to ARPANSA guidelines

1.1.8 Traffic and transport

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
			General measures:				
41.	Safety and asset protection	Minimise risks	• Use of a licensed haulage contractor with experience in transporting similar loads, to be responsible for obtaining all required approvals and permits from the RMS and Councils and for complying with conditions specified in the approvals	The Proponent	Prior to construction	CEMP	Written confirmation of license and experience, including referees
42.	Safety and asset protection	Minimise risks	• Development of a **Traffic Management Plan** to include scheduling of deliveries, managing timing of transport through Goulburn and Crookwell to avoid peak hours (beginning/end of the school day), limiting the number of trips per day, undertaking community consultation before and during all haulage activities (including with neighbouring landowners and landowners adjoining access roads), designing and implementing temporary modifications to intersections and street furniture , restoring all changes to their original condition and managing the haulage process	The Proponent	Prior to construction	CEMP	Develop TMP in accordance with Traffic Impact Study, Attachment 3.7
43.	Safety and asset protection	Minimise risks	• Implementation of all aspects of the **Traffic Management Plan** in coordination with the Councils and RMS	The Proponent	During construction	CEMP	Adherence to TMP
44.	Safety and asset protection	Minimise risks	• Providing a dedicated telephone contacts list to enable any issues or concerns to be rapidly identified and addressed	The Proponent	Prior to construction	CEMP	Rapid response to queries
45.	Safety and asset protection	Minimise risks	• Installing required signage to direct traffic flows appropriately during haulage through Goulburn and Crookwell	The Proponent	During construction	CEMP	Timely provision of signage

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
46.	Safety and asset protection	Minimise risks	• Reinstating pre-existing conditions after temporary modifications to the roads and pavement along the route.	The Proponent	During construction	CEMP	Dilapidation report adhered to
47.	Safety and asset protection	Minimise risks	• Undertaking forward planning to ensure equipment transportation complies with requirements of the management plan, RMS and Council	The Proponent	Prior to construction	CEMP	Minimise complaints from road users and risks associated with transport
48.	Safety and asset protection	Minimise risks	• The extent of road upgrades, including realignments and paving upgrades, would be determined by a qualified traffic consultant, in consultation with the RMS and Council	The Proponent	During construction	CEMP	Minimise complaints from road users and risks associated with transport
49.	Safety and asset protection	Minimise risks	• The Proponent would prepare road dilapidation reports covering pavement and drainage structures in consultation with Council, for the construction (and decommissioning) route prior to the commencement of construction (and decommissioning) and after construction (and decommissioning) is complete. Any damage resulting from the construction (or decommissioning) traffic, except that resulting from normal wear and tear, would be repaired at the Proponent's cost. Alternatively, the Proponent may negotiate an alternative for road damage with the relevant roads authority. The decision to provide a seal needs to be balanced against the cost of maintenance on the gravel surface. • Road condition would be inspected throughout construction to ensure that impacts are addressed as they occur. This would be undertaken at regular intervals by the site manager and council roads engineer	The Proponent in consultation with Councils	Prior to construction	CEMP	Dilapidation report adhered to Ongoing contact with roads authorities

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
50.	Safety and asset protection	Minimise risks	• A speed limit would be placed on some of the roads near dwellings or sub standard junctions. The speed restriction would be included in the **Traffic Management Plan** to be submitted to Council	The Proponent in consultation with Council and RTA	Prior to construction	CEMP	Adherence to TMP
51.	Safety and asset protection	Minimise risks	• A procedure would be established to monitor the traffic impacts during construction, such as noise, dust nuisance and travel times and work methods modified to reduce the impacts	The Proponent	Prior to construction	CEMP	Minimise complaints from road users and risks associated with transport
52.	Safety and asset protection	Minimise risks	• A procedure would be established to inform vehicle operators on the precise timing of school buses	The Proponent	Prior to construction	CEMP	Protocols set out in CEMP
53.	Safety and asset protection	Minimise risks	• Regular monitoring and scheduled maintenance of gravel pavements such as grading, dust suppression and drainage control would take place during the construction period	The Proponent	Construction	CEMP	Protocols set out in CEMP
54.	Safety and asset protection	Minimise risks	• Signposting to warn horse riders of construction traffic and slashing of vegetation from verges on the Bi-Centennial Route to allow horses to move off the road when vehicles approach	The Proponent in consultation with Council	Prior to construction	CEMP	Timely provision of signage
			Additional location specific measures				
55.	Safety and asset protection	Minimise risks	*Hume Highway Junction at Breadalbane* • Speed controls. The Roads and Maritime Services are generally not in favour of speed restrictions on the Hume Highway because of the loss in efficiency of the route. However, the use of speed controls for specific short-term activities may be included in a traffic control plan or other temporary traffic control measures	The Proponent in consultation with RMS	Prior to construction	CEMP	Adherence to TMP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
56.	Safety and asset protection	Minimise risks	*Crookwell Road* • The business owners, retailers etc in the main street of Crookwell would be made aware of the timing for heavy, over-mass and over-dimensional vehicles	The Proponent	Prior to construction	CEMP	Timely notification
57.	Safety and asset protection	Minimise risks	*Grabben Gullen Road* • The junction is to be designed and constructed in consultation with Upper Lachlan Shire Council and the Roads and Traffic Authority	The Proponent	Prior to construction	CEMP	Adherence to TMP
58.	Safety and asset protection	Minimise risks	*Range Road* • The new junction required to be constructed on Range Road would be designed and constructed in consultation with Upper Lachlan Shire Council	The Proponent in consultation with RTA	Prior to construction	CEMP	Adherence to TMP
59.	Safety and asset protection	Minimise risks	*Gurrundah Road* The new junction required to be constructed on Range Road would be designed and constructed in consultation with Upper Lachlan Shire Council	The Proponent in consultation with RTA	Prior to construction	CEMP	Adherence to TMP
60.	Safety and asset protection	Minimise risks	*Range Road* • Consideration would be given to the reconstruction and sealing of the 1.8km length of unsealed pavement which would include the proposed junctions	The Proponent in consultation with RTA	Prior to construction	CEMP	Adherence to TMP
61.	Safety and asset protection	Minimise risks	*Range Road* • The shadow flicker effects would be monitored following commissioning and any remedial measures to address concerns would be developed in consultation with the RMS and the Department of Planning	The Proponent	Operation	CEMP	Shadow flicker controlled (via roadside planting if required)
62.	Safety and asset protection	Minimise risks	*Bannister Lane, Storriers Lane, Prices Lane* • A program would be established to consult with all of the road users and residents in the area particularly those living in the residences close to the roads	The Proponent in consultation with RMS and Council	Prior to construction	CEMP	Timely notification and consultation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
63.	Safety and asset protection	Minimise risks	*Gurrundah Road* • The junction is to be designed and constructed in consultation with Upper Lachlan Shire Council	The Proponent in consultation with Council	Prior to construction	CEMP	Adherence to TMP
64.	Safety and asset protection	Minimise risks	*Breadalbane to Gurrundah Road* • A procedure would be established for all over-dimensioned vehicles associated with the Gullen Range wind farm project to make contact with a railway service to establish approximate timing of trains so that crossings could be made during the safer periods. The need to always visually check for the approach of trains would be stressed to vehicle operators	The Proponent	Prior to construction	CEMP	Adherence to TMP

1.1.9 Fire and bushfire impacts

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
65.	Increase risk of fire ignition or spread	Minimise risks	• The Rural Fire Service and NSW Fire Brigade would be consulted in regard to the adequacy of bushfire prevention measures to be implemented on site during construction, operation and decommissioning. These measures would in particular cover hot-work procedures, asset protection zones, safety, communication, site access and response protocols in the event of a fire originating in the wind farm infrastructure, or in the event of an external wildfire threatening the wind farm or nearby properties	The Proponent	Prior to construction	DoP	Timely notification and consultation

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
65a	Increase risk of fire ignition or spread	Minimise risk	• The Proponent will investigate the potential to house an RFS hall within the Wind Farm or at a suitable location identified in consultation with RFS near to the wind farm. This facility could also be used as a community hall. o The Proponent would offer the land to the RFS in perpetuity. o The construction, operation and maintenance of the RFS station would be the responsibility of the RFS	The Proponent	Operation	Proponent	Adherence to RFS guidelines for fire safety
66.	Increase risk of fire ignition or spread	Minimise risks	• Flammable materials and ignition sources brought onto the site, such as hydrocarbons, would be handled and stored as per manufacturer's instructions	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
67.	Increase risk of fire ignition or spread	Minimise risks	• During the construction phase, appropriate fire fighting equipment would be held onsite when the fire danger is very high to extreme, and a minimum of one person on site would be trained in its use. The equipment and level of training would be determined in consultation with the local RFS	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
68.	Increase risk of fire ignition or spread	Minimise risks	• The substation facility would be bunded with a capacity exceeding the volume of the transformer oil to contain the oil in the event of a major leak or fire. The facility would be regularly inspected and maintained to ensure leaks do not present a fire hazard, and to ensure the bunded area is clear (including removing any rainwater)	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
69.	Increase risk of fire ignition or spread	Minimise risks	• The substation would be surrounded by a gravel and concrete area free of vegetation to prevent the spread of fire from the substation and reduce the impact of bushfire on the structure. The substation area would also be surrounded by a security fence as a safety precaution to prevent trespassers and stock ingress	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
70.	Increase risk of fire ignition or spread	Minimise risks	• Asset protection zones, based on the RFS *Planning for Bushfire Protection*, would be maintained around the control room, sub-station and in electricity transmission easements. Workplace health and safety protocols would be developed to minimise the risk of fire for workers during construction and during maintenance in the control room and amenities	The Proponent	During construction	CEMP	Adherence to RFS *Planning For Bushfire Protection*

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
71.	Increase risk of fire ignition or spread	Minimise risks	• Fire extinguishers would be stored onsite in the control building and within the substation building	The Proponent	During construction	CEMP	Adherence to safety protocols set out in CEMP
72.	Increase risk of fire ignition or spread	Minimise risks	• Shut down of turbines would commence if components reach critical temperatures or if directed by the RFS in the case of a nearby wildfire being declared (an all hours contact point would be available to the RFS during the bushfire period). Remote alarming and maintenance procedures would also be used to minimise risks	The Proponent	Operation	OEMP	All hours contact point provided to RFS. Remote alarming installed
73.	Increase risk of fire ignition or spread	Minimise risks	• Overhead transmission easements would be periodically inspected to monitor regrowth of encroaching vegetation	The Proponent	Operation	OEMP	Compliance with Transgrid easement maintenance protocols.

1.1.10 Hydrology

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
74.	Water extraction	Not deplete local supplies	• Water would be sourced from an onsite bore (Pomeroy) as well as other local sources including onsite dams. It would be reused where possible to reduce the total amount required. No water would be sourced from creeks or rivers without relevant permits being sought. No water would be or discharged into creeks, rivers or drainage lines without relevant permits	The Proponent	Construction	CEMP	Minimise water use, maximise reuse onsite,
75.	Deterioration of water quality	Minimise risk	• All vehicles onsite would follow established trails and minimise onsite movements	The Proponent	Construction and operation	CEMP and OEMP	Protocols set out in CEMP and OEMP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
76.	Deterioration of water quality	Minimise risk	• Machinery would be operated and maintained in a manner that minimises risk of hydrocarbon spills	The Proponent	Construction and operation	CEMP and OEMP	Protocols set out in CEMP and OEMP
77.	Deterioration of water quality	Minimise risk	• Maintenance or re-fuelling of machinery would be carried out on hard-stand areas (i.e. existing or proposed road surface or hard-stand areas beneath turbines). Where possible, maintenance and re-fuelling would not occur on areas that either contain native vegetation, or would be revegetated	The Proponent	Construction and operation	CEMP and OEMP	Protocols set out in CEMP and OEMP
78.	Deterioration of water quality	Minimise risk	• The concrete batching plants would contain settling ponds sufficient to capture all concrete wash. Wash water would be recycled onsite (in cement mix, road base and dust control) and would not be released. The Batching Plants have been removed from site.	The Proponent	Construction	CEMP	Protocols set out in CEMP
79.	Deterioration of water quality	Minimise risk	• Waste sludge would be recovered from the settling pond and used in the production of road base manufactured onsite. The waste material would be taken from the batching plant to be blended in the road base elsewhere onsite	The Proponent	Construction	CEMP	Minimise waste, maximise reuse
80.	Deterioration of water quality	Minimise risk	• The concrete batching plant areas would be fully remediated at the completion of the construction phase	The Proponent	Completion of construction	CEMP	Stable and revegetated
81.	Deterioration of water quality	Minimise risk	• Dust suppression would be carried out where required. Central to controlling dust are means to determine when dust suppression is required and having adequate access to water or chemical dust suppression alternatives to control dust. These specifications would be included in the **Construction Environmental Management Plan** prepared for the project prior to construction	The Proponent	Construction	CEMP	Minimise dust complaints

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
82.	Deterioration of water quality	Minimise risk	Sediment and erosion would be controlled as part of a formal **Sediment / Erosion Control Plan (SECP)**, as a sub plan of the **Construction Environmental Management Plan**. This plan would include the following provisions: • Sediment traps would be installed wherever there is potential for sediment to collect and enter waterways • Stockpiles generated as a result of construction activities would be bunded with silt fencing, (hay bales or similar) to reduce the potential for runoff from these areas • Soil and water management practices would be guided by the Best Practice guidelines contained within *Soils and Construction Vol. 1* (Landcom 2004)	The Proponent	Construction	CEMP	Adherence to SECP
83.	Deterioration of water quality	Minimise risk	• A **Water Management Strategy** would be developed for the site as part of the Construction and Operational Environmental Management Plans. This would aim to integrate the total water cycle of the site in terms of water supply, stormwater and wastewater, and maximise the use of best management practice techniques for stormwater and wastewater management. Devices such as swales to disperse rather than concentrate runoff would be implemented. Water use would be minimised by maximising reuse. Detailed measures would be devised in conjunction with the development of the construction drawings.	The Proponent	Construction and Operation	CEMP and OEMP	Best practice water management devices
84.	Deterioration of water quality	Minimise risk	A **Site Restoration Plan (SRP)** would be prepared as part of the **Construction Environmental Management Plan**. This would set out protocols for restoration works including: • Site preparation • Stabilisation • Revegetation • Monitoring	The Proponent	Construction	CEMP	Adherence to SRP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
85.	Deterioration of water quality	Minimise risk	The contractor would prepare and implement a **Spill Control Plan,** as a sub-plan of the **Construction Environmental Management Plan.** It would: • Identify persons responsible for implementing the plan if a spill of a dangerous or hazardous chemical/waste would occur • Material Safety Data Sheets (MSDS) for all chemical inventories would be located on site and readily available • Where chemicals are used, their application and disposal would comply with manufacturers recommendations • Any spill that occurs, regardless of size or type of spill, would be reported to the Construction Manager • The event and clean up processes would be recorded. Information that would be recorded in the event of spill would include time and date of spill, type of chemical or waste spilt, approximate volume spilt, general area in which the spill occurred, corrective actions applied, and disposal of spilt material • Spill protocols in this plan would dictate when the EPA would be notified • Chemical / fuel storage areas would be identified, and be bunded to prevent loss of any pollutants • Hydrocarbon spill kits would be stored at the site. A number of site staff are to be trained in the use of the spill kits	The Proponent	Construction	CEMP	Adherence to Spill Control Plan. Minimise spills. Rapid response to spill, involving the EPA as required.
86.	Deterioration of water quality	Minimise risk	• Infrastructure would be bunded to ensure that the amounts of oil could be fully contained in the event of a leak. Bunding provisions would be regularly inspected	The Proponent	Operation	OEMP	Bunding adequate to contain fluids
87.	Deterioration of water quality	Minimise risk	• Septic systems, if installed, would meet Upper Lachlan Council standards	The Proponent	Operation	OEMP	Adherence to Council standards

1.1.11 Mineral exploration

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
88.	Conflict with mineral exploration	Minimise conflict	• The Proponent would liaise with the current mineral lease holders, providing a final turbine and infrastructure layout, prior to the construction phase	The Proponent	Prior to construction	DoP	Timely notification and liaison
89.	Conflict with mineral exploration	Minimise conflict	• The Proponent would liaise with the current mineral lease holders during the construction phase, to ensure that where possible, the works program does not unnecessarily interfere with planned exploration activities.	The Proponent	Construction	DoP	Timely notification and liaison
90.	Conflict with mineral exploration	Facilitate access	• The Proponent would liaise with the involved land owners and current mineral lease holders prior to rehabilitation, to ensure that any project access roads that they may wish to retain are retained. Several of these access roads are likely to be of benefit both to routine agricultural activities as well as to exploration activities onsite	The Proponent	Construction	DoP	Timely notification and liaison

1.1.12 Economic

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
91.	Affect on local economy	Maximise positive effect of proposal	• The Proponent would liaise with local industry representatives to maximise the use of local contractors and manufacturing facilities in the construction and decommissioning phases of the project	The Proponent	Prior to construction	DoP	Timely notification and liaison
92.	Affect on local activities	Minimise disruption	• Co-ordinate construction activities with local events. Gullen Range Wind Farm Pty Ltd would liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works	The Proponent	Prior to construction	DoP	Timely notification and liaison

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
92a	Affect on local economy	Minimise impacts	• Where feasible/reasonable the Proponent would implement a Sustainable Procurement Strategy with the goal of increasing local (regional and national) products required for the construction and operation of the wind farm	The Proponent	Ongoing	Project Manager	% of local regional products
92b	Local opportunities	Maximise local opportunities	• The Proponent would source services from the local area including but not limited to: o Staff o Suppliers o Materials o Services o Food and consumables	The Proponent	Ongoing	Project Manager	% of local employment

1.1.13 Community wellbeing

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
93.	Community division	Provide accurate information	• Dissemination of accessible and independent information on wind farm impacts	The Proponent	Prior to construction	DPE	Timely dissemination of information
94.	Community division	Provide accurate information	• Monitoring information collected during the operation of the wind farm would be made publicly available	The Proponent	Operation	DPE	Timely dissemination of information
95.	Community division	Equitable distribution of benefits	• Gullen Range wind farm would address the potential for wider adverse community impacts by way of a Community Enhancement Program as presented in Section 4.4.2.	The Proponent	Prior to construction	DPE in consultation with the ULSC	Agreement on amount and conditions of fund

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
							achieved, in accordance with Council policy
95a	Community division	Maximise Benefits	• The Proponent would investigate and where feasible purchase a property for the use of the Public as a community hall. This may combine with Commitment 65a as a shared facility. • The community hall would be run by a panel of community members for the benefit of local people and events	The Proponent		ULSC	
95b	Community division	Provide accurate information and education	• The Proponent would provide a community education program for local schools which would include: o Visits to the wind farm o Information on renewable energy o Information on climate change issues	The Proponent	Operation	DPE	
95c	Community division	Provide accurate information and education	• The Proponent would hold an annual 'open day' at the wind farm to allow the public to visit the facility	The Proponent	Operation	DPE	
95d	Community division	Better community relationship	• The proponent will strengthen its relationship with the community by improving its consultation efforts and undertaking regular interface with neighbours within 2km of the wind farm.	The Proponent	Operation	DPE	Evidence of consultation by GRWFPL
95e	Community division	Provide accurate information and education	• The proponent would provide an annual public report on the environmental and social performance of the wind farm and the consultation activities undertaken for the year	The Proponent	Operation	DPE	Annual Report issued to public

1.1.14 Tourism

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
96.	Affect on local activities	Minimise disruption	• Co-ordinate construction activities with local events. Gullen Range Wind Farm Pty Ltd would liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works	The Proponent	Prior to construction	DPE	Timely notification and liaison
97.	Affect on local activities	Maximise benefits	• The Proponent would work with the involved landowners, the community and Upper Lachlan Shire Council to allow for the development of the wind farm as a tourist attraction, if this option becomes desirable to these three parties.	The Proponent	Operation	DPE	Liaison as required

1.1.15 Agricultural impacts

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
98.	Affect on current local land use	Minimise disruption	• A **Traffic Management Plan** would be developed and would include provisions for construction traffic on access roads where stock may be grazing. These may include specifications for safe speed limits and provision of a construction timetable to affected landowners	The Proponent	Construction	CEMP	Adherence to TMP
99.	Affect on current local land use	Minimise disruption	• Stock would be restricted from works areas where there is a risk stock injury. For example, near excavated trenches and within high traffic areas	The Proponent	Construction	CEMP	Adherence to TMP
100.	Affect on current local land use	Maximise benefits	• Liaison would be undertaken with involved landowners to explore the possibility of enhancing the native component of the understorey in pasture production. This could be incorporated into the site restoration plan which would dictate protocols for the rehabilitation of areas disturbed during construction	The Proponent	Construction	CEMP	Liaison as required
101.	Affect on current local land use	Maximise benefits	• Stock would be restricted from areas being rehabilitated, until surfaces are able to withstand resumed grazing	The Proponent	Construction	CEMP	Protocols set out in SRP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
102.	Affect on current local land use	Minimise risks	• Liaison would be undertaken with involved landowners to restrict stock access within construction zones during the construction and decommissioning phases. This is aimed at reducing potential for collision and ensuring stock are not able to escape during construction	The Proponent	Construction	CEMP	Timely notification and liaison
103.	Affect on current local land use	Minimise disruption	• Liaison would be undertaken with neighbouring landowners and landowners adjoining access roads, to provide information about the timing and routes to be used during construction and decommissioning. This could be in the form of advertising and provision of a contact point for further inquiries. The aim would be to reduce the risk of interference with agricultural activities on affected roads and road verges.	The Proponent	Construction	CEMP	Timely notification
104.	Affect on current local land use	Minimise risks	• The **Traffic Management Plan (TMP)** would contain procedures to manage horse riders using the Bicentennial National Trail during the construction period including keeping the verge of the road clear for riders to allow riders to move off the road. This would include ongoing consultation and liaison with the BNT co-ordinator	The Proponent	Operation	OEMP	Adherence to TMP

1.1.16 Health and safety: construction activities

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
105.	Safety of persons or stock	Minimise risks	A detailed **Health and Safety Plan (H&SP)** would be prepared, as a sub plan of the **Construction Environmental Management Plan**, identifying hazards associated with construction works, the risks of the identified hazards occurring and appropriate safeguards would be prepared prior to the commencement of construction works. Additionally: • The plan would incorporate standard work place practices, such as restraints, fall arrest systems, protective clothing and procedures that enable infrastructure to remain stationary during specific activities • Emergency response protocols and equipment and reminders of the requirement for workers to take responsibility for their safety would be implemented • All site workers are to be inducted to the site on their first day of	The Proponent	Construction	CEMP	Adherence to H&SP

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
			employment. The induction would include a detailed briefing of the health and safety plan • Workplace health and safety protocols would be developed to minimise the risk as a result of the ignition of fire from and to workers during construction and during maintenance in the control room and amenities				
106.	Safety of persons or stock	Minimise risks	• Liaison would occur between property owners and construction staff in relation to land and stock management during construction (during construction and decommissioning, stock would be excluded from the works area - this would exclude road works)	The Proponent	Construction	CEMP	Timely notification and liaison
107.	Safety of persons or stock	Minimise risks	• Site fencing would be installed where there is a risk to the safety of the general public (i.e. when the trench is left open for extended periods)	The Proponent	Construction	CEMP	Adherence to H&SP
108.	Safety of persons or stock	Minimise risks	• Employee safety would be managed through the application a **Health and Safety Plan**	The Proponent	Operation	OEMP	Adherence to H&SP

1.1.17 Health and safety: shadow flicker

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
109.	Safety / nuisance to persons or stock	Minimise risks	• If shadow flicker is found to be a nuisance to residents, conditions would be pre-programmed into the control system and individual wind turbines automatically shut down whenever these conditions are present	The Proponent	Operation	OEMP	Minimise complaints
110.	Safety of persons or stock	Minimise risks	• Shadow flicker effects on motorists using Range Road would be monitored following commissioning and any remedial measures to address concerns would be developed in consultation with the RTA and the Department of Planning	The Proponent	Operation	OEMP in consultation with the RTA and the Department of Planning	Minimise shadow flicker on this section of road

1.1.18 Health and safety: stability of turbines

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
111.	Safety of persons or stock	Minimise risks	• Obtain and implement sound geotechnical advice during construction, choice of a reliable turbine and proper installation and maintenance of the turbines	The Proponent	Construction	DPE	Adherence to geotechnical report conclusions

1.1.19 Historic heritage

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
112.	Deterioration of heritage items	Minimise risks	• Inform the Upper Lachlan Shire Council, Goulburn-Mulwaree Council and the NSW Heritage Office of the proximity of final access routes	The Proponent	Construction	DPE	Timely notification and liaison
113.	Deterioration of heritage items	Minimise risks	• Building design, materials and colour would be appropriate to the heritage values of the area	The Proponent	Prior to construction	DPE	Signoff from Landscape Architect
114.	Deterioration of heritage items	Minimise risks	• Underground rather than overhead transmission would be used where possible and where it would not result in inappropriate risks to soils and land forms. Although extensive existing electricity transmission infrastructure is present on the site and to the south, the cumulative impact of the development would be reduced where possible	The Proponent	Prior to construction	DPE	Minimal overhead transmission

1.1.20 Physical impacts: air quality

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
115.	Air quality	Minimise risks	• Subsoil would be separated from topsoil for rehabilitation purposes. All topsoil from the excavation sites would be stockpiled and replaced to its original depth for seeding and fertilising. On steep slopes, topsoil would need to be stabilised using, for example, jute matting. Any excess subsoil would be removed from the site and disposed of at an appropriate fill storage site	The Proponent	Construction	CEMP	Protocols set out in CEMP
116.	Air quality	Minimise risks	• Any material stockpiled as would be covered with plastic, seeded or otherwise bound to reduce dust. Dust levels at stockpile sites would be visually monitored. Dust suppression (eg. water sprays) would be implemented if required	The Proponent	Construction	CEMP	Protocols set out in CEMP
117.	Air quality	Minimise risks	• Product stockpiles would be protected from prevailing weather conditions	The Proponent	Construction	CEMP	Protocols set out in CEMP
118.	Air quality	Minimise risks	• During dry, windy periods a water cart or alternative chemical dust suppression would be available and applied to works areas generating dust. Means to determine when action is required would be detailed in the **Construction Management Plan**	The Proponent	Construction	CEMP	Protocols set out in CEMP
119.	Air quality	Minimise risks	• Should blasting be required, it would be carried out in accordance with all relevant statutory requirements	The Proponent	Construction	CEMP	Adherence to ANZECC guidelines
120.	Air quality	Minimise risks	• Residences within 1km of blasting activities would be informed prior to blasting	The Proponent	Construction	CEMP	Timely notification
121.	Air quality	Minimise risks	• Dust filters would be installed on silos, where required	The Proponent	Construction	CEMP	Minimal dust complaints

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
122.	Air quality	Minimise risks	Sediment and erosion would be controlled as part of a formal **Sediment / Erosion Control Plan (SECP)**. This plan would include the following provisions: • Sediment traps would be installed wherever there is potential for sediment to collect and enter waterways • On the steeper slopes check banks would be installed across the trenchline, as appropriate, following closure of the trench. These would discharge runoff to areas of stable vegetation • Stabilisation would be undertaken as soon as practicable during construction. Furthermore, rehabilitation of disturbed ground would be carried out at the completion of construction works • Stockpiles generated as a result of construction activities would be bunded with silt fencing, (hay bales or similar) to reduce the potential for runoff from these areas • Soil and water management practices would be guided by the Best Practice guidelines contained within *Soils and Construction Vol. 1* (Landcom 2004)	The Proponent	Construction	CEMP	Adherence to SECP
123.	Air quality	Minimise risks	A **Traffic Management Plan (TMP)** would be developed and would include strategies to reduce the number of vehicle movements to, from and across the sites. These would include: • Only machinery compliant with emission standards would be used • Vehicles and motorised equipment would be maintained so that emissions are minimised • Machinery and vehicles would not be left running or idling when not in use	The Proponent	Construction	CEMP	Adherence to TMP

1.1.21 Physical impacts: soils and landforms

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
124.	Soil loss or	Minimise risks	• Concrete wash would be deposited in an excavated area,	The	Construction	CEMP	No effect on

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
	stability of landform loss		below the level of the topsoil, or in an approved landfill site. Where possible, waste water and solids would be reused onsite	Proponent			waterways or top soil
125.	Soil loss or stability of landform loss	Minimise risks	• Tracks would be graded to enhance their stability	The Proponent	Construction	CEMP	Adherence to SECP
126.	Soil loss or stability of landform loss	Minimise risks	• Access routes and tracks would be confined to already disturbed areas, where possible	The Proponent	Construction	CEMP	Minimise disturbance area
127.	Soil loss or stability of landform loss	Minimise risks	• ANZECC guidelines for control of blasting impact at residences would be adhered to if blasting is required	The Proponent	Construction	CEMP	Adherence to ANZECC guidelines

1.1.22 Resource impacts

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
128.	Waste generation	Minimise waste and maximise recycling of materials	• Waste would be reused or recycled whenever possible. Separate recyclable materials receptacles would be provided (eg. For glass, plastics and aluminium)	The Proponent	Construction and operation	CEMP and OEMP	Waste streams identified, Waste Hierarchy implemented
129.	Waste generation	Appropriate disposal of waste	• Packaging materials and general construction wastes would be disposed of, with Council's approval, at Council operated waste disposal centres	The Proponent	Construction and operation	CEMP and OEMP	Waste streams identified, Waste Hierarchy implemented

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
130.	Waste generation	Appropriate disposal of waste	• Toilet facilities would be provided for onsite workers and sullage from contractor's pump out toilet facilities would be disposed at the local sewage treatment plants or other suitable facility agreed to by Council	The Proponent	Construction and operation	CEMP and OEMP	Council approved disposal
131.	Waste generation	Minimise waste and maximise recycling of materials	• Surplus topsoil would be stockpiled on site during construction, and following construction would be spread on the site (particularly over former hardstand areas and access roads) to assist with revegetation	The Proponent	Construction	CEMP	SRP adhered to
132.	Waste generation	Minimise waste and maximise recycling of materials	• Excavated material would be used in road base construction and as aggregate for footings where possible. Surplus material would be disposed of in appropriate locations on site (on agreement with the landowner), finished with topsoil, and revegetated	The Proponent	Construction	CEMP	Maximum reuse of excavated material
133.	Waste generation	Appropriate disposal of waste	• Risk of chemical spills would be minimised and protocols would be in place to ensure prompt and effective clean up of any accidental spills	The Proponent	Construction and operation	CEMP and OEMP	Adherence to Spill Control Plan. Minimise spills. Rapid response to spill, involving the EPA as required.
134.	Waste generation	Appropriate disposal of waste	• No permanent waste disposal would be utilised onsite	The Proponent	Construction and operation	CEMP and OEMP	Waste disposal protocols set out in CEMP and OEMP adhered to

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
135.	Waste generation	Appropriate disposal of waste	• The contractor would implement a Spill Control Plan as part of its Erosion and Sediment Control Plan. Spill Control Plans would identify persons responsible for implementing the plan if a spill of a dangerous or hazardous waste should occur. Any spill that occurs, regardless of size or type of spill, would be reported to the Construction Manager. The event and clean up processes would be recorded. Spill protocols in the plan would dictate when the EPA should be notified	The Proponent	Construction and operation	CEMP and OEMP	Adherence to Spill Control Plan. Minimise spills. Rapid response to spill, involving the EPA as required.

1.1.23 Cumulative impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
136.	Cumulative noise	Minimise risk of construction noise criteria exceedence	Construction noise • If an additional project proposes concurrent construction timing as the proposed Gullen Range wind farm, the Proponent would enter into liaison to ensure that additional construction noise issues were addressed	The Proponent	Construction and operation	CEMP and OEMP	Rapid response to complaints, adherence to SA EPA guidelines
137.	Cumulative traffic and infrastructure	Minimise disruption	Traffic and infrastructure • If an additional project proposed concurrent construction timing on access routes nominated by the Gullen Range wind farm, the Proponent would enter into liaison to ensure that additional traffic and transport issues were addressed	The Proponent	Construction and operation	CEMP and OEMP	Timely notification and liaison with road authorities and second proponent
138.	Cumulative economic	Maximise local skill use	Economic • Liaison would continue with local economic development bodies to	The Proponent	Construction and operation	DPE	Timely notification

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
			ensure the potential for local skill use and manufacturing is maximised				and liaison
139.	Impact on future rural subdivisions	Minimise risks	Future Rural Subdivisions The Proponent will provide reasonable and feasible noise mitigation measures to achieve a noise criterion ($LA_{eq\ (10\text{-}minute)}$) of 30dB(A) inside bedrooms (as outlined in the Guidelines for Community Noise (WHO, 1999) for no more than one dwelling on each parcel of land that: • Is not associated with the project; • Was lawfully in existence at the date of the approval; • Was lawfully permitted to be developed for the purpose of a residential dwelling at the date of the approval; • Is or was the subject of a valid construction certificate for a residential dwelling, lodged with the consent or a certifying authority within three years of the date of approval; and • Would, but for the requirements of this condition, experience noise contributions from the project at the approved location of the residential dwelling in excess of the noise limits recommended in the SA EPA guidelines. •	The Proponent	Operation	DoP	Minimise impacts
140.	Impact on local water supplies	Comply with water authority	• No ground water would be sourced without relevant permits being sought.	The Proponent	Prior to construction	CEMP	Relevant approvals obtained
141.	Impact on groundwater	Minimise risks	• Undertake geotechnical investigations to ensure that the project would have no material adverse effect on groundwater/aquifers as a result of blasting activities.	The Proponent	Detailed design phase	CEMP	No detectable impact on groundwater
142.	Loss of biodiversity value	Avoid or minimise impact	• *During the detailed design phase, a copy of the plans of the final infrastructure layout (including all turbines, hard stand areas, buildings, tracks, power lines and associated infrastructure) would be provided to DoP to demonstrate the achievement of biodiversity SoCs in the EA.*	Ecological consultant	Prior to construction	DPE	Minimise direct biodiversity impact

	Impact	Objective	Mitigation tasks	By	Timing	Auditing	Criteria
143.	Loss of biodiversity value	Avoid or minimise impact	• Additional targeted surveying (utilising 'Spider hole' pitfall traps) would be carried in works area likely to be impacted by GUR-08 infrastructure to establish if the Grassland Earless Dragon utilises this habitat at Gurrundah. If it is identified as occurring, turbine infrastructure would be relocated to avoid this habitat, and a buffer of at least 25 metres maintained	Ecological consultant	Prior to construction	DPE OEH	Minimise direct biodiversity impact
144.	Safety and asset protection	Minimise risks	• If haulage is proposed on routes that have not been assessed as part of the EA, assessment would be undertaken, in consultation with the Department of Planning, the roads authority and Council, prior to its inclusion in the haulage route. This would be completed as part of the Construction Environmental Management Plan.	The Proponent	During construction	CEMP	Minimise impacts on road users

APPENDIX C – FINAL DESIGN TURBINE LOCATIONS

Table 1: *Final design turbine locations and difference (source: Table 2-2 Modification EA)*

Turbine ID	Surveyed Final Design Coordinates and elevation			Distance relocated (m) <50 50-100 >100	Direction moved	Change in Turbine Level (m)
	Easting	Northing	Level Base of Tower			
KIA_01	722206	6178258	987.42	35.7	East	7.4
KIA_02	722106	6178003	968.24	43.4	North	7.5
BAN_01	722867	6177000	961.07	47.4	SE	5.5
BAN_02	722816	6176718	960.89	12.6	South	-0.1
BAN_03	722567	6176552	959.37	36.8	South	-0.6
BAN_04	722477	6176299	957.8	12.8	South	-1.2
BAN_05	723284	6176726	964.46	12.5	South	-1.3
BAN_06	723235	6176463	971.72	4.5	West	2.6
BAN_07	723092	6176141	973.04	33.3	NW	-7.7
BAN_08	723327	6175886	1000.99	187.0	SSW	14.8
BAN_09	722740	6174867	952.9	167.0	West	-3.8
BAN_10	722846	6174519	959.13	80.4	South	-0.9
BAN_11	723242	6174950	964.19	48.5	North	1.0
BAN_12	723177	6174649	968.18	64.8	West	5.1
BAN_13	723736	6174579	960.3	168.6	ESE	-3.6
BAN_14	723832	6174779	974.36	85.0	South	-5.6
BAN_15	724314	6174314	965.87	177.9	North	2.9
BAN_16	724441	6173780	971.89	14.0	South	1.9
BAN_17	724453	6173505	975.64	13.9	West	0.6
BAN_18	723870	6173444	957.43	32.0	West	0.7
BAN_19	724307	6173286	969.32	2.2	SE	-0.7
BAN_20	724521	6172964	970.76	0.0	N.A.	0.8
BAN_21	724485	6172357	968.7	111.9	SSE	7.6
BAN_22	724466	6172100	981.57	22.0	South	1.6
BAN_23	724269	6171949	975.81	16.1	NW	1.4
BAN_24	724049	6171628	955.85	123.6	South	2.3
BAN_25	724647	6171804	986.26	50.9	NW	1.3
BAN_26	724630	6171532	985.61	46.6	NW	1.6
BAN_27	724502	6171321	980.48	20.6	East	4.3
BAN_28	724213	6171232	973	9.9	NW	3.0
BAN_29	723793	6171252	959.5	7.1	West	4.5
BAN_30	724099	6171000	955.16	1.0	N.A.	1.2
POM_01	725833	6166934	898.69	115.2	NE	-1.3
POM_02	726044	6166594	888.82	45.0	SW	5.2
POM_03	726063	6166277	884.18	102.2	West	4.2
POM_04	726461	6166355	873.2	96.2	SW	12.5
POM_05	726800	6166565	865.08	8.1	West	5.1
POM_06	727033	6165858	862.62	56.7	SW	2.6
POM_07	727112	6165618	844.99	23.4	West	-0.2
POM_08	725438	6165310	888.16	0.0	NA	-11.8
POM_09	724870	6165173	883.05	28.3	SSW	-2.9
POM_10	725390	6165082	892.5	92.5	East	-6.0
POM_11	725525	6164826	889.87	64.4	NW	-10.1
POM_12	724220	6164723	890.59	10.2	North	-8.6
POM_13	724725	6164560	888.39	6.0	North	-4.2
POM_14	725064	6164835	892.14	36.4	SW	1.3
POM_15	725079	6164566	901.81	8.5	SW	2.7
POM_16	725216	6164233	893.4	18.1	South	8.4
POM_17	725509	6163949	865.02	7.2	SW	7.6
POM_18	725752	6163649	849.99	11.0	North	10.0
POM_19	724788	6163595	899.03	56.6	North	0.2
POM_20	725434	6163257	833.73	7.6	West	13.7
POM_21	725752	6162969	828	7.2	NE	8.0
POM_22	726057	6162593	821.56	81.5	SE	6.0
POM_23	726339	6162361	812.01	20.2	East	12.2
GUR_01	727827	6161200	787.19	2.2	South	2.2

Turbine ID	Surveyed Final Design Coordinates and elevation			Distance relocated (m) <50 50-100 >100	Direction moved	Change in Turbine Level (m)
	Easting	Northing	Level Base of Tower			
GUR_02	727730	6160921	805.09	8.9	North	-3.8
GUR_03	727826	6160598	820.43	10.0	North	-3.0
GUR_04	727464	6160571	799.12	13.5	NW	-0.8
GUR_05	727307	6160350	816.25	3.2	West	1.3
GUR_06	727298	6160051	779.65	10.8	NE	2.7
GUR_07	727912	6160363	836.3	101.5	North	12.0
GUR_08	727832	6159846	773.02	0.0	N.A.	-0.7
GUR_09	727269	6159369	811.32	36.9	South	1.7
GUR_10	727389	6158918	819.87	60.5	SSE	8.5
GUR_11	727520	6158639	833.15	6.4	NW	3.1
GUR_12	727479	6158308	839.08	59.7	South	7.5
GUR_13	727642	6158039	824.07	19.0	SW	4.1
GUR_14	727753	6157727	832.16	0.0	N.A.	2.2
GUR_15	727834	6157450	833.9	43.7	North	5.1
GUR_16	728211	6159145	785.91	12.0	SW	1.6
GUR_17	727997	6158925	803.51	29.4	South	3.5
GUR_18	728036	6158675	810.96	55.3	East	4.4
	Note: GW100 is a GW100-2.5 and has hub height of 80 metres. GW82 is a GW82-1.5 and has a hub height of 85 metres.					

APPENDIX D – ADDITIONAL INFORMATION FROM GOLDWIND (25 JUNE 2015)

New Gullen Range Wind Farm

Level 23, 201 Elizabeth Street, Sydney, NSW 2000
ABN 41 167 404 211

Mike Young,

Department of Planning and Environment

Bridge Street Sydney, NSW 2000

25 June 2016

Attention: Nicole Brewer

By email: mike.young@planning.nsw.gov.au, Nicole.brewer@planning.nsw.gov.au

Dear Mike,

Gullen Range Wind Farm – Modification Application – Further information

The attached information provides further information requested in the Department's email message of 19 June 2015.

Should you have any questions in relation to this matter, please do not hesitate to contact me or, Jeff Bembrick as follows: Email jeffbembrick@goldwindaustralia.com or Mobile phone: 0499156665.

Yours Sincerely

Ning Chen

Director

Email: ningchen@goldwindaustralia.com

Phone: 02 9008 1788

Attachment A: Response to three questions in DPE email of 19 June 2015

Attachment B: Map GR-PM-DWG_0210 – Shows project lands and associated properties

Attachment A - Further information for Department of Planning:

The following information is provided by New Gullen Range Wind Farm (NGRWF) in response to a Department of Planning and Environment (DPE) request for further information involving three questions set out in the DPE email message of 19 June 2015.

1. **General information about the agreements with landowners where the terms of the agreement do not specifically cover the impacts of the project (eg. noise and/or visual impacts) including property B20.**

   A range of landowner agreements have been implemented to enable installation and operation of the project. These involve commercial transactions between NGRWF and the landowner for the purposes defined in the respective agreements. Where agreements have been entered into, the landowner, their property and any residence which are the subject of the agreement is then referred to as 'Associated'. Types of agreements that give an 'Associated' status include the following:

   - Host landowners that have agreed to installation and operation of infrastructure on their land (1-12 on accompanying Map GR-PM-DWG_0089).
   - Neighbouring landowners where agreement or acquisition was required by Condition 2.25 of the Project Approval
   - Neighbouring landowners and property and residences (not subject to Condition 2.25) where agreement or acquisition has resulted in 'Associated' status. These agreements are beyond the requirements of condition 2.25 and have been developed for varying purposes but represent support for the project through the agreement reached. Some of these agreements cover all impacts of the windfarm while other agreements do not specifically cover all impacts of the project.

   The attached tables (A to D) summarise the associated property and residences that are subject to agreements and the nature of the associations. Also attached is drawing no. GR-PM-DWG_0210 which shows the locations of the associated properties relative to the wind farm project area.

   While associated properties have agreements in place, this has not meant that they have been disregarded by impact assessments. The assessments for associated properties related to the scope of the agreements and applicable assessment criteria for issues such as noise or visual.

   In relation to visual impacts several assessments were undertaken as part of the modification application process including Gullen Range Wind Farm – Modification Application – Visual Review. ERM, March 2014.

   The ERM Visual Review, March 2014 referenced 16 additional photomontages prepared as part of the Visual assessment for the Modification Application. The report stated that:

   - "*The amended locations of the wind turbines and the reduction in wind turbine heights do not bring about any perceptible change to the level of visual impact. The minor alterations in arrangement are barely discernible even when the two layouts are compared one above the other. In reality once construction is completed there will be no discernible difference to any viewer.*"

   In the case of **Residence B20** where the neighbour has raised concerns about the modification and increased visual impacts *("relocation of turbines closer to home reduces visual enjoyment of*

property"), the review of the B20 property in the Submissions Report, 2014 shows that no turbines within 2km of the B20 residence have moved closer to the B20 residence and any claim that the visual impact of the wind farm has increased for Residence B20 due to modified turbine locations does not appear justified. The noise impact at Residence B20 is expected to be compliant with criteria for non-associated residences. Noise monitoring, additional to the approved Noise Compliance Plan, has been undertaken at Residence B20.

Residence PW37 is located on Prices Lane beyond 2km from the nearest turbine and is subject to an agreement relating to an easement for installation of cables between the Bannister Group and the substation. The agreement does not specifically address all the potential impacts of the wind farm. It is noted that the Development Consent for Residence PW37 was only obtained in July 2011, almost one year after the Project Approval for GRWF.

Residence PW37 is expected to be compliant with criteria for non-associated residences. In respect of visual impact, a signed landscaping agreement has been completed with PW37 and that focuses on the more distant views to Bannister turbines (BAN30 at greater than 3km distance). The view from the residence to the nearest turbine, POM01 at 2.1km is largely obstructed by a very large shed to the east of PW37 residence. POM01 was moved 56m further from PW37 residence location.

Tables A to D – Summary of Associated property and residences that are subject to agreements and the nature of the associations.

A - Host Land where turbines are located on leased land			
Map Ref.	**Residence number**	**Property Name**	**Comment uncontracted impacts assessed**
1	No residence	Maberly	Noise assessment not applicable as no residence.
6		Carl Banfield	
12		R Ritchie	
3	B53	W. Leonard	Noise assessment undertaken as associated residence.
4	B1	C Banfield	
5	B6	Raymond John Gay	
7	B2	Pat McCormack	
8	B3	John Klem Trust	
10	G37a	T Bush	
11	G37	T & R Bush	

Note: Host properties 2 and 9 are owned by proponent, see Table below

B - Acquired Land – Owned by Proponent				
Map Ref	**Property number**	**Property Name**	**Infrastructure**	**Comment uncontracted impacts assessed**
2	B27	Goulburn Land ex Elliot	WTG/Cable/Road Lease	Proponent owned.
9	No residence	Goulburn Land ex part of Pomeroy West		
	No Residence	Goulburn land - ex Hewitt	No infrastructure	
	B8	Goulburn land - ex Picker-Wales		
	B29	Goulburn Land - ex Hyde		
	PW34	Goulburn land - ex Benjamin		

C - Associated neighbouring residences with agreements that cover all impacts			
Residence number	**Landowner**	**Nature of Agreement**	**Comment uncontracted impacts assessed**
B33	Hart	Agreement accepts all impacts. & Release from acquisition requirement.	Noise assessment undertaken as associated residence.
B121a/B122a	Montgomery		
B12a	G. Price Jones	Agreement accepts all impacts.	
B18 & B18a	Durrant		
B17& B7	Montgomery		
B9	Bluevale		
PW7	Ikin		
B12	H. Price Jones	Agreement accepts all impacts, with negotiated noise limit.	Property was fully assessed prior to becoming associated in October 2014. Compliance with negotiated noise limits assessed during operational noise compliance review. Landscape plan agreed and being implemented.

Table D addresses two residences B20 and PW37 that are located in proximity to the cable route between Bannister Group and the Substation in the Pomeroy area. The agreements were needed in respect of cable easements rather than for wind farm impacts.

D - Associated neighbouring residences subject to agreements but not specifically covering all impacts of the project					
Map Ref	**Residence number**	**Landowner**	**Nature of Agreement**	**Comment on Assessment of Noise impact**	**Comment on Assessment of Visual impact**
D1	B20	Post	Cable in adjacent Crown Land and Essential Energy OHL upgrade access	The Revised Noise Assessment predicts compliance with non-associated criteria for this property. Noise monitoring has been undertaken at the residence. This monitoring is in addition to the requirements of the approved Noise Compliance Plan.	The turbines within 2km of the Residence B20 have not moved toward B20 and have not increased visual impact at B20 residence. Visual assessment by ERM stated that: *"The amended locations of the wind turbines and the reduction in wind turbine heights do not bring about any perceptible change to the level of visual impact. The minor alterations in arrangement are barely discernible even when the two layouts are compared one above the other. In reality once construction is completed there will be no discernible difference to any viewer."* (reference: ERM March 2014)
D2	PW37	Portelli	Underground Cable Easement. It is noted that this Residence gained Development Consent in July 2011, after the windfarm was approved.	The residence is beyond 2km from the closest turbine (POM01) which was moved 56m further away from PW37. Noise impact at PW37 can be expected to be compliant with noise criteria for non-associated residences.	The residence is beyond 2km from the closest turbine (POM01) that has moved 56m further away. There is a very large shed between PW37 and POM01 that obstructs the view of the wind farm from the residence. Visual assessment by ERM stated that: *"The amended locations of the wind turbines and the reduction in wind turbine heights do not bring about any perceptible change to the level of visual impact. The minor alterations in arrangement are barely discernible even when the two layouts are compared one above the other. In reality once construction is completed there will be no discernible difference to any viewer."* (reference: ERM March 2014)

2. The results of any noise compliance monitoring that would be relevant to considering the impacts on these properties.

As required by Project Approval operational wind farm noise monitoring has been carried out in accordance with the Noise Compliance Plan (approved as part of the Operation Environmental Management Plan (OEMP)) at seventeen (17) monitoring locations in the vicinity of the Gullen Range Wind Farm. Marshall Day Acoustics, a recognised independent noise expert consultancy, has been engaged to carry out the Noise Compliance programme. The 17 locations where noise compliance assessment is being undertaken are the 17 locations where background noise was previously undertaken and will provide evidence of the reliability of noise predictions and confidence in compliance at other locations. To obtain meaningful data, a minimum amount of suitable data (spanning the key wind directions and wind speeds) must be obtained. This means that the monitoring can require a long period of time to gain sufficient data.

This monitoring is based on data collected between 9 December 2014 and 23 June 2015. The monitoring activities have been protracted due to a requirement in a specific location to collect further data where background noise was impacting on the ability to complete the assessment.

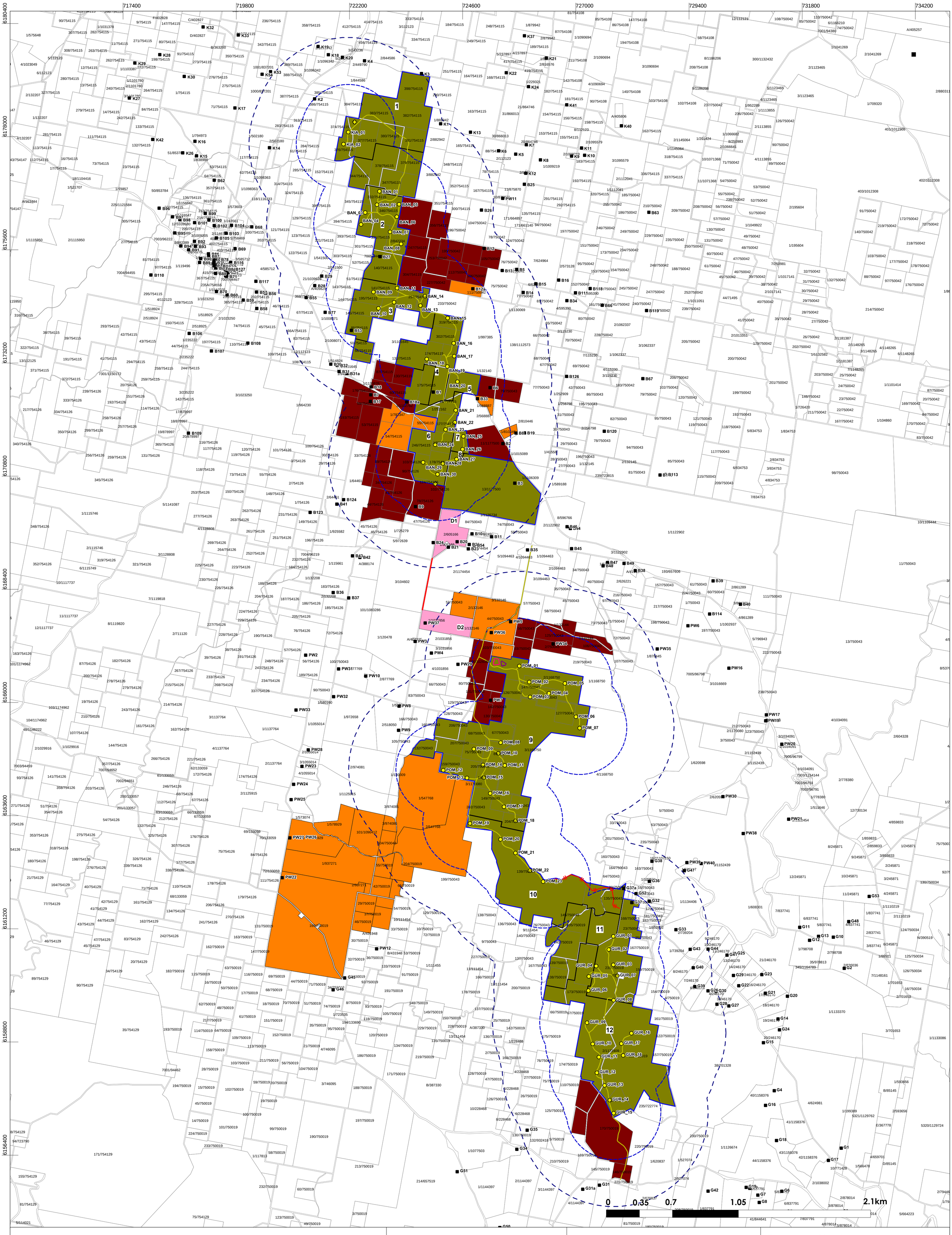
The analysis of the data collected and the subsequent reporting are still to be finalised, however based on interpretation of the data to date, the results support that wind farm noise levels are compliant with the applicable limits at the related receiver locations.

In the unanticipated event that the final analysis of the compliance testing shows that the project is non-compliant in a specific area, the project has an approved Noise Management Plan (also part of the approved OEMP) to address any noncompliance. This noise management plan will ensure that the project is compliant for the final turbine locations.

3. Clarify whether Goldwind has any objections to the amendments to the project approval recommended by the Department to the PAC.

NGRWF has previously advised its comments on the suitability of the conditions and DPE has advised some minor amendments in the DPE correspondence of 24 June 2015. NGRWF does not object to these changes to the conditions set out in that correspondence.

Attachment B: Map GR-PM-DWG 0210 – Project lands and associated properties



LEGEND

- Houses
- Wind turbines
- 1km to closest turbine
- 2km to closest turbine
- Site Divisions
- Final design roads (Catcon Jan '14)

Cadastre (NSW LPI March '14)

- Associated landowners by project area
- Associated landowners by agreement
- Land subject to condition 2.25
- Associated land listed in Tabe D and not subject to condition 2.25
- Non-associated landowners

- Project boundary
- Medium voltage link
- 33kV overhead line
- Switching station
- Substation
- Permanent met mast

Note: Grid markings in MGA94 zone 55

GULLEN RANGE WIND FARM PTY LTD

PREPARED BY

EPURON

PROJECT

GULLEN RANGE WIND FARM

TITLE

Information to DPE for Associated Lands

Document Number

GR-PM-DWG_0210

Revision	Layout ID
C	6a

SCALE	DATE	DRAWN
1:35,000 at A1	25/06/15	PM

Memorandum

To	Planning and Assessment Commission				
From	David Kitto Executive Director Resource Assessments and Business Systems				
Date	14 August 2015	**File no**	MP07_0118	**File**	20150814 memo DK to Commission additional info.doc

Subject: Gullen Range Wind Farm Project (MP 07_0118)

Purpose

To provide additional information on the Gullen Range Wind Farm Project to the Planning Assessment Commission (the Commission).

Background

To provide additional information on:

- the Department's technical review of the Wind Farm Operational Noise Assessment
- selected redrafted conditions; and
- further information regarding the visual impact on selected properties.

Issue

1. Wind Farm Operational Noise

The Department's technical review of the *Gullen Range Wind Farm Operational Noise Assessment* (17 July 2015) is provided in **Attachment A.**

The review concluded that data presented in the report indicates that compliance is being demonstrated at all of the nearest identified receivers under worst case scenarios. The Department notes that a very conservative approach has been taken in determining compliance and as a result, is confident that the Gullen Range wind farm is operating within its noise limits and is meeting all requirements in regards to noise.

The operator of Gullen Range wind farm has committed to reassessing its data sets for tonality in respect to ISO 1996.2 or collecting additional data if required. A further report on tonality will be provided to the Department. Notwithstanding the outcome of any further report, the tonality issue identified with the GW100 turbines is not a mechanical problem, but is caused as a by-product of magnetic flux causing a torque ripple. This can be further addressed by software modifications if necessary.

2. Redrafted conditions

The Department has redrafted conditions 2.2 and 2.3A to provide clarity about the timing of the notification of landscaping provision and colour treatment to the perimeter fencing of the substation / switchyard. An additional condition for establishment of a Community Consultative Committee has been provided in condition 5.7.

These conditions are provided in **Attachment B.**

3. Further information regarding B28, B55, B77 and K2

Further information is provided on properties B28, B55 and B77 as they are located within close proximity to B29 which was recommended for acquisition in the Assessment Report (July 2014). B28 and B55 are located south-west of B29. B77 is located south of B29. Further information is also provided on property K2.

The Department notes that condition 2.2 of the project approval provides access to landscaping provisions for any residence located within 3 km of turbines.

The visual impact on these properties has been variously assessed in the Land and Environment Court decision (2010), the Assessment Report (July 2014) and the Draft Order issued to the proponent in October 2014.

B28
The Land and Environment Court decision (2010) (Court decision) specifically considered the visual impact on residence B28 from the project. The Court decision noted that existing vegetation at B28 shielded the view of the turbines and concluded that the impact on residence B28 did not warrant modification or refusal of the project. The Assessment Report (July 2014) for the modified turbine locations, considered that the existing vegetation and ancillary farm buildings around the residence between the residence and the wind farm shielded views of the turbines.

The Court decision, Assessment Report (July 2014) and the Draft Order did not find that there was an unacceptable impact on residence B28 or recommend its acquisition.

The property owner of B28 has agreed to landscaping provisions on their property. The Department notes that these have been implemented at the site.

B55
The Court decision specifically considered the visual impact on residence B55 from the project. It concluded that the impact on that residence did not warrant modification of the proposal or refusal of the proposal.

The Court decision considered that existing vegetation at residence B55 shielded the view of the turbines. The Court decision made further reference to the concern of the resident at B55 that the view would not be obstructed when deciduous trees would provide less screening. The Court decision considered that the visual impact would be low even if assuming the minimal screening at any time of the year.

The Assessment Report (July 2014) considered from a site visit, that that mature trees around the B55 residence curtilage would largely shield the views of the wind farm from this residence.

The Court decision, Assessment Report (July 2014) and the Draft Order did not find that there was an unacceptable impact on residence B55 or recommend its acquisition.

The proponent has offered landscaping provisions at B55 and is negotiating with the property owner to finalise this offer.

B77
The Court decision did not specifically assess the visual impact at B77. The Assessment Report (July 2014) considered that although minor changes were visible, there was no overall change to visual impact on residence B77 from the modified turbine locations.

The Court decision, Assessment Report (July 2014) and the Draft Order did not find that there was an unacceptable impact on residence B77 or recommend its acquisition.

The property owner of B77 has agreed to landscaping provisions on their property. The Department notes that these have been implemented at the site.

K2
The Court decision did not specifically assess the visual impact at K2. The Assessment Report (July 2014) stated that although residence K2 was recognised as having a high visual impact, the resulting visual impact from the modification is considered similar.

The Court decision, Assessment Report (July 2014) and the Draft Order did not recommend the acquisition of property K2.

The property owner of K2 was offered landscaping provisions but the property owner did not want any landscaping treatments to be carried out.

B29
The Court decision specifically considered the visual impact on residence B29 from the project. It concluded that the impact on residence B29 did not warrant modification or refusal of the proposal.

The Assessment Report (July 2014) concluded that there was greater visual impact on residence B29 from the modified turbine locations that could not be effectively screened. The Assessment Report (July 2014) recommended that property B29 be offered the opportunity to request acquisition or BAN_09 be relocated to its original positon. This was further reiterated in the Draft Order issued to the company which stated that BAN_08, BAN_09 and BAN_12 moved closer to B29 resulting in an unacceptable visual impact.

4. Further consultation with Goldwind
The Department contacted Goldwind and asked if it was open to entering into a negotiated agreement or acquiring any of these properties.

Goldwind indicated that the visual impact on these properties was consistent with the impacts that were approved by the Court decision.

Although Goldwind did not agree with the Department's findings in the Assessment Report (July 2014) about the visual impact on residence B29, nor the intent of the Department's Draft Order, Goldwind decided to acquire the property.

Goldwind highlighted that the property owner at K2 did not want any landscaping treatments to be carried out, that it has already implemented landscaping treatments at B28 and B77 and is finalising an agreement to provide landscaping treatments at B55.

Consequently, Goldwind advised the Department that it did not believe any negotiated agreements were required, and it could see no reason to justify any further property acquisition.

Conclusion

The Department notes that a very conservative approach has been taken in determining noise compliance and is confident that the Gullen Range wind farm is operating within its noise limits and is meeting all requirements in regards to noise.

The Department considers that the impact (including noise and visual impact) to residences B28, B55, B77 and K2 has not materially changed and is consistent with the original approval.

Recommendation

This memo is provided for the **consideration** of the Commission.

14/8/15

David Kitto
Executive Director
Resource Assessments and Business Systems

Memorandum

ATTACHMENT A – TECHNICAL REVIEW OF THE WIND FARM OPERATIONAL NOISE ASSESSMENT

Planning & Environment

Memorandum

To Mike Young

From Jeff Parnell

Date 14 August 2015 **File no** MP07_0118 **File** 20150814 Memo JP to MY.doc

Subject: Gullen Range Wind Farm - technical review of noise compliance monitoring

Purpose

To provide a technical review of the adequacy of *Gullen Range Wind Farm Assessment of Wind Farm Operational Noise*, 17 July 2015 (Rp 001 2014544SY) (operational noise assessment).

Background

The Gullen Range Wind Farm project (MP 07_0118) was approved by the Minister for Planning in 2009 and then by the Land and Environment Court in August 2010. The project approval allows the proponent to construct and operate up to 73 turbines.

Condition 2.21 of the project approval relates to verification of operational noise performance and requires the actions outlined in Table 1.

Table 1 Summary of project approval requirements for verification operational noise performance

Requirement	Condition of approval reference
Preparation of Noise Compliance Plan	condition 2.21
Assessment of the performance of the project against the noise predictions	condition 2.2 (a)
Noise monitoring to be undertaken within three months of commissioning of the wind turbines and submitted to the Department within one month of completion of the monitoring unless otherwise agreed with the Director General (now Secretary)	condition 2.21 (c) condition 2.21 (d)
The noise compliance assessment to be undertaken in accordance with the procedures presented in the Wind Farms: Environmental Noise Guidelines (SA, EPA 2003) (SA guidelines 2003) except that all sound power levels and wind speeds shall be referenced to hub height.	condition 2.21

Noise Compliance Plan

The Noise Compliance Plan, Gullen Range Wind Farm Operational Noise Management and Noise Compliance Plan, (4 October 2013) was prepared as part of the Operational Environmental Management Plan (OEMP). The OEMP, including the Noise Compliance Plan, was approved by the Department on 5 December 2013.

Noise monitoring following commissioning

A report has been prepared outlining the monitoring undertaken following commissioning: *Gullen Range Wind Farm Assessment of Wind Farm Operational Noise*, 17 July 2015 (Rp 001 2014544SY). Although the project approval requires this be undertaken within three months of commissioning and submitted to the Department within one month of completion of the monitoring, the Department granted an extension to Goldwind to 17 July 2015 which was met.

Issue

Guidelines

Condition 2.21 of the project approval requires noise from the wind farm to be assessed against the criteria specified in the preconstruction noise impact assessment report, in general accordance with the *Wind Farms: Environmental Noise Guidelines* (SA, EPA 2003) (SA Guidelines 2003).

The SA Guidelines 2003 were subsequently updated by the *Wind Farms: Environmental Noise Guidelines* (SA, EPA 2009) (SA Guidelines 2009). However, the current approval does not specifically reference the SA Guidelines 2009.

However, in accordance with condition 2.21, Marshall Day Acoustics developed a Noise Compliance Plan. This plan outlined the methodology for compliance monitoring aligning the methodology to the SA Guidelines 2009 and in some instances taking a more conservative approach, which the Department accepted.

Assessment of operational noise assessment

The operational noise assessment has been undertaken in consideration of both the SA Guidelines 2009 and the Noise Compliance Plan.

To avoid confusion regarding the minimum number of data points used in assessing compliance and in taking a conservative approach, Marshall Day nominated in the compliance plan that it would exclude all data points which were not collected from the worst case direction. While the SA 2009 guideline allows for substantial dilution of worst case data points by those collected from other directions (recommended at least 500 worst case points out of 2000 valid points), the Marshall Day proposal provides a much more stringent approach which the Department accepts.

Assessment of tonality

In accordance with the requirements of the EPL and approval, an assessment of tonality was done to the International Electrotechnical Standard IEC 61400−11 (IEC standard) and indicated that tonality is not a feature of the wind turbine noise at 14 of the 17 assessment locations. However the assessment did identify intermittently reportable tonality at assessment locations B8, B13 and G37.

In response, the operator identified the power conversion plants in the nacelle of the GW100 turbine as the likely source of tonality. For these turbine models it is possible to control tonality by changes to the computer software. The operator undertook an upgrade of the turbine controlling software across the whole wind farm and this was demonstrated to result in significant improvements to turbine performance at assessment locations B8 and G37 in monitoring undertaken in April 2015. Subsequent subjective testing in May 2015 indicated that tonality was not considered excessive, although it was still at marginally reportable levels at B8 and at B13. Notwithstanding, the software has been subjected to a further upgrade which the operator has indicated has further reduced the potential for generation of any tones.

Whilst the Department can be satisfied that tonality is not a feature at 15 of the 17 locations, it is currently inconclusive at locations B8 and B13. Given that the acoustic energy levels experienced at these locations are only marginally audible, it is highly unlikely that a perceptible tonality issue exists or is a characteristic feature of the wind turbines. This is supported by the subjective tests undertaken on data from these sites.

The Department and the EPA have discussed the issue of excessive tonality at length and agree that the IEC standard is not suitable for determining human responses at residential receivers and is more suited for technical ‘type’ testing. The SA Guidelines do not give good guidance on the identification of ‘excessive’ tonality apart from stating that methods and results of testing (such as in accordance with International Electrotechnical Standard IEC 61400−11) may help determine whether there is a characteristic tonality issue. All mechanical equipment

generates tones and acceptable levels of tonality are accounted for when setting noise criteria. Tonality only becomes a problem when excessive levels are experienced.

Both agencies agree that International Standard ISO 1996.2 provides more appropriate guidance on levels of excessive tonality. The ISO standard was referenced in the draft NSW Wind Farm Guidelines (2011) and the EPA is recommending its use in the soon-to-be-released revised version of the NSW Industrial Noise Policy. Goldwind has confirmed they will also undertake the tonality assessment against the ISO standard to confirm compliance.

Comment

The Marshall Day operational noise report provides an assessment of compliance in accordance with the required criteria and documentation. Where, the SA Guidelines 2003 was replaced with a more practical and no less stringent approach in SA Guidelines 2009, then this document has been referenced. Where additional clarification has been required, it has been provided in the approved Noise Compliance Plan. Table 2 identifies the key noise requirements and provides comment on whether the operational noise assessment complies with the guidelines.

While tonality does not appear to be a significant feature of the wind farm operation and is not a repeatable characteristic, it is recommended that additional assessment be undertaken to confirm that mitigation has been successful. While the consent and EPL require assessment against the IEC standard, it needs to be acknowledged that the standard was written for type testing of turbine noise in close proximity to the turbine. An additional assessment against contemporary receiver based tonality assessment approaches, for example those in ISO1996-2 would provide an additional demonstration of compliance.

The operator of Gullen Range wind farm has committed to reassessing its data sets in respect to ISO 1996.2 or collecting additional data if required. A further report on tonality will be provided. Notwithstanding the outcome of any further report, the tonality issue identified with the GW100 turbines is not a mechanical problem, but is caused as a by-product of magnetic flux causing a torque ripple. This can be further addressed by software modifications if necessary.

In regards to meeting dB(A) noise criteria, the data presented in the Marshall Day report indicates that compliance is being demonstrated at all of the nearest identified receivers under worst case scenarios. Whilst the data represents a snapshot of operations, a very conservative approach has been taken in determining compliance. As a result, the Department should have a high level of confidence that the Gullen Range wind farm is consistently operating within its noise limits.

Table 2 Summary of adequacy of noise compliance monitoring

Key Issue	Addressed in Report
Condition 2.21 – Develop noise compliance plan	✓
Condition 2.15 – Appropriate noise criteria identified	✓
Suitable monitoring locations selected	✓
Equipment meets required standards	✓
Appropriate wind screens used	✓
Appropriate wind speeds referenced	✓
Appropriate data exclusion rules adopted	✓
Acceptable quantity of data	✓
Clear representation of data and results	✓
Objective assessment of tonality and annoying characteristics	✓ ASIR
Clear discussion of results and conclusions	✓

ASIR. Conditionally adequate. Additional supporting information required

Recommendation

Pending the provision of additional data supporting the contention that further software modifications are not required, it is recommended that the **Director, Resource Assessments**, accepts *Gullen Range Wind Farm Assessment of Wind Farm Operational Noise*, 17 July 2015 (Rp 001 2014544SY) as acceptable analysis of the compliance of nearest identified receivers with the project approval for Gullen Range Wind Farm (MP 07_0118).

Jeff Parnell
14 August 2015

Memorandum

ATTACHMENT B - REDRAFTED CONDITIONS

2.2 By December 2015, the Proponent shall notify in writing:

a) all owners of existing or approved residential dwellings that are located within three kilometres of the project;
b) all owners of approved subdivision allotment where there is an approved dwelling entitlement, where such subdivision allotments were approved by the date of approval of the project that are located within three kilometres of the project;
c) the owners of Lot 55 of DP 754115;
d) but excluding the owners of Lot 118 of DP 1116333 and Lot 121 of DP 754115 and the owners of Lots 143 and 303 of DP 754115, Lot 2 of DP 541500 and Lot 2 of DP 541499
e) the owners of PW37

that they are entitled to landscaping treatments on their property in order to minimise the visual impact of the project on their property.

2.3 Upon receiving a written request from the landowner referred to in condition 2.2 to have landscaping treatments implemented on their property, the Proponent shall:

a) within fourteen (14) days of receiving the request, commission a suitably qualified person approved by the Secretary, to investigate reasonable and feasible measures to minimise the visual impacts of the project on the landowner's property using landscape treatments;
b) ensure that the qualified person provides a landscaping plan detailing the matters investigated and consequential recommendations within twelve (12) weeks of receiving such request; and
c) provide the landowner with a copy of the landscaping plan, including suggested landscape treatment measures, within fourteen (14) days of receiving the plan.

If the parties agree on the landscaping plan, then the Proponent shall implement the agreed measures with all landscaping being completed within three months (where practical). The Proponent shall maintain these measures, at their cost, for a period of two years. Access and notification arrangements are to be negotiated between the parties.

Landscape treatments shall include, but not be limited to, site preparation stock and rabbit-proof fencing, selection and planting of appropriate species decided by both parties, watering, weed control and the replacement of failed plants.;

If the parties are unable to agree on the landscaping plan within three months of the plan being provided to the landowner, or there is a dispute about the implementation of any agreed landscaping treatments, then either party may refer the matter to the Secretary for resolution. The Secretary's decision on such a referral shall be final and binding on the parties.

2.3A By 31 December 2015, unless otherwise agreed by the Secretary, the Proponent shall implement:

a) landscaping treatments to screen the substation and associated switching station for the project; and
b) colour treatment to perimeter fencing for the substation and associated switching station for the project to minimise glare,

to the satisfaction of the Secretary.

The landscaping treatments referred to in 2.3A a) must employ all reasonable and feasible mitigation measures and utilise mature plantings to screen the substation and switching station from the surrounding non-associated property PW4. Following the installation of the landscaping treatments, the Proponent shall maintain them over the life of project.

Community Consultative Committee

5.7 The Proponent shall establish and operate a Community Consultative Committee (CCC) for the project to the satisfaction of the Secretary. The CCC must be operational by 31 December 2015, unless the Secretary agrees otherwise, and it must be operated generally in accordance with the guidance in Appendix C of the draft *NSW Planning Guidelines Wind Farms* (December 2011), or any equivalent guideline.

Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Applicant complies with this consent.