

Biala Wind Farm

RESPONSE TO SUBMISSIONS

February 2016

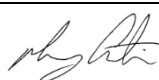


ERM REFERENCE
0178462RP01 RESPONSE TO SUBMISSIONS



ERM Document Control Record						
0178462RP01_F01 – Response to Submissions Report						
Version	Revision	Author	Reviewed by	ERM Approval to Issue		Comments
				Name	Date	
FINAL	F01	CB	MC	Murray Curtis	16 February 2016	Final report issues by ERM

Biala Wind Farm

Prepared by:	Claire Burnes
Position	Project Manager
Signed:	
Date:	16 February 2016
Approved by:	Murray Curtis
Position:	Partner
Signed:	
Date:	16 February 2016

Response to Submissions

Report prepared for Newtricity

ERM Reference: 0178462RP01

www.erm.com

This disclaimer, together with any limitations specified in the report, apply to use of this report. This report was prepared in accordance with the contracted scope of services for the specific purpose stated and subject to the applicable cost, time and other constraints. In preparing this report, ERM relied on: (a) client/third party information which was not verified by ERM except to the extent required by the scope of services, and ERM does not accept responsibility for omissions or inaccuracies in the client/third party information; and (b) information taken at or under the particular times and conditions specified, and ERM does not accept responsibility for any subsequent changes. This report has been prepared solely for use by, and is confidential to, the client and ERM accepts no responsibility for its use by other persons. This report is subject to copyright protection and the copyright owner reserves its rights. This report does not constitute legal advice.

CONTENTS

1	INTRODUCTION	
1.1	BACKGROUND	1
1.2	PURPOSE AND STRUCTURE OF THIS REPORT	2
1.3	CONTRIBUTORS	2
2	CONSIDERATION OF SUBMISSIONS	
2.1	PUBLIC EXHIBITION OF THE EIS	3
2.2	SUMMARY OF SUBMISSIONS RECEIVED	4
2.3	ANALYSIS PROCESS	5
2.3.1	CONSULTATION WITH DPE AND OTHER GOVERNMENT AGENCIES	5
2.3.2	PROJECT DESIGN AND REVISED STATEMENT OF COMMITMENTS	6
4	RESPONSE TO SUBMISSIONS	
4.1	DISCUSSION OF KEY ISSUES RAISED	7
4.1.1	ROAD ACCESS LOCATIONS / DESIGN	7
4.1.3	ROAD UPGRADE REQUIREMENTS	11
4.1.4	ABORIGINAL AND HISTORIC CULTURAL HERITAGE ASSESSMENT	11
4.1.5	BIODIVERSITY IMPACT ASSESSMENT	11
4.1.6	BLASTING ACOUSTICS ASSESSMENT	12
4.1.7	ADDITIONAL APPROVED DWELLING	13
4.2	AGENCY SUBMISSIONS	16
4.3	PUBLIC SUBMISSIONS	36
5	REVISED COMMITMENTS	
6	REFERENCES	

ANNEXES

ANNEX A	AGENCY SUBMISSIONS
ANNEX B	PUBLIC SUBMISSIONS
ANNEX C	SCHEDULE OF ROAD UPGRADE REQUIREMENTS
ANNEX D	UPDATED CULTURAL HERITAGE ASSESSMENT
ANNEX E	ADDENDUM TO BIODIVERSITY IMPACT ASSESSMENT
ANNEX F	REVISED VEGETATION MAPPING AND ANALYSIS
ANNEX G	BLASTING ACOUSTICS ASSESSMENT
ANNEX H	ASSESSMENT OF IMPACTS ON ADDITIONAL APPROVED DWELLING (DNVGL)
ANNEX I	SUPPLEMENTARY MATERIAL - VISUAL IMPACTS (CLOUSTON)

LIST OF TABLES

<i>TABLE 1.1</i>	<i>RESPONSE TO SUBMISSION REPORT CONTRIBUTORS</i>	<i>2</i>
<i>TABLE 2.1</i>	<i>RESPONDENT DETAILS</i>	<i>4</i>
<i>TABLE 4.1</i>	<i>APPROXIMATE COORDINATES OF DWELLING DA18</i>	<i>13</i>
<i>TABLE 4.2</i>	<i>SUMMARY OF IMPACTS FROM PRIVATE RECEPTOR DA18</i>	<i>14</i>
<i>TABLE 4.3</i>	<i>RESPONSE TO AGENCY SUBMISSIONS</i>	<i>17</i>
<i>TABLE 4.4</i>	<i>SUMMARY OF KEY COMMUNITY ISSUES</i>	<i>36</i>
<i>TABLE 4.5</i>	<i>PUBLIC SUBMISSIONS</i>	<i>37</i>
<i>TABLE 5.1</i>	<i>UPDATED SUMMARY OF MITIGATION MEASURES FOR THE PROJECT</i>	<i>65</i>

LIST OF FIGURES

<i>FIGURE 4.1</i>	<i>REVISED ACCESS POINTS AND ROADS, DECEMBER 2015</i>	<i>10</i>
<i>FIGURE 4.2</i>	<i>INSERT FIGURE 4-2 (DA18)</i>	<i>15</i>

Newtricity (the Proponent) is seeking approval for the construction and operation of the Biala Wind Farm, situated near the locality of Biala in the Southern Tablelands region of New South Wales (NSW) (the Project). The Project is located approximately 14.5 km south-west of Crookwell and 8.5 km east of Biala, and is wholly contained within the Upper Lachlan local government area (LGA).

The Project will involve the construction of 31 wind turbine generators (WTGs) at a maximum tip height of 185 metres (m) above ground level (AGL) and an indicative generation capacity of 77.5 Megawatts (MW). Support infrastructure includes an electrical reticulation network and substation, internal access roads and permanent operations and maintenance facilities together with a temporary concrete batching plant, site offices and equipment storage area that will be utilised during the construction period.

The Project Area (PA) covers approximately 1,936 hectares (ha), on which the WTGs, electrical reticulation network, access roads and ancillary structures will be located. Newtricity has entered into commercial lease agreements with four landholders hosting Project infrastructure, which encompasses 37 individual land parcels.

A 132 kilovolt (kV) overhead transmission line is proposed to connect the on-site substation within the PA to the existing 132 kV Yass to Goulburn transmission line located approximately 22 kilometres (km) south of the wind farm site. Approval for the transmission line will be sought separately to the wind farm, with the planning approval pathway yet to be determined subject to further investigation and identification of the final alignment, and further consultation with Essential Energy as the ultimate owner and operator of the transmission line.

The Project was declared as 'State Significant Development' (SSD) in accordance with clause 20, Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011* and is to be assessed by the Department of Planning and Environment (DPE) under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Project was referred to the Commonwealth Department of Environment (DoE), and a Delegate for the Minister for the Environment determined under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that the Project is not a controlled action.

In support of the SSD application, an Environmental Impact Statement (EIS) was prepared for the Project in accordance with the requirements of the *Environmental Planning and Assessment Regulation 2000*, which was submitted to DPE in July 2015 and subsequently publicly exhibited between 21 August 2015 and 20 October 2015 (refer Section 2.1).

1.2 *PURPOSE AND STRUCTURE OF THIS REPORT*

This 'Response to Submissions' (RtS) Report has been prepared to provide considered responses to the issues raised during the public exhibition period of the EIS in accordance with Section 79C (1) of the EP&A Act.

The report will be submitted to DPE so that the Development Application lodged by Newtricity can be further assessed and determined.

The report outlines the exhibition and response process in Chapter 2; provides a discussion of the key issues raised during exhibition and considered through further investigation during preparation of the RtS Report in Section 4.1; presents considered responses to issues raised by various agencies and the public in Sections 4.2 and 4.3 respectively; and provides an amended table of committed mitigation and management measures that will be implemented as part of the Project going forward.

1.3 *CONTRIBUTORS*

The RtS Report has been prepared by ERM in consultation with numerous agencies, and with contribution by a number of specialist subconsultants who were responsible for preparation of specialist assessments undertaken as part of preparation of the EIS, as summarised below.

Table 1.1 Response to Submission Report Contributors

Issue	Responsibility
Aboriginal & Cultural Heritage, Biodiversity, Blasting, Other Minor Issues	ERM
Visual	Clouston Associates (Clouston)
Transport	GTA Consultants
EMI	DNV GL
Noise	DNV GL
Shadow Flicker	DNV GL

2.1 PUBLIC EXHIBITION OF THE EIS

The EIS was publicly exhibited between 21 August 2015 and 20 October 2015 at the following locations:

- Department of Planning and Environment: Information Centre, 23-33 Bridge Street, Sydney;
- Upper Lachlan Shire Council's Gunning office: 123 Yass Street, Gunning;
- Upper Lachlan Shire Council's Crookwell office: 44 Spring Street, Crookwell;
- Upper Lachlan Shire Council's Gunning Library: 92 Yass Street, Gunning;
- Upper Lachlan Shire Council's Crookwell Library: Memorial Hall Centre, Denison Street, Crookwell; and
- Nature Conservation Council: 2/5 Wilson Street, Newtown.

A copy of the EIS was also available to the public on the DPE Major Projects website throughout the exhibition period.

Local residents were notified of the exhibition period via the following methods:

- newspaper advertisements placed in local newspapers by DPE;
- update on the Project website (<http://www.newtricity.com.au/biala-wind-farm>);
- the Community Information Day held on 19 September 2015; and
- Volume 5 of the Project Newsletter, which was placed on the Project website (http://www.newtricity.com.au/images/PDF/Biala/0178462_NewsAug2015.pdf) emailed/posted to anyone who had previously registered interest in the Project, and distributed as hard copies to:
 - the local Council offices and Grabben Gullen pub;
 - members of the Project's Community Consultative Committee (CCC); and
 - as inserts in the Crookwell Gazette on 20 August 2015.

A total of 50 submissions were received, consisting of 11 from government agencies and 39 from members of the public / community groups, including four public submissions that were received following close of the exhibition period. Respondent details are provided in *Table 2.1*. Copies of agency and public submissions received are provided in *Annexures A* and *B* respectively.

Table 2.1 **Respondent Details**

Respondent ID	Respondent Name
Agency Stakeholders	
1	AirServices Australia (ASA)
2	Civil Aviation Safety Authority (CASA)
3	Australian Department of Defence (DoD)
5	NSW Health
13	NSW Department of Industry - Resources & Energy (DoI)
14	NSW Transport - Roads & Maritime Service (RMS)
16	Upper Lachlan Shire Council (ULSC)
27	NSW Office of Environment & Heritage (OEH)
44	NSW Department of Primary Industries - Lands (DPI Lands)
45	NSW Environment Protection Authority (EPA)
46	NSW Department of Primary Industries (DPI)
Public/Community Stakeholders	
4	Parkesbourne/Mummel Landscape Guardians Inc.
6	Brent Lowrey
7	Jenny Hajek
8	Michael Crawford
9	Gregory Faulkner
10	Jane Penny
11	Pamela Hawke
12	Graham Hawke
15	Doctors for the Environment Australia
17	Anonymous of Crookwell
18	Leonie Martin
19	Michael Katz
20	Christine Saunders
21	Jane Keany
22	Mark Tomlinson
23	Elizabeth Tomlinson
24	Ulli Tuisk
25	Grabben Gullen Community Progress Association
26	Douglas Pittard
28	Jayne Apps
29	Rye Park Action Group
30	Nicholas Andersen
31	Biala Landscape Protection Group
32	Mark Sutton
33	Sara Brown
34	Anthony Hill

Respondent ID	Respondent Name
35	Rosemary Miller
36	Den O'Neill
37	Anthony Gardner
38	Barry O'Neill
39	Marguerite Gardner
40	John Fern
41	Anonymous of Mt Fairy via Braidwood
42	Ken Hewitt
43	Anonymous of Mt Fairy
47 ¹	John Emery & Charles Knight
48 ¹	Greg and Patricia Hallam
49 ¹	Stephen and Jennifer Medway
50 ¹	Malcolm Barlow
1. Late submission received following close of exhibition period.	

2.3

ANALYSIS PROCESS

Submissions have been separated for analysis and response into those provided by government agencies and those provided by community members / groups.

Government agency submissions have been addressed separately and in response to each of the individual items raised as they reflect detailed and specific issues related to the particular area of expertise of each agency. Consideration of the key issues raised by agencies is provided in *Sections 4.1* and *4.2*.

Public submissions have raised a number of recurring themes and issues. In order to provide a response that is coherent and of relevance to the broader community, responses to public submissions have been provided to these recurring themes and issues rather than to individual submissions with reference to the individual submissions to which each response relates (identified by Respondent ID as outlined in *Table 2.1* above). However, as far as possible, where specific concerns have been raised these have been specifically addressed. Tabulated responses to public submissions are provided in *Section 4.3*.

2.3.1

Consultation with DPE and other Government Agencies

Ongoing consultation with DPE representatives has been undertaken throughout the exhibition period and during preparation of the RtS report in consideration of submissions and responses. In addition, subsequent to receipt of submissions, and in response to a number of specific issues raised, further consultation has been undertaken with ULSC and OEH in order to clarify assessment requirements and consider appropriate actions and outcomes to address specific issues. This consultation has incorporated onsite meetings with both ULSC and OEH representatives and ERM and subconsultant specialists to discuss transport and biodiversity related issues

respectively.

2.3.2 *Project Design and Revised Statement of Commitments*

In consideration of the key issues raised and further consultation undertaken, a number of minor amendments to the Project design have been adopted during preparation of the RtS report. These are discussed further in *Section 4.1*, and including the following:

- Relocation of the northern, central and southern access points in order to improve sight distances along Grabben Gullen Road; and
- Minor amendments to the internal access road layout in order to improve environmental outcomes associated with potential archaeological and ecological impacts.

Other than the minor amendments described herein, the Project remains as described in the EIS. However, to reflect additional and / or amended requirements as identified through the exhibition and RtS process, an amended Statement of Commitments has been prepared and included in *Table 5.1*, which outlines the proposed commitments and mitigation measures that will be implemented as part of the Project going forward.

Provided in Section 4.1 below is a discussion of the key issues subject to further consideration and investigation during the exhibition and RtS process, along with tabulated responses to both agency and public submissions received during the exhibition period in Sections 4.2 and 4.3 respectively.

4.1 DISCUSSION OF KEY ISSUES RAISED

4.1.1 Road Access Locations/Design

The ULSC submission (refer *Annex A*) provided a number of comments and concerns regarding sight distance provisions of the proposed site access points off Grabben Gullen Road, which outlined the following in regards to this issue:

"Section 4.5.2: Sight distance - is substandard at the northern most and southern accesses. The proponent has suggested that a speed limit could be utilised to reduce sight distance requirements. ULSC property access standards require that an 85th percentile speed of 70 km/hr exists for a sight distance of 150 m. Unfortunately it is unlikely that motorists would obey such a speed limit in an isolated situation. To overcome this, the proponent must consider 'micrositing' the accesses to improve sight distance."

Background

An assessment of the available sight distance at each of the Project access points was undertaken and outlined in Section 4.5.2 of the GTA Report attached as Annex K to the exhibited EIS. The assessment indicated that the sight distance available at the proposed northern (an existing public road) and southern access points did not meet the Austroads requirements for a 100 km/h road.

The provided sight distance at each of the proposed access points did however meet the requirements for an 80 km/h road and as such, it was proposed that localised speed reductions (to 80 km/h) be introduced at these access points. As outlined in the feedback provided in ULSC's submission, this option is not preferred by ULSC, and therefore further assessment of alternate options has been undertaken, including consideration of alternate access points and specific intersection treatments at each to ensure the Austroads requirements are met.

ULSC, ERM, GTA staff and a representative of the Proponent, undertook a joint site inspection on 3 December 2015 to discuss and agree the most appropriate locations and treatments for each of the proposed access points. Summarised below are the agreed outcomes of this inspection.

Northern Access

The previously proposed northern access point had approximately 150 m available sight distance to the south, less than the 250 m required by Austroads.

The available sight distance to the south of the access is restricted by the existing crest in the road. A number of potential options to increase the available sight distance were considered at the site meeting:

- Option A: relocate the access further to the north;
- Option B: leave the access point at the currently proposed location and regrade Grabben Gullen Road to the south of the access point (i.e. lower the road by approximately 1 to 1.5 m); or
- Option C: remove vehicle access to the Project site from the north altogether.

Each of these options were considered suitable solutions that would satisfy design requirements. Should Options A or B be adopted, the available sight distances would meet the minimum requirements for a 100 km/h road set out in Austroads. Alternatively, should Option C be adopted, no vehicle access to the site would be provided from the north, with all vehicles required to access the site from the proposed central/southern access points.

Central Access

It was agreed that the central access could be relocated further to the south to improve the available sight distance. The sight distance at the revised central access exceeds the minimum requirements for a 100 km/h road set out in Austroads.

Southern Access

The previously proposed southern access had approximately 150 m available sight distance to the north, less than the 250 m (approx.) required by Austroads. It was therefore determined that the access point would need to be relocated either to the north or the south to meet the design objectives.

Due to a number of existing constraints, including land ownership, it was concluded that the access would need to be relocated approximately 200 m to the north. The sight distance at the revised southern access meets the minimum requirements for a 100 km/h road set out in Austroads.

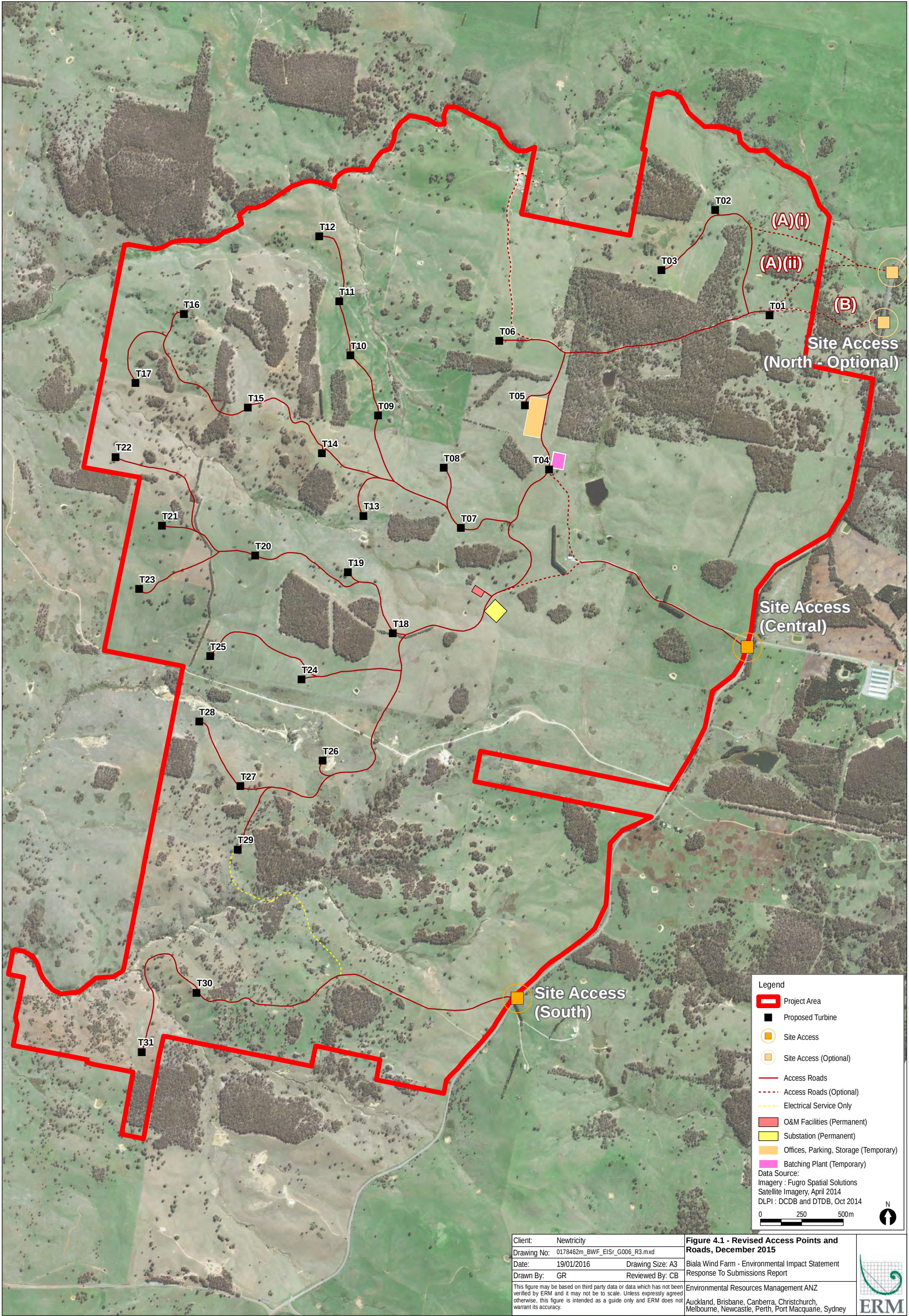
Summary

The revised central and southern vehicle access point locations, as determined collaboratively with ULSC, exceed the sight distance requirements set out in Austroads.

Whilst not yet confirmed, the identified options for the northern access point indicate that the minimum sight distance requirements can be met if an access point is to be provided at this location.

The revised access locations will result in some modifications to the internal road network layout, which have been considered as part of the broader RtS process, with no additional impacts identified as a result of the proposed amendments.

The revised locations for the northern, central and southern vehicle access points are illustrated in *Figure 4.1*. This figure also incorporates the removal of the previously proposed internal road connection between Wind Turbine Generators (WTGs) T29 and T30, which is now proposed as an internal electrical service connection only, in order to minimise impacts on Biala Creek, a 3rd order watercourse at this crossing location (identified as Watercourse Crossing 8 in the EIS). This amendment was made in response to DPI responses and in discussion with DPE, and further detail is provided in *Table 4.3*.



4.1.3 Road Upgrade Requirements

Consultation with DPE during preparation of the RtS report identified the requirement for confirmation of ULSC's required road upgrade works associated with the proposed Restricted Access Vehicle (RAV) route identified for the Project. Through subsequent consultation with ULSC, including a joint site inspection by ULSC, ERM, GTA staff and a representative of the Proponent on 3 December 2015, the road upgrade requirements, including drainage/causeway works, pavement rehabilitation, and intersection treatments, have been identified and are documented in ULSC's schedule of road upgrade works included as *Annex C*.

4.1.4 Aboriginal and Historic Cultural Heritage Assessment

OEH's submission identified a number of issues relating to the Aboriginal and Historic Cultural Heritage Assessment (AHCHA), which have been addressed in a revised AHCHA report for the Project attached as *Annex D*. Responses to each of the issues raised by OEH are provided in *Table 4.3*.

Revised mitigation measures addressing potential cultural heritage impacts associated with the Project, and reflecting amendments made in the updated AHCHA report, are included in *Table 5.1*.

4.1.5 Biodiversity Impact Assessment

The Ecology Impact Assessment included as Annex F to the exhibited EIS was prepared following completion of extensive seasonal ecology surveys undertaken between October 2012 and March 2014. Since preparation of the Ecology Impact Assessment and exhibition of the EIS, additional survey effort has been undertaken, including additional vegetation assessment and additional data collection using an ultrasonic bat detector.

Outlined below is a summary of the background and findings of the additional work undertaken. Responses relating to biodiversity issues raised in both agency and public submissions are provided in *Table 4.3* and *Table 4.4* respectively.

Bat Data Analysis and Updated Impact Assessment

At the time of preparation of the Ecology Impact Assessment, a mast-mounted bat detection unit had been installed at the PA, and it was considered valuable to continue data collection through the Autumn 2015 period. The mast-mounted bat detection unit has now been collected, and the results are outlined in an Addendum to the Ecology Impact Assessment presented as *Annex E* of this report. The Addendum consolidates the bat results from ground-level units previously reported in the Ecology Impact Assessment with the recently available data from the mast-mounted unit, and provides an updated impact assessment of the Project on bats. The Addendum concludes that the Project is unlikely to have a significant impact on any threatened bat species identified.

Following review of the Ecology Impact Assessment, OEH requested a site visit to verify vegetation communities present at the PA. The site visit was undertaken with an ERM ecologist on 25 November 2015.

Based on the results of this additional site visit and a review of available desktop information, the previously mapped Plant Community Type 728 (*Broad-leaved Peppermint – Brittle Gum Shrubby Open Forest on the Eastern Tablelands, South-Eastern Highlands Bioregion*) has been redefined as Plant Community Type 1097 (*Ribbon Gum - Narrow-leaved Peppermint grassy open forest on basalt plateaux, Sydney Basin Bioregion and South Eastern Highlands Bioregion*).

The revised mapping has identified some additional areas of the Endangered Ecological Community *Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland in the South Eastern Highlands, Sydney Basin, South East Corner and NSW South Western Slopes Bioregions*. Appropriate impact assessments were conducted for this Endangered Ecological Community in the EIS, which will be immaterially changed following this vegetation mapping revision.

The full report outlining methods and findings from the site visit, and updated maps of vegetation communities and habitat types at the PA are provided in *Annex F*.

4.1.6 *Blasting Acoustics Assessment*

It is not known at this stage whether blasting may be necessary for the Project, however blasting may sometimes be required during construction of wind farms associated with ground preparation works prior to the installation of handstands and footings at and near wind turbines.

ERM has undertaken a Blasting Acoustics Assessment for the Project as part of the preparation of this RtS Report (refer *Annex G*) to consider potential overpressure and ground-borne vibration associated with blasting should it be required as part of construction works for the Project.

Potential impacts have been assessed in accordance with the ANZEC Guideline and AS2187.2 and are considered to be negligible, if any at all.

Any blasting required during construction of the Project will be designed to achieve the relevant overpressure and ground borne vibration criteria. This commitment is reflected in Section 9 of *Annex G* and in the revised mitigation measures included in *Table 5.1*.

4.1.7

Additional Approved Dwelling

Following submission of the EIS to DPE for public exhibition, the Proponent was made aware of an additional approved residential dwelling (non-involved landholder) in the vicinity of the Project. A copy of the approved DA plan was obtained from ULSC, which indicate that the DA was lodged with ULSC on 29 May 2015 and development consent granted on 17 June 2015. The proposed dwelling is located south east of the Project within Lot 103, DP1174962.

ULSC advised that no coordinates were provided for the proposed dwelling, however some distances are indicated on the approved plans in relation to property boundaries. In order to estimate the position of the dwelling for assessment purposes, the plan provided by ULCS was georeferenced, matching the lot boundaries with the lot boundaries as per the DPLI data set. The estimated location of the proposed dwelling based on this data analysis is summarised in *Table 4.1* and illustrated on *Figure 4-2*, with the dwelling referred to as 'DA18'.

Table 4.1 *Approximate Coordinates of Dwelling DA18*

Dwelling ID	Status	Easting (m) ¹	Northing (m) ¹	Approximate Distance From Nearest WTG (m)
DA18	Non-involved	715847	6166184	2119
1. Coordinate System is WGS84 Zone 55H				

An assessment of the potential impacts of the Project on this proposed dwelling associated with operational noise and shadow flicker was undertaken by DNV GL as an addendum to the impact assessment reports previously prepared by DNV GL for the Project that were included as Annexures G and O in the exhibited EIS. A copy of the addendum report is provided in *Annex H*, and a summary of the findings of the assessment is as follows:

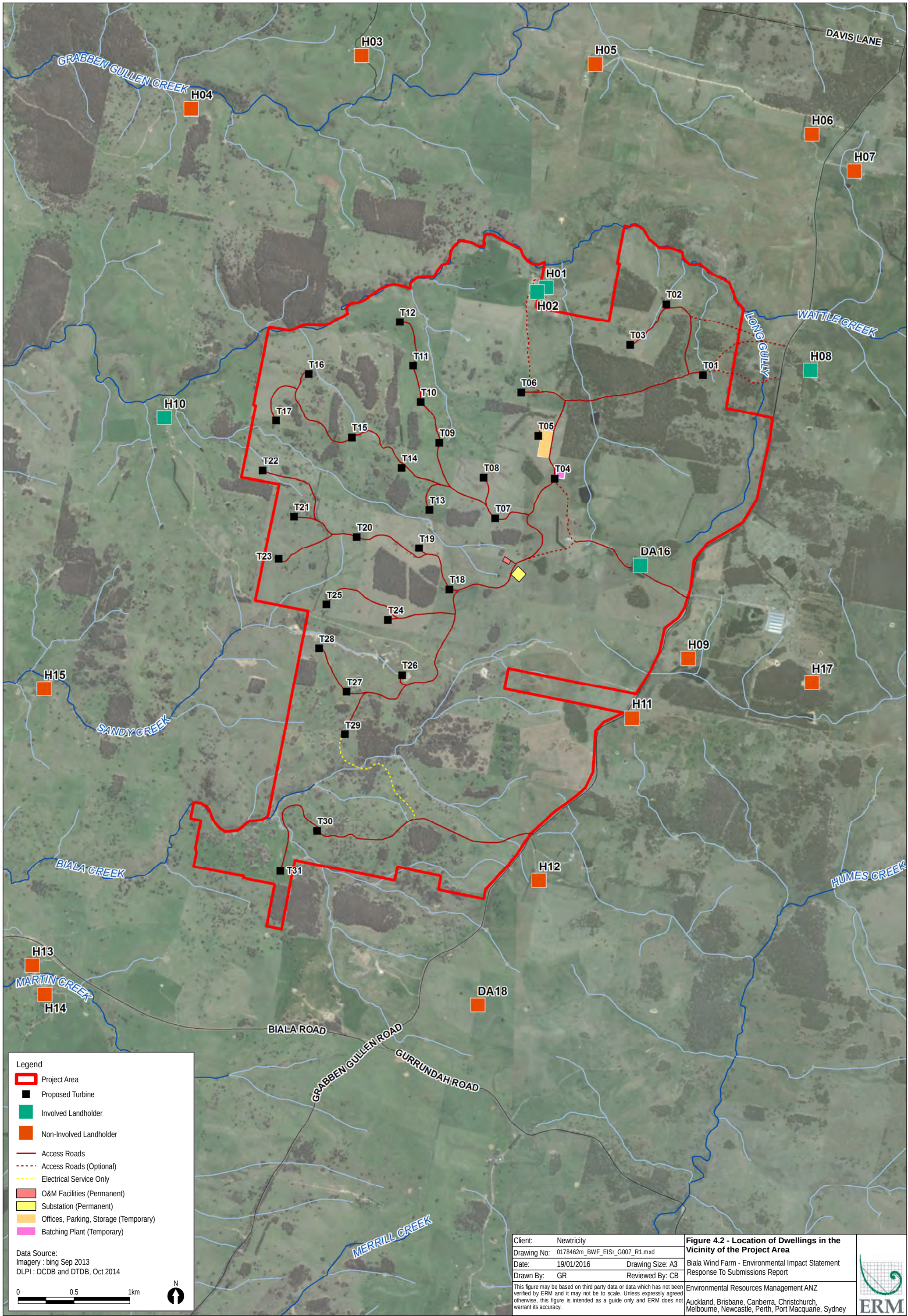
- It is predicted that the Project will comply with the required wind farm operational noise limits at house DA18; and
- The shadow flicker assessment for the Project assumed a maximum rotor shadow length of 1500 m (based on the more conservative of two available recommendations for this limit). Based on this recommendation and the nearest WTG being located in excess of 2000 m from the proposed dwelling, a shadow flicker duration of 0 hours per annum is predicted at the proposed dwelling based on the modelling approach described in Annex O to the exhibited EIS.

An assessment of the potential visual impacts of the Project on this proposed dwelling was undertaken by Clouston and is presented in Supplementary Material to the impact assessment report previously prepared by Clouston for the Project that was included as Annex I to the exhibited EIS. A copy of the Supplementary Material is provided in *Annex I*, and a summary of the findings of the assessment is tabulated below.

Table 4.2 ***Summary of Impacts from Private Receptor DA18***

Viewpoint No. and Description	Assessed Level of Impact
Viewpoint 11	Moderate/High
Residential Property - DA18	A review of the topography and vegetation in this area indicates this dwelling will have clear views to the north west with the two closest WTGs clearly visible and blade motion easily discernible. These WTGs will appear large and visually dominant. The upper portions of 11 more WTGs to the north may also be visible, partially obscured by the elevated ridgeline of the hill. Placement of the dwelling in a more elevated position may result in a greater number of WTGs being visible. A view from the peak of the hill would take in all 31 proposed WTGs. This would lead to a visual impact rating of 'High'.

No other significant impacts at this proposed dwelling have been identified as likely to occur as a result of the Project.



None of the agency submissions received raised any specific objection to the Project and all were generally supportive of the proposal and associated impact assessment and commitments made in the EIS. Many of the submissions identified generally minor issues for further consideration during the assessment of the Project, or required actions (such as further consultation) in the subsequent phases of the Project. Responses to each of the agency submissions are provided in *Table 4.3* below.

Table 4.3 Response to Agency Submissions

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
AirServices Australia	1	No issues raised	No issues raised	N/A
CASA	2	Obstacle Lighting	Recommends that the identified wind turbines on this project should be lit with steady low red intensity lighting at night as required under the National Airports Safeguarding Framework Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation.	The relevant section of the National Airports Safeguarding Framework Guideline D: Managing the Risk of Wind Turbine Installations is extracted below: "Lighting of wind turbines not in the vicinity of an aerodrome, with a height of 150m or more <i>Where a wind turbine 150m or taller in height is proposed away from aerodromes, the proponent should conduct an aeronautical risk assessment.</i> <i>The risk assessment, to be conducted by a suitably qualified person(s), should examine the effect of the proposed wind turbines on the operation of aircraft. The study must be submitted to CASA to enable an assessment of any potential risk to aviation safety. CASA may determine that the proposal is:</i> <i>(a) hazardous, but that the risks to aircraft safety would be reduced by the provision of approved lighting and/or marking; or</i> <i>(b) not a hazard to aircraft safety."</i> CASA has recommended lighting, but not required it. The Aeronautical Impact Assessment undertaken for the Project concluded that there would be an acceptable level of aviation safety risk associated with the potential for an aircraft collision with a wind turbine without obstacle lighting on the turbines of the Project. Notwithstanding, a lighting design was prepared by Aviation Protects as part of the Aeronautical Impact Assessment, which identifies obstacle lighting of the following wind turbine generators should lighting be identified as required: T01, T02, T03, T04, T05, T06, T07, T12, T14, T16, T18, T22, T23, T26, T28, T29, T30 and T31 If obstacle lights are to be installed, they would be designed so that there is an acceptable level of visual impact to neighbours. The following commitment is included in the table of mitigation measures included as Table 5.1 in the RtS Report: <i>Obstacle lighting is not considered to be required, however any night lighting design will be confirmed during detailed design in consultation with CASA, and would be designed in a manner to reduce visual impact, and within the frequency range that would enable the lighting to be visible to persons using night vision devices.</i>
Australian Government Department of Defence	3	Consultation Requirements	Confirms that the structures will meet the definition of tall structures, and therefore requires that the Developer provide AirServices Australia with 'as constructed' details. Requests to be consulted should there be any subsequent modification in wind turbine height or scale of development.	Noted. The following (amended) commitment has been incorporated in the RtS report: <i>WTG and monitoring mast heights and co-ordinates (including 'As Constructed' details following completion of construction) will be notified to CASA, DoD, ASA and AAAA as well as other aircraft operators in the region for inclusion in databases and navigational charts of the area.</i> Noted. Any such proposed change to the Project design would be subject of a modification application to DPE, which would involve consultation with relevant government agencies, including DoD.
		Obstacle Lighting	Requests that the Wind Farm should be lit in accordance with Civil Aviation Safety Regulation 139 and the CASA Manual of Standards 139. If Light-Emitting Diode (LED) obstruction lighting is applied to the Wind Farm, the frequency range of the emitted LED light is requested to fall within the wavelength range of 655 to 930 nanometres. This will enable the lighting to	Refer above response to CASA Obstacle Lighting requirements.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
		General	be visible to persons using night vision devices. Does not object to the project subject to clearance and adherence to conditions provided by AirServices Australia and CASA requirements.	Noted.
NSW Health	5	General	Notes that the EIS appears to comprehensively address any potential public health issues, particularly in regard to noise, vibration, shadow flicker and blade glint. The proposed monitoring, controls and mitigation measures for affected properties within 1km of the turbines (involved landholders), and affected properties within 2km of the turbines (non-involved landholders) appear to be adequate. Provided the proposed development complies with the recommendations of the Environmental Impact Statement, and meets the requirements of the Draft NSW Planning Guidelines: Wind Farms, this office would raise no objection to the proposed development.	Noted.
		Transmission Line Assessment	Requests to review and provide comment on the DA for the transmission line to connect the wind farm to the electricity grid.	As outlined in the EIS, the transmission line will be progressed under Part 5 of the EP&A Act, with Essential Energy as the determining authority, being the ultimate owner and operator of the infrastructure as part of their existing electricity network. Essential Energy will therefore have the responsibility of determining whether the proposed transmission line connection is likely to have a significant environmental impact that would designate the activity as 'Stage Significant Infrastructure' (SSI) under the EP&A Act. Should the Project be determined to be SSI, the assessment process would incorporate DPEs issue of SEARs in consultation with ULSC and relevant public authorities, and the EIS would be placed on public exhibition for at least 30 days. Alternatively, if no significant environmental impact is identified, the environmental assessment would involve preparation of a Review of Environmental Factors (REF) and associated consultation processes in accordance with Essential Energy's Environmental Assessment framework.
NSW Department of Industry	13	General	Has no objection to the Project with regard to potential mineral resources sterilisation and fully supports the Project. Notes that the construction and operation of the project is consistent with the NSW Government's policy to increase generation of renewable energy under the Renewable Energy Action Plan and the project brings investment to regional NSW (estimated at \$70m during the construction phase) and will provide jobs during construction and operation.	Noted.
Roads & Maritime Service (RMS)	14	General	Has no objection to the Project in principle subject to the conditions outlined in previous correspondence dated 5 August 2013 being included in the development consent.	RMS correspondence of 5 August 2013 contributed to DPE's formulation of DGRs for the Project, which have been addressed in the EIS and Transport Impact Assessment (GTA Consultants, 31/07/15) included as Annex K to the EIS. RMS comments outlined in this correspondence are summarised below, with responses to each of the identified issues outlined following.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
				<i>* Requirement for obtaining a permit for oversized and over mass loads from RMS prior to transporting any oversized or over mass loads.</i> The requirement for obtaining RAV permits has been highlighted in the EIS, and included as a specific item to be addressed in the Construction Traffic Management Plan (CTMP) that will be prepared for the Project prior to the commencement of construction (refer <i>Table 5.1</i> of the RtS Report for committed mitigation measures regarding traffic and transport related issues and impacts). <i>* Requirement for development of a Traffic Management Plan in consultation with RMS and ULSC's Local Traffic Committee.</i> Development of a CTMP has been committed in the EIS. The following (amended) commitment is included in the table of mitigation measures included as <i>Table 5.1</i> in the RtS Report, to specifically highlight the requirement for the CTMP to be developed in consultation with RMS and ULSC: <i>A Construction Traffic Management Plan will be prepared prior to the commencement of construction in consultation with RMS and ULSC's Local Traffic Committee, and will include (but not be limited to) the following...</i> <i>* If the Gunning Road option for the transporting of the components is adopted, all drivers of heavy vehicles associated with the development shall be required in any Transport Code of Conduct or similar policy/document, to use the grade separated intersection of the Hume Highway and Gunning-Collector Road for all movement onto the Hume Highway eastbound.</i> As outlined in the EIS and Transport Impact Assessment (GTA Consultants, 31/07/15) included as <i>Annex K</i> to the EIS, the preferred RAV Route to the PA (referred to as Route 4A in GTA's Transport Impact Assessment, and included as <i>Figure 13-2</i> of the EIS) will be via the same route used for the Gullen Range Wind Farm, and would access the PA via the north through Crookwell, as opposed to via the south through Gunning. This preferred route would involve access via the Hume Highway southern interchange through Goulburn, Crookwell-Goulburn Road and then bypassing the Crookwell Township via Grange Road, Cullen Street, Kialla Road and Range Road connecting to Grabben Gullen Road.
Upper Lachlan Shire Council (ULSC)	16	Consideration of Upper Lachland Development Control Plan 2010 (Visual Impacts)	In reference to the DCP requirement for assessment of visual impacts and scenic value, and consultation with ULSC and the community on appropriate visual impact measures, ULSC notes that the location and design of screen planting used as a mitigation measure is site specific and requires detailed analysis of potential views and consultation with surrounding landowner during the detailed design phase. It also notes that ULSC does not support roadside tree planting as a screening mitigation measure.	The EIS acknowledges that the location and design of screen planting used as a mitigation measure is site specific, requires detailed analysis and consultation with surrounding landowners. This was explicitly committed to as a mitigation measure in Table 18-1 of the EIS. Any vegetation screening would be confirmed during detailed design in consultation with impacted landowners and ULSC. Roadside tree planting would not be undertaken without agreement with ULSC. The following (amended) commitment is included in the table of mitigation measures within <i>Table 5.1</i> in the RtS Report, to specifically highlight the requirement for agreement with ULSC for any roadside tree planting: <i>* The potential visual impact of the Project from the selected private viewpoints could be mitigated by planting vegetation close to the view locations. For instance, tree or large shrub planting close to a dwelling can screen potential views to individual or groups of turbines. Similarly roadside tree planting can screen potential views of turbines from particular sections of road provided the turbine is not located some distance from the road.</i> <i>* The location and design of screen planting used as a mitigation measure is site specific and requires detailed analysis of potential views and consultation with surrounding landowners during the detailed design phase. Roadside tree planting would not be undertaken without agreement with ULSC.</i>
		Consideration of Upper Lachland Development Control Plan 2010 (Noise and Shadow Flicker Impacts)	In reference to the DPC requirement for turbine locations to be sensitive to existing related dwellings and for noise and shadow flicker to be minimised, ULSC notes that theoretical shadow flicker within 50m of the house location is predicted at 5 dwellings, 4 of which are predicted to be greater than the NSW Guidelines recommended limit of 30hrs per year within 50m of the house location, however these are all stakeholder dwellings. Requires that landholder agreements with these impacted/involved landholders be substantiated.	DPE are aware of the status of landholder agreements in place for the Project. Any approval received for the project is likely to include conditions whereby the Proponent will need to provide evidence to the satisfaction of the Director-General that lease agreements with site landowners have been established and provide adequate provisions relating to the Project.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response																									
		Consideration of Upper Lachland Development Control Plan 2010 (Communications Impacts)	In reference to the DPC requirement for a communications study to identify the existing status of communications and detail the proposed method of dealing with potential communication interference, ULSC notes that there are many parts of the ULS that have very poor radio, TV, mobile phone, two way reception and the like. Requires that the development should not detract from the reception of any of these or other communication methods, and where necessary, it may be required to install additional services to maintain such services in the vicinity of the development, in which case the work and equipment shall be at the developers cost. ULSC has concerns regarding the proponent's commitments to rectify communications issues if they arise, as there is no commitment to the process or timing of any proposed mitigation measures.	The Proponent is committed to identifying and rectifying any negative impacts to reception should they arise as a result of the Project. The EIS included a summary of mitigation measures for the Project (Table 18-1) which included commitments to identify and rectify any impacts on television reception considered to be caused from the Project. This commitment has been amended to incorporate these requirements within the Construction Environmental Management Plan (CEMP) that will be developed for the Project, so that appropriate processes and timing for these mitigations are developed prior to commencement of construction. The following amended commitment is included in the table of mitigation measures included as <i>Table 5.1</i> in the Rts Report: <i>The following measures will be incorporated in the Construction Environmental Management Plan (CEMP) to be developed for the Project prior to commencement of construction, including identification of processes and timing to address each issue:</i> <i>following construction, an assessment of the potentially affected dwellings, and at the request of the landholder of any other dwellings, will be undertaken to mitigate television reception impacts considered to be caused from the Project. Mitigation options to be considered will include a combination of the following:</i> <i>realigning the householder's TV antenna more directly towards their existing transmitter;</i> <i>tuning the householder's antenna into alternative sources of the same or suitable signal;</i> <i>installation of more directional and/or higher gain antenna at the affected dwelling;</i> <i>relocating the antenna to a less affected position;</i> <i>installation of cable/satellite television at the affected dwelling; and</i> <i>installation of a television relay station.</i>																									
				<i>any interference to radio broadcasting can be mitigated through the installation of a high quality antenna and/or amplifier;</i> <i>at the expense of the Proponent, the fixed point-to-point link within the PA operated by NSW RFS will be re-routed to avoid any obstruction to the service; and</i> <i>the potentially affected point-to-point link operated by ULSC will be re-routed, with the Proponent to lodge an agreed bond amount at the request of ULSC and supply all relevant Project information to undertake the works.</i>																									
		Transport and Access Assessment	Table 4.1 figures should be doubled Table 4.1 and 4.2 should provide information on the same basis i.e overall trips/turbine or max daily trips/turbine Section 4.2.1 Summary - all traffic should be shown (not half) as empty trucks will still occupy space on the road and have potential to be involved in crashes	Traffic generation can be presented as a trip (i.e. an in and an out movement) or as a movement. The report identifies the number of trips and then specifies the number of in and out movements. As requested the updated table below provides a summary of the daily traffic movements. Table 4.1: Maximum Daily Movements <table> <tr> <th>Site</th><th>No. of Turbines</th><th>Construction Period</th><th>Maximum Daily Movements During Construction</th><th>Maximum Daily Trips per Turbine</th></tr> <tr> <td>Gullen Range, NSW</td><td>84</td><td>12 – 24 months</td><td>596vpd</td><td>7.1</td></tr> <tr> <td>Rye Park, NSW</td><td>119</td><td>18-24 months</td><td>592vpd</td><td>5.0</td></tr> <tr> <td>Crookwell 3, NSW</td><td>30</td><td>NA</td><td>154vpd</td><td>5.1</td></tr> <tr> <td>Paling Yards, NSW</td><td>59</td><td>18 months</td><td>240vpd</td><td>4.1</td></tr> </table> GTA has presented the two metrics as they demonstrate two different measures, allowing assessment of the daily impacts and the overall traffic generation from the site. Identifying the maximum daily trips allows assessment of the worst case (or highest traffic generation period) scenario on the road network. The 'empty' truck movements are identified as the 'out' movement, with the delivery truck movements identified as the 'in' movements. The wind farm is anticipated to generate up to 220 daily movements during construction and a total of 14,774 movements across the construction period.	Site	No. of Turbines	Construction Period	Maximum Daily Movements During Construction	Maximum Daily Trips per Turbine	Gullen Range, NSW	84	12 – 24 months	596vpd	7.1	Rye Park, NSW	119	18-24 months	592vpd	5.0	Crookwell 3, NSW	30	NA	154vpd	5.1	Paling Yards, NSW	59	18 months	240vpd	4.1
Site	No. of Turbines	Construction Period	Maximum Daily Movements During Construction	Maximum Daily Trips per Turbine																									
Gullen Range, NSW	84	12 – 24 months	596vpd	7.1																									
Rye Park, NSW	119	18-24 months	592vpd	5.0																									
Crookwell 3, NSW	30	NA	154vpd	5.1																									
Paling Yards, NSW	59	18 months	240vpd	4.1																									

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			Section 4.5.2 Sight distance - is substandard at the northern most and southern accesses. The proponent has suggested that a speed limit could be utilised to reduce sight distance requirements. ULSC property access standards require that an 85th percentile speed of 70 km/hr exists for a sight distance of 150m. Unfortunately it is unlikely that motorists would obey such a speed limit in an isolated situation. To overcome this, the proponent must consider 'micro-siting' the accesses to improve sight distance. Section 4.5.3 - the warrants for turning lanes has been poorly dealt with in the traffic impact assessment. In the assessment, the traffic generated by the development appears to have not been added to the baseline traffic on Grabben Gullen Road. Given that the intersections are not located in the most ideal positions, further consideration should be given to BAR/BAL treatments. Also the base line traffic value used was 50vpd - ULSC measured 480 AADT in 2013 (it would be more appropriate to use a baseline figure of 550vpd). Grabben Gullen Road (MR52) - is a Regional Road (not a State Road) and is controlled by ULSC (not RMS). Kialla Road was only partly reconstructed for Gullen Range Wind Farm - 7.7km of it was not reconstructed and will require re-assessment before use by RAVs. ULSC prefers the use of Route 4A for RAVs, however: Part of Kialla Road that hasn't been reconstructed must be reassessed to determine if it is able to carry the loads imposed upon it. There is 7.7km of the road that is in this condition; ULSC will not allow Route 4A to be used for heavy construction and light vehicle traffic associated with the development. This is due to the route traversing through residential areas. To use the route for all traffic the development would introduce safety concerns and also result in many complaints from the local residents. ULSC expects the proponent to implement systems that: a) identify all vehicles that are associated with the development b) ensure that all vehicles use routes that have been identified for use by the development. There are four causeways on Kialla Road that will be impassable by SPVs carrying 70m blade segments. The part of Range Road from Kialla Road to Grabben Gullen Road is not in a satisfactory condition to carry the projected over-mass and over-dimension traffic. The proponent will be required to drain and reconstruct the majority of this part of Range Road. The length of road involved in 7km.	Refer discussion provided in <i>Section 4.1.1</i> of Response to Submission Report. The turn lane warrants are based on peak hour traffic volumes and not daily traffic volumes, with a baseline traffic value of 50vph adopted for the assessment. The assessed baseline peak hour traffic volumes are generally consistent with updated traffic volume data provided by ULSC (2013 traffic surveys) which indicate that Grabben Gullen Road carried 43 peak hour movements. The warrants have been undertaken in accordance with the methodology set out in Austroads and indicate that a BAL/BAR treatment is required. Noted. Further consultation with ULSC (as opposed to RMS) will be undertaken as required with respect to potential impacts and construction work requirements associated with this road during preparation of the Construction Traffic Management Plan (CTMP) for the Project. Noted. Refer discussion provided in Section 4.1.3 of the Response to Submission Report. Noted. As subsequently agreed with ULSC, it is proposed to reconstruct approximately 2.5km of Kialla Road (not yet upgraded) as part of the Biala Wind Farm project assuming that Route 4A was adopted for the RAV's. Refer discussion provided in <i>Section 4.1.3</i> of the Response to Submission Report. Noted. As outlined in Chapter 13, the preferred route for general construction traffic does not follow Route 4A. As illustrated in Figure 13-2, the proposed route for general construction traffic (non-RAV heavy vehicles) is defined as 'Route 1', which would avoid heavy construction traffic traversing through residential areas. The majority of light vehicles would also use this route, however some light vehicles may be required to travel along Route 4A (i.e. any employees/personnel who live along this route). All vehicles associated with the construction of the Project could be identified with stickers on their windscreen, which would allow residents/community members to easily identify heavy vehicle movements associated with the project. All construction vehicles would be instructed to use the identified/agreed access routes when accessing the Project site. These requirements have been added to the committed list of mitigation measures to be dealt with during preparation of the CTMP for the Project. As subsequently agreed with ULSC, causeways on Kialla Road would be upgraded as part of the Project assuming that Route 4A was adopted for the RAV's. This will be addressed during detailed design and in preparation of the CTMP. Refer discussion provided in <i>Section 4.1.3</i> of the Response to Submission Report. As subsequently agreed with ULSC, it is proposed to reconstruct approximately 7km of Range Road (not yet upgraded) as part of construction of the Project assuming that Route 4A was adopted for the RAV's. This will be addressed during detailed design and in preparation of the CTMP. Refer discussion provided in <i>Section 4.1.3</i> of the Response to Submission Report.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			The turning circle diagrams shown on drawings 01, 06, 07, 08, and OS contain many errors. These must be corrected and the intersection modifications redesigned. ULSC is particularly concerned that drawing 07 of 22 shows a tree to be 'trimmed' on the inside of the Grange Road / Cullen Street. This tree is a protected, rare specimen of Australian Red Cedar and must not be touched. The intersection must be redesigned to move the travel path well away from inside of the curve (and the tree). The developer must provide design drawings for each access proposed to be constructed on MR54 to show that adequate room exists between the edge of MR 54 and the gate (or whatever other device) that regulates access into the property. ULSC has used speed limits on roads leading to two other wind farm developments with considerable success. The imposition of the limits improved the interaction between heavy vehicles and other road users considerably. Unfortunately, the current standards for the imposition of speed limits fail to address these situations adequately, with RMS being unlikely to support the imposition of limits and also likely to direct ULSC to remove any limits that it might impose itself.	As subsequently agreed with ULSC the swept path (Drawing 7 of 22) can be updated such that the protected tree on the inside of the corner is not impacted by the RAV's. It was agreed that other identified issues associated with the swept path drawings were minor and would be addressed during detailed design. Additional Commitment included: • <i>in consultation with ULSC, confirm swept path designs and provide detailed design drawings to ULSC for consideration prior to construction.</i> The access points will be designed such that a vehicle is able to store between the road and the control point (gate) without impeding vehicles on Grabben Gullen Road. Detailed drawings of the site access points will be completed at the detailed design stage, which will be undertaken in consultation with ULSC. Additional commitment included: • <i>in consultation with ULSC, confirmation of required upgrade works at each of the proposed site access points off Grabben Gullen Road to ensure safe and functional access to the site, including provision of detailed design drawings to ULSC for consideration prior to construction.</i> The Proponent would be supportive of the reduced speed limits on key routes in the vicinity of the site during the construction period. However, this is an issue for ULSC to resolve with RMS.
			ULSC endorses the use of Route 1 - Grabben Gullen Road for use by heavy construction traffic and light traffic. However, the following should be noted: Route 1 is not a B-Double Route; Route 1 comprises thin, old pavements that will require some strengthening prior to work commencing and will also require rehabilitation post construction.	Noted.
		Connection to the electricity reticulation network	DPE to confirm arrangements are in place.	The environmental assessment and approvals process for the transmission line connection is discussed in Section 6.9 of the EIS. The construction of the wind farm, provided it is approved under the Part 4 of the EP&A Act, will be dependent on the approval of the transmission line under Part 5 of the EP&A Act.
		Community Enhancement Program	ULSC considers that the proponent has not addressed Clause 3.17 Community Enhancement Program - Upper Lachlan Development Control Plan 2010. Therefore, in lieu of a detailed response from the proponent. ULSC shall require the imposition of a condition that states: "Prior to the commencement of construction of the project, the proponent is to prepare a Community Fund Program prepared in consultation with the ULSC to be funded by the proponent at a minimum rate of \$2,500 per constructed turbine per annum (indexed to the consumer price index for Sydney (Housing) commencing at the September 2010 quarter). The Community Enhancement Program is to be managed by a legal entity established in accordance with the Local Government Act 1993.	The Proponent is committed to establishing a Community Enhancement Program. Section 6.6.1 of the EIS refers to the DCP requirement for preparation of a Community Enhancement Program. Specifically, it outlines the following: "Community Enhancement Program <i>The DCP specifies a requirement that prior to the commencement of construction, the Proponent is to prepare a Community Enhancement Program (CEP) in consultation with the local community and ULSC. In discussions with ULSC, the Proponent intends to establish a Community Enhancement Program in the form of a Voluntary Planning Agreement in lieu of a levy under the Upper Lachlan Section 94A Development Contributions Plan. In accordance with the Upper Lachlan DCP, the Proponent will contribute \$2,500 per WTG per annum, which equates to \$77,500 per annum in direct contributions throughout the operational life of the Project. Consultation with ULSC regarding the CEP is ongoing and will be finalised for inclusion in the Project approval."</i> Further, this commitment to establishment of a CEP was reflected in Table 18.1 of the EIS, which is now also reflected in Table 5.1 of the RfS Report. <i>"Prior to the commencement of construction, a community enhancement program will be established providing a voluntary annual contribution for the provision and enhancement of community facilities and ULSC funded infrastructure projects."</i>

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
Office of Environment & Heritage (OEH)	27	Transmission Line Assessment Aboriginal Cultural Heritage Assessment	OEH notes that the EIS does not include any information on the impacts on the transmission line. In OEH's opinion the transmission line for the project may have significant impact on both Aboriginal cultural heritage values and biodiversity values and therefore should be considered as part of this project and assessed as such for the full cumulative impacts. Incorrect references to the requirement for AHIPs - As the project is being assessed as a State Significant Development, OEH is not the relevant consent authority for this Project and AHIPs will not be required provided consent approval is obtained from the Department of Planning & Environment. Section 2.3 of the AHCHA contains outdated text relating to the National Parks and Wildlife Act 1974. Specifically it does not consider or refer to the 2010 NPW Act amendments which commenced in October 2010. Under Section 10.1 of the AHCHA, OEH notes the recommendation for nine Aboriginal sites recorded during the field survey to undergo a subsurface testing programme, prior to ground disturbance activities commencing, where disturbance to these areas cannot be avoided. OEH considers any subsurface testing should occur at the environmental assessment stage to ensure an adequate understanding of the Aboriginal heritage values prior to Project approval. It also allows for appropriate management measures to be considered before the Project design is completed. If significant deposits are located as a result of subsurface testing OEH requests clarification as to what mitigation measures would be considered if the Project layout and design has already been approved?	Newtricity acknowledge that the transmission line connection of the wind farm to the existing grid is fundamental to the operability and viability of the Project. The proposed 132kV transmission line connecting the wind farm to the existing Yass to Goulburn 132kV line would be progressed separately to the wind farm by Essential Energy (the network operator) under Part 5 of the EP&A Act. Essential Energy as the determining authority under Part 5 of the EP&A Act has the responsibility to examine and take into account to the fullest extent possible, all matters affecting, or likely to affect the environment by reason of the activity. This is commonly referred to as a Review of Environmental Effects (REF). The following issues (among others) will be addressed in the REF and where relevant, mitigation and management measures devised to manage identified potential impacts: • biodiversity; • landscape and visual; • socio-economic; • cultural heritage; • electromagnetic interference; • construction (including road traffic) and operational noise; • construction traffic; • land use impacts; and • cumulative impacts. Investigations into the final alignment are continuing and Newtricity anticipate that the REF for the transmission line connection will be submitted to Essential Energy in Quarter 2, 2016. The construction of the wind farm, provided it is approved under the Part 4 of the EP&A Act, will be dependent on the approval of the transmission line under Part 5 of the EP&A Act. Noted. The Aboriginal and Historic Cultural Heritage Assessment (AHCHA) report has been amended accordingly (refer Section 2.3). A copy of the updated AHCHA report is included as <i>Annex D</i> to the RTS Report. Noted. The AHCHA report has been amended to incorporate additional discussion of this issue (refer <i>Section 2.3</i>). Section 10.1 of the AHCHA report outlines that nine PAD areas within the PA have been identified as having moderate or high potential to reveal Aboriginal cultural heritage (BWF2; BWF3; BWF10; BWF12; BWF13; BWF16; BWF19; BWF21; and BWF PAD1) and should undergo a sub-surface testing program where disturbance to these areas cannot be avoided. However, the location of these identified sensitive areas was considered during constraints mapping and preliminary project design, and as such, of these nine PAD areas identified, it is considered that the majority would be unlikely to be disturbed by ground disturbing activities associated with the Project based on the current Project layout and specific location of each PAD being either a considerable distance from Project infrastructure components, and/or within creeklines that would be avoided through detailed design of the Project. Of the nine areas identified, only BWF13, BWF19 and BWF PAD1 are located immediately adjacent to or within the footprint of proposed Project infrastructure, and subsequent detailed design of the Project may be able to avoid impacts to these areas also. Ground disturbance impacts to BWF2 are also now likely to be avoided due to redesign of road access points and realignment of the northern access road into the site that has been undertaken as part of the RTS process (refer <i>Figure 4-1</i>). Further, the Project Area is relatively unconstrained from an environmental sensitivity perspective (refer EIS Figure 5-3), thereby providing flexibility for siting of wind turbine generators and other infrastructure so as to avoid mapped areas of Aboriginal heritage (or significant archaeological deposits should they be identified through sub-surface testing) during the detailed design phase of the Project.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
				On this basis, it is considered appropriate that any sub-surface test excavation be deferred to the detailed design phase of the Project, as this could avoid disturbance to areas during sub-surface testing that may not be required to be disturbed by the Project. The sub-surface testing program would be undertaken as part of the detailed design phase of the Project during which locations of Project infrastructure components and ground disturbing activities would be confirmed, and would occur prior to ground disturbing activities of the proposed wind farm development commencing. If the sub-surface testing program identifies significant archaeological deposits these may be subjected to a salvage excavation or avoided as part detailed design. Section 10.1 of the AHCHA report has been updated to provide additional mitigation measures with respect to the framework for undertaking the test excavations and additional work that would be required in the event that further survey/test excavations undertaken during detailed design identify additional Aboriginal sites.
			OEH disagrees with the monitoring recommendation as it is proposed under Section 10.1. Monitoring of areas during construction or initial earthworks should not be used as a replacement for subsurface test excavation. The issue of archaeological sensitivity and Aboriginal Cultural Heritage significance should be resolved as part of the assessment process, not as part of the development construction process. OEH is therefore concerned about the adequacy of the current assessment in terms of the number of changes that may occur during detailed design and the extent and significance of additional Aboriginal cultural heritage values that may be subsequently located within areas identified as archaeologically sensitive landforms. Section 7.2.1 of the AHCHA notes that a new site layout was provided following the field survey. There is no discussion as to whether these additional impact areas will be surveyed. OEH advises that all areas proposed to be impacted must be surveyed in order to assess and consider the full impact on Aboriginal Cultural Heritage values by the Project. No map provided in the AHCHA to support the described landforms. There are two wind farm projects to the west, Rugby and Rye Park, that may also be relevant as part of the archaeological background in Section 5.3. It is not clear in Section 9.1 and the mapping provided (Figures 7.1 and 7.2) that all impact areas have been surveyed. OEH notes that the EIS refers to a number of temporary and permanent facilities that are not mapped in the AHCHA. OEH notes the Transport Impact Assessment makes reference to parts of the transport route are proposed for upgrade or tree removal. OEH requests clarification as to whether these areas have been surveyed for Aboriginal sites such as scarred trees?	Noted. The recommendation for ongoing monitoring of works was in direct response to a recommendation by a RAP as an appropriate way to avoid any potential or direct impact to recorded Aboriginal heritage sites and areas of PAD. Section 10.1 of the AHCHA report has been amended to include additional survey and sub-surface testing to be undertaken as part of the detailed design phase of the Project (refer responses above), with the recommendation for ongoing monitoring moved to Section 10.1.4 <i>Aboriginal Community Endorsement and Recommendations</i> to reflect the RAPs recommendation on this issue. Sections 7.2.1 and 10.1 of the AHCHA report have been updated to commit to additional field survey of any areas not previously surveyed following confirmation of impact areas during detailed design of Project infrastructure. Refer further discussion above regarding survey/test excavation to be undertaken during detailed design. Noted. The AHCHA report has been amended to include updated mapping (refer Figures 7.4 and 7.5). Section 5.3 of the AHCHA report has been updated to incorporate consideration of these projects. The AHCHA has been updated to include all project infrastructure components in each of the associated figures. Sections 7.2.1 and 10 have been updated to include requirements for additional survey work to be undertaken during detailed design (refer responses above). Turning circle designs have been revisited as part of the RTS process in response to a number of issues raised by ULSC. As a result, the turning circle designs will be updated during detailed design to avoid any removal of trees at these intersections. Refer further discussion above in response to ULSC comments.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
		Biodiversity Assessment	There are a number of species where the surveys (required by the DGRs) were not undertaken, such as for the Koala, Golden Sun Moth and certain reptiles. However, OEH previously agreed (in January 2014) that the requirements could be varied, as per Annex C of the Ecology Impact Assessment. With these exceptions, the following surveys and assessments do not appear to have been completed or included in the Ecology Impacts Assessment:	
			Striped legless lizard - the assessment should provide details on the habitat disturbance (eg ploughing and removal of rocky habitat) that has occurred across the site Golden Sun Moth - similarly to the Striped legless lizard, the level of disturbance across the site should be mapped in the ecological assessment The bird utilisation surveys varied from the DGRs in that they included meanders rather than a standard width transects. No live trapping took place for Squirrel Gliders or Yellow-bellied gliders but camera trapping was used as an alternative.	Areas disturbed by ploughing, cropping and/or introduction of non-native grasses are mapped as 'Pasture' in the Grassland Disturbance Map (Figure 1, Annex F of the EIS). These areas contain some degree of soil disturbance as a result of cropping, ploughing and pasture improvement, however the discrete areas of past cropping and ploughing are difficult to map due to the seasonal, spatial and temporal variability of agricultural grassland management. No Natural Temperate Grassland is present within the PA. There are limited rocky areas within the PA, restricted to one basalt knoll; a rock pile among short pasture in the centre of the PA; and two small rock patches among short grass on the edge of a patch of Broad-leaved Peppermint – Brittle Gum shrubby open forest. Areas disturbed by ploughing, cropping and/or introduction of non-native grasses are mapped as 'Pasture' in the Grassland Disturbance Map (Figure 1, Annex F of the EIS). These areas contain some degree of soil disturbance as a result of cropping, ploughing and pasture improvement, however the discrete areas of past cropping and ploughing are difficult to map due to the seasonal, spatial and temporal variability of agricultural grassland management. The assessments included 17 bird utilisation surveys in a wide number of habitats with over 32.5 hours of effort. The aim of the surveys was to identify the species present at the PA, including threatened species. The meander approach allowed more flexibility to focus on areas of higher bird activity or diversity. For example: habitat features that were likely to attract birds (such as flowering eucalypts) could be investigated; mixed flocks of birds detected in the area could be further investigated; and when calls of a threatened species were heard, the call could be followed to visually verify the record and collect further data on bird behaviour and number of individuals. In addition, the configuration of meanders was considered appropriate to the configuration of woodland as small, isolated patches within the PA. Notes from meeting with OEH regarding survey techniques (9 January 2014) indicated that OEH were satisfied with the Bird Utilisation Survey methods used at that time, including the use of meanders (Annex C of Ecology Impact Assessment report included as Annex F of the EIS). At the time of this meeting, two rounds of Bird Utilisation Surveys had been completed. Live trapping was undertaken to target Squirrel Glider in January 2014 and March 2014, as described in the DGRs. Trapping covered a total effort of 260 Elliot trap nights. Camera trapping and spotlighting were also undertaken to target the species (Table 4.7 of the Ecology Impact Assessment). The DGRs did not propose live trapping as a technique for Yellow-bellied Glider. Instead, stag watching, spotlighting, call playback and habitat assessment was undertaken, as defined in the DGRs (refer to Table 4.2 and Table 4.7 of the Ecology Impact Assessment). Following the field surveys, the Squirrel Glider and Yellow-bellied Glider were considered unlikely to occur due to an absence of suitable tall fertile forest habitats. No individuals of either species were detected through trapping, spotlighting or call playback, and no feeding signs were recorded during extensive habitat and hollow-bearing tree surveys. The high level of fragmentation of woodland and forest habitats at the PA and a lack of records of the species within approximately 60 km of the PA also reduce the likelihood of the species occurring within the PA (refer Annex E of the Ecology Impact Assessment).

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			The 'regularised grid-based spot assessment technique' was not undertaken for Koalas Only one bat-detector was attached to a wind mast and the results of this assessment were not included in the report. OEH considers that all of the impacts to native vegetation are likely to be permanent. OEH seeks clarification on the amount of clearing which will be required to construct the roads and easements through the areas of woodland and forest. The EA indicates only 10m of clearing will be required for the roads, however wind farms which have been built in the last 2 years have cleared well over 10m. OEH therefore seeks clarification on the following calculations: Do the clearing calculations include all easements and cabling required? In areas where cut and fill will be required (including steep slopes) has the additional width of clearing required been included in the clearing calculations? Site visit requested to analyse the vegetation mapping results of the project to confirm its accuracy. OEH considers that impacts to native vegetation have been avoided well for this project. However based on survey results, there are additional features that OEH consider should be avoided including:	Database searches of the surrounding area, spotlighting, call playback and opportunistic scat searches within the PA did not detect the presence of the Koala within or near the PA. The landscape is heavily fragmented and there are no recent records of the species within the locality. Given that the species is unlikely to occur and no signs of the species were recorded it was not considered appropriate to try to determine activity levels using the spot assessment methods. The survey effort undertaken to detect the Koala, and to map areas of suitable habitat, is detailed in Table 4.7 of the Ecology Impact Assessment. The PA currently contains only one wind monitoring mast, and therefore, only one ultrasonic bat detection unit was installed at mast height. Mounting of the unit was timed to coincide with scheduled mast maintenance, to allow for safe mounting of the unit at approximately 50m height. To accommodate this timing, the unit was installed on 24 July 2014 and recorded through until 11 May 2015. Data from the mast-mounted unit was not available when the EIS was submitted, as there was great value in continuing data collection through the autumn period following preparation of the EIS. The data has now been collected and analysed, and a Bat Data Analysis and Updated Impact Assessment report is provided in <i>Annex E</i>. The report consolidates the bat results from ground-level units previously reported in the Ecology Impact Assessment with the recently available data from the mast-mounted unit, and provides an updated impact assessment of the Project on bats. Native vegetation impacts have been determined based on the 10 m wide road corridor that has been adopted for the EIS. The road design and associated corridor allowance was determined based on preliminary design requirements and site considerations, and incorporates an anticipated 8 m wide road carriageway and 2 m allowance for cabling, drainage and batters. It is anticipated that this road design would cater for the construction and operational vehicles anticipated as required for the Project. It is noted that in areas of significant cut/fill, localised batter widths would increase the required clearing corridor in these areas. However, based on the preliminary road design, it is not anticipated that this will be required to any significant extent across the site, and detailed design of access road alignments would be undertaken to avoid significant cut/fill across contours wherever possible. Further, at this particular site, access roads are proposed to generally utilise existing tracks wherever possible, in which case there may be less clearing than has been assessed in the EIS through some sections. In addition, the majority of access roads across the site are not located within areas that are vegetated or subject to other environmental or land ownership constraints etc. and therefore any potentially localised widening of access roads that may be identified as required during detailed design could be aligned to avoid any adjacent vegetation and therefore is not likely to result in any additional impacts to vegetation. The assessed road corridor allowance is considered appropriate and the clearing calculation within the EIS considered a conservative estimate of the anticipated worst case vegetation clearing required for the Project. The estimated Project footprints include easements and cabling. Refer comment above. An additional site visit was undertaken on 25 November 2015. Results of the site visit and verification of endangered ecological community mapping is presented in <i>Annex F</i>.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			the access road through the large remnant of native vegetation in the northern section of the site the proximity of some turbines to hollow-bearing trees, some of which showed signs of use (eg T06, T04, T21, T29) the proximity of some turbines to threatened species records (eg T27, T29, T31) the proximity of two turbines to a high risk species, the Wedge-tail Eagle next (ie T29, T30)	The access road that intersects the large patch of vegetation is currently used as the primary farm access track, with an approximate cleared width of 4m. The Project will involve widening of this access road corridor to 10m. A gap in vegetation cover of 10m is not considered to be 'hostile' or likely to affect the movement of fauna species assessed. The area of clearing for this section of access road presented in the Ecology Impact Assessment is an overestimation of the actual clearing required within the woodland patch. The scale of vegetation mapping presented in the Ecology Impact Assessment includes the existing road surface within the native vegetation polygon. When the existing 4m road corridor is excluded from the calculation, the area of clearing at this will be only 60% of the previously calculated clearing area. Revised development footprints for the full infrastructure layout will be calculated following detailed design. WTGs T04, T21 and T29 are not located within 300m of hollow-bearing trees with signs of use. WTG T06 is located 140m to 250m from four hollows showing evidence of use by fauna. The specific species using the hollows are not known, however hollow dependant species that have been recorded at the PA include the Powerful Owl; a range of common parrot species; microbats including the vulnerable Yellow-bellied Sheathtail Bat; and common arboreal mammals (Ringtail Possum and Brushtail Possum). The presence of WTGs close to tree hollows may impact species by disturbing roosting and nesting, or leading to habitat alienation due to avoidance behaviour. There is limited information available on the extent of habitat alienation exhibited by Australian fauna as a result of WTGs, however it is expected that the Brushtail Possum, Ringtail Possum and many of the common parrot species would not be affected by noise disturbance from WTGs, as these species frequently occur in urban areas. While the hollows identified near the proposed WTGs provide potential habitat for the vulnerable species Powerful Owl and Yellow-bellied Sheathtail bat the use of the hollows at the PA has not been confirmed for these species and no hollows with signs of use have been recorded within 140m of any WTG. Threatened species recorded within close proximity to the WTGs include the Varied Sittella, Eastern False Pipistrelle and Eastern Bentwing Bat. The Varied Sittella was recorded 93m and 107m to the east of WTG T29, and 230m to the south of T31. The Varied Sittella is unlikely to be at risk of WTG collision, as the species flies at or below canopy height. WTG T29 is not located within preferred habitat of the Varied Sittella and the proximity of records to the WTG is unlikely to present additional risk to the species. The Eastern False Pipistrelle and Eastern Bentwing Bat were recorded from bat detection units located approximately 60m south of T27; and 120m and 200m south of T31. The specific location of bat records within the PA reflect the locations of bat detection units, rather than indicating nodes of higher bat activity. The impact assessment presented in the Bat Data Analysis and Updated Impact Assessment report (<i>Annex E</i>) considers the proximity of species records to WTGs, and concludes that the Project is unlikely to have a significant impact on these species. The Wedge-tailed Eagle was recorded on numerous occasions within the PA, including a record of an active nest site in October 2013, approximately 340m from WTG T29, and 615m from WTG30. Smales (2015) reviewed collision mortality data from eight wind farms with a combined total of 289 WTGs operating from between one and nine years (equivalent of 916 WTG-years). This identified fatalities of eight Wedge-tailed Eagles across all years (Smales 2015), equivalent to approximately 0.009 Wedge-tailed Eagle deaths caused by collision per WTG per year. Extrapolated to the 31 WTGs proposed for the Project, this would equate to 2.7 Wedge-tailed Eagle mortalities per 10 years of Project operation. Data from other wind farm sites is not directly comparable to the Project, as not all wind farms would have contained nesting Wedge-tailed Eagles or have WTGs located in close proximity to Wedge-tailed Eagles; however this data does give an indication of the scale of potential WTG collision mortality. Juvenile raptors are typically at higher risk of WTG than adults, and the proximity of a nest to WTG T29 may lead to mortality of the nesting adults, or a juvenile Wedge-tailed Eagle. Mortality of a small number of individuals is unlikely to affect the population in the local area, as Wedge-tailed Eagles from the surrounding area would be expected to move into the existing territory. This consideration is supported by numerous Wedge-tailed Eagle records from control raptor survey sites approximately 10km from the PA.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			OEH considers that the section discussing bird and bat mortality due to WTG collision should be expanded to incorporate the following: The results of the bat-detector that was attached to the wind mast. These results will form an important component of the ecological assessment (specific consideration of the Eastern bentwing bat migration). It is discussed that the Gould's Wattle Bat is not at risk of collision - this bat has been recorded killed on a number of wind farms across Australia and is at risk of being struck. The Wedge-tail Eagle has not been properly assessed in this section, and is a high risk species that is frequently killed by turbine-strike. It is not clear where the Little Eagle was recorded, or whether it has a nest within the project area. This species is also at risk from turbine strike therefore more survey is required for this species. OEH requires the following information: Survey to determine if there is a nest onsite within the development footprint Population size, was it only one Little Eagle onsite, is there a pair onsite if so where and what habitat are they utilising	The results of the mast-mounted bat detector are presented in the Bat Data Analysis and Updated Impact Assessment report (refer <i>Annex E</i>). It is acknowledged that Gould's Wattle Bat is at risk of WTG and this is an error in the Ecology Impact Assessment report. Mortality of the species has been reported at two wind farms in Tasmania (Hull and Cawthen 2012). Findings of a study at these wind farms identified that the majority of Gould's Wattle Bat carcasses identified were adults, and a strong seasonal pattern was identified indicating higher mortality of bats in autumn, a period of post-reproduction. The authors concluded that the timing of bat fatalities would not result in the direct loss of young, and assumed (acknowledging that the impact on local populations cannot be definitively determined) that it is unlikely that impacts to the species were occurring (Hull and Cawthen 2012). While the Project may result in mortality of some Gould's Wattle Bat individuals, the above study suggests this is unlikely to affect breeding of the local population, and, as the species is common and widespread throughout Australia, is unlikely to substantially impact the species. The Wedge-tailed Eagle was recorded on numerous occasions within the PA, including a record of an active nest site from October 2013. Smales (2015) reviewed collision mortality data from eight wind farms with a combined total of 289 WTGs operating from between one and nine years (equivalent of 916 WTG-years). This identified fatalities of eight Wedge-tailed Eagles across all years (Smales 2015), equivalent to approximately 0.009 Wedge-tailed Eagle deaths caused by collision per WTG per year. Extrapolated to the 31 WTGs proposed for the Project, this would equate to 2.7 Wedge-tailed Eagle mortalities per 10 years of Project operation. Data from other wind farm sites is not directly comparable to the Project, as not all wind farms would have contained nesting Wedge-tailed Eagles or have WTGs located in close proximity to Wedge-tailed Eagles; however this data does give an indication of the scale of potential WTG collision mortality. There is potential for the Project to lead to mortality of individuals currently present within the PA. Mortality of a small number of individuals is unlikely to affect the population in the local area, as Wedge-tailed Eagles from the surrounding area would be expected to move into the existing territory. This consideration is supported by numerous Wedge-tailed Eagle records from control raptor survey sites approximately 10km from the PA. Two Little Eagle individuals were recorded 5km north west of the PA. The species was not recorded within the PA, and no nests of the species were recorded within the PA. Detailed habitat assessments, including inspection of all trees within the PA during the hollow-bearing tree survey, did not identify any Little Eagle nests. The survey effort undertaken is detailed in Table 4.7 of the Ecology Impact Assessment and is sufficient to conclude that no Little Eagle nests are present within the PA. The species was not recorded within the PA. The records of the species are from 5km north west of the PA.
			If there are nesting eagles onsite in close proximity to the turbine this will place undue risk on the Little Eagles and the turbines will need to be relocated.	Detailed habitat assessments did not identify any Little Eagle nests. The survey effort undertaken is detailed in Table 4.7 of the Ecology Impact Assessment and is sufficient to conclude that no Little Eagle nests are present within the PA.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
DPI Lands	44	Consultation & Authorisation Requirements	The credit conversion tools used in the assessment of offset requirements are only an estimation. The area of impact will need to be confirmed especially within forest and woodland areas	The EIS contained a preliminary offset calculation, however was subject to limitations, including lack of a detailed infrastructure layout and preparation of the EIS prior to release of the updated BioBanking Credit Calculator Version 4.0 (which is most suitable for use on linear infrastructure projects). The limitations are described in full in Annex I of the Ecology Impact Assessment. An updated Offset Report will be prepared using the BioBanking Credit Calculator Version 4.0 following detailed design of the infrastructure layout.
			No sites have been identified as potential candidates for offset requirements in the assessment. OEHS preference is that the proponent and their consultants determine potential candidate offset sites where the vegetation is compatible and the landowners may be interested in securing and managing an offset site. OEH recommends this is done prior to approval.	As noted above, an updated Offset Report will be prepared following detailed design of the infrastructure layout which will confirm the offset requirement. Unavoidable impacts will be offset based on advice from DPE and in accordance with the NSW Biodiversity Offsets Policy for Major Projects, which allows for: acquiring or retiring credits under the Biobanking Scheme in the TSC Act; making payment into an offset fund that has been developed by the NSW Government; or providing supplementary measures. It is anticipated that any approval received from DPE for the Project will include conditions relating to offset requirements.
			Due to the number of termite mounds recorded on site, it is likely that the offset will also have to include habitat for the Rosenberg's Goanna	Rosenburg's Goanna is considered unlikely to occur within the PA. A review of species records from the Atlas of Living Australia identified the smallest isolated patch of habitat with a recent (post-1980) record of the species was 800 ha in size. Woodland and forest in the PA is highly fragmented and there are no nearby large expanses of woodland providing preferred or connecting habitat. Termite mounds were surveyed and recorded within the PA (as these also provide habitat for other reptile species) and no termite mounds will be impacted by the Project. As the species is unlikely to occur within the PA, and no termite mounds will be impacted, offsets are not considered to be required for this species. The consequence of this conclusion in terms of offset calculations will be revisited when offset requirements are recalculated.
			The Department reiterates the need for consultation and authorisation of any occupation of Crown Land prior to works being undertaken. It is recognised that the Proponent has stipulated this need in the EIS submitted in conjunction with the development proposal.	Noted.
Environment Protection Authority (EPA)	45	Environment Protection Licence	If the project is approved, Biala Wind Farm will require an Environment Protection Licence issued under the POEO Act for both the construction and operational phases. The proponent will need to make a separate application to the EPA to obtain this Licence. We have proposed limits for noise emissions from the wind farm (Attachment B) which would be reflected in any future Licence for the Biala Wind Farm.	Noted. Application to the EPA to obtain the required EPL will be made in due course following detailed design of the Project, during which the Noise Impact Assessment (NIA) would be revised to reflect the final Project layout and WTG model selection. Provided below are responses to Attachment B of the EPA's submission: It is noted that the EPA will utilise any revised NIA to set noise limits in an EPL for the Project if it is granted approval by DPE, and therefore the noise limit values presented in Attachment B may vary at a later date depending on any additional baseline work or outcomes of the revised NIA. In response to suggested condition L6.2, the EPA should specify that the tabulated noise limits were developed based on the 24 hour compliance limits presented in Table 6.2 of the DNV-GL report included as Annex G to the EIS. In addition, it is noted that the tabulated noise limits should be updated to reflect actual limits for wind speeds above 12m/s. For example, at HN03/HN04 the limits increase to 49 dB(A) @ 13 m/s; 53 dB(A) @ 14 m/s; and 55 dB(A) between 15 and 20 m/s.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
				In response to suggested condition L6.4(b), it is recommended that it be amended to read as follows: <i>"b) Turbine hub height integer wind speeds shall be determined via measurement or calculation, or by a means that is appropriately calibrated against the development wind mast used in the Noise Impact Assessment (NIA). This process shall be detailed and documented in the Operational Noise Management Plan, which will outline monitoring and verification methodology for the compliance assessment."</i> In response to suggested condition L6.4(c), it is recommended that it be amended to read as follows: <i>"c) 5dB(A) must be added to the wind turbine noise levels where tonality is present. The presence of tonality must be determined using the methodology detailed in Chapter 4 of the NSW Industrial Noise Policy or International Organisation for Standardisation (ISO) 1996-2:2007 – Acoustics - Description, Measurement and Assessment of Environmental Noise - Part 2: Determination of Environmental Noise Levels (simplified method)."</i> The recommended amendment to suggested condition L6.4(c) incorporates reference to ISO 1996.2, as this standard provides methods for assessing the audibility of tones in noise via a simplified and reference method. The simplified method is considered acceptable, and ISO 1996.2 is considered the suitable standard for assessing tonality at receptors during noise compliance testing.
		General	In general the Environmental Impact Statement (EIS) adequately describes the potential environmental impacts of the project and the measures necessary to minimise or mitigate against those predicted impacts. The EPA supports the proposed mitigation measures set out in Section 10.4 and Table 18.1 of the EIS in order to minimise environmental impacts associated with the project. The EPA notes environmental risks will principally be managed through the preparation and implementation of various environmental management plans covering construction, operation and decommissioning and rehabilitation activities. The inclusion of such plans assists to identify specific environmental controls and mitigation measures should predicted impacts actually occur.	Noted.
		Soil and Water	The proponent should ensure that any sediment and erosion control measures implemented are designed, constructed and maintained in accordance with guideline document Managing Urban Stormwater – Soils and Construction (Landcom, 2004).	The Water Supply, Water Quality & Hydrology Assessment included as Annex L to the EIS, recommends that a Soil and Water Management Plan (SWMP) be prepared for the project, and provides a conceptual SWMP in consideration of the relevant best practice guidelines, including the Landcom (2004) document (refer Section 6 of Annex L to the EIS). The following (amended) commitment is included in the table of mitigation measures within <i>Table 5.1</i> in the RtS Report, to include specific reference to the best practice guidelines under which the SWMP will be developed. <i>* A detailed Soil and Water Management Plan (SWMP) will be prepared prior to construction commencing. The SWMP will be prepared by a suitably qualified person, such as a soil conservationist, and in accordance with best practice guidelines as referenced in Section 6 of the Water Supply, Water Quality and Hydrology Assessment included as Annex L to the EIS.</i>

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
		Air Quality	The main air quality issue is the potential for dust emissions during construction of the wind farm. The EPA notes the proponent has committed to undertaking measures to minimise any dust impacts on local amenity during the construction phase. The EPA would include a condition on any Environment Protection Licence for the project which requires the proponent to ensure the premises is maintained in a condition which minimises or prevents the emission of dust from the premises.	Noted.
		Waste	The proponent should identify, characterise and classify all waste that will be generated onsite through excavation, demolition or construction activities and document procedures and protocols to ensure that any waste leaving the site is transported and disposed of lawfully. The Proponent must ensure that any waste generated and/or stored at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines. The Proponent must retain all sampling and classification results for the life of the Project to demonstrate compliance with EPA's Waste Classification Guidelines.	The CEMP to be prepared for the Project prior to commencement of construction will incorporate consideration of waste streams that will be generated onsite through construction activities, and outline the framework for management of waste materials, including classification, storage, and disposal requirements. The following additional commitment has been included in the table of mitigation measures within <i>Table 5.1</i> of the RtS Report: <i>* The Construction Environmental Management Plan (CEMP) to be developed for the Project prior to commencement of construction will incorporate consideration of waste streams that will be generated onsite through construction activities, and outline the framework for management of waste materials, including classification in accordance with relevant Waste Classification Guidelines, storage, and disposal requirements.</i>
		Concrete Batching Plant	The EPA understands a temporary concrete batching plant will be established on-site during the construction phase of the project. Mitigation measures for this plant are identified in Table 18.1 of the EIS: Appropriate stormwater, collection, treatment and recycling will be in place at the concrete batch plant, in accordance with relevant best practice guidelines and any requirements of the NSW EPA. Whilst EPA does not have specific requirements for concrete batching plants, it considers the Environmental Guidelines for the Concrete Batching Industry (Vic EPA, 1998) http://www.epa.vic.gov.au/~media/Publications/628.pdf as suitable. The Proponent must ensure appropriate stormwater collection, treatment and recycling at the concrete batch plant in accordance with relevant best practice guidelines and EPA requirements.	Noted. The mitigation measure adopted in the EIS and RtS Report reflect this requirement, and will be addressed in the CEMP.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
		Noise	The EPA has reviewed the noise components of the Biala Wind Farm EIS, including the Noise Impact Assessment and Supplementary Noise Impact Assessment. The noise impact assessment considered the cumulative noise contributions of the Gullen Range and Gunning wind farms which are nearby the project site. The EPA supports the noise mitigation measures recommended in the noise impact assessment and supplementary noise impact assessment.	Noted.
			The EPA recommends the Proponent be required to prepare a revised NIA once the final turbine model and turbine layout is selected, and prior to any construction activities. The revised NIA should: 1. Specify the allowable noise contribution of the Project, for each integer wind speed (measured at hub-height) from cut-in to rated power, so that the total noise from all three wind farms at sensitive receivers (that are not involved with projects) does not exceed the Environmental Noise Guidelines; 2. Wind Farms (SA EPA 2003) criteria; and 3. Demonstrate, through appropriate modelling and in accordance with the SA EPA (2003) criteria, that the final turbine model and layout can meet the limits derived in accordance with those guidelines. The EPA will utilise any revised NIA to set noise limits in an Environment Protection Licence for the Project if it is granted project approval by DPE.	A revised NIA will be prepared during the detailed design of the Project based on the final Project layout and selected WTG model. The revised NIA will assess (cumulative, total noise) compliance at the Biala WF Project receptors identified in the DNV-GL wind farm noise impact assessment report included as Annex G of the EIS. It is acknowledged that the noise limits will be reliant on this future acoustics work, and similarly, the Project EPL. Given however that the baseline work to date is thorough and robust, it is not expected that the limits would change to those already presented in the EIS.
			The EPA recommends that prior to commissioning of the turbines, the proponent should prepare and implement an Operational Noise Management Plan including (but necessarily not limited to) the following measures to manage noise emissions from the operation of the project: a) Verification that predicted noise levels are met via a noise compliance assessment which is completed within six months of final turbine commissioning, in accordance with the Environmental Noise Guidelines: Wind Farms (SA EPA, 2003); b) Identification and implementation of best practice management techniques for minimisation of noise emissions where reasonable and feasible; c) Measures to be rectify any annoying noise characteristics resulting from the operation of the project such as infrasound, tonality or adverse mechanical noise from component failure; and d) Procedures and corrective actions to be undertaken if any non-compliance is detected.	Noted. The following additional commitment has been included in the table of mitigation measures within <i>Table 5.1</i> of the RtS Report:
				<i>An Operational Noise Management Plan (ONMP) will be developed prior to commissioning of the WTGs, which will include the monitoring and verification methodology for noise compliance assessment, and ongoing noise monitoring and management requirements throughout the operational life of the Project.</i>
			It is proposed the wind farm will be constructed during normal construction hours ie. 7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday with no construction works on	The majority of site preparation and construction works are expected to occur during the recommended standard hours for construction ie. 7:00am to 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday with no construction works on Sundays or Public Holidays.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			Sundays or Public Holidays. The EPA supports this approach.	A limited amount of out of hours work, including vehicle movements (to, from and on-site) could occur depending on logistical and safety requirements imposed by relevant regulatory authorities e.g. NSW Police. This work would generally be limited to delivery of oversized plant or structures or emergency work. If a need to work outside the recommended standard hours of construction is identified, these works will be justified. The EIS commits to preparation of a Construction Noise Management Plan (CNMP) that will be developed to ensure that appropriate work practices are implemented during construction of the Project to minimise impact. These work practices will consider works outside the recommended hours. Refer <i>Table 5.1</i> of the RtS Report.
			The proponent should be required to prepare and implement a detailed Construction Noise Management Plan prior to commencement of construction activities, that includes, but is not necessarily limited to; a) identification of each work area, site compound and access route (both private and public) b) identification of the specific activities that will be carried out and associated noise sources at the premises and access routes, c) identification of all potentially affected sensitive receivers, d) the construction noise and vibration objectives identified in accordance with the NSW Interim Construction Noise Guideline and Assessing Vibration: A Technical Guideline, e) assessment of potential noise and vibration from the proposed construction methods (including noise from construction traffic) against the objectives identified in (d), f) where the objectives are predicted to be exceeded an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise impacts, g) description of management methods and procedures and specific noise mitigation treatments that will be implemented to control noise and vibration during construction, including the early erection of operational noise control barriers.	The EIS commits to preparation of a Construction Noise Management Plan (CNMP) that will be developed to ensure that appropriate work practices are implemented during construction of the Project to minimise impact. Further guidance regarding the features and content of a CNMP is provided in section 7.2.2 of the ICNG. Refer <i>Table 5.1</i> of the RtS Report.
		Blasting	The EPA noted the EIS did not include an assessment of blast impacts or detail whether blasting was likely to be required for the construction of the project, so blast conditions have not been included with these comments. If blasting is required, the noise and vibration impacts will need to be assessed by the EPA.	It is not known at this stage whether blasting may be necessary for the Project, however blasting may sometimes be required during construction of wind farms associated with ground preparation works prior to the installation of handstands and footings at and near wind turbines. ERM has undertaken a Blasting Acoustics Assessment for the Project, included as <i>Annex F</i> to the RtS Report, to consider potential overpressure and ground-borne vibration associated with blasting should it be required as part of construction works for the Project. Potential impacts have been assessed in accordance with the ANZEC Guideline and AS2187.2 and are considered to be negligible, if any at all. Any blasting required during construction of the Project will be designed to achieve the relevant overpressure and ground borne vibration criteria. The following additional commitment has been included in <i>Table 5.1</i> of the RtS Report: <i>Project related blasting (if this becomes necessary) will be designed to achieve the overpressure and ground borne vibration criteria identified in the ANZEC Guideline and AS2187.2 (refer Section 3 of Annex F). If blasting is identified as required, potential blasting impacts will be assessed by the NSW EPA prior to any blasting being undertaken.</i>

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
Department of Primary Industries	46	Agriculture	DPI Agriculture advises that there are no significant impacts on agricultural operations in the vicinity of the proposed wind farm. Directed to contact Resource Management Officer for further information.	Noted. ERM contacted the Regional Management Officer 30/10/15, which confirmed that DPI Agriculture had no further comments in regards to the proposal.
		Fisheries	DPI Fisheries has no objections to the proposal provided proposed mitigation measures relating to water quality, erosion and sediment control and waterway crossings are fully implemented. Crossing number 8 (Biala Creek) appears to be unnecessary as alternative access to turbines 29, 30 and 31 is available via other constructed tracks. It is labelled as 'optional'. Crossing number 8 is likely to be the most problematic to construct and maintain as it has steep banks and since it is on a 3rd order stream, it needs to be designed and constructed to facilitate fish passage. DPI Fisheries recommends that it not be included. Directed to contact Regional Manager, Aquatic Ecosystems for further information.	Noted. In response to DPI and DPE recommendations, the road access layout for the Project has been revised to remove the optional road between WTGs 29 and 30/31. Access to WTGs 30 and 31 will be provided via a southern access road off Grabben Gullen Road. However, it may be necessary to extend electrical/communication cabling between WTGs 29 and 30/31 via a crossing of the creek, and so an indicative 'electrical service only' connection alignment for this purpose has been included in the updated road layout illustrated in <i>Figure 4-1</i> of the RtS Report. The preferred alignment of this service connection will be determined during the detailed design phase of the Project, and will be located to avoid potential impacts to environmentally sensitive areas wherever possible.
		Water	DPI Water made a number of observations of water related issues in reference to the EIS, and the following comments: The Main EIS and Annexure L have identified a number of potential water sources, including water in two runoff dams on the existing property, groundwater from bores, surface water from creeks and tankering water. The final water source/s are yet to be confirmed, however the EIS indicates the existing dams have the ability to provide the total water demands in a dry 10th percentile rainfall year. As detailed in the EIS the water in these dams must be used on the property they are located on. The assessment also indicates the need for further discussion with the landholders to confirm the ability to access the dams and any additional demands from the existing landuse. It is recommended this discussion be completed as soon as possible to confirm the water sources.	Noted. Should the Project be approved by DPE, further consultation and investigation of the most appropriate water sources will be undertaken and confirmed during the detailed design phase of the Project.
			The ability to access alternate supplies from groundwater and surface water (eg. creeks) has not been confirmed in the assessment, and these options would need the proponent to obtain sufficient water entitlement in an access licence. Uncertainty in accessing water supplies represents a commercial risk to the proponent. Table 18-1 of the Main EIS identifies a range of potential impacts to water related issues and a list of mitigating measures. DPI Water supports the mitigating measures, particularly the proposal to include a detailed Soil and Water Management Plan and to obtain necessary water licences.	Noted. Should the Project be approved by DPE, further consultation and investigation of the most appropriate water sources will be undertaken and confirmed during the detailed design phase of the Project, including securing the necessary entitlements/licences. Noted.

Agency / Author	DPE / ERM Ref	Issue Raised	Submission	Response
			Section 14.2 of the main EIS and Section 2.3 of Annexure L identifies locations where access roads and cabling will cross water courses. This includes seven first order water courses, 1 second order and 2 third order watercourses. DPI Water supports the commitment to implement adequate buffer distances and to design crossings in accordance with DPI Water’s Guidelines for Watercourse Crossings on Waterfront Land. It is recognised some of the proposed watercourse crossing sites are characterised by significant erosion, hence the use of appropriate soil and erosion control and rehabilitation techniques will be required. DPI Water requests the following conditions be included in any determination issued for the Biala Windfarm Project: 1. The proponent shall prepare a Soil and Water Management Plan in consultation with and to the satisfaction of DPI Water prior to commencement of activities. 2. The design of waterway crossings for access roads and cable installations, and any associated instream works is to be prepared in accordance with DPI Water’s “Guidelines for Controlled Activities on Waterfront Land” (2012). 3. The proponent must obtain relevant licensing under the Water Management Act 2000 before commencing any works which intercept or extract groundwater or surface water.	Noted. The Soil and Water Management Plan to be developed for the Project will incorporate requirements for appropriate design of required watercourse crossings for access roads and services, including identification of soils and erosion control and rehabilitation requirements. Noted. The following amended/additional commitments have been included in <i>Table 5.1</i> of the RtS Report: <i>A detailed Soil and Water Management Plan (SWMP) will be prepared in consultation with, and to the satisfaction of DPI Water, prior to construction commencing. The SWMP will be prepared by a suitably qualified person, such as a soil conservationist, and in accordance with best practice guidelines as referenced in Section 6 of the Water Supply, Water Quality and Hydrology Assessment included as Annex L to the EIS.</i> <i>Waterway crossings for access roads and cable installations, and any associated instream works will be designed in accordance with DPI Water’s “Guidelines for Controlled Activities on Waterfront Land” (2012).</i> <i>Obtain the relevant water access licenses under the Water Management Act 2000 prior to commencing any works that intercept or extract groundwater or surface water.</i>
		Lands	DPI Lands forwarded a response separately.	Noted (refer Submission No. 44)

4.3

PUBLIC SUBMISSIONS

Public submissions have raised a number of recurring themes and issues. Those issues ranked the highest in terms of the number of submissions, in which the issue was raised, are summarised in *Table 4.4*.

Table 4.4 *Summary of Key Community Issues*

Key Issue	No. of submissions that raised the issue
Visual Impacts	12
Cumulative Impacts	12
Property Values	12
Visual Impact Assessment Methodology	9
Community Consultation	9
Transmission Line Assessment	8
Traffic and Transport Impacts	8
Community / Social / Economic Issues	7
Project Justification	7
Negative Health Impacts	7
Noise Impacts	6
Noise Impact Assessment Methodology	6
Decommissioning	6
Ecology Impact Assessment Methodology	5

Responses to each of the issues raised in the public submissions are provided in *Table 4.5* below. The 'Submission Reference No.' relates to the Respondent ID outlined in *Table 2.1*.

Table 4.5 Public Submissions

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
Inadequate Assessment Guidelines	4	Inadequate assessment guidelines results in inadequately located wind farms and associated unacceptable impacts to neighbouring residents	The EIS has been prepared in accordance with the current standards and guidelines applicable to wind farms. Further, design of the project has been informed through consideration of site constraints and potential impacts to avoid impacts wherever possible.
Assessment Pathway	19, 31, 50	The project has been submitted as a State Significant Development (SSD). It is highly likely that any renewable power generated would be delivered to the ACT, therefore limiting the significance of the project for NSW.	In accordance with State Environmental Planning Policy (State and Regional Development) 2011, the Project is considered SSD, being: “Development for the purpose of electricity generating works or heat or their co-generation (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that: - has a capital investment value of more than \$30 million”. - The Project will deliver electricity to the national electricity grid, which is a complex transmission and distribution network that services Queensland, NSW, ACT, Victoria, South Australia and Tasmania. Electricity is delivered via this network based on supply availability and the source of demand, which does mean that electricity moves across state boundaries depending on timing of availability and source of the electricity demand. This allows for greater efficiency in delivery of electricity across the network than would otherwise be possible if each of the state jurisdictions were to operate independently. - The Project is significant to NSW in that it will provide cost competitive large scale renewable energy generation that will contribute to the achievement of the NSW Renewable Energy Action Plan 2013 (REAP) that has been developed to support the achievement of the national target of 20% renewable energy by 2020 set by the Australian Government. It will assist to further reduce greenhouse gas (GHG) emissions and contribute significant economic impacts to the local and regional economy.
		The EIS indicates that the transmission line will be assessed under Part 5 of the EP&A Act. Part 5 is for public authorities. Newtricity is not a public authority; therefore determination of the transmission line under Part 5 is flawed.	Essential Energy is a NSW Government-owned corporation, or 'public authority'. Part 5, Section 110 of the EP&A Act defines the following: "determining authority means a Minister or public authority and, in relation to any activity, means the Minister or public authority by or on whose behalf the activity is or is to be carried out or any Minister or public authority whose approval is required in order to enable the activity to be carried out." - As EE is the public authority on whose behalf the activity is to be carried out, EE will act as the proponent and determining authority for the transmission line works, and will ultimately own, operate and maintain the infrastructure as part of the existing electricity network. - Determination of the transmission line under Part 5 is consistent with the provisions of the EP&A Act. - As the determining authority, EE has the responsibility to examine and take into account to the fullest extent possible, all matters affecting, or likely to affect the environment by reason of the activity. This will be documented through a Review of Environmental Factors (REF) that will address the range of environmental issues of relevance to the transmission line project.
		The revised SEARS require the EIS to satisfy the department that there is a feasible and certain grid option connection.	A 132kV overhead transmission line is proposed to connect the on-site substation to the existing Essential Energy Yass to Goulburn 132kV overhead transmission line network located approximately 22km south of the PA. A summary of the preliminary investigation and line route options considered during preparation of the EIS are provided in Section 3.8 and Section 5.4 of the EIS, with the Line Route Options report included as Annex B to the EIS. The investigation included a line route corridor assessment that considered environmental and technical constraints associated with the proposed transmission line connection. As outlined in Section 6.9 of the EIS, the preliminary constraints investigation undertaken identified that there are no significant constraints that would restrict the viability of connection to the Yass to Goulburn 132kV line, subject to obtaining approval from Essential Energy and the landholders along the route. As outlined in Section 5.4 of the EIS, Essential Energy has been consulted regarding the project and supports the proposed connection, along with assessment of the connection under Part 5 of the EP&A Act with Essential Energy as the Determining Authority. Consultation with landholders along the corridor, and investigations to identify the final alignment are continuing. Newtricity anticipate that the REF for the transmission line connection will be submitted to Essential Energy in Quarter 2/3, 2016.
Transmission Line Assessment	4, 19, 28, 31, 48, 47, 49	The two components (wind farm and transmission line) should be assessed as a single project. If the wind farm is approved before the wind farm is approved, this will exert undue pressure on the planning authorities to grant approval for the transmission line, so that assessment of the transmission line is not objective or impartial.	Assessment and approval of the wind farm and transmission line separately under different parts of the EP&A Act is consistent with the provisions of the Act.
			Assuming the wind farm project is approved by DPE, as the determining authority for the transmission line assessment, EE has the responsibility to examine and take into account to the fullest extent possible, all matters affecting, or likely to affect the environment by reason of the activity. This would be documented through a Review of Environmental Factors (REF) that would address the range of environmental issues of relevance to the transmission line project.
			Whilst the transmission line will be progressed under Part 5 of the EP&A Act, it will be the responsibility of EE to determine whether the proposed transmission line connection is likely to have a significant environmental impact that would designate the activity as 'State Significant Infrastructure' (SSI) under the EP&A Act. SSI developments require the preparation of an EIS that would be assessed and approval would be determined by DPE rather than Essential Energy in this instance.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The project should be considered as one as the transmission lines are the major peince of necessary infrastructure, without which the wind farm project could not operate.	The construction of the wind farm, provided it is approved under Part 4 of the EP&A Act, will be dependent on the approval of the transmission line under Part 5 of the EP&A Act.
		Objects to the transmission line passes through their property	Locating the transmission line on any privately owned property is subject to agreement of the landholder.
		What are land owner rights if the project is approved without the transmission line. Can the proponent/government force access?	Whilst the transmission line will be progressed under Part 5 of the EP&A Act, it will be the responsibility of EE to determine whether the proposed transmission line connection is likely to have a significant environmental impact that would designate the activity as 'State Significant Infrastructure' (SSI) under the EP&A Act. SSI developments require the preparation of an EIS that would be assessed and approval would be determined by DPE rather than Essential Energy in this instance. The agreement between Essential Energy and Newtricity requires Newtricity to identify the transmission line route and to negotiate and survey all easements prior to the transmission line gaining Essential Energy approval and certification.
		Can transmission line easements be returned to landholder ownership following decommissioning?	Once the transmission line is no longer occupying an easement it is up to the easement authority (in this case Essential Energy) to determine the ongoing requirement for the easement and whether the easement agreement is to be relinquished.
		The powerline will have significant negative implications on nearby properties, including impacts on investment and primary production potential.	The REF to be prepared for the proposed transmission line will examine the range of issues likely to affect the environment, including those associated with land use and socio-economic impacts, and will devise appropriate mitigation and management measures to address identified potential impacts.
Visual Impacts	4, 9, 10, 24, 28, 29, 31, 33, 35, 36, 43, 47, 50	Unavoidable visual impacts dominate the landscape and result in serious transformation of the landscape.	The landscape character is typical of the Southern Tablelands with undulating hillsides, large swathes of native vegetation, creek lines, ridges and a low density of rural residential development. The Project will alter some of the distinguishable landscape characteristics of the locality, including that of the undulating grassland and rural residential development. The prominent height of the turbines will be the most noticeable element of the Project, standing out in a landscape with very few other tall structures. All studied landscape zones, however, have the capability to absorb change to some extent.
		The turbines are the largest proposed to date. The visual impacts will be horrendous, with no possible way to mitigate this.	The turbines are a large model with a blade-tip height up to 185m. The visual impacts of the Project on the studied viewpoints are found to range from low to moderate/high. The dwellings that have received the highest visual impact rating are often located on elevated ground with panoramic views over the surrounding landscape. WTGs are by their nature tall and visually intrusive. As outlined in the LCVIA, the turbine design and location is limited by functional requirements and minor changes such as colour choice and reflectivity are unlikely to alter any of the impact ratings recorded within the LCVIA report. Whilst screen planting can be highly effective in blocking or filtering views, the impact is often of a highly local nature and can remove parts of the view that may still be considered desirable. New screen planting around affected dwellings would likely reduce some of the visual impacts but may not be acceptable to landowners.
		Visual impacts to residents living within 10km of the project.	For the purpose of this report the study area for the VIA is defined as the area of land within and beyond the project area which could be potentially visually affected by the Project. Based on a desktop analysis and site visit, a study area of approximately 12km offset from the WTGs was identified based on topography, receptor location and viewing distance. The SEARs call for a ZVI of no less than 10km offset from the WTGs associated with the Project. During the preparation of the LCVIA, a ZVI for a 15km radius was produced which is now included as supplementary material (refer Annex I to the RtS Report). This ZVI assisted in guiding the selection of a study area for a more detailed assessment of visual impacts, set at approx. 12km and subject to a thorough site visit. The ZVI shown within the original report indicates this core study area. As can be seen within the 15km ZVI diagrams, based purely on topographical analysis, WTGs may be visible from areas of the landscape beyond the nominated 12km study area. In reality, screening vegetation would be likely to block or filter many of these views. The very low density of sensitive residential visual receptors in these locations combined with the significant viewing distance, means that visual impacts from these locations are likely to be low and they were not further investigated within the study. At distances in excess of 15km, the WTGs would occupy a relatively insignificant proportion of the visual scene.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The EIS effectively dismisses impacts on visual amenity, whereby 'moderate negative impacts' are considered to be insignificant. We believe a moderate negative impact to be a significant impact, and the EIS does not adequately assess local community values towards local and regional visual amenity.	The visual impacts of the Proposal on the studied viewpoints are found to range from low to moderate/high. Two viewpoints received an impact rating of moderate (related to dwellings H06, H07, H09, H11, H12, H17) and two viewpoints a rating of moderate/high (related to dwellings H13, H14, H15 and H03). A 'moderate' impact rating would result in moderately adverse visual impacts. These are not considered to be insignificant and do imply a level of adverse impact to the visual amenity of receptors. Overall the LCVIA concludes that the Project has a relatively limited visual catchment due to: •the relatively low density of residential viewer locations within the study area; •a low density and lightly used public viewpoints including roads and limited areas of public open space; •surrounding topography which limits some views of the project area; and • dense stands of tree planting, windbreaks and garden plantings (associated with individual properties) that block or filter some views towards the Proposal.
		We do not accept that the landscape character of the area is regarded as low due to transformation by agriculture.	The landscape character of the study area is found to be typical of the Southern Tablelands with undulating hillsides, large swathes of native vegetation, creek lines, ridges and a low density of rural residential development. Based on a six point scale from negligible to high impact, the overall impact of the Proposal on landscape character was rated as: • low across one character zone - rural roads • moderate/low across one zone - wooded areas • moderate across two zones - main roads and undulating grassland • moderate/high across one zone - rural development Irrespective of the extent and nature of modifications to the landscape, it has not been assumed that the landscape surrounding the Proposal should be any less valued as a result of modification.
		Visual amenity of road users, particularly local residents, is ignored. The EIS suggests that users of 'minor local road networks' and two main thoroughfares are unaffected. Local residents travel the roads and work on their farms daily and are in fact the group to be most negatively impacted.	Visual impacts on public road users have been analysed within viewpoints 1-4. This analysis considers both local and main roads. Three of these viewpoints receive a visual impact rating of 'moderate'. The analysis of the proposed view from Grabben Gullen Road (viewpoint 4) states 'A long line of WTGs will be visible in the middle of the view frame at a distance of 1.7km. These will be noticeable to west and eastbound travellers on the road, visually prominent within a wide panoramic view. Receptors will move along the road quickly, although due to the large area covered by WTGs, the turbines will be visible for a reasonable length of time. The Proposal is likely to have a moderately negatively impact on visual amenity from this section of the road.'
		The ability to screen turbines from view is limited, leaving residual impacts to residents.	WTGs are by their nature tall and visually intrusive. The turbine design and location is limited by functional requirements and minor changes such as colour choice and reflectivity are unlikely to alter any of the impact ratings recorded within the LCVIA report. Whilst screen planting can be highly effective in blocking or filtering views, the impact is often of a highly local nature and can remove parts of the view that may still be considered desirable. New screen planting around affected dwellings would likely reduce some of the visual impacts but may not be acceptable to landowners.
		Concerns about the possible lighting of the turbine towers at night and consider this to be unacceptably obtrusive (in reference to previous experiences with lighting on the Gunning Wind Farm towers).	The potential receptors that could be impacted by night time lighting include residents and motorists. Very little built form currently exists in the landscape and any new light source is likely to be noticeable. Whilst obstacle lighting would be visible to motorists travelling along the local roads, the duration of visibility would tend to be short and partially screened by undulating landform. Night time obstacle lighting would also be visible from a number of the residential view locations within the study area, with views of a longer duration. Topography and screening vegetation would block or partially obscure some of the views, although a level of visual impact will remain.
		The visual impacts of a wind farm cannot be mitigated. The Department must therefore recommend buyout rights for all residents suffering severe or high visual impacts and where the extent of the visual impact is assessed in terms of the affected residents' own visual values as required by the SEARs. This is likely to include most properties within 5km of the wind farm unless the wind farm is topographically concealed from them and, given the size of the turbines, may include many properties well beyond 5km.	Potential mitigation measures and their effectiveness are discussed within Part 6 of the LCVIA. WTGs are by their nature tall and visually intrusive. The turbine design and location is limited by functional requirements and minor changes such as colour choice and reflectivity are unlikely to alter any of the impact ratings recorded within the LCVIA report. Whilst screen planting can be highly effective in blocking or filtering views, the impact is often of a highly local nature and can remove parts of the view that may still be considered desirable. New screen planting around affected dwellings would likely reduce some of the visual impacts but may not be acceptable to landowners. The location and design of any screen planting used as a mitigation measure is site specific and will require detailed analysis of potential views and consultation with surrounding landowners during the detailed design phase. No non-involved landholders have received a visual impact rating of high. Two viewpoints received an impact rating of moderate (related to dwellings H06, H07, H09, H11, H12, H17) and two viewpoints a rating of moderate/high (related to dwellings H13, H14, H15 and H03).

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The EIS concludes that the project will result in an overall moderate to moderate/low visual impact given the limited number of sensitive residential dwellings in proximity to the PA. It is difficult to see how 185m turbines will only have a moderate to moderate/low visual impact on close by neighbours. What does this impact measurement mean? Against what standard is this assessment calibrated?	The overall moderate/low visual impact is an assessment of the entire study area as a whole and is a product of the low density of residential receptors and undulating local topography. Individual dwellings will experience higher visual impacts as described within the report. Two viewpoints received an impact rating of moderate (related to dwellings H06, H07, H09, H11, H12, H17) and two viewpoints a rating of moderate/high (related to dwellings H13, H14, H15 and H03).
		The EIS is inconsistent in the stated impact ratings (Sections E8 and E12), which needs to be justified.	
Visual Impact Assessment Methodology	4, 9,11,12, 18, 20, 32, 37, 40	Photomontage presentation – lacking in number, misleading scale/view representation	Photomontages have been prepared to industry standards using accurate scale and view representation. Coordinates are included on each image in the form of eastings and northings. Whilst a photomontage can provide an image that illustrates a photo realistic representation of a wind farm in relation to its proposed location and scale relative to the surrounding landscape, it is acknowledged that it is never 100% accurate due to the fact that a flat image does not allow the viewer to perceive any information relating to depth or distance. To gain a perceptually accurate view of the photomontages they should be printed and viewed at A1/ A0 sized sheets and held at arm’s length. Where site access could be arranged with property owners, photomontages were taken from a location that would best provide an accurate impression of visual impacts from that property. Where possible, this location was selected through discussion with the landholder. For example, the photomontage from property H07 was taken from a location where the property owner indicated that a new dwelling would be constructed. Where the property owner was not available for discussion, the photomontage specialists selected a location that best indicated a worst case scenario ie. a view from the main part of the dwelling towards the closest turbines.
		Photomontages have not been produced in accordance with the requirement of the SEARS.	The SEARS require that the technical study '<i>include photomontages of the project taken from potentially affected dwellings and in particular from all non-host Dwellings within 2km of a proposed wind turbine (including approved but not yet developed Dwellings or subdivisions with residential rights), settlements and significant public view points</i>'. There are no non-host dwellings within a 2km offset of the turbines although several properties are positioned almost exactly on the 2km line - including H06, H07, H11 and H12. Photomontages have been produced for four of these properties, as well as H03 which sites at a distance of 2.4km. For properties H14, H04 and H05 (all over 2kms from the closest WTG) a simulated view has been created to give an impression of the expected visual impact. Four photomontages have been produced for public viewpoints that are in close proximity to the turbines. An additional property location (a DA approved site, referred to as DA18 in the RtS Report) was identified at a distance of approximately 2km from the nearest WTGs, subsequent to the exhibition of the EIS. A supplementary visual impact assessment has been conducted for this property. Access to this property was attempted during preparation of the RtS but could not be gained, therefore it was not possible to undertake a photomontage, and so a simulated view was created (refer further discussion of potential impacts to this DA approved dwelling outlined in <i>Section 4.1.7</i> of the RtS Report and Supplementary Material provided in <i>Annex I</i>).
		The EIS is not clear as to the number or location of photomontages prepared for the project.	The site visits for the LCVIA and photomontages were undertaken at different times. Consequently, site access to individual properties could be arranged for the photomontage site visit that had not been given for the earlier LCVIA site visit. Photos associated with each viewpoint within the report are therefore taken from the nearest accessible public location. The photomontage team were given unrestricted access to many properties and hence these images have been produced from the precise property location. This has led to a difference between 'viewpoint' photo location and 'photomontage' photo location. The LCVIA indicates the location and number of photomontages produced on page 90.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The viewpoint analysis does not provide sufficient information to determine the level of visual impact from individual residences. The viewpoint analysis has understated the potential level of impact at individual residences within each viewpoint.	During the LCVIA site visit, access was not usually possible to individual residences. For the visual impact assessment, a photo was taken at the closest publicly accessible point - often the end of the property driveway. The description of visual impact is therefore estimated from the property's main dwelling area. Where access was not possible, properties in close geographical proximity have been grouped together to indicate a similar level of visual impact. For these grouped properties, a worst case scenario rating has been given. Screening vegetation and topography have the potential to reduce the visual impact that some of these properties are exposed to. A separate site visit was conducted for the spatially accurate photomontages where site access was agreed and the photos were taken from the property itself, providing a more accurate representation of potential visual impact.
		Identification of the Zone of Visual Influence (ZVI) and assessment of the visual impacts within it has not been adequately addressed.	The SEARs call for a ZVI of no less than 10km offset from the Biala WTGs. During the preparation of the LCVIA, a ZVI for a 15km radius was produced which is now included as supplementary material. This ZVI assisted in guiding the selection of a study area for a more detailed assessment of visual impacts, set at approx. 12km and subject to a thorough site visit. The ZVI shown within the original report indicates this core study area. As can be seen within the 15km ZVI diagrams, based purely on topographical analysis, WTGs may be visible from areas of the landscape beyond the nominated 12km study area. In reality, screening vegetation would be likely to block or filter many of these views. The very low density of sensitive residential visual receptors in these locations combined with the significant viewing distance, means that visual impacts from this location are likely to be low and they were not further investigated within the study. At distances in excess of 15km, the WTGs would occupy a relatively insignificant proportion of the visual scene.
		The photomontages provided in the EIS are not consistent with those presented at the Community Information Day or on the Newtricity website, and are not representative of the view of the Biala wind farm from the selected viewpoints.	It is important to distinguish the spatially accurate photomontages within section 8 of the LCVIA Report from the indicative wireframe model overlaid on site photos to give an impression of the expected scale of impact. As described on page 44 of the LCVIA report 'the wire frame models have been created using 3D modelling and geographical mapping software. They are overlaid on photos taken with a 35mm lens which gives a slightly wider field of view than the human eye. This shows the wider context of the viewpoint but will make the turbines seem more distant. The wireframe model is indicative only but offers a good indication of the likely extent of turbine visibility. Environmental factors such as weather and lighting conditions will impact the overall visibility of the Proposal on any given viewpoint. Spatially accurate photomontages of the Proposal can be found in Section 8 - Photomontages' The photomontages presented at the Community Day and on the Netricity website were early visual representations to give an indicative impression of the turbines within the landscape. The subsequent spatially accurate photomontages within the EIS have been prepared to industry standards using accurate scale and view representation and supersede these earlier images.
		The visual impact ratings have been understated (as an example, in reference to Public Viewpoint No. 4) in which it is argued that the view of the turbines while travelling along the road in this location would result in a moderate to high period of view rating and therefore a higher overall impact rating of moderate as presented.	Period of view is one of several factors that affect the overall visual impact rating for any given viewpoint. The lowest ratings are associated with motorists travelling quickly with sequential views of the turbines. It can be argued that motorists may have views up to a few minutes as they travel along some of the local roads, increasing their period of view rating to moderate. These changes alone, however, would not alter the overall impact rating for any given viewpoint. The overall rating is a function of magnitude and sensitivity - made up of multiple magnitude factors. The conclusion for viewpoint 4 remains that: 'Receptors will move along the road quickly, although due to the large area covered by WTGs, the turbines will be visible for a reasonable length of time. The Proposal is likely to have a moderately negatively impact on visual amenity from this section of the road.'
		The simulated views provided for properties that the consultant was not able to access are not acceptable as they do not provide the reader with the true and accurate feel for the landscape, the visual amenity and fail to bring justice to the beauty of the rural landscape affected by the wind turbines. Evidence of attempts made to access these properties and reasons should be given as to why a computer image of a very real view was used instead.	Despite repeated attempts, site access was not possible to a limited number of properties within the study area. Due to their long driveways and remote location, it was not always possible to take a representative viewpoint photo from a nearby publicly accessible location. In this situation a computer generated image was used to give an impression of the expected visual impact. The study captured representative and accurate views of the landscape from public receptor points and private receptors where access was granted.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		Why are the turbines pictured in the photomontages not stark white? What is presented in the EIS is not an accurate simulation of the turbines based on experience of other wind farms, which are a bright, stark white colour and therefore do not blend into the landscape. The photomontages in the EIS give a false representation as to the true visual impact.	Photomontages have been prepared to industry standards using accurate scale, view and lighting representation. The photomontage software applies lighting and shadowing parameters to each viewpoint depending on location and time of day that the photo was taken. The lighting is therefore different in each image. Some WTGs appear whiter as the sun is directly on the turbines and some appear greyer as the light source is behind and they are effectively silhouetted.
		Viewpoint analysis is not representative of individual views from private receptors and does not accurately reflect level of visual impacts	During the LCVIA site visit, access was not usually possible to individual residences. For the visual impact assessment, a photo was taken at the closest publicly accessible point - often the end of the properties driveway. The description of visual impact is therefore estimated from the property's main dwelling area. Some properties in close geographical proximity have been grouped together to indicate a similar level of visual impact. Where direct access was not possible, a worst case scenario rating has been given. In reality, screening vegetation and topography has the potential to reduce the visual impact that these properties are exposed to. A separate site visit was conducted for the spatially accurate photomontages where site access was agreed and the photos were taken from the property itself, providing a more accurate representation of potential visual impact.
		Inappropriate magnitude ratings	The overall impact rating of the Proposal on any given visual receptor is based on factors of magnitude and sensitivity. The magnitude ratings are a measure of the visual effects of the development within the landscape. A series of quantitative assessments have been studied including distance from development, quantum of view, period of view and magnitude of change. The overall visual impact rating for any given viewpoint is decided upon by a considered judgement of all qualitative and quantitative factors, not just one factor. Period of view is one of several factors that affect the overall visual impact rating for any given viewpoint. The ratings in the report range from low (a few seconds) to moderate (several hours). The lowest ratings are associated with motorists travelling quickly with sequential views of the turbines whilst the highest ratings are associated with residential dwellings where the tenant may have longer views from the driveway or main part of the dwelling. It can be argued that the ratings for residential dwellings should be higher if the duration of view is for a significant part of the day. Motorists may also have views up to a few minutes as they travel along some of the local roads, increasing their period of view rating to moderate. These changes alone, however, would not alter the overall impact rating for any given viewpoint. Viewing distance is a key (but not sole) determiner of the level of visual impact. Three broad distance categories have been used within the assessment matrix tables. 0-2km - High, 2-7km - moderate and further than 7km - low. All the viewpoints studied had a distance rating of moderate or high. Many other factors make up the overall visual impact rating, including whether the view is screened or blocked by topography and vegetation. A dwelling may be 1km from WTGs but a topographical feature renders them invisible. The overall visual impact is likely to be negligible or low despite the close proximity of the WTGs to the dwelling. Likewise, a dwelling at over 5km viewing distance may have a wide, panoramic view of the WTGs and record a higher overall impact despite the lower viewing distance rating.
		The assessment procedures of the Department do not take seriously the transformation of the landscape from the intrusive presence of a wind farm.	The VIA has been produced in accordance with the project SEARs and is consistent with the Wind Farms and Landscape Values National Assessment Framework methodology with additional regard for several best practice guidelines, including the: • National Wind farm Development Guidelines (Public Consultation Draft V2.4 July 2010) • Draft NSW Planning Guidelines Wind farms (Department of Planning and Infrastructure, December 2011) • Auswind Best Practice Guidelines (December 2006) • Environmental Impact Assessment Practice Note: Guidelines for Landscape Character and Visual Impact Assessment (RMS March 2013) Any procedures or guidelines set by the department are outside the scope of an impact assessment for the Project.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The visual impact assessment has not been undertaken in accordance with any established, independent framework. Specifically, the consideration of the effect of distance as a factor affecting visual impact.	An LCVIA is by its nature not an exact science and consequently is subject to varied methodologies both in Australia and overseas. Potentially subjective assessment material and differences of opinion about how to best assess visual characteristics, qualities, degrees of alteration and viewer sensitivity often arise. As a consequence, and as identified by the NSW Land and Environment Court, the key to a robust process is to explain clearly the criteria upon which an assessment is made. The LCVIA is based on a compiled set of assessment criteria and is consistent with the Wind Farms and Landscape Values National Assessment Framework - NAF (June 2007). Viewing distance is a key (but not sole) determiner of the level of visual impact. Three broad distance categories have been used within the assessment matrix tables. 0-2km - High, 2-7km - moderate and further than 7km - low. All the viewpoints studied had a distance rating of moderate or high. Many other factors make up the overall visual impact rating, including whether the view is screened or blocked by topography and vegetation. A dwelling may be 1km from WTGs but a topographical feature renders them invisible. The overall visual impact is likely to be negligible or low despite the close proximity of the WTGs to the dwelling. Likewise, a dwelling at over 5km viewing distance may have a wide, panoramic view of the WTGs and record a higher overall impact despite the lower viewing distance rating. Many arguments could be put forward for exactly how these distance bands should be calculated, however the overall visual impact rating for any given viewpoint is decided upon by a considered judgement of all qualitative and quantitative factors, not just one factor.
		The DGRs require that the assessment of visual impact be in relation to 'community and stakeholder values of the local and regional visual amenity and quality' and that the description of those values be evidence-based ('surveys and consultation'). The EIS provides neither a description of those community values nor reference to any evidence base for the visual values of the affected community.	The Landscape Character and Visual Impact Assessment (LCVIA) undertaken for the Project (refer Annex I of the EIS) included an assessment of the character of the surrounding landscape, which identified the distinct landscape character zones within the study area, upon which an assessment of potential impacts was undertaken. The findings of the LCVIA were supported by those of published research in consideration of community values towards local and regional visual amenity based on community consultation and survey, as outlined in Section 11.3.3 of the EIS.
		The magnitude of impacts associated with the 'period of view' for public and private receptors have been understated, which has skewed the assessment.	Period of view is one of several factors that affect the overall visual impact rating for any given viewpoint. The ratings in the report range from low (a few seconds) to moderate (several hours). The lowest ratings are associated with motorists travelling quickly with sequential views of the turbines whilst the highest ratings are associated with residential dwellings where the tenant may have longer views from the driveway or main part of the dwelling. It can be argued that the ratings for residential dwellings should be higher if the duration of view is for a significant part of the day. Motorists may also have views up to a few minutes as they travel along some of the local roads, increasing their period of view rating to moderate. These changes alone, however, would not alter the overall impact rating for any given viewpoint. The overall visual impact rating for any given viewpoint is decided upon by a considered judgement of all qualitative and quantitative factors, not just one factor.
		The LVIA has ignored the minimum Zone of Visual Influence (ZVI) specified in the SEARs, with no justification/evidence for not assessing impacts across a huge amount of the area required to be covered by the SEARs.	The SEARs call for a ZVI of no less than 10km offset from the WTGs associated with the Project. During the preparation of the LCVIA, a ZVI for a 15km radius was produced which is now included as supplementary material. This ZVI assisted in guiding the selection of a study area for a more detailed assessment of visual impacts, set at approx. 12km and subject to a thorough site visit. The ZVI shown within the original report indicates this core study area. As can be seen within the 15km ZVI diagrams, based purely on topographical analysis, WTGs may be visible from areas of the landscape beyond the nominated 12km study area. In reality, screening vegetation would be likely to block or filter many of these views. The very low density of sensitive residential visual receptors in these locations combined with the significant viewing distance, means that visual impacts from this location are likely to be low and they were not further investigated within the study. At distances in excess of 15km, the WTGs would occupy a relatively small proportion of the visual scene.
		Photomontages have been produced contrary to best practice.	Photomontages developed for this assessment have been prepared to industry standards using accurate scale, view and lighting representation. Photomontages have been created within the guidelines of the Draft NSW and the Scottish Natural Heritage Visual Representation of Wind farms (2006). Geographical co-ordinates are included on each image in the form of eastings and northings. Where site access could be arranged with property owners, photomontages were taken from a location that would best provide an accurate impression of visual impacts. Where possible this location was selected through discussion with the landholder. For example - the photomontage from property H07 (photomontage 7) was taken from a location where the property owner indicated that a new dwelling would be constructed. Where the property owner was not available for discussion, the photomontage specialists selected a location that best indicated a worst case scenario ie. a view from the main part of the dwelling towards the closest turbines.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
Noise Impacts	4, 24, 28, 29, 35, 50	Noise impacts will be experienced by surrounding residents.	The operational wind farm noise impact of the Biala Wind Farm has been assessed according to the requirements of the Revised SEARs, and consistent with the relevant noise guidelines. This assessment is summarised in Section 10 and detailed in Annex G of the submitted EIS. This document demonstrates that the proposed Biala Wind Farm is compliant with wind farm noise limits, provided the selected turbine type and wind farm layout is similar to that used in the assessment. The assessment includes houses up to 2.9 km away and as the assessed houses are compliant it is expected that noise from the Biala Wind Farm will comply with the limits at houses further than this distance. The SEARs require that the Biala Wind Farm noise assessment is consistent with the SA EPA Wind Farm Noise Guidelines(2003), however with the requirements that background noise curves are derived from wind speed measurements at hub height, and that the assessment should be based on separate day (7am to 10pm) and night (10pm to 7am) periods, which substantially improves the robustness of the noise assessment compared to using the SA EPA (2003) guidelines as originally written. Wind turbine noise will be audible depending on distance, direction, time of day and atmospheric conditions. However modelling of the Biala Wind Farm noise has demonstrated the wind farm to be compliant with project requirements.
		The turbines will generate low frequency noise and infrasound that will impact surrounding residents.	Wind turbine generators produce sound across the audible spectrum, and like many environmental noise sources, also have sound components in the infrasonic range, which are below the threshold of human hearing. Research has shown that infrasound measured from wind turbines is similar to other sources of environmental noise [“Infrasound levels near wind farms and in other environments”, Resonate Acoustics, Report for SA EPA, January 2013]. The position of the National Health and Medical Research council (NHMRC) is that “after careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans” [https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/eh57_nhmrc_statement_wind_farms_human_health_0.pdf].
Noise Impact Assessment Methodology	4	The wind turbines are larger and of greater capacity (than Gullen Range) and will have significantly greater noise impacts.	The size, capacity and noise output characteristics of the proposed turbines have been taken into account in the noise modelling, including the overall sound level and frequency profile of the noise. The turbine noise has been adjusted for distance when predicting at residential locations. The wind farm noise impact assessment is summarised in Section 10 and detailed in Annex G of the EIS.
		Cumulative noise impacts	The cumulative impact of wind farm noise for the Biala, Gunning and Gullen Wind Farms has been included in the wind farm noise impact assessment. The existing and proposed turbines of the Crookwell 1, 2 and 3 Wind Farms are over 13 km from the Biala site; therefore these wind farms will not influence the noise assessment for the Project.
		The Revised SEARs reference only the South Australian Noise guidelines (2003). These noise guidelines are completely inadequate to measure all relevant aspects of wind turbine sound energy. Any assessment carried out according to these guidelines will be unreliable and unsafe. The impacts from the substation are to be assessed according to the NSW Industrial Noise Policy (2000), but the impacts of the wind turbines are not. The NSW Industrial Noise Policy refers explicitly to 'rotating machinery'. Since wind turbines are obviously rotating machinery, the impacts of the Biala wind turbines should have to be assessed with reference to the NSW Industrial Noise Policy.	The operational noise from wind turbines has been assessed according to the SA EPA (2003) guidelines, except where modified by the SEARs, as these guidelines are specified in the SEARs as being relevant for assessing the wind turbine noise. The SA EPA wind farm noise guidelines have been developed to account for the special characteristics of wind turbine noise compared with other sources of industrial noise, such as operational noise occurring simultaneously with wind induced background noise. The SA EPA guidelines are therefore more suitable for assessing wind turbine noise than the NSW Industrial Noise Policy (EPA, 2000). The “drainage flow” wind specified in the NSW Industrial Noise Policy is associated with temperature inversions; however as temperature inversions generally occur in calmer wind conditions, it is unlikely to be a frequent occurrence during wind farm operation. Nonetheless, it should be noted that the ISO9613-2 noise model used in this assessment to predict the wind farm noise conservatively assumes downwind propagation from all turbines simultaneously, and is also appropriate for meteorological conditions consisting of a well-developed, moderate, ground-based temperature inversion, such as commonly occurs at night.
	6	The background noise monitoring methodology does not comply with the NSW Wind Farm Guidelines or the South Australian Guidelines. Specifically, the EIS does not provide the GPS coordinates of the measurement locations; does not provide multi-	The location of the houses near the Biala Wind Farm that were included in the assessment, including those where background noise measurements have been carried out, have been provided in Table 4.1 of the wind farm noise impact assessment, detailed in Annex G to the EIS. The relative location (by distance and direction) of the noise loggers from the nearby dwelling have been provided in Table 5.1 of the wind farm noise impact assessment, detailed in Annex G to the EIS.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		directional photos of the setups to inform other parties of any potential extraneous noise sources around the measurement equipment; and does not provide information to allow clear determination as to whether any of these monitoring sites will shield the equipment from the wind farm during noise compliance testing. Submission makes specific reference to the validity of the background monitoring undertaken at dwelling HN07.	Specifically, in relation to queries regarding the noise monitoring data for dwelling HN07, the GPS-measured location of the noise logger at HN07 is 719191 E, 6173660 N (UTM Zone 55, WGS84 datum), noting that the accuracy of GPS measurements can be ± 5 to 10 m. The GPS locations at the other noise loggers can be provided on request, as well as additional photographs taken at logger locations. Although there was some evidence of high background noise levels at HN07 in the evening/night between 5 pm and 7 am, it is not expected that this noise was due to demolition, which would generally be expected to be carried out during daytime working hours. However, to mitigate the impact of these high background noise levels, compliance was checked against the lower background noise period between 7 am and 5pm during the day. The assessment of noise compliance at HN07 from 7am to 5pm was a conservative inclusion in addition to that already required under the SEARS for the 24 hour, day (7am to 10pm) and night periods (10pm to 7am). In all these cases (24 Hour, day, night and 7am to 5pm) the wind farm noise was found to be compliant at house HN07. If another building is built nearby to HN07, then the existing background measurements are likely to still be representative of the dwelling location (however this should be confirmed when further details are known), as the background measurements record the ambient sound environment around a dwelling, and when placing noise loggers the monitoring location is selected to be generally representative of the site, taking care to be sufficiently distant from nearby surfaces or vegetation that might detrimentally influence the quality of measurements.
	19	There are many machines that are neither new, or well maintained. The noise generated through operation of old turbines is not considered in the assessment of impacts.	The noise assessment for the Biala Wind Farm is based on a wind turbine “noise envelope”. If the turbine selected for the site has sound power levels that fall within the envelope used for this assessment, then the noise impact of the turbine selected is expected to be similar to, or lower than, that reported in this assessment. It is too complex to model all possible noise output scenarios for the wind farm due to equipment malfunction. In the case of excessive noise events, for example due to a broken turbine or component, then this is best monitored and managed through operational noise management measures that can be specified in approval conditions and Environmental Protection Licence (EPL) requirements. As described in Annex G Section 11, there are a number of noise management and mitigation measures that can be implemented in the case of excessive noise events, for example running one or more turbines in reduced noise modes until any issues are rectified. Prior to commissioning the turbines, the proponent will prepare and implement an Operational Noise Management Plan including (but necessarily not limited to) the following measures to manage noise emissions from the operation of the project: a) Verification that predicted noise levels are met via a noise compliance assessment which is completed within six months of final turbine commissioning, in accordance with the Environmental Noise Guidelines: Wind Farms (SA EPA, 2003); b) Identification and implementation of best practice management techniques for minimisation of noise emissions where reasonable and feasible; c) Rectification of any annoying noise characteristics resulting from the operation of the project such as tonality or adverse mechanical noise from component failure; and d) Procedures and corrective actions to be undertaken if any non-compliance is detected.
	22	Newtricity is proposing a layout where most turbines breach the spacing recommended by the NSW Government NSW Wind Turbine Handbook, 2002. The turbines will therefore operate in the wake turbulence from other turbines, which effects turbine efficiency but very substantially increases noise including infrasound. The exact effect of this phenomenon has yet to be determined by available information, and therefore the purported noise modelling presented by the Proponent must be of unknown and unsubstantiated validity.	The ISO 9613-2 noise propagation model is an industry standard, and has been validated by post-construction noise measurements on operating wind farms, both internationally and in Australia. For example the independent study carried out by Resonate Acoustics [“Accuracy of noise predictions for wind farms”, Cooper et al., 5 th International Conference on Wind Turbine Noise, Denver 28-30 August 2013], which demonstrated that noise modelling using the ISO9613-2 model using a ground absorption factor of $G = 0$ resulted in either a (conservative) over-prediction or was similar to measurements depending on terrain. Furthermore, additional levels of conservatism are incorporated into the noise model, such as the assumption that each receiver is simultaneously downwind of each turbine location, and that there is no attenuation due to line-of sight screening due to terrain, vegetation or other obstacles. An independent study has also demonstrated that there was no substantial increase in turbine noise levels from operating in the wake of other turbines [“Influence of upwind turbines on wind turbine sound power output”, Cooper et al., Proceedings of Acoustics 2012 – Fremantle, 21-23 November 2012]. It has been theorised that minor increases in noise due to turbulence are offset by reductions in the wind speed hitting the waked turbine.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
	33	Infrasound and low frequency noise impacts are not well understood, but may have significant impacts on surrounding residents and a precautionary approach should be applied.	Wind turbine generators produce sound across the audible spectrum, and like many environmental noise sources, also have sound components in the infrasonic range, which are below the threshold of human hearing. Research has shown that infrasound measured from wind turbines is similar to other sources of environmental noise [“Infrasound levels near wind farms and in other environments”, Resonate Acoustics, Report for SA EPA, January 2013]. The position of the National Health and Medical Research council (NHMRC) is that “after careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans” [https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/eh57_nhmrc_statement_wind_farms_human_health_0.pdf]. Aerodynamic noise from a wind turbine is generally not dominant in the low frequency range, with frequencies more prevalent in the mid-frequencies from 200 and 1000 Hz. Association of wind turbines with excessive low frequency noise may be due to misinterpretation of the ‘swishing’ sound typically heard in close proximity to wind turbines, which is actually amplitude modulation and not low frequency noise. If low frequency noise is found to be excessive according to the procedures in the Draft NSW Planning Guidelines Wind Farms 2011, the noise output of the wind farm may be managed using the processes defined in Annex G Section 11 of the EIS. Prior to commissioning the turbines, the proponent will prepare and implement an Operational Noise Management Plan including (but not necessarily not limited to) the following measures to manage noise emissions from the operation of the project: a) Verification that predicted noise levels are met via a noise compliance assessment which is completed within six months of final turbine commissioning, in accordance with the Environmental Noise Guidelines: Wind Farms (SA EPA, 2003); b) Identification and implementation of best practice management techniques for minimisation of noise emissions where reasonable and feasible; c) Rectification of any annoying noise characteristics resulting from the operation of the project such as tonality or adverse mechanical noise from component failure; and d) Procedures and corrective actions to be undertaken if any non-compliance is detected.
		Noise compliance - the NZS 6808:2010 typically used for noise compliance does not take noise sampling from the nacelle height, it uses mathematical formula to arrive at a figure. Further, sound is averaged out and hides the breaches as they occur.	The NZS6808:2010 referenced in submission 33 is not relevant to the Project which is assessed according to the SA EPA Guidelines (2003) with some modifications as specified by the SEARS. Nonetheless it should be noted that the turbine sound power level data used as inputs in the noise model are derived via measurement and calculation at a test site, as sound power level is a theoretical value from a point source that, by its nature, cannot be directly measured. Sound power level (LW) is a measure of the total power radiated by a source. The “sound power” of a source is a fundamental property of the source and is independent of the surrounding environment. This differs from the Sound Pressure Level (LP) which is the level of “sound pressure” as measured at distance by a standard sound level meter with a microphone. LP is the received sound as opposed to LW that is the sound ‘intensity’ at the source itself.
			The noise compliance limits are derived using the SA EPA Guidelines (2003). This is a project requirement, and the guidelines have been developed to produce a process for wind farm noise compliance testing that is practical, functional, and the noise limits that are applied are derived to protect amenity and sleep disturbance. Wind farm noise and background noise are measured using the L90 descriptor (which is the level of noise exceeded 90% of the time over a 10 minute period) in order to remove intermittent or impulsive noises that would unduly influence measurements. Due to the large number of measurement samples and the variable nature of environmental noise sources, a regression curve is fitted to the data to derive noise limits or determine the wind farm noise level for assessment against limits. Hence some averaging of measurements is required. It is worth noting that additional levels of conservatism are incorporated into the noise model, such as the assumption that each receiver is simultaneously downwind of each turbine location, and that there are no attenuations due to line-of sight screening due to terrain, vegetation or other obstacles.
	41	The background noise monitoring methodology does not comply with the NSW Wind Farm Guidelines or the South Australian Guidelines. Specifically, the EIS does not provide the GPS coordinates of the measurement locations; does not provide multi-directional photos of the setups to inform other parties of any potential extraneous noise sources around the measurement equipment; and does not provide information to allow clear determination as to whether any of these monitoring sites will shield the equipment from the wind farm during noise compliance testing.	The location of the houses near the Biala Wind Farm that were included in the assessment, including those where background noise measurements have been carried out, have been provided in Table 4.1 of the wind farm noise impact assessment, detailed in Annex G to the EIS. The relative location (by distance and direction) of the noise loggers from the nearby dwelling have been provided in Table 5.1 of the wind farm noise impact assessment, detailed in Annex G to the EIS. Panoramic photos are currently not included in the EIS report, in order to keep the report size to a manageable level. The GPS locations at the noise loggers can be provided on request, as well as photos for additional azimuths and viewpoints. Noise measurement locations have been selected to satisfy project requirements and guidelines, as well as being on the wind farm side of the house. At most measurement locations there are a number of areas of vegetation, which form a natural part of the existing noise environment for that area. Therefore logger placement is a balance of selecting a location that is representative of the local environment near that house, as well as being sufficiently distant from any vegetation, other noise sources, or surfaces that would be considered to be unrepresentative of the local area or unduly affect measurements.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
Traffic and Transport	17, 19, 25, 31, 33, 35, 42, 49	Ongoing maintenance work generates significant traffic, which causes damage to roads over time, for which no compensation is provided to Council and the cost is borne by the broader community through local rates.	The Proponent is working with ULSC to implement appropriate mechanisms to ensure that the roads used by construction vehicles are returned to their original state or better. The Construction Environmental Management Plan (CEMP) to be prepared for the project following project approval would incorporate measures to rectify haulage roads and road infrastructure post construction, and would contain any additional matters identified as required by RMS and ULSC.
		The condition of Gunning Crookwell Road will deteriorate and not be returned to its current condition on the completion of the project as previously experienced across the shire.	Refer above.
		Increased heavy vehicle traffic for up to 2 years on local roads and through local villages	The project will generate traffic onto the surrounding road network during construction as outlined in the EIS. As demonstrated in the EIS, the traffic volumes generated by the development will be within acceptable capacity thresholds in the vicinity of the project and surrounding areas.
		The traffic on the Gunning Crookwell Road is generally increasing. Construction of the wind farm will escalate to a level that will increase the risk to people travelling this road for the necessity of attending school. Imposition of speed restrictions on this road during the construction period is unacceptable due to increased travel times for motorists. Requests that the developer fund a school bus and that traffic directly associated with works on the wind farm construction be forbidden to use the road during the period of time the school bus would be travelling.	The CEMP to be prepared for the project following project approval will include preparation of a Construction Traffic Management Plan (CTMP). The CTMP will include detailed measures to address traffic generation, measures to minimise impacts to existing road users and to maintain and rectify haulage roads and road infrastructure. It would include requirements for specific work stage construction traffic management plans as required, and would consider appropriate mitigation measures to be implemented during school drop-off/pick-up periods.
		Currently B-double trucks are not permitted to travel Gunning Crookwell Road by local Council, which limits transport of livestock to market, however the vehicles transporting turbine components will be allowed to utilise it. Where is the difference and why is the developer not being made to upgrade the road to a higher standard to allow these heavier vehicles to travel ensuring the safety of fellow motorists.	Transport of the turbine components will be undertaken under a permit to be issued by RMS/ULSC that will include specific traffic management conditions. The proponent will be required to fund any road upgrades required to facilitate the delivery of the over dimensioned loads.
		The Gullen Range wind farm is evidence of the detriment the multiple road trips associated with an industrial scale build of this size has on local roads. Although the proponent is responsible for maintaining roads to the standard prior to construction commencing, it is another matter entirely to get them to honour said responsibility after the fact.	The Proponent is working with ULSC to implement appropriate mechanisms to ensure that the roads used by construction vehicles are returned to their original state or better. The CEMP to be prepared for the project following project approval would incorporate measures to rectify haulage roads and road infrastructure post construction, and would contain any additional matters identified as required by RMS and ULSC.
		Range Road is not a viable option for heavy construction vehicle access. Significant funds were outlaid to repair damage created by the overuse and abuse of heavy construction vehicles following completion of the Gullen Range project. To have it destroyed again is unacceptable and a waste of money already spent.	The proposed over dimension vehicle route has been identified in consultation with ULSC and RMS as the most appropriate route to the project site. Any required road network upgrades will be funded by the proponent.
		The section of Range Road between Gullen Range Wind Farm and Grabben Gullen Road has been in a derelict state of repair for years. It is not acceptable to have residents suffer poor road conditions because the Upper Lachlan Shire Council withholds road works awaiting funds from wind farm projects.	It is proposed to utilise Range Road by over dimensioned vehicles to access the project area. Range Road would be upgraded to facilitate access. The current state of Range Road is not subject of this project assessment or development application.
		Range Road in its entirety is not capable of coping with the number and regularity of this type of heavy vehicle. The road is used by residents to commute, children on school buses and as a livestock cartage route to Goulburn. It is not divided, has minimal width, has reduced visibility due to crests, bends and vegetation with no one point of clear visibility being more than 500m.	The over dimensioned loads will be transported under traffic management conditioned via a permit to be issued by RMS/ULSC to ensure that the loads can be safely transported whilst minimising impacts on existing road users. The EIS has demonstrated that the anticipated traffic volumes generated by the project are within acceptable capacity thresholds in the vicinity of the project and surrounding areas.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The damage and deterioration and resultant danger to passenger vehicles associated with the Gullen Range Wind Farm project resulted in the road being sign posted to a 'heavy vehicle access route' and the speed limit reduced to 80km/hr. This was done after accidents, deterioration, speeding trucks and access vehicles and as a direct result of residents expressing their justified concerns over these safety issues to the media, local council and members of parliament.	Noted. Any speed limit reductions would need to be undertaken in accordance with RMS and ULSC requirements and would be identified in the CTMP to be prepared for the project following project approval.
		The project extends through to Biala Road in the south, which has been previously upgraded as an access route for the Cullerin Wind Farm which does not traverse through a populated village area and should be the heavy construction vehicle access route in the event the project proceeds.	The proposed over dimension vehicle route has been identified in consultation with ULSC and RMS as the most appropriate route to the project site. The route to the south via Biala Road was not pursued due to restraints at "Devil's Elbow" and the heritage listed railway bridge.
		The proposal will impact directly on local school bus services, Gunning-Crookwell commuter traffic, and farming operations, particularly where farmers are moving stock across roads. The EIS fails to identify mitigation measures to address these impacts.	The project will generate traffic onto the surrounding road network during construction as outlined in the EIS. As demonstrated in the EIS, the traffic volumes generated by the development will be within acceptable capacity thresholds in the vicinity of the project and surrounding areas.
			The over dimensioned loads will be transported under traffic management conditioned via a permit to be issued by RMS/ULSC to ensure that the loads can be safely transported whilst minimising impacts on existing road users.
			The CTMP to be prepared for the project following project approval will include detailed measures to address traffic generation and measures to minimise impacts to existing road users. It would include requirements for specific work stage construction traffic management plans as required, and would consider appropriate mitigation measures to be implemented during school drop-off/pick-up periods and include consideration of site specific issues such as dedicated stock crossing locations.
		There is no real assessment of any concrete batching at the site, despite the traffic report assuming there will be one.	The EIS and associated specialist assessments (including associated traffic) have included consideration of a temporary concrete batching plant that is proposed to be provided within the Project Area.
		We are not convinced that the proponent has identified appropriate safe sight distances in each direction of the proposed three access points identified in Table 4.4	Revised vehicle access locations have been identified in conjunction with ULSC and the project team. The revised vehicle access locations exceed the sight distance requirements set out in the Australian Standards and Austroads Guide. Refer further discussion of this issue in <i>Section 4.1.1</i> of the Response to Submissions Report.
		There has been little discussion about the condition of Grabben Gullen Road, which will no doubt suffer from the impact of increased traffic during the construction phase and we ask that provision for road maintenance costs are required in a revised EIS.	The Proponent is working with ULSC to implement appropriate mechanisms to ensure that the roads used by construction vehicles are returned to their original state or better. The CEMP to be prepared for the project following project approval would incorporate measures to rectify haulage roads and road infrastructure post construction, and would contain any additional matters identified as required by RMS and ULSC.
		Significant adverse effects on the operation of existing farming operations, which incorporates movement of stock between sunrise and sunset (under a stock movement permit) across Grabben Gullen Road between two portions of the property. The movement of stock will be compromised with increased traffic on the road. Although the speed limit is recommended to be reduced, history shows that this is not and will not be monitored. Concerns regarding the welfare of our stock and the safety of ourselves whilst moving the stock. Considers that some parts of the farming operation could be relocated to the opposite side of the road to limit the number of stock crossings of the road if an undercover shed and associated facilities were provided. In addition, the close proximity of construction may be carried out at the same time as lambing (September to October), with the increased activity and noise likely to disturb ewes and disrupt their mothering that may result in loss of lambs and profit. It is requested that the closest towers to the lambing paddocks not be carried out during the months of September and October.	The CTMP to be prepared for the project following project approval will include detailed measures to address traffic generation and measures to minimise impacts to existing road users. It would include requirements for specific work stage construction traffic management plans as required, and would consider site specific issues such as dedicated stock crossing locations.
			Construction staging and timing is not confirmed at this stage. During preparation of the CEMP, proposed timing of construction works will be identified and any identified potential conflicts with existing adjacent land uses/activities flagged so that appropriate mitigation measures can be developed to avoid impacts wherever possible.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
Ecology Impacts and Assessment Methodology	10, 25, 29, 33, 35, 50	Siting of turbines in close proximity to, and surrounding, pockets of remnant vegetation that currently cover a large area of the proposal. Further, the turbines will be situated in such a way as to disrupt pathways and flight zones for native birds, animals and reptiles, and in the case of a large area of trees at the north east of the proposal, will dissect with access roads and power lines, both above and below ground.	The landscape of the PA is already highly fragmented comprising patches of native woodland. The proposed Project comprises a Development Footprint that is nodal (that is, a series of WTG points linked by a network of linear access roads) and has been designed to avoid areas of woodland. The development will not exacerbate any existing fragmentation in the landscape by land clearing. The siting of the proposed access road in the large wooded area in the north east of the PA has been located to follow the existing farm access road to avoid any additional disturbance resulting from creating a new access track. Linear gaps in native vegetation created by clearing for the Project access roads are expected to have a maximum width of 10m. This distance is unlikely to inhibit movement of any fauna species identified at the PA. Birds using habitats within the PA were observed to make many short distance flights within and between woodland patches. As the Project layout is nodal, and the maximum linear width of fragmentation is 10m, the proposed infrastructure is unlikely to affect movement of birds between woodland patches in the PA. No listed migratory species were identified within the PA during the seasonal field surveys and potential impacts of wind farms on flight paths of birds passing through the landscape are discussed in Section 6.1.8 of the Ecology Impact Assessment.
		Ecology surveys were insufficient. Seasonal/migratory fauna movements are limited to small windows each year, and the field survey undertaken cannot identify these species.	The field survey program was designed in accordance with the survey requirements issued by OEH and was undertaken over six survey periods (totalling 43 days) between October 2012 and March 2014. Remote bat detection units also continuously recorded data from July 2014 to May 2015 (almost one year period). While no species listed as migratory under the EPBC Act were identified during the field survey program, it is acknowledged that migratory species have potential to fly over the PA or use habitats within the PA during migration. For this reason, potential impacts to migratory species that were not recorded during field surveys, but are considered to have the potential to occur based on database records and habitat suitability, were assessed in the Ecology Impact Assessment. The migratory species with potential to occur at the PA are outlined in Table F4, Annex F of the Ecology Impact Assessment, and the significance of impacts to these species is assessed in Annex H of the Ecology Impact Assessment.
		Destruction of pristine bush and grasslands including rare bush orchids	A number of non-threatened orchid species were recorded in areas of native vegetation within the PA. The Project will involve removal of less than 1% of the native vegetation within the PA, and it is therefore unlikely that a substantial proportion of the orchid species at the PA would be damaged or removed. The breakdown of areas of each vegetation type removed are presented in Table 6.1 of the Ecology Impact Assessment. No threatened orchid species were detected during flora surveys. Pre-clearance surveys will be undertaken in the vicinity of native vegetation prior to vegetation removal, with an aim of identifying and avoiding any threatened flora present within or near the proposed clearing area.
		Birds and bats that are killed by turbines upset the ecosystem - they are the natural enemies of insects and help to keep their numbers in balance	It is acknowledged that wind farms have the potential to lead to mortality of birds and bats due to WTG collision, and potentially barotrauma. Research into the risk of WTG collision in Australia is limited; however a review of mortality data from European and North American wind farms presented a median rate of 2.3 dead birds per WTG per year (Rydell et al. 2012). Mortality at rates in this order would not be sufficient to affect the role of birds and bats as predators of insects. Further discussion on the risk of fauna mortality due to WTG collision and barotrauma is provided in Section 6.1.11 and 6.1.12 of the Ecology Impact Assessment.
		Further clearing of land in an already heavily felled region will lead to fauna and flora loss	Clearing of native vegetation and fauna habitat features has been avoided where possible. Less than 1% of native vegetation within the PA will be cleared for the Project, and only eight hollows (1% of hollows at the PA) are located within the development footprint. Removal of this small portion of flora and fauna habitat is unlikely to result in a loss of any flora or fauna species currently present at the PA. Cumulative habitat loss and fragmentation is discussed in Section 6.3.1 of the Ecology Impact Assessment.
		Being primarily agricultural land which has been cleared for pasture with little native habitat, removing or destruction of primary breeding areas and havens for fauna (through draining of dams and changing or destroying natural waterways) is a great concern for the little ecological environment we have and for the future environment in general.	No dams are proposed to be drained as part of the Project and no watercourses containing fish will be impacted. There are seven locations where new access roads and cabling will cross first order watercourses. Any crossings will be designed and constructed in accordance with the Guidelines for Watercourse Crossings on Waterfront Land (NSW Office of Water 2012) and the Fish Passage Requirements for Waterway Crossings (Fairfull and Witheridge 2013). Further information is provided in Section 6.1.6 of the Ecology Impact Assessment.
		The project will result in killing of high-flying avian life	It is acknowledged that wind farms have the potential to lead to mortality of birds and bats due to WTG collision, and potentially barotrauma. The risk of fauna mortality due to WTG collision and barotrauma is discussed in Section 6.1.11 and 6.1.12 of the Ecology Impact Assessment.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
EMI Impacts	24, 25, 42, 49	EMI impacts resulting from operation of the turbines, including interference with television reception	DNV GL has assessed the potential risks regarding interference with radio communication services operating in the vicinity of the Project, including television services, in accordance with the planning guidelines relevant to the proposed Biala Wind Farm. This assessment is summarised in Section 16 and detailed in Annex N of the EIS.
			DNV GL has reviewed the line-of-sight of the commonly used TV satellite and it has been found that no turbine intercepts the line-of-sight between houses considered in this analysis and these satellites.
			The Project site is in a location for which there is good predicted digital terrestrial television coverage across most of the site according to the Australian Government Digital Ready MySwitch website. However, in the areas where digital reception is marginal, residents in the vicinity of the Project may be eligible to receive access to the Government-funded satellite television service to view free-to-air television. Should interference be encountered that is attributable to the Project, there are a number of amelioration options. For example, realigning the householders TV antenna more directly towards their existing transmitter, adjusting the height of the TV antenna, tuning the householder's antenna into alternative sources of the same or suitable TV signal, the installation of a more directional and/or higher gain antenna at the affected building, relocating the antenna to a less affected position, the installation of a cable or satellite TV receiver at the affected house, or installation of a TV relay station.
			Possible cumulative EMI impacts from the proposed Project and nearby wind farms have also been considered and are presented in Annex N of the EIS. Cumulative impacts are not expected to occur for most services considered, however the possibility exists for cumulative impacts to point-to-multipoint stations, mobile phones, wireless internet, CB radio and television services. In this case options exist to mitigate most interference issues should they occur, as described above in the case of TV services.
			Residents in the vicinity of the wind farm may also have access to satellite television. DNV GL has reviewed the line-of-sight of the commonly used TV satellite and it has been found that no turbine intercepts the line-of-sight between houses considered in this analysis and these satellites. According to the ISP directory, no satellite internet services are available in the vicinity of the Project.
			The wireless internet provider Yless4U operates a point-to-multipoint station approximately 33 km from the site. YLess4U have responded indicating that they do not have any concerns regarding the Project. It is possible that residences around the Project utilise Telstra NextG wireless broadband services instead.
			In general, mobile phone signals are not susceptible to interference from wind turbines. It has been found that there is good coverage in some areas around the proposed wind farm, and mobile signals are unlikely to be affected in these areas. However there are some areas where coverage may be marginal and therefore mobile signals may be susceptible to interference from the wind farm. DNV GL has contacted Optus, Telstra and Vodafone to seek feedback on any potential impact that the Project could have on their services and to date no concerns have been raised. DNV GL also notes that if interference is encountered, mitigation options are available.
Shadow Flicker Impacts	24	Shadow flicker impacts resulting from operation of the turbines	DNV GL has assessed the potential shadow flicker in the vicinity of the Project in accordance with appropriate guidelines relevant to the proposed Biala Wind Farm. This assessment is summarised in Section 16 and detailed in Annex O of the EIS.
			The results indicate that no dwellings that are not associated with the project are affected by shadow flicker above the limits in the recommended guidelines.
Water Supply / Use	25, 33	Water use associated with concrete for turbine bases, substation, as well as dust suppression and other varied uses is significant in an area already light on for water levels in surrounding catchments. Will the proponent truck water in from vast distances to prevent locals from having to possibly face water restrictions? The locality is primarily agricultural land and the dams and watercourses are used to maintain stock and to provide water to households and to irrigate crops / paddocks. By draining these dams and changing or destroying natural waterways will have a negative effect on landholders further down the waterways who rely on these resources.	Water supply options are available to meet the demands of the Project during construction, with the most convenient and cost effective being the use of surface water from existing dams within the PA. In the event that existing surface waterbodies are not utilised during construction, water may be sourced externally and delivered to the PA via water tanker. In addition, groundwater pumping via a new bore and extraction from the Lachlan River also present viable water supply options, however licensing, economic and logistical requirements would need to be determined following approval.
			As outlined in the EIS, supply of water from existing (or new) dams is one of a number of identified options, each of which have various associated advantages and disadvantages, along with difference licensing and approval requirements.
			Over-extraction of surface or groundwater resulting in reduced environmental flows, reduced water availability for existing licensed users and impacts on water-dependent ecosystems is identified as a potential risk to/resulting from the project.
			As committed in the EIS, the CEMP to be prepared for the project following project approval, would incorporate appropriate preventative and management measures to manage these risks and prevent significant impacts. This would also incorporate obtaining any required water access licences.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
Community Consultation	7, 9, 10, 18, 19, 25, 34, 37a, 49	Community Information Sessions did not provide access to the technical specialists involved in the assessment of the project.	Three Community Information Sessions have been held to date, all of which included representation by the Proponent and key senior members of the environmental assessment team. Due to the broad range and number of environmental issues being addressed, it is not considered appropriate that specialists in each technical discipline be present at the community information sessions.
			During each session, feedback was provided to the community regarding the status of the project and findings and outcomes of the ongoing specialist assessments, along with opportunities to ask questions relating to specific issues of concern for individual community members.
			In the event that senior members of the environmental assessment team are unable to answer technical questions to the level of detail requested, the matter can be deferred and subsequent consultation undertaken through involvement of the relevant technical specialist(s) as required to satisfy community queries and issues.
		Not evident how the issues raised by the community or community groups (including visual impacts, noise, property devaluation, health and more) have been resolved. The proponent has not listened to the majority of local residents, and the community consultation has provided minimal information and done nothing to understand or address the concerns of the community.	Table 7-4 of the EIS identifies the key community issues and concerns that have been raised in consultation during the environmental assessment, and outlines where and how each of these issues have been addressed.
		No attempt has been made to adjust the project to any concerns that have arisen.	Community concerns and issues have been considered throughout the duration of the project, in the identification of options, development and refinement of the project design and in undertaking the specialist assessments that have informed preparation of the EIS. This has included development of recommendations for mitigation measures and commitments made to address specific local issues in response to the information and feedback gained through the consultation process (including preparation of this RtS Report, and associated amendments to commitments and mitigation measures where appropriate).
		Inadequate process for community consultation. Little real information has been provided and the distress and opposition of many people in the district has been ignored. It has failed in any meaningful way to comply with the SEARs requirement for real consultation.	Community consultation has been undertaken in accordance with the Stakeholder and Community Engagement Strategy (refer Annex D to the EIS) that was prepared specific to the Project in the early stages of the planning process. The strategy was developed in accordance with the requirements of DGRs, Draft NSW Planning Guidelines for Wind Farms (DP&I 2011) (Draft Wind Farm Guidelines) and other relevant planning instruments and guidelines. It was prepared to direct the engagement process, and through implementation, ensure that an adequate level of consultation is undertaken during the environmental investigation, approval and construction phases of the Project.
			It was designed to ensure that key stakeholders and issues are identified, and that the consultation approach incorporated a range of appropriate methods to provide effective consultation throughout the project. Feedback received has been incorporated into the assessment process as outlined above and described in the EIS (refer Chapter 7).
		The DGRs require that the EIS " <i>Demonstrate effective consultation with stakeholders, and that the level of consultation with each stakeholder is commensurate with their degree of interest/concern or likely impact</i> ". A generic table (Table 4.1) apparently showing 'consultation and engagement methods' does not thoroughly meet the above DGR. The EIS has made reference to key stakeholders and targeted consultation yet then goes on to provide a 'generic' table. The table provides no information as to the value, content or outcome of any of those methods, provides no evidence of community feedback.	Table 4.1 of the Stakeholder and Community Engagement Strategy outlines the generic list of consultation and engagement tools/methods that may be applied during the various stages of the consultation process, noting that the applied methods will vary depending on the status of the project and the level of stakeholder interest. Chapter 4 goes on to provide details on how and when these methods were applied for the identified key stakeholders and issues during the various stages of consultation.
		The Stakeholder and Community Engagement Strategy does not truly consult on a two way conversation but outlines the facts of the project with no true investigation or consideration given to the feedback from the community directly affected.	Processes are in place to respond to legitimate concerns relating to all aspects of the Project. Feedback received throughout the consultation process has been incorporated into the assessment as outlined above and described in the EIS (refer Chapter 7).
			The Proponent is committed to continued ongoing and thorough community engagement with all stakeholders throughout the approvals process and post approval during the construction and operational phases of the Project.
		The EIS is misleading as it often gives reference to information newsletters, however there were only 5 issued in a 2 year period and the information contained within was broad and generalised.	Newsletters were issued at various times throughout the project to provide factual and timely updates and feedback to the community on the status of the project and outcomes of the ongoing design, assessment and consultation processes.
			The number of newsletters released was reflective of the availability and timing of new information as the assessment process continued.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
			Throughout the assessment period, other means were available to the community to gain project related information, ask specific questions or provide feedback on the Project, including website updates, community information sessions, or direct contact with the Proponent and project team via the project website.
		Information contained in the EIS and other project documentation is misleading with respect to Newtricity constructing and operating a wind farm.	As the Proponent for the proposed development, Newtricity is seeking approval for the construction and operation of the Project consistent with the framework for seeking such project approvals under the EP&A Act.
			The EIS contains no misleading information regarding Newtricity's ongoing involvement in the Project. Newtricity has been transparent in provision of information on the Project website, outlining that it will make a final decision in respect to constructing the wind farm once all the necessary approvals are in place, that a joint partner to build the wind farm would be considered or may on-sell the lease to another wind farm company.
			Irrespective, this is not subject for consideration as part of the environmental assessment under the EP&A Act.
		There was no initial public consultation with non-host Grabben Gullen residents prior to the Biala project being declared a 'State Significant Development'. This has created an immediate hostility towards the Upper Lachlan Shire Council and Government representatives, between host and non-host residents and a sense of futility by non-host residents to have their voice heard.	As outlined in Table 4.5 of the Stakeholder and Community Engagement Strategy (refer Annex D to the EIS), a range of consultation and engagement activities were undertaken in the early stages of the Project prior to the request for DGRs was issued to DPE. This included presentations to ULSC and other political stakeholders; a briefing in the Crookwell Gazette; distribution of Newsletter 1 to landholders and residents within a 10km radius of the PA (a distribution radius that includes the township of Grabben Gullen) and identified community groups; establishment of the Project website; and convening the first Community Information Day, which was advertised in the Crookwell Gazette and Goulburn Post two weeks prior.
		Initial stages of consultation were inadequate in informing residents of the project and potential impacts	
		The Stakeholder and Community Engagement Strategy outlines the Grabben Gullen Community Progress Association as being one of the stakeholders, being a representative of the community. Never has the association been invited to be consulted as a representative by any representative of the Biala Wind Farm nor its Community Consultative Committee nor have we been informed of the individuals on the CCC or its contact details.	An individual, identifying themselves as representative of the Grabben Gullen Community Progress Association made contact with the Project team and was subsequently added to the distribution list for receipt of email communication regarding the Project. To our knowledge, the registered email address has been in receipt of email communication regarding updates on the Project. It is also noted that that same individual was present at the Community Information Day held on 13 July 2013.
			Any individual or community group can make direct contact with the Proponent and project team via the project website.
			An overview of the CCC structure and copies of CCC meeting minutes are posted on the Project website and include the names of the CCC members
		The Proponent's public consultation has been inadequate and has involved providing substandard and misleading information to local residents regarding the visual impact of the proposed wind farm.	Information provided to the community has been factual and consistent with the level of detail and availability of new and relevant information at the time of release. Information has been provided through various means as outlined in the EIS and supporting Stakeholder and Community Engagement Strategy, providing regular updates and feedback to the community on the status of the project and outcomes of the ongoing design, assessment and consultation processes.
			The photomontages presented at the Community Information Day and on the Newtricity website were early visual representations to give an indicative impression of the turbines within the landscape. The subsequent spatially accurate photomontages within the EIS have been prepared to industry standards using accurate scale and view representation and supersede these earlier images. Refer Section 8 of the LCVIA Report contained in Annex I of the EIS for further discussion of photomontages.
Community / Social / Economic Issues	19, 35, 29, 33, 25, 31, 42, 47, 49, 50	Damage to the cohesiveness of the community, creation of community tension and ill feeling and division between involved and non-involved landholders	It is acknowledged that a wind farm development can be divisive between involved and non-involved landholders and negatively affect community wellbeing. Such outcomes are more likely to result where there is a lack of information available to the community regarding the details of the Project and the potential impacts associated with it, and where the benefits of the Project are not equitably distributed amongst the community.
			The Proponent has sought to implement an ongoing and thorough community consultation program to ensure the relevant information is made available to the community so that they are adequately informed of the Project, and that sufficient opportunity is provided for the community to provide feedback for consideration throughout the assessment process and ongoing.
			The Proponent intends to establish a Community Enhancement Program for the Project, which will contribute direct contributions throughout the operational life of the Project, and provide the opportunity for distribution of the benefits of the Project to the wider community.
		Interference with farming operations during construction and maintenance activities	Some impacts to farming operations are anticipated during construction generally associated with construction traffic and noise. These have been identified in the EIS, with mitigation measures outlined to avoid and reduce impacts wherever possible.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
			As committed in the EIS, a CEMP will be prepared for the project following project approval that will include detailed management measures to minimise all identified construction risks and impacts. It would include detailed sub plan for key issues, including traffic, noise, dust etc (refer Chapter 18 of the EIS) that would include for example, requirements for specific work stage construction traffic management plans, and consider site specific issues such as dedicated stock crossing locations and any other required measures to reduce potential impacts to farming operations in the area.
			Ongoing operation of the wind farm is not anticipated to generate any significant impacts to nearby farming operations.
		Significant disruption to the village of Grabben Gullen.	Some impacts to the township of Grabben Gullen are anticipated during construction of the Project associated with construction traffic vehicle movements to and from site.
			As outlined in the EIS, the preferred Restricted Vehicle Access (RAV) Route (referred to as Route 4A) that has been identified in consultation with RMS and ULSC, would utilise the same route used for the Gullen Range Wind Farm, which extends along Range Road, connecting to Grabben Gullen Road at the township of Grabben Gullen.
			However, the preferred route for general construction traffic does not follow the same route, with these vehicles are proposed to access the site from the south to avoid traversing through residential areas, including the township of Grabben Gullen. The majority of light vehicles would also use this route, however some light vehicles may be required to travel along Route 4A (i.e. any employees/personnel who live along this route).
			While some impacts are anticipated during the period of construction that RAV vehicle movements are required, it should be noted that this vehicle type makes up only 5% of the traffic anticipated will be generated by the Project, and all RAV movements will be undertaken under traffic management conditioned via a permit to be issued by RMS/ULSC to ensure that the loads can be safely transported whilst minimising impacts on existing road users. Further, these impacts will be short-term, and the road upgrades required to be undertaken along portions of this route prior to construction commencing, will result in improved road conditions for the local community in the longer term.
		Wind farms do not generate the 'local' job numbers stated in their proposals. Biala as a 31 turbine wind farm is stating it will create up to 7 permanent jobs. Macarthur as the largest windfarm currently in Australia only employs 18 permanent staff and they are travelling distances over 100km, which indicate they are not locals. These are specialised jobs. With Canberra and Sydney close by, it is highly unlikely they will go to locals.	As outlined in the EIS, anticipated employment resulting from the Project was estimated using the National and State based snapshot developed by SKM for the Clean Energy Council in 2012, which predicts the total economic impact and direct employment impact that the Project would have on the local region during the construction and operational phases. The model was developed based on collated information from the Clean Energy Council's industry wind farm database, wind farm assessment reports and other sources including consultation with wind farm developers to provide a current snapshot of the wind energy sector, with this data then being utilised to model estimates of direct, indirect and total output and employment for the construction and operations phase of wind farms.
			Use of the model is considered the most appropriate means by which to estimate the employment generation of the Project given it was recently developed from data obtained from the existing wind farm industry.
			It obviously cannot be guaranteed that the permanent jobs to be generated by the operation of the wind farm will be fulfilled by local residents, and there is potential that these positions could be fulfilled by commuters from major centres. Notwithstanding, the Project will generate local employment opportunities and potential for up-skilling of the local workforce.
		The EIS espouses to create 'employment opportunities to the local and broader community'. The installation of Gullen Range Wind Farm saw upon 90% of employees derived from interstate for the construction process with one major company being utilised from the broader region.	There is potential that a proportion of the workforce may be derived from interstate or other distant major centres. The makeup of the construction workforce cannot be guaranteed and will be subject to market and employment conditions at the time of construction, along with commercial and other considerations. In the event that the principal construction contractor was from interstate or outside the broader region, benefits to the local and regional community would still be significant through employment of local subcontractors, labourers and tradespeople and use of other local suppliers for provision of construction equipment and materials and local services.
		Council's dealing with wind farm issues imposes additional costs directly to councils and in turn, ratepayers. The EIS does not properly demonstrate the impact of new and existing wind farms on Council. Further, wind farms are unfairly exempt from paying rates to local councils, and the rates paid by wind turbine hosts are assessed and paid on rural land valuations, not industrial.	Wind farm developments do create requirement for commitment of Council resources. However, these developments also contribute a significant ongoing revenue stream for councils through applicable developer contributions. In this case, the Proponent intends to establish a Community Enhancement Program in the form of a Voluntary Planning Agreement in lieu of a ley under the Upper Lachlan Section 94A Development Contributions Plan, which will contribute \$2,500 per WTG per annum, equating to \$77,500 per annum in direct contributions throughout the operational life of the Project; funds that can be spent to improve community assets such as recreational facilities, public open space and public amenities, thereby providing benefits to the ratepayer/broader community.
			Issues relating to Council's framework for calculation of rates are not subject for consideration as part of the environmental assessment under the EP&A Act.
		Limitations to use of land - A number of the towers appear to be well under 2km from the boundary of our property and a number	Some WTGs may lie within 2km of the boundary of non-involved landholder properties that are located immediately adjacent to the PA.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		of others that will be within 4km radius of our boundary fence. Our ability for future development (e.g for residential dwellings or subdivision of land) of our property will be greatly hindered having a wind farm so close, and in the event of a sale either with the property as a whole or a subdivision, believe the wind farm will limit our market.	As outlined in the EIS, the potential impacts associated with the Project have been assessed based on existing and DA approved dwellings within and in the vicinity of the PA. It is not possible to undertake an assessment of impacts of the Project on potential future subdivisions as there is no certainty that such subdivision would take place, and if it were to, where associated dwellings may be located.
			Landholder rights to subdivide their land and construct dwellings would not be affected by the Project, and could be undertaken in accordance with the relevant planning provisions.
			Future dwellings could be constructed in proximity to the WTGs through considered siting and design to minimise potential impacts (likely associated with noise and visual issues) at the dwelling location.
		Presence of the transmission line will reduce subdivision potential of affected blocks and limit potential development of land around the easement	Land zoning and potential land use conflict considerations associated with the transmission line connection will be incorporated in the REF that will be prepared for the works (refer further discussion in transmission line assessment responses above).
		The proposal directly conflicts with local zoning regulations for the area, which is zoned as RU2 Rural Landscape, meaning that development must reflect the rural character and must minimise the impact on the local environment. The powerline will directly contravene these planning regulations.	As outlined in Section 6.4.2 of the EIS, the Project is classified as ‘electricity generating works’. Under clause 34(1) of the ISEPP, electricity generating works are permitted with consent under the RU1-Primary Production and RU2 - Rural Landscape Zones, which are the applicable land use zonings across the PA (refer <i>Section 6.5.1</i>).
			Further consideration of the objectives of the applicable land use zones is provided in Section 6.5.1 of the EIS:
			<i>Whilst the Project does not strictly meet the objectives of the RU2 - Rural Landscape Zone, the Project has been designed to minimise potential land use conflicts on extensive agriculture. The footprint of the Project will occupy approximately 2% of the total land contained within the PA and will not prevent ongoing agricultural activities occurring on the land. The Project will also contribute to supporting a range of land uses across the PA as specified in the objectives of the LEP 2010. The introduction of wind farms into rural and agricultural regions provides a suitable supporting income base, which in turn assists in maintaining the agricultural capacity of the land. In relation to those areas of the PA mapped within sensitive areas, the potential impacts on biodiversity have been assessed in detail in Chapter 9 and the Ecology Impact Assessment at Annex F. In addition, potential impacts associated with erosion and watercourse crossings have been addressed in Chapter 14 and the Water Supply, Water Quality and Hydrology Assessment at Annex L.</i>
			Land zoning considerations associated with the transmission line connection will be incorporated in the REF that will be prepared for the works (refer further discussion in transmission line assessment responses above).
		The developer has given no indication as to whether or not they will comply with Council's policy on Community Enhancement Programs	Section 6.6.1 of the EIS outlines the following in respect to establishment of a Community Enhancement Program:
			<i>The DCP specifies a requirement that prior to the commencement of construction, the Proponent is to prepare a Community Enhancement Program (CEP) in consultation with the local community and Council. In discussions with Council, the Proponent intends to establish a Community Enhancement Program in the form of a Voluntary Planning Agreement in lieu of a levy under the Upper Lachlan Section 94A Development Contributions Plan. In accordance with the Upper Lachlan DCP, the Proponent will contribute \$2,500 per WTG per annum, which equates to \$77,500 per annum in direct contributions throughout the operational life of the Project. Consultation with Council regarding the CEP is ongoing and will be finalised for inclusion in the Project approval.</i>
Land Degradation / Erosion	33, 35	Land degradation and erosion to local roads and wind tower sites	Potential soil and water impacts resulting from construction activities have been identified in Chapter 14 and Annex L (the Water Supply, Water Quality and Hydrology Assessment) of the EIS. The potential impacts identified erosion of unsealed roads and erosion of relatively large disturbed areas associated with establishment of pad sites as risks to the project. However, the assessment undertaken identified that the overall potential risks are relatively minor on the basis that:
			* for the most part, pad sites and access road construction occur on relatively low gradient lands high up in the respective drainage catchments;
			* there is generally a very low risk of run-on or run-off of concentrated stormwater flows;
			* construction sites within the PA generally present a low erosion hazard; and
			* the landscape of the PA is relatively stable with no significant areas of erosion.
			A Construction Environmental Management Plan (CEMP) would be prepared for the Project prior to commencement of construction, which would incorporate a Soil and Water Management Plan to document the range of management practices that would be implemented to manage the identified risks and prevent land degradation through erosion processes.
			During operation, there will be low erosion and sedimentation potential, with negligible impacts anticipated.
		Removal of vegetation leads to erosion issues once the soil is disturbed.	Uncontrolled vegetation removal and soil disturbance can result in soil erosion issues. However, as outlined in Section 6.3 of Annex L to the EIS, a range of management practices have been developed for construction sites to prevent these types of uncontrolled activities and resulting erosion issues from occurring. As committed in the EIS, these best management practices would be implemented during construction of the project through application of the CEMP and associated Soil and Water Management Plan.
Cumulative Impacts	4, 10, 29, 19, 18, 33, 25, 31, 40, 49, 47, 49, 50	Impacts to the village of Grabben Gullen will be significant, especially when taking into consideration that it will be additional	As outlined in Chapter 17 of the EIS, potential cumulative impacts associated with the Project and the existing, approved and proposed wind farms in proximity to the PA have been assessed, in particular, the closest wind farms being Gullen Range, Gunning and Crookwell.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		to that of the Gullen Range wind farm to the north of Grabben Gullen that is currently operating and the Gunning wind farm to the east, effectively surrounding residents with industrial wind turbines on a massive scale.	The assessment included consideration of potential cumulative biodiversity, noise, landscape and visual, traffic, EMI and aviation impacts.
			The greatest potential for cumulative impacts to the village of Grabben Gullen is considered to be through visual impacts associated with the three closest wind farms.
			However, a combination of vegetation and topography block the majority of views from the centre of Grabben Gullen village to the Gullen Range WTGs, and views towards the Biala and Gunning WTGs are not available from Grabben Gullen village.
		There are five operational (Crookwell I, Cullerin, Walwa, Gullen Range, Taralga), two approved (Crookwell II, Collector) and Biala proposed, that saturate the eastern fringe of the shire with excessive cumulative impacts on the rural landscape and especially those in the Grabben Gullen village area.	There will, however, be cumulative visual impacts caused by sequential visibility of the three wind farms as motorists travel along Grabben Gullen Road, Range Road and Biala Gurrundah Road. These wind farms are in relatively close proximity to the roads and will be highly visible, leading to a perceived sense of increased wind farm development in the area.
			Given the separation distance between the village of Grabben Gullen and Biala wind farm, no noise impacts would occur as a result of the Project, nor would there be any resultant cumulative noise impacts from combined activities at the other closest wind farms.
		With the Biala project, it will see the village of Grabben Gullen surrounded by 100+ turbines at a distance of 2km+ from the North, North East, East, South and South West of the village.	It was identified in the cumulative traffic assessment that there are a number of potential developments in the surrounding area that may be constructed or operational concurrently with the construction of the Project. Cumulative impacts to the village of Grabben Gullen may result of a number of developments were to occur concurrently and utilise similar construction access routes in the vicinity of the village. However, based on the assessment undertaken by GTA Consultants, it was determined that the surrounding road network has ample spare capacity to accommodate the likely traffic generation of the Project and any nearby future developments, and no cumulative traffic impacts are considered likely.
			Potential cumulative EMI impacts were addressed in the EMI assessment undertaken by DNV GL (refer Annex N of the EIS) and summarised in Section 17.3.5 of the EIS. The assessment identified that the Project together with the two nearest wind farms, Gullen Rand and Gunning, have the potential to contribute to cumulative impacts on terrestrial television for residents directly between the three developments. This area of identified potential cumulative impact does not incorporate the village of Grabben Gullen and therefore no cumulative EMI impacts to the village are expected.
		There are already many wind turbines in the region. Too many wind turbines in a given area will cause a drop in market value, and for non-hosting residents, this is not fair.	There is a perception in society that the presence of wind farms may reduce the value of local properties and create buyer uncertainty thereby reducing the ability to find a buyer.
			The EIS included a review of published literature on the issue of wind farm effects on property values that analysed data on property sales in areas in the vicinity of wind farms in Australia and internationally. It is acknowledged that there is relatively limited available relevant data, and some is contradictory, however the body of information does not provide evidence that wind farms have any quantifiable effect on land values in surrounding areas.
		All the southern approaches to Crookwell now have, or are to have wind farms located nearby. Subjecting the three major roads to Crookwell to this kind of industrial development will not enhance the attractiveness of the Crookwell district to tourists or to tree-changers. The whole are will suffer property devaluation.	The EIS has demonstrated that the impacts associated with the project beyond the PA are minimal, and predominantly associated with visual impacts.
			The assessment of potential cumulative visual impacts identified the potential for both 'combined visibility' and 'sequential effects'. Assessment of the combined views of the Biala, Gullen Range, Crookwell and Gunning wind farms indicated there would be opportunities for combined views of the wind farms from only a limited number of surrounding residential dwellings and local roads, with combined visibility towards these wind farms largely restricted by tree cover and undulating landform.
		Concerns regarding the visual impact of another wind farm in the region, and the flow on effects this will have on property values, ongoing agricultural activities and the impact on property development.	Potential combined visual impacts from private viewpoints are largely confined to non-involved properties located on Sapphire Road and Church Lane, with elevated panoramic views of Gunning and Gullen Range Wind Farms. These impacts are considered minor in nature given the distance between the impacted viewpoints and the two wind farms (14 km), with WTGs appearing as small features on the horizon as part of a wider panoramic view. Properties with elevated panoramic views along Church Lane may also have visual accessibility to both the Project and Crookwell Wind Farm, however the distance of that development from the impacted viewpoints (over 20 km) will make any cumulative visual impact insignificant.
			Sequential views of Biala, Gullen Range, Gunning and Crookwell Wind Farms would occur for motorists travelling along Grabben Gullen Road, Biala Gurrundah Road and Range Road. Despite the presence of additional wind farm developments, motorists would experience a range of views extending toward and beyond WTGs within the landscape. The roads follow the low undulating nature of a landform typical across much of the NSW Southern Tablelands, where views may extend over regional areas from highpoints and ridgelines, or be contained and compartmentalised by rising or sloping landforms together with timbered and vegetated areas.
			The extent and overall visibility of WTGs would be influenced by the direction of travel relative to the alignment of WTGs as well as the relatively short travel time along the highway and local road network alongside and between the WTGs.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
			The assessment determined that the Project is unlikely to result in any significant combined or sequential cumulative visual impacts resulting from associated views toward other wind farm developments in proximity to the PA. The Project may however, slightly increase the perceived density of wind farm development within this area of the Southern Tablelands.
			Based on the assessed impacts of the Project and lack of evidence to support the claim that wind farms devalue nearby properties, it is considered unlikely that the cumulative effect of the wind farms would result in devaluation of properties in the surrounding area.
		The EIS gives reference to cumulative effects to the individual property owners in the vicinity of the wind farm, however it doesn't give reference to the impact of another wind farm on the area as a whole. Adding another wind farm will alter the character of these rural communities as a whole, and this needs to be considered. If the area becomes predominantly littered with wind turbines, any reasonable person's perception of the area will alter, and this part of NSW would therefore become an industrial wind farm area. The real estate market, and type of residents wanting to live here would change along with the character of the area.	Wind farms, either already built, proposed or forecast will increase the perceived sense of increased wind farm development in the area and add to the level of cumulative visual impact experienced by residents and visitors.
		Residents may have limited view or distant view of other wind farms in the area from their homes, but by travelling from their home they are affected by other wind farms in the area, together as a culmination a resident would be left feeling that the atmosphere, character, purpose of their rural community has been greatly altered.	As outlined in the EIS, sequential views of surrounding wind farms will occur for motorists travelling along Grabben Gullen Road, Range Road and Biala Gurrundah Road. They will be exposed to several wind farms within relatively close proximity to the road, leading to a perceived sense of increased development in the area and a level of cumulative visual impact.
		Substations and transmission lines are being built to accommodate the wind farms and are changing a scenic rural residential landscape to an industrialised scarring of the land.	The substation is a relatively small structure and located away from any sensitive residential receptors. The nature of the local topography and vegetation surrounding the proposed substation location effectively screen or block views towards the structure. The overall visual impact of the substation is rated as low.
			The transmission line will be assessed separately as described in the EIS and above responses.
		While the EIS states that the project is within primarily agricultural land, this project and the Gullen Range wind farm are in close proximity to a populated rural village where the residents have chosen to reside for the quality of a rural life and not to be surrounded by commercial enterprises. This cumulative effect places visual stress on residents, stress on relationships between residents and personal angst.	The landscape character assessment identified 5 character zones within the area, including residential development. As described within the report, the isolation, large plot sizes and lack of surrounding development are important features of the rural residential character zone. Any new bulky development may alter the character of the area. The zone is described as having a high sensitivity to change and the Project as having a moderate/high impact rating on this landscape character. It is acknowledged that a cumulative impact will be experienced as the density of wind farm development increases in the area.
		Concern regarding potential cumulative EMI effects of this project and Gullen Range project in reference to the extreme interference resulting from the Gullen Range Wind Farm.	Potential cumulative EMI impacts were addressed in the EMI assessment undertaken by DNV GL (refer Annex N of the EIS) and summarised in Section 17.3.5 of the EIS. The assessment identified that the Project together with the two nearest wind farms, Gullen Rand and Gunning, have the potential to contribute to cumulative impacts on terrestrial television for residents directly between the three developments. However, as outlined in the EIS, it is expected that any interference to terrestrial television can be mitigated by improving the equipment at a dwelling, such as installing a high-gain directional antenna.
			In regards to potential EMI issues, the EIS commits to undertaking an assessment of potentially affected dwellings to mitigate television reception impacts considered caused by the Project.
		The Biala and Gullen Range wind farms will result in 100+ turbines to the north, east, south and west of Grabben Gullen.	The EIS has considered potential health effects associated with the Project. Significantly, as referenced in the EIS (Section 16.5.1) the latest National Health and Medical Research Council (NHMRC) Information Paper: Evidence on Wind Farms and Human Health (2015) concludes the following:

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The EIS considers health reports based on residents within a 2km distance from a turbine, but does not consider the health impact on the prospective cumulative effect on residents in the locality.	<i>‘There is no direct evidence that exposure to wind farm noise affects physical or mental health. While exposure to environmental noise is associated with health effects, these effects occur at much higher levels of noise than are likely to be perceived by people living in close proximity to wind farms in Australia. The parallel evidence assessed suggests that there are unlikely to be any significant effects on physical or mental health at distances greater than 1,500 m from wind farms.</i> <i>There is consistent but poor quality direct evidence that wind farm noise is associated with annoyance. While the parallel evidence suggests that prolonged noise-related annoyance may result in stress, which may be a risk factor for cardiovascular disease, annoyance was not consistently defined in the studies and a range of other factors are possible explanations for the association observed.</i> <i>There is less consistent, poor quality direct evidence of an association between sleep disturbance and wind farm noise. However, sleep disturbance was not objectively measured in the studies and a range of other factors are possible explanations for the association observed. While chronic sleep disturbance is known to affect health, the parallel evidence suggests that wind farm noise is unlikely to disturb sleep at distances of more than 1,500 m from wind farms.</i> <i>There is no direct evidence that considered the possible effects on health of infrasound or low frequency noise from wind farms. Exposure to infrasound and low-frequency noise in a laboratory setting has few, if any, effects on body functions. However, this exposure did not replicate all of the characteristics of wind farm noise as it has generally been at much higher levels and of short duration.</i> <i>Although individuals may perceive aspects of wind farm noise at greater distances, it is unlikely that it will be disturbing at distances of more than 1,500 m. Noise from wind farms, including its content of low-frequency noise and infrasound, is similar to noise from many other natural and human-made sources.’</i>
			Having regard to the NHMRC Statement released in February 2015, it was assessed that the Project is unlikely to cause adverse health effects to surrounding residents outside the PA. Given the separation distances between the Biala, Gullen Range and Gunning wind farms, the minimum separation distance to the closest WTGs associated with more than one wind farm at any one time would be approximately 3km. Following from the NHMRC findings, it is therefore considered unlikely that any adverse health effects would occur as a result of any cumulative effects of these three wind farms.
		The EIS outlines that there is potential for the Biala wind turbines to be visible combined or sequentially with the Crookwell 1, 2 and 3 wind farms, the Gullen Range and Gunning wind farms. The impacts of these cumulative visual impacts have been inadequately addressed in the EIS.	There would be combined views of the Biala, Gullen, Crookwell and Gunning wind farms from a limited number of residential dwellings and local roads within a 10km radius of the the Biala wind farm. Combined views are restricted from the majority of viewpoints studied within the report by tree cover and undulating topography. There will, however, be sequential views of surrounding wind farms for motorists travelling along Grabben Gullen Road, Range Road and Biala Gurrundah Road. They will be exposed to several wind farms within relatively close proximity to the road, leading to a perceived sense of increased development in the area and a level of cumulative visual impact.
		The cumulative impact assessment should include the impact on those residents already experiencing material impacts from the existing wind farms of Gullen Range and Gunning plus the even taller turbines at Biala. But Clouston appears to have totally ignored all those properties, with consideration of cumulative impact limited to a few properties in Church Lane (about 2km from the Biala wind farm), for which it has already chosen to produce photomontages about the Biala impact.	
Precationay Noise Conditions	8	The government must impose conditions that explicitly entitle it to subsequently vary those conditions if it deems appropriate so that Investor - State Dispute Settlements (ISDS) cannot be used to block such action and impose penalties on the NSW government. In this way, the NSW Government can fully retain discretion to later enact quantified noise (and other) conditions for this and other wind farm projects.	DPE is responsible for conditioning any approval issued for the Project. These issues are not subject for consideration as part of the environmental assessment under the EP&A Act.
Certification Under EP&A Act	7, 23	Certification of the EIS not in accordance with the EP&A Regulations	The <i>Environmental Planning and Assessment Regulation 2000</i> (EP&A Regulation) outlines the following: "Schedule 2 <i>Environmental impact statements</i> Part 3 <i>General provisions</i> 6 <i>Form of environmental impact statement</i> An <i>environmental impact statement</i> must contain the following information: ...(f) <i>a declaration by the person by whom the statement is prepared to the effect that:</i> (i) <i>the statement has been prepared in accordance with this Schedule, and</i>

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
			(ii) <i>the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and</i>
			(iii) <i>that the information contained in the statement is neither false nor misleading."</i>
			The EIS was prepared in accordance with the requirements of the EP&A Regulation. ERM provided a certification upfront in the EIS that is consistent with the above requirement.
Project Justification	7, 17, 19, 25, 28, 31, 33	The following project objective is stated in the EIS: "contribute to the additional generating capacity required to meet the growing energy demand in NSW". This statement is incorrect. NSW has ample generating capacity to meet its needs for many years.	The publicly exhibited EIS outlined that the 2014 Annual Electricity Statement of Opportunities (ESOO) released by the Australian Energy Market Operator Limited indicated that <i>"for the first time in the National Electricity Market's (NEM) history, as a result of decreasing operational consumption, no new capacity is required in any NEM region to maintain supply-adequacy over the next 10 years"</i> (AEMO 2014 p1). Consistent with other states in Australia, the results for NSW indicate that, provided existing generation remains available, new capacity is not required to maintain reliability under high, medium and low economic growth scenarios until 2023-2024 (AEMO 2014).
			Subsequent to exhibition of the EIS, the 2015 Annual ESSO was released, which outlines that in the year since reporting the predicted surplus generation capacity by 2023-24, the market has responded by notifying its intent to withdraw a significant portion of the reported surplus by 2022, and maximum demand projections have increased. As a result, the 2015 report predicts that under the high and medium energy demand scenarios, additional investment in supply capacity will be required by 2021-22. The report also highlights that the recently announced withdrawals in NSW exceed the 2014 predicted surplus for the region, and this would result in an increased reliance on imports from other states. Further, the 2015 report acknowledges that the 2015 results and revised outlook has highlighted deficiencies in the system for reporting withdrawals of generation units from service, which impacts the accuracy of forecasting available capacity, reliability of supply and therefore timing for investment, and has committed to an improved classification system to address this issue in the 2016 ESSO. It might be expected that more accurate data capture relating to plans for retirement of aging assets may result in further reduction in predictions of ongoing capacity and identify the requirement for additional replacement capacity. The latest results indicate that electricity demand will continue to rise and investment in new capacity will be required to meet forecast demand in the mid to longer term, particularly in NSW in order to be able to continue to meet increases in local demand and avoid reliance on supply from other states. Investment in new, cost effective clean energy such as wind energy will be important in increasing electricity supply whilst reducing GHG emissions.
		In reference to the National Electricity Market (NEM) 2014 results, indicates that there is a lack of efficiency in the wind industry (compare to fossil fuel generation), that Australia's energy demand has been on the decline for 6 consecutive years, and that no new capacity is required over the next ten years.	Refer above.
		Electricity Generation Capacity - the statement in the EIS outlining the amount of electricity that will be generated by the wind farm is false. Wind energy alone cannot power anything. It is intermittent and variable.	As referenced, the predicted electricity generation capacity stated in the EIS is based directly on the output of the NSW Office of Environment and Heritage's Wind Farm Greenhouse Gas Savings Tool, which is the standard adopted method for calculation of expected GHG savings.
			The generation capacity of the Project appears not to be disputed; perhaps an argument in semantics and the statement should be amended to read:
			• produce enough electricity to power <i>the equivalent of</i> 33,200 homes annually (based on the average NSW household electricity consumption of 7.3 MWh/year).
		The project will not make a substantial difference (to renewable energy generation in NSW).	It is estimated that the Project will generate 242 GWh of electricity annually; reduce the amount of annual greenhouse gas emissions by on average 0.207Mt Co2e over the first three years of operation; and produce enough electricity to power the equivalent of 33,200 homes annually.
		Do not consider the benefit of 30 turbines to be a substantial factor in reducing global greenhouse gases when compared to the welfare of nearly 500 directly affected local residents.	Refer above.
			The EIS has demonstrated that the potential environmental and social impacts associated with the Project and be appropriately managed.
		No coverage in the EIS of Project Public Policy Costs. The Proponent should have to model the specific marginal increase in the price of electricity expected to be incurred across NSW if this project is allowed to go ahead, and the impact across the system of the need to add further peak load capacity to cover the regular periods where wind power is not available in the region.	Australia's Renewable Energy Target (RET) scheme creates a competitive market for renewable energy projects. Wind power is currently the most economical form of large-scale renewable energy and is expected to play a significant role in meeting the Large-scale Renewable Energy Target (LRET).
			The issue of provision of peak load capacity is not one isolated to power generated by wind farms, and is associated with electricity demand patterns.
		The vast majority of the project spend will be spent overseas.	The findings of the Clean Energy Council's Wind Farm Investment, Employment and Carbon Abatement in Australia (SKM, 2012) do not support these claims, which estimates that the total cumulative capital investment in wind farms in Australia to date is estimated at just over \$7 billion;

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		A significant proportion of the jobs created during construction of wind farms in this area have gone to overseas contractors and workers.	\$4.25 billion of which is estimated as having been spent in Australia, including investment in manufacture of the towers, the civil, electrical and other site works, along with most of the installation and supporting labour, local transport, and employee support services.
		The EIS refers to economic benefits to the community. We argue these are insufficient and overstated. The significant revenue generated would be paid to a company whose investors are based in Ireland, while the commitment to a community benefits fund is a mere \$2500 per turbine per year, and the commercial arrangements with hosts are made to just four individual landholders, therefore the benefits are obviously limited and a fraction of what the turbine is generating for off-shore investors.	The economic benefits of the Project have been estimated based on the total installed capacity of the Project using the Clean Energy Council's model, which was developed based on collated information from the Clean Energy Council's industry wind farm database, wind farm assessment reports and other sources including consultation with wind farm developers, and has been generally adopted by the industry.
			The establishment of a Community Enhancement Program will contribute \$2,500 per WTG per annum, equating to \$77,500 per annum in direct contributions to ULSC throughout the operational life of the Project; funds that can be spent to improve community assets such as recreational facilities, public open space and public amenities, thereby providing benefits to the broader community.
		Site analysis does not consider the medium term future usage and potential of the area. The potential for this area to develop into a highly attractive low density housing environment will be destroyed should further wind farms be permitted in the region. The economic implications of this are potentially much larger than the minimal benefits of the wind farm.	Refer discussion below in response to property values and consideration of 'lifestyle' or rural residential properties.
		The wind farm is not 'green energy'. Construction comes at a huge cost to the environment. The carbon footprint generated in the manufacturing and construction of the turbines will not in their lifetime become neutral.	In accordance with the Australian Government's Renewable Energy Target (RET) scheme, wind power generated through wind farms is a recognised form of renewable energy under the Large-scale Renewable Energy Target (LRET) and attracts Renewable Energy Certificates (RECs) under this policy framework. Further, the NSW Renewable Energy Action Plan 2013 (REAP) has been developed to support the national target of 20% renewable energy by 2020, which also notes that wind energy is one of the most commercially viable and cost-effective renewable energy sources for large scale installation.
		There is significant evidence undermining the economic and environmental suitability of wind farms. In reference to the August 2015 Senate Select Committee report on wind turbines, highlight numerous examples of wind farm impacts on communities, physical and emotional, that can no longer be ignored by planning authorities.	The EIS has considered potential health effects associated with the Project. Significantly, as referenced in the EIS (Section 16.5.1) the latest National Health and Medical Research Council (NHMRC) Information Paper: Evidence on Wind Farms and Human Health (2015) concludes the following:
			<i>'There is no direct evidence that exposure to wind farm noise affects physical or mental health. While exposure to environmental noise is associated with health effects, these effects occur at much higher levels of noise than are likely to be perceived by people living in close proximity to wind farms in Australia. The parallel evidence assessed suggests that there are unlikely to be any significant effects on physical or mental health at distances greater than 1,500 m from wind farms. There is consistent but poor quality direct evidence that wind farm noise is associated with annoyance. While the parallel evidence suggests that prolonged noise-related annoyance may result in stress, which may be a risk factor for cardiovascular disease, annoyance was not consistently defined in the studies and a range of other factors are possible explanations for the association observed. There is less consistent, poor quality direct evidence of an association between sleep disturbance and wind farm noise. However, sleep disturbance was not objectively measured in the studies and a range of other factors are possible explanations for the association observed. While chronic sleep disturbance is known to affect health, the parallel evidence suggests that wind farm noise is unlikely to disturb sleep at distances of more than 1,500 m from wind farms. There is no direct evidence that considered the possible effects on health of infrasound or low frequency noise from wind farms. Exposure to infrasound and low-frequency noise in a laboratory setting has few, if any, effects on body functions. However, this exposure did not replicate all of the characteristics of wind farm noise as it has generally been at much higher levels and of short duration. Although individuals may perceive aspects of wind farm noise at greater distances, it is unlikely that it will be disturbing at distances of more than 1,500 m. Noise from wind farms, including its content of low-frequency noise and infrasound, is similar to noise from many other natural and human-made sources.'</i>
			The Draft Wind Farm Guidelines and SEARs issued for the Project, require consideration of the potential impact of the Project on the health of nearby residents, particularly those located within 2 km of a proposed WTG. As noted previously in the EIS, there are no dwellings associated within non-involved landholders within 2 km of a proposed WTG and therefore, having regard to the NHMRC Statement released in February 2015, the Project is unlikely to cause adverse health effects to surrounding residents.
			Notwithstanding, further assessment of potential health impacts relating to noise and vibration, shadow flicker and EMF was undertaken and documented in Section 16.5.2 of the EIS, including a review of available literature. The assessment did not identify any effects from the Project that have the potential to cause adverse health impacts.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The proponent overlooks the productive capacity of primary production in this region by relying on 13 year old data from NSW Agriculture (now NSW Department of Primary Industries).	This comment is made in reference to the NSW Agriculture classification system referenced in the EIS to identify and classify the suitability of land for general agricultural use. Notwithstanding the age of the referenced document, it remains NSW DPI's adopted classification system for agricultural lands (refer http://www.dpi.nsw.gov.au/agriculture/resources/lup/strategic-planning/agricultural)
Property Values	4, 7, 17, 21, 25, 26, 30, 31, 33, 35, 37a, 47, 49, 50	Property are devalued as a result of wind farm development, particularly rural residential or 'lifestyle' properties	There is a perception in society that the presence of wind farms may reduce the value of local properties and create buyer uncertainty thereby reducing the ability to find a buyer.
			The EIS included a review of published literature on the issue of wind farm effects on property values that analysed data on property sales in areas in the vicinity of wind farms in Australia and internationally. It is acknowledged that there is relatively limited available relevant data, and some is contradictory, however the body of information does not provide evidence that wind farms have any quantifiable effect on land values in surrounding areas.
			Property values fluctuate constantly and are influenced by a large number of factors, including market conditions (supply and demand for property), prevailing economic conditions, permitted and surrounding land uses, access to services, and property condition and improvements amongst many others, and therefore it is difficult to draw a direct correlation to impacts attributable to an individual or small number of these factors in isolation.
			There is evidence that introduction of wind farms into rural and agricultural regions provides a suitable supporting income base, which in turn assists in maintaining the capacity of the land for the underlying land use of those properties, being ongoing primary production purposes, and may therefore result in an increase to the agricultural value of the land.
			Some studies have considered 'lifestyle' properties, which have been flagged as being potentially more vulnerable to property value impacts, which is likely to be attributable to lifestyle and amenity components being of high value to such property owners.
			The Local Government Act defines rural residential land (often referred to as 'lifestyle' properties) as land that 'is not less than 2ha and not more than 40ha in area'. In accordance with the Upper Lachlan Local Environmental Plan 2010, the majority of the land within and immediately north, south and west of the PA is currently zoned with minimum lot size of 40ha, with the area further beyond the PA to the west, 80ha, and east of Grabben Gullen Road 100ha.
			In accordance with this definition, the minimum lot sizes within and immediately surrounding the are sit at the upper limit of the land parcel size that would be used for 'lifestyle' properties, and land use is considered more likely to continue to be dominated by larger sized land parcels focussed on primary production purposes, consistent with the key objective of the RU2 zone in this area, which is to encourage sustainable primary industry production by maintaining and enhancing the natural resource base.
			The broader region consists of large and extensively cleared rural land parcels for the purposes of agricultural grazing. It is acknowledged however, that some areas immediately surrounding the PA are zoned such that it would allow future subdivision to smaller 'lifestyle' size blocks, therefore there is potential for generation of more properties of this nature.
			The EIS has demonstrated that the impacts associated with the project beyond the PA are minimal, and predominantly associated with visual impacts. However, the nature of the topography in the area and limited viewshed ensures that moderate/high visual impacts are limited to dwellings within 2-3km of WTGs.
			Based on the assessed impacts and findings of existing literature, it is considered unlikely that the wind farm would result in devaluation of properties in the surrounding area.
		The EIS does not incorporate consideration of relevant literature and assessment of potential impacts.	The EIS included a review of published literature on the issue of wind farm effects on property values that analysed data on property sales in areas in the vicinity of wind farms in Australia and internationally. The review identified and considered those studies that were determined to be relevant to the project and environmental setting.
		Land use zoning should zone wind farm type developments to rural areas with low population densities and property values, not in high value rural residential and agricultural areas that are close to rural towns and major urban centres.	The Project is located in an area of low population density, in a rural area that is predominantly zoned RU2 - Rural Landscape, with a small area in the northern portion of the PA located in the RU1 - Primary Production Zone (which is located outside the proposed development footprint).
			As discussed in the EIS, the key objective of the RU2 Zone is to encourage sustainable primary industry production by maintaining and enhancing the natural resource base. Whilst the Project does not strictly meet the objectives of the RU2 Zone, the Project has been designed to minimise potential land use conflicts on extensive agriculture. The footprint of the Project will occupy approximately 2% of the total land contained within the PA and will not prevent ongoing agricultural activities occurring on the land. The Project will also contribute to supporting a range of land uses across the PA as specified in the objectives of the LEP 2010. The introduction of wind farms into rural and agricultural regions provides a suitable supporting income base, which in turn assists in maintaining the agricultural capacity of the land.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		Councils acknowledge that where rates are reduced for properties that are impacted by the wind farm and its associated infrastructure (powerlines do lower property values) that the overall budget cannot be diminished therefore other rate payers will cop a rate increase to balance the books	Land values are one factor considered by councils when determining rates, and changes in land values don't necessarily lead to similar changes in rates. Each council develops a revenue policy to use in the calculation of rates and charges to fund services for the community, and this is subject to legislative provisions and processes to ensure a transparent and fair framework is applied.
		Reduced land values of properties through which the transmission line extends	Locating of transmission line infrastructure on any privately owned property is subject to agreement of the landholder and establishment of an easement granting the right to use the land for a specific purpose. A component of an easement agreement would be compensation to the landholder, which may include payment for loss of specific uses of the easement (and any associated land value reduction), use of the easement and other considerations.
Decommissioning	17, 19, 30, 31, 35, 39	A Decommissioning and Rehabilitation Plan (DRP) must be provided to DPE prior to project approval. The form of the DRP must satisfy the requirements of the SEARs and outline the cost of dismantling and removing the turbines; the return they will get from sale as scrap; and how the funding will be guaranteed.	A Preliminary DRP was provided as Annex R to the EIS, which outlines the process for update/revision.
			The SEARs outline the following requirement with respect to decommissioning:
			<i>"a timeline identifying the development's proposed construction and operation components, their envisaged lifespan and arrangements for decommissioning. Include a Decommissioning and Rehabilitation Plan with proposed funding arrangements and confirming that the Proponent is responsible for decommissioning"</i>
			The details provided in the Preliminary DRP are consistent with the requirements of the SEARs.
		The responsibility for decommissioning is stated to lie with the Proponent, however the Proponent has not demonstrated it has the financial resources to undertake and remediate the project. The responsibility of a new owner can be voided easily by contracting out of this responsibility at the time of purchase. The whole claim on responsibility is therefore meaningless.	As committed in the Preliminary DRP, it is the responsibility of Newtricity or the wind farm owner at the time of decommissioning to fund and execute the decommissioning of the Project.
		If the project is approved, it should be conditional on the Proponent lodging a bond or bank guarantee to cover remediation.	As outlined in the Preliminary DRP, it is anticipated that a fund to cover the costs of decommissioning the Project infrastructure and rehabilitating the PA would be established prior to construction of the Project commencing, with the funds held by a legal firm or an authorised appointed trustee corporation.
			It is anticipated that any project approval issued by DPE would include conditions relating to decommissioning requirements that would require provision for a decommissioning bond or other funding mechanisms.
		If foundations and access roads were to be left in place, it is likely to deem the area unsuitable for subsequent development.	As outlined in the Preliminary DRP, a key component of the decommissioning process is consultation with the involved lanholders to address and discuss the decommissioning and rehabilitation process, and to identify their preferences to retain project infrastructure on their property, particularly those with the potential to enhance their farming activities at the time.
			It is possible that some infrastructure components may be left in situ at decommissioning, including WTG foundations and access roads, hardstand and laydown areas for example.
			If WTG foundations were to be left in situ, they would be covered in clean fill material and the area adequately graded to reflect the slope of the surrounding area and to minimise the risk of soil erosion.
			Given that the development footprint is located within land zoned as 'RU2 - Rural Landscape Zone' under the Upper Lachlan Local Environmental Plan 2010, it is considered unlikely that leaving such infrastructure in situ at decommissioning is likely to detrimentally impact ongoing primary production activities or deem the area unsuitable for the types of development that would be permissible within that land zoning.
		Possibility of wind towers being left behind at the end of the 20-25 year life	The proposed WTGs are anticipated to have an operational lifespan of approximately 25 years.
			Following this timeframe, the project infrastructure may be upgraded or replaced with new WTGs and continue operation for a further specified period, however this would be subject to further assessment and approval at that time.
			Alternatively, the infrastructure would be decommissioned and site rehabilitated in accordance with the DRP.
			It is anticipated that any project approval issued by DPE would include conditions relating to the timing and requirements of decommissioning of both individual WTGs should they cease to be operational for an extended period of time, and the project as a whole following cessation of operation of the project.
		Need assurance that the turbines will be deconstructed at the finality of operations, and a written guarantee that this will occur and who will be responsible for the process regardless of the time lapse.	Refer above.

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		The cost and responsibility for remediating the site must be clearly outlined by DPE.	Decommissioning and remediation cost and responsibility considerations are addressed in the Preliminary DRP, which will be updated every five years until the end of the Project's operational life to reflect new information and current conditions. Revisions to the DRP would be subject to approval of DPE and form the basis for decommissioning and rehabilitation works.
		The EIS refers to 'reasonable' levels of rehabilitation - suitable rehabilitation standards need to be set so they don't deviate from 'rehabilitate back to original state'.	The rehabilitation requirements associated with the decommissioning of the primary project components are outlined in the Preliminary DRP. As stated in the Preliminary DRP, the primary objective of the proposed rehabilitation and associated monitoring program is to return disturbed areas back to pre-construction conditions and contours.
			As outlined above, the DRP will be updated every five years until the end of the Project's operational life, which, at the appropriate time, will be updated to incorporate the specific standards and best practice guidelines to which rehabilitation works would be undertaken in order to achieve the stated objective.
		What process will DPE adopt to ensure rehabilitation matters are adequately addressed by the proponent? The wind farm company must be monitored to ensure that the decommissioning and rehabilitation plan is regularly updated (especially regarding any specific costs).	Refer above.
Positive Health Impacts	15	Generation of electricity from wind has immediate public health benefits from displacing coal fired electricity and improving air quality, as well as long term health benefits from reducing global climate risk. Doctors for the Environment Australia strongly supports the Biala Wind Farm Project because of these public health benefits.	Noted.
Negative Health Impacts	7, 9, 30, 33, 35, 47, 49	Health and stress issues for humans and animals Physical and emotional impact on the community Negative impacts on the amenity of nearby resident's homes as well as their sleep and health. Concerned about the health consequences associated with the powerlines The section in the EIS relating to health impacts indicates a review of available literature was undertaken, which is false. With respect to potential infrasound and low frequency noise impacts on human health, lack of evidence does not make for an absolute confirmation that it does not exist, and a precautionary approach should be taken to making decisions (based on currently available data and modelling) in a field where further research is required and new information is emerging.	In reference to the relevant specialist assessments contained as annexures to the EIS, Section 16.5 of the EIS outlines the assessment undertaken in relation to potential health effects associated with the Project. The assessment included consideration of potential effects resulting from audible noise, inaudible and low frequency noise, shadow flicker and blade glint, and electromagnetic emissions. Based on assessment of potential impacts in accordance with current policies, criteria and guidelines, and in consideration of the findings of recent studies relating to potential health impacts resulting from wind farms, the EIS did not identify any effects from the Project that have the potential to cause adverse health impacts. Wind turbine generators produce sound across the audible spectrum, and like many environmental noise sources, also have sound components in the infrasonic range, which are below the threshold of human hearing. Research has shown that infrasound measured from wind turbines is similar to other sources of environmental noise [“Infrasound levels near wind farms and in other environments”, Resonate Acoustics, Report for SA EPA, January 2013]. The position of the National Health and Medical Research council (NHMRC) is that “after careful consideration and deliberation of the body of evidence, NHMRC concludes that there is currently no consistent evidence that wind farms cause adverse health effects in humans” [https://www.nhmrc.gov.au/_files_nhmrc/publications/attachments/eh57_nhmrc_statement_wind_farms_human_health_0.pdf].
Status/Financial Capacity of the Proponent	19, 47	No information as to the actual financial capacity of the Proponent. Questions whether the Proponent has the necessary capital to develop the project, or if it is to be sold, how the project is bankable.	The financial capacity of the Proponent is not subject for consideration as part of the environmental assessment under the EP&A Act.
Hazards and Risks	17, 35, 50	Increased bushfire danger with restrictions of access of water bombing aircraft.	An assessment of bushfire hazards and risks associated with the Project was undertaken as part of the EIS (refer EIS Section 16.6). The Project may prevent aerial fire-fighting operations within the Project Area; however the network of internal access roads for the Project will improve vehicle access within and across the PA and enhance ground-based means of fighting bushfire.
		Construction of the wind farm poses a fire risk that could threaten livelihoods and businesses.	The risk of bushfire from wind farm developments is considered low given the on-board control systems designed to mitigate the risk of fire. All WTGs are located in areas mapped as low fire hazard and with the implementation of the mitigation measures outlined and committed in the EIS,

Subject	DPE / ERM Submission Reference No.	Issue Raised	Response
		Ongoing operation of the wind farm increases fire risk given wind turbine turbulence and flight restrictions as well as increased power lines in the area.	the risk of bushfire can be effectively managed.
Innapropriate Placement of Turbines	28, 24	In reference to Gullen Range wind farm, notes prior experience with misplacement of turbines contrary to project approval and in close proximity to homes	Noted. Any project approval issued by DPE would include conditions requiring the Proponent to execute the project in accordance with the Major Project Application and supporting documentation, including the EIS which outlines the proposed locations of project infrastructure. Any variation to the placement of infrastructure post-approval (e.g. 'micrositing' - refer discussion below) would be subject to DPE approval and require further assessment.
		Wind farms should be built away from where people already live in order to avoid the negative impacts of wind farms. Consideration should be given to those who live in the area where a wind farm is proposed, with the option of a buy out of their property based on values prior to knowledge of the wind farm proposal.	As demonstrated in the EIS, the wind farm has been sited in an area of low density receptors within and surrounding the Project Area. The wind farm layout has been designed and refined taking into consideration environmental and social constraints and impacts in order to avoid and minimise negative impacts associated with the project as much as possible.
			The Proponent has reached agreements with all Involved Landholders within the Project Area in relation to the Project and it's identified impacts on these properties.
			WTGs are located at least 2km from all non-involved landholders, and no significant impacts to these dwellings have been identified. Where potential impacts have been identified, appropriate mitigation measures have been recommended and would be further considered during subsequent phases of the project (e.g. during preparation of the Construction Environmental Management Plan) in consultation with impacted landholders or other relevant stakeholders (e.g. Council).
Micrositing	38	Micrositing should allow for only minor changes to the turbine layout to that assessed in the EIS. Maximum micrositing distances should be 'set' by DPE, and limited to only small variations; or DPE should define the Project Area as the perimeter around the external turbines and allow some flexibility to move turbines within this areas but not any closer to impacted residences; or DPE could condition the approval such that no turbine can be moved closer than the approved closest turbine to any non-host dwelling.	Noted. It is anticipated that DPE would condition the project approval to incorporate a set micrositing allowance for project infrastructure as long as impacts remain consistent with that assessed as part of the EIS.
			Any micrositing would be subject to DPE approval, is likely to be identified during detailed design, and would be subject to further assessment to demonstrate how the new locations would not result in increased environmental impacts when compared to the approved locations.

REVISED COMMITMENTS

An amended table of commitments has been prepared to reflect additional and / or amended requirements as identified through the exhibition and RtS process and discussed in this RtS Report. The amended table is is provided below, which outlines the proposed commitments and mitigation measures that will be implemented as part of the Project going forward.

Table 5.1 Updated Summary of Mitigation Measures for the Project

Aspect	Potential Impact	Mitigation Measures
Biodiversity	Clearing of native vegetation.	Pre-clearance surveys, marking the extent of clearing and micro-siting of laydown areas and access tracks will be undertaken in consultation with a qualified ecologist in the vicinity of the EEC and DNG, Woodland/Forest and Open Woodland habitats. Micro-siting will minimise disturbance to the EEC, any identified threatened flora and hollow-bearing trees where possible.
	Habitat loss, fragmentation and degradation.	- A Flora and Fauna Management Plan, incorporating a Weed Management Strategy will be developed to minimise ecological impacts during the construction of the Project and will include (but is not limited to the following measures): - Clearing will be undertaken sequentially to allow fauna time to move away. If possible, clearing will be staged to direct fauna toward areas of suitable habitat. - If clearing of hollow-bearing trees is unavoidable, removed hollows will be replaced with artificial shelter prior to felling. - Habitat features such as coarse woody debris (diameter >10 cm) and large surface rocks will be relocated from the clearing area to adjacent habitat in consultation with landowners. - Measures to reduce fauna mortality on access roads within the PA will be developed and implemented, including enforcing vehicle speed limits according to habitat value and road condition, and installing signage advising of high activity wildlife areas. - Unsealed access roads and construction areas to be regularly watered to limit dust generation, particularly in windy conditions. - Imported soil and rubble will be certified as free of weeds and weed seeds. - All construction staff and sub-contractors will be educated on noxious weeds within the PA and ways to prevent spread of weeds.
	Mortality due to WTG collision and barotrauma.	A Bird and Bat Monitoring Plan will be developed with the objective of minimising the impacts of the operational wind farm on threatened bird and bat species. The Bird and Bat Monitoring Plan will outline: - the required monitoring techniques and frequency; - strike rate thresholds and corrective actions to be implemented when thresholds are reached; - requirements for reporting to State and Commonwealth agencies; - roles and responsibilities for the Proponent, operator and agencies; and - an evaluation and adaptive management framework to provide for the incorporation of new information obtained through the monitoring program or relevant external research.

Aspect	Potential Impact	Mitigation Measures
		Other likely management actions may include prompt removal of stock carcasses near WTGs and no lambing near WTGs. The plan will be developed in consultation with NSW Department of Planning and Environment and OEHL and in consideration of the monitoring guidelines provided by the Australian Wind Energy Association (Brett Lane & Associates 2005).
Noise and Vibration	Noise generated during the construction and decommissioning of the Project exceeding specified noise management levels at nearby receptor locations.	• Construction works will be limited to the standard hours of construction, which are Monday to Friday 7 am to 6 pm; Saturday 8 am to 1 pm; and no work on Sundays or Public Holidays. • Any works that are required outside the standard hours of construction will be strongly justified and additional noise control mitigation and management measures implemented to reduce noise to acceptable levels. These additional measures will consider the potential for sleep disturbance impacts that could occur during the night time period due peak or maximum noise level events. • Construction plant, equipment and/or machinery will be selected during the design phase to achieve the sound power level values identified in the Supplementary Acoustic Assessment. Where additional items of equipment are required for construction or where the assessed values cannot be achieved, additional noise control mitigation will be implemented. • Good practice noise control mitigation and management measures will be implemented during all construction activities to reduce noise levels and minimise any impacts as far as practicable. • When planning for and during works associated with the alternate and optional access roads, the Proponent will negotiate with the occupants of H01, H02 and DA16 (if occupied) to discuss (as a minimum) the nature of works to be carried out, the expected noise levels and duration, contact details for any complaints and agreement of preferred construction hours. This agreement will target periods where the highest noise generating events can occur based on the occupants preference. Further guidance on negotiating agreements is provided in section 7.2.2 of the ICNG. • A Construction Noise Management Plan (CNMP) will be developed to ensure that appropriate work practices are implemented during construction of the Project to minimise impact. Further guidance regarding the features and content of a CNMP is provided in section 7.2.2 of the ICNG. • Project vehicle movements will not exceed those estimated in the Transport Impact Assessment (GTA 2015) as used in the assessment to predict noise impacts. Where additional vehicles are required for unforeseen circumstances, their impact will be evaluated and additional mitigation applied if necessary. • The Proponent will plan to schedule deliveries and on-site vehicle movements for the daytime period wherever possible. If it is not possible for this to occur, the Proponent will instruct drivers to arrive and depart as quietly as possible. Whilst on-site the drivers will be instructed to implement good practice noise management measures to reduce peak noise levels and minimise any impacts as far as practicable. • An Operational Noise Management Plan (ONMP) will be developed prior to commissioning of the WTGs, which will include the monitoring and verification methodology for noise compliance assessment, and ongoing noise monitoring and management requirements throughout the operational life of the Project.

Aspect	Potential Impact	Mitigation Measures
	Blasting overpressure and ground borne vibration generated during the construction of the Project exceeding specified criteria at nearby receptor locations. Potential exceedance of prescribed operational noise limits at surrounding receptor locations from key noise sources including WTGs and electrical substation.	• Project related blasting (if this becomes necessary) will be designed to achieve the overpressure and ground borne vibration criteria identified in the ANZEC Guideline and AS2187.2 (refer Section 3 of Annex G). If blasting is identified as required, potential blasting impacts will be assessed by the NSW EPA prior to any blasting being undertaken. • An Operational Noise Management Plan (ONMP) will be developed to ensure that appropriate management measures are implemented to minimise impacts. • Compliance testing of the operational noise generated by the Project is normally carried out following construction. The specific requirements for operational wind farm noise compliance testing are to be specified by the relevant authority, however the following noise management options are available: - receiving and documenting noise impact complaints through a dedicated, publicly advertised telephone number; - once an adverse noise report is received, investigating the nature of the reported impact with further detailed noise measurement and assessment if necessary; - if required, one or more WTGs can be operated in noise optimised modes for specific direction sectors and/or wind speeds; - mitigation measures can also be applied at specific house locations, with the agreement of the resident. Such measures may include modifications to the house, including installation of screening or barriers, or planting of additional vegetation; and - entering into agreements with affected residences.

Aspect	Potential Impact	Mitigation Measures
Landscape and Visual	Physical presence of Project infrastructure including but not limited to WTGs and electrical substation impacting on the visual amenity experienced at sensitive receptor locations and at nearby public viewpoints.	- The potential visual impact of the Project from the selected private viewpoints could be mitigated by planting vegetation close to the view locations. For instance, tree or large shrub planting close to a dwelling can screen potential views to individual or groups of turbines. Similarly roadside tree planting can screen potential views of turbines from particular sections of road provided the turbine is not located some distance from the road. - The location and design of screen planting used as a mitigation measure is site specific and requires detailed analysis of potential views and consultation with surrounding landowners during the detailed design phase. Roadside tree planting would not be undertaken without agreement with ULSC. - Colour choice can provide an opportunity to reduce visual contrast between the WTG structures and the background against which they are viewed. The use of an appropriate off-white or grey colour for the WTGs where the visual contrast would be reduced when viewed against a background of landscape may be possible. The final colour selection would however, be subject to the availability of WTG models on the market at the time. - In terms of the proposed access roads, the following measures will be adopted: - minimise the extent of cut and fill in the construction of the roads, following contours where possible, - re-vegetating disturbed soil areas immediately after completion of construction works with local native vegetation or pasture grasses as agreed with involved landowners; and - use local materials as much as possible in road construction to minimise colour contrast. - With regards to the substation, the following measures will be adopted: - locating the substation to take advantage of natural topographical and vegetation screening; - ensuring materials are non-reflective and colours assist with blending facility with local context; and - planting additional screening vegetation.
Cultural Heritage	Potential disturbance to Aboriginal and historic heritage objects or places during construction and operation of the Project.	- Personnel involved with ground disturbance activities in the PA will undertake an Aboriginal and historic heritage awareness training/induction program in line with Section 10.1.2 of the CHA (refer <i>Annex D</i> to this report). - During works, the location of all previously recorded Aboriginal and historic heritage sites and those sites recorded as part of this assessment will be clearly marked on all construction plans for the PA and site foreman informed of their presence and the need to avoid disturbance. - If suspected Aboriginal heritage objects are found during works the Chance Find Procedures outlined in the CHA will be followed (refer Annex J; Section 10.1.3 for Aboriginal heritage and Section 10.2.1 for historic heritage). - The PAD areas within the PA that have been identified as having moderate or high potential to reveal Aboriginal cultural heritage and may be subjected to impacts (refer to <i>Figure 7.4</i> and <i>Figure 7.5 of Annex D</i> - BWF2, BWF13, BWF19, BWF21, and BWF PAD1), will undergo a sub-surface testing program in accordance with the ACHA where disturbance to these areas cannot be avoided. The sub-surface testing program will be undertaken as part of the detailed design phase of the Project during which locations of Project infrastructure components and ground disturbing activities will be confirmed, and prior to ground disturbing elements of the proposed wind farm

Aspect	Potential Impact	Mitigation Measures
		development commencing. If the sub-surface testing program identifies significant archaeological deposits these may be subject to a salvage excavation (in accordance with Section 10.1.5 of the AHCHA) or avoided through detailed design. • An Aboriginal Cultural Heritage Management Plan (ACHMP) will be prepared and implemented to manage sub-surface testing activities and the Aboriginal heritage values within the PA. The ACHMP will include strategies to manage any Aboriginal heritage sites identified during future survey work or significant deposits found during sub-surface testing. • During detailed design and prior to the commencement of construction, additional impact areas not previously examined will be surveyed by a qualified archaeologist and RAPs. Any new Aboriginal heritage sites identified within proposed impact areas as part of these surveys may be avoided as part of detailed design, fenced off and protected, or subjected to a sub-surface testing program and salvaged (if required). Detailed strategies for protection of Aboriginal heritage values identified in future survey work will be provided in the ACHMP. • Where the stone artefact scatter (BWF18) cannot be avoided, surface collection/salvage by Aboriginal stakeholder groups and an appropriately qualified archaeologist should be undertaken prior to the commencement of works. • No archaeological constraints exist for areas that have been surveyed and identified as having no heritage sites or PADs (refer to Figures 7.1 and 7.2 of the CHA provided in <i>Annex D</i>). • No ground disturbing components in the location of Aboriginal heritage sites or areas of PAD will take place until the sub-surface archaeological investigations outlined in this report have been undertaken and reported on. • Where possible, and in consultation with Aboriginal stakeholders, conservation areas will be established for relocation of disturbed artefacts. An interpretive strategy will also be established that describes what the area is and the past use of the landscape by Aboriginal people.

Aspect	Potential Impact	Mitigation Measures
Traffic and Transport	Damage and disruption to local roads from heavy vehicle movements particularly during construction and decommissioning.	• A Construction Traffic Management Plan will be prepared prior to the commencement of construction in consultation with RMS and ULSC's Local Traffic Committee, and will include (but not limited to) the following: - confirmation of expected traffic volumes generated by the Project for all work stages and hours of operation; - confirmation of, identification and qualification of all heavy vehicle and RAV haulage routes for all work stages; - mechanism to review identified haulage route road condition; - confirmation of required upgrade works at each of the proposed site access points off Grabben Gullen Road to ensure safe and functional access to the site; - traffic management measures required to facilitate RAVs, including functional plans detailing road widening/improvement works where required prior to the commencement of works; - mechanisms/agreements to maintain haulage route roads and road infrastructure during construction works and to reinstate roads to at least pre-construction conditions; - any requirements for specific work stage construction traffic control plans; - detail a period of inactivity for construction vehicles during the time of school bus services; - mechanisms for identifying all vehicles associated with the construction of the Project and ensuring that construction vehicles use identified/agreed routes; - in consultation with ULSC, confirm swept path designs and provide detailed design drawings to ULSC for consideration prior to construction; - in consultation with ULSC, confirmation of required upgrade works at each of the proposed site access points off Grabben Gullen Road to ensure safe and functional access to the site, including provision of detailed design drawings to ULSC for consideration prior to construction; - relevant mechanisms for RAV permits and traffic management requirements; - any additional matters identified as required by RMS and ULSC; - escorts for RAVs will be provided in accordance with RMS requirements; and - to ensure that roads utilised by traffic associated with the construction of the Project are maintained to a suitable standard commensurate with their function, a joint inspection of the road surface will be undertaken by representatives of RMS, ULSC and the Proponent prior to the commencement of construction works on the PA. Upon completion of the construction works, a final joint inspection will be undertaken by representatives of RMS, ULSC and the Proponent. The purpose of this inspection will be to identify those works that will ultimately be necessary to return the roads to their pre-development condition or better.

Aspect	Potential Impact	Mitigation Measures
Water Supply, Water Quality and Hydrology	Sediment run-off generated from ground disturbing activities entering existing surface water bodies within the PA. Impacts to surface water flows generated from construction activities. Impacts at watercourse crossings. Accidental spills causing localised contamination to soil, groundwater or surface water bodies.	• A detailed Soil and Water Management Plan (SWMP) will be prepared in consultation with, and to the satisfaction of DPI Water, prior to construction commencing. The SWMP will be prepared by a suitably qualified person, such as a soil conservationist, and in accordance with best practice guidelines as referenced in Section 6 of the Water Supply, Water Quality and Hydrology Assessment included as Annex L to the EIS. • Progressive Erosion and Sediment Control Plans will be prepared as the Project progresses to address management requirements at individual work sites. • The Project will be designed and constructed to minimise land disturbance and therefore reduce the erosion hazard. • Construction activities will be staged to minimise the duration and extent of land disturbance. • Topsoil resources will be managed to minimise the risk of erosion and sedimentation, and maximize reuse of topsoil during rehabilitation. • Upslope (clean) stormwater will be diverted around the disturbed sites and capture sediment-laden runoff from within the disturbed site for diversion to sediment control devices. • The site will be rehabilitated promptly and progressively as works progress. • Erosion and sediment control devices will be inspected and maintained for the duration of the Project. • Land disturbance within 20 m of minor streams (first and second order watercourses) and 40 m of third order or higher watercourses will be avoided. • Waterway crossings for access roads and cable installations, and any associated instream works will be designed in accordance with DPI Water's "Guidelines for Controlled Activities on Waterfront Land" (2012). • Appropriate procedures will be in place for the transport, storage and handling of fuels, oils and other hazardous substances, including availability of spill clean-up kits. • Disturbance during construction will be minimised by using existing access tracks and roads until proposed final designs are implemented. • Appropriate stormwater, collection, treatment and recycling will be in place at the concrete batch plant, in accordance with relevant best practice guidelines and any requirements of the NSW EPA.
	Increase in water demand to service the Project during construction causing changes to baseline groundwater and/or surface water levels.	• Obtain the relevant water access licenses under the Water Management Act 2000 prior to commencing any works that intercept or extract groundwater or surface water.

Aspect	Potential Impact	Mitigation Measures
Socio-Economic	Impacts on the local economy, community and infrastructure.	- Where feasible and applicable, contractors and suppliers will be sourced from the broader local region during the construction phase. - Where feasible and applicable, service and maintenance staff will be sourced from the broader local region during the operation of the Project. - Prior to the commencement of construction, a community enhancement program will be established providing a voluntary annual contribution for the provision and enhancement of community facilities and Council funded infrastructure projects. - The Proponent will consult with local and regional realtors periodically in order to identify trends or changes associated with wind farm impacted properties to determine a correlation between the Project and property values in the region. - In addition to the mitigation measures outlined above, mitigation measures pertaining to the other impacts including landscape and visual, noise and vibration, traffic and transport, aviation safety and communications will be implemented.
Aviation Safety	Impacts to flight paths for commercial and recreational aircraft. WTGs impacting on the safe operation of aircraft in the region for agricultural purposes and the aerial-based water application for fighting bushfires.	- WTG and monitoring mast heights and co-ordinates (including 'As Constructed' details following completion of construction) will be notified to CASA, DoD, ASA and AAAA as well as other aircraft operators in the region for inclusion in databases and navigational charts of the area. - Consideration will be given to marking the wind monitoring towers with bands of contrasting colour according to the requirements set out in MOS 139 Section 8.10 - Obstacle Markings. - The lowest safe altitude (LSALT) for airway W423 will be increased by 100 ft to 4,700 ft. - Prior to undertaking aerial application operations, if it is determined there is an unacceptable risk in operating fixed wing aircraft on properties adjoining the PA, helicopters will be utilised as they can operate in closer proximity to obstacles such as WTGs. - The heights and co-ordinates of WTGs and wind monitoring masts will be provided to emergency services operating in the vicinity of the Project. - Should obstacle lighting be adopted, it will be designed during detailed design in a manner to reduce visual impact and in accordance with ICAO Annex 14 Vol 1 Chapter 6 and MOS 139 Chapter 9.

Aspect	Potential Impact	Mitigation Measures
Electromagnetic Interference	Potential for WTGs to cause electromagnetic interference (EMI) by blocking, scattering or reflecting waves between transmitters and receivers. This may include television, radar and radio transmissions.	- The following measures will be incorporated in the Construction Environmental Management Plan (CEMP) to be developed for the Project prior to commencement of construction, including identification of processes and timing to address each issue: - following construction, an assessment of the potentially affected dwellings, and at the request of the landholder of any other dwellings, will be undertaken to mitigate television reception impacts considered to be caused from the Project. Mitigation options to be considered will include a combination of the following: - realigning the householder's TV antenna more directly towards their existing transmitter; - tuning the householder's antenna into alternative sources of the same or suitable signal; - installation of more directional and/or higher gain antenna at the affected dwelling; - relocating the antenna to a less affected position; - installation of cable/satellite television at the affected dwelling; and - installation of a television relay station. - any interference to radio broadcasting can be mitigated through the installation of a high quality antenna and/or amplifier; - at the expense of the Proponent, the fixed point-to-point link within the PA operated by NSW RFS will be re-routed to avoid any obstruction to the service; and - the potentially affected point-to-point link operated by ULSC will be re-routed, with the Proponent to lodge an agreed bond amount at the request of ULSC and supply all relevant Project information to undertake the works.
Shadow Flicker	Impacts on human health related to shadow flicker.	- The following mitigation measures will be investigated and implemented in consultation with involved landholders affected by shadow flicker: - installation of screening structures or the planting of trees to block shadows cast by the WTGs; and - the use of WTG control strategies which shut down WTGs when shadow flicker is likely to occur or relocation of the WTG.

Aspect	Potential Impact	Mitigation Measures
Blade Throw	Accidental release of WTG blades during operation.	- The WTG model selected for the Project will be certified to the relevant international standards and has an adequate lightning protection system and shutdown system. - An ongoing operation and maintenance program will be implemented throughout the lifetime of the Project.
Health	Impacts on human health pertaining to audible and inaudible noise, blade glint, shadow flicker and electromagnetic fields.	- WTG blades will be coated with a non-reflective finish to avoid the occurrence of blade glint. - The WTG model ultimately selected for the Project will meet the relevant Australian design and safety standards. - The mitigation measures pertaining to potential noise and shadow flicker impacts will be implemented.
Bushfire Risk	Impacts to/from the Project on bushfire risk (accidental ignition of bushfire during construction and operation of the Project). Impacts of the Project on bushfire management capabilities.	- A Bushfire Management and Emergency Response Plan will be prepared in consultation with the NSW RFS and other relevant stakeholders, prior to the commencement of any construction. - Fire weather to be monitored daily on the NSW RFS website. Fire weather to be displayed on-site and activities modified accordingly. - Locate electricity services to limit the possibility of ignition of surrounding bushland or the fabric of buildings and undertake regular inspections of lines to ensure they are not fouled by branches, as per the performance criteria and acceptable solutions of PBP (NSW RFS2006). - Maintain a reduced fuel zone (APZ or defendable space) around each of the WTGs, substation and compounds to ensure adequate defendable space in accordance with the performance criteria and acceptable solutions of PBP (NSW RFS 2006). - Appropriate location of water access points will assist safe, effective and timely fire suppression activities. To ensure adequate access to water for RFS and fire-fighting crews, the allocation of static water supplies is necessary and will be further detailed in the Bushfire Management and Emergency Response Plan. A water supply reserve dedicated to fire-fighting purposes will be installed and maintained as per the performance criteria and acceptable solutions of PBP (NSW RFS 2006). A minimum of 30,000 litres of water tanks, dams or other static water supplies are to be provided across the PA. The exact number and location will be confirmed in consultation with the local RFS and detailed in the Bushfire Management and Emergency Response Plan. - Provide and maintain public and property access roads as per the performance criteria and acceptable solutions of PBP (NSW RFS 2006). This includes, but is not limited to, ensuring that fire fighters are provided with safe all weather access to structures, that public road widths, design and capacity allow for fire fighter access and resident evacuation, and that roads are clearly signposted. - Safe working procedures and emergency response procedures will be developed and strictly implemented for all work tasks, with all employees and visitors involved in the operation and maintenance of the Project routinely trained in the safe operating procedures and the basic first response fire-fighting techniques including: - maintaining a 10 m wide fuel reduced zone around construction activities that may result in ignition of a fire e.g. welding; - ignition creating activities such as welding will not be undertaken on days of total fire ban;

Aspect	Potential Impact	Mitigation Measures
		- communication and reporting requirements such as alerting emergency crews (000) and reporting details of location, size, proximity to assets and access capabilities. Reporting procedures and mechanisms will be efficient and simple to ensure that potential issues are identified, inspected and rectified in a timely manner; - maintaining provision for mobile telephone and UHF radio communications; - use of 4WD striker unit (to be available on site daily during the construction and maintenance phases of the Project); - use of a dedicated 10,000 litre tanker (to be available on site daily during the construction phase of the Project); and - use and location of extinguishers, knap-sacks and hoses.
Waste	Improper management of waste streams during construction of the Project impacting on the receiving environment.	• The Construction Environmental Management Plan (CEMP) to be developed for the Project prior to commencement of construction will incorporate consideration of waste streams that will be generated onsite through construction activities, and outline the framework for management of waste materials, including classification in accordance with relevant Waste Classification Guidelines, storage, and disposal requirements.