



Yass Valley ***Wind Farm***

Preferred Project & Submissions Report

December 2013

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Preferred Project & Submissions Report | December 2013

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1 Introduction

The Yass Valley Wind Farm proposal is for the development of a wind farm in the Southern Tablelands region of NSW, approximately 30 km west of Yass and around 300 km west of Sydney.

An application for the proposal was lodged with the NSW Department of Planning on 2 December 2008 and Director General's Requirements were issued to the proponent on 12 January 2009 to guide the work required in assessing the proposed wind farm. The final revision of the Environmental Assessment for the Yass Valley Wind Farm, which addressed the issues raised in the Director General's Requirements, was lodged in November of 2009 and placed on exhibition by the department from 13 November 2009 to 14 December 2009. Twenty two submissions were received in response to the exhibition of the Environmental Assessment of the wind farm, seven of which were from government agencies.

Epuron lodged a Preferred Project Report with the NSW Department of Planning & Infrastructure on 30 November 2012. This report considered and responded to the issues raised in the submissions on the Yass Valley Wind Farm Environmental Assessment. The Preferred Project Report was placed on public exhibition by the department from 14 December 2012 to 1 March 2013.

Eighteen submissions were received in response to the exhibition of the Preferred Project Report, eight individual submissions and ten government agency submissions. Four of these submissions were received after the exhibition period had closed on 1 March 2013.

1.1 Purpose of this Report

This revised Preferred Project & Submissions Report provides an update to the Preferred Project Report submitted in November 2012 and publicly exhibited from December 2012 to March 2013 and includes responses to each of the submissions to the Preferred Project Report. Submissions to the EA are addressed in section 2 and submissions to the Preferred Project Report are addressed in section 3.

The report also identifies changes to the proposed wind farm infrastructure that have been made as a result of the submissions received and identifies the preferred project that Epuron is seeking approval for.

1.2 Summary of the Proposal

As presented in this revised Preferred Project and Submissions Report, the Yass Valley Wind Farm proposal would involve the construction and operation of a wind farm. The proposal includes:

- ▶ Up to 144 wind turbines located within the Coppabella and Marilba precincts. Each wind turbine consists of three blades, a rotor hub and nacelle mounted on a tubular steel tower together with the associated turbine foundation, turbine transformer and crane hardstand area.
- ▶ A 330kV switchyard enabling the connection of the wind farm to TransGrid's existing Yass to Lower Tumut 330kV transmission line. The switchyard will incorporate an auxiliary services building and a nearby microwave tower to provide communications to TransGrid's operational control centre.
- ▶ A high voltage (up to 330kV) pole mounted transmission line approximately 25km long to connect the switchyard to the two substations on the wind farm site.
- ▶ Up to two substations on the wind farm site. Each substation will include transformers to provide connection to the medium voltage electrical reticulation network.
- ▶ A medium voltage electrical reticulation network of above ground and underground cabling to connect the individual wind turbines to the site substations.
- ▶ Internal site access tracks and minor upgrades to existing public roads to allow the delivery of the wind turbine components and other equipment.
- ▶ A permanent operation and maintenance facility including offices, facilities, car parking and equipment storage.
- ▶ Up to five permanent wind monitoring masts.

- ▶ Temporary construction facilities including offices, facilities, car parking, equipment laydown areas and concrete batching plants.

Table 1-1 Changes to the project during development

Detail	Environmental Assessment November 2009	Preferred Project Report November 2012	Preferred Project & Submissions Report December 2013
Number of wind turbines	152	148	144
Length of high voltage overhead powerline	>75 km	25 km	25 km
Number of site substations	6	Up to 2	Up to 2
Maximum tip height	150	150	150

1.3 Project Benefits

The Yass Valley Wind Farm would provide the following primary benefits:

- ▶ In full operation, it would generate more than 1,135,000 MWh of electricity per year - sufficient for the average consumption of around 142,000 homes.
- ▶ It would improve the security of electricity supply through diversification of generation locations.
- ▶ It would reduce greenhouse gas emissions by approximately 1,098,000 tonnes of carbon dioxide equivalent (CO₂e) per annum
- ▶ It would contribute to the State and Federal Governments' target of providing 20% of consumed energy from renewable sources by 2020.
- ▶ It would contribute to the NSW Government's target of reducing greenhouse gas emissions by 60% by the year 2050.
- ▶ It would create local employment opportunities (up to 167 jobs during construction and 34 operations and maintenance jobs) and inject funds of up to \$334 million into the Australian economy and \$75 million into the local economy.

In addition to these primary benefits there are also secondary benefits and opportunities for improvement in infrastructure, tourism and ecology.

2 Exhibition of Environmental Assessment

2.1 Public Exhibition

The Yass Valley Wind Farm Environmental Assessment (EA) is comprised of:

- ▶ The Environmental Assessment;
- ▶ Attachments: Involved land parcels, turbine grid co-ordinates, Part 3A declaration, DGRs, planning focus meeting minutes and community consultation plan & materials;
- ▶ Appendix 1 – Landscape & Visual Impact Assessment;
- ▶ Appendix 2 – Noise Assessment;
- ▶ Appendix 3 – Biodiversity Assessment;
- ▶ Appendix 4 – Archaeology Assessment;
- ▶ Appendix 5 – Communications and Aviation Assessment;
- ▶ Appendix 6 – Traffic & Transport Assessment; and
- ▶ Appendix 7 – Shadow Flicker Assessment

The Yass Valley Wind Farm Environmental Assessment was on public exhibition from 13 November 2009 to 14 December 2009 at the following locations:

- ▶ NSW Department of Planning, 23-33 Bridge St, Sydney;
- ▶ Nature Conservation Council, 301 Kent St, Sydney;
- ▶ Yass Valley Council office, Yass;
- ▶ Harden Shire Council office, Harden;
- ▶ Binalong Post Office, Binalong; and
- ▶ On the NSW Department of Planning website

Local residents were notified of the exhibition period through advertisements placed in the local newspapers by the Department of Planning and a newsletter was sent to residents in the vicinity of the project site by the proponent.

2.2 Submissions Received

The Department of Planning received a total of 22 submissions. Of the 22 submissions, 7 were from government agencies and the remaining 15 submissions were from individuals or private organisations. One of the individual submissions was in support of the wind farm and the other 14 submissions were opposed to the project.

In accordance with section 75H of the Environmental Planning and Assessment Act 1979, this Preferred Project & Submissions Report provides considered responses to the issues raised in submissions received in relation to the EA for the proposed Yass Valley Wind Farm.

The individual submissions and government agency submissions have been listed and addressed individually.

2.3 Assessment of Submissions

The issues raised in each submission have been summarised and tabulated in Table 2-1 on the following page to identify the most frequently and infrequently raised issues.

Table 2-1 Summary of submissions received

Submission Number	Visual Impacts	Operational Noise	Biodiversity Impacts	Heritage Impacts	Consultation/ community	Property Value Impact	Health Impacts	Safety Impacts	Fire Hazards	Aviation Impacts	Communications Impacts	Traffic Impacts	Resource Impacts	Soil Erosion	Tourism Impacts	Decommissioning
1	■	■	■		■	■	■									■
2	■	■														
3	■				■									■		
4	■														■	
5				■									■			
6	■	■	■			■	■									
7	■		■								■					■
8																
9	■	■	■		■	■	■									
10	■	■	■			■	■		■							
11	■				■	■			■							■
12	■															
13													■			■
14					■	■	■									
15	■		■		■							■			■	
16													■			
17										■						
18				■									■	■		
19			■	■												
20												■				
21					■							■				
22		■					■									
Indicates government agency submission																

2.4 Response to Individual Submissions

The NSW Department of Planning & Infrastructure has requested that the response to community submissions be presented in a format which responds to submissions in an individual manner, identifying the individual submitter, the issue(s) raised and where the issue has been addressed.

2.4.1 David Burraston, Cootamundra

Issue	Response																								
Poor greenhouse gas reduction The stated GHG reduction figures are incorrect and inconsistent	A comparison of the original estimate and a revised estimate using the NSW government wind farm greenhouse gas savings tool www.greenhousegas.nsw.gov.au is shown below: <table><tr><th></th><th><i>Epuron estimate in Environmental Assessment 2009</i></th><th><i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i></th></tr><tr><td>Number of Turbines</td><td>152</td><td>144</td></tr><tr><td>Turbine Capacity (MW)</td><td>2.5</td><td>2.5</td></tr><tr><td>Wind Farm Capacity (MW)</td><td>380</td><td>360</td></tr><tr><td>Capacity Factor</td><td>0.36</td><td>0.36</td></tr><tr><td>Wind Farm Energy Output (MWh)</td><td>1,198,368</td><td>1,135,296</td></tr><tr><td>Emissions avoided per annum (t CO₂-e)</td><td>1,143,243</td><td>1,097,831</td></tr><tr><td>Equivalent average number of households</td><td>142,905</td><td>141,912</td></tr></table> The Government’s greenhouse gas savings tool is the most relevant tool to use.		<i>Epuron estimate in Environmental Assessment 2009</i>	<i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i>	Number of Turbines	152	144	Turbine Capacity (MW)	2.5	2.5	Wind Farm Capacity (MW)	380	360	Capacity Factor	0.36	0.36	Wind Farm Energy Output (MWh)	1,198,368	1,135,296	Emissions avoided per annum (t CO ₂ -e)	1,143,243	1,097,831	Equivalent average number of households	142,905	141,912
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Emissions avoided per annum (t CO ₂ -e)	1,143,243	1,097,831																							
Equivalent average number of households	142,905	141,912																							
Lack of community consultation	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Ongoing telephone contact ▶ Ongoing individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ An Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued four project newsletters ▶ Established a project website ▶ Establish a Community Consultation Committee ▶ Held six CCC meetings ▶ Contacted or attempted to contact all neighbours with a residence within 5 km of a turbine and in some cases beyond 5kms																								
Illegibility of figures and diagrams. E.g. Fig 2-1, 3-2, 3-4, 3-5 ...	Revised maps have been included in the Preferred Project & Submissions report including an A1 scale map of the site. It is intended that these revised and additional maps will assist in developing an understanding of the proposal.																								
Number of landholders is inconsistent	There has been a change to the landholders from the exhibited EA to the final development described in this PPR. A number of new landholders associated with the alternate transmission line are now included and landownership to the west of the Coppabella precinct have been amended. Details of the properties and landholders involved in the project are included in Attachment 10.																								
Decommissioning	Decommissioning the wind farm at the end of its commercial life is the proponent’s obligation and carried out by, and at the expense of, the wind farm proponent (owner). This is expected to be a condition of any project approval. Refer to the Decommissioning Plan																								

Issue	Response
	(Attachment 11) for further details.

2.4.2 James Middleton, Harden

Issue	Response
The proposed wind farm is not viable or cost efficient and the landowner is at risk of having a product that requires to be removed.	Like a DA for a home or business, the commercial viability of the wind farm is the proponent's risk and is not a planning issue. Given the costs involved it is unlikely that an application would be lodged without the full intention to take the project to construction. The responsibility for decommissioning of the wind farm at the end of its economic life is the proponent's. See the draft Decommissioning and Rehabilitation Plan (Attachment 11) for more details.
The land where turbines will be positioned will not be properly managed for control of weeds, feral animals and erosion. Land management could be compromised as the land owner could rely on the income from the wind turbines rather than efficient management of the land.	Areas disturbed during construction will be protected by the installation and maintenance of appropriate erosion and sediment control measures to avoid contributing to any soil and landform degradation. An Erosion and Sediment Control Plan will be prepared as part of the Construction and Environment Management Plan that will be submitted to the Director-General of the NSW Department of Planning & Infrastructure for approval prior to the commencement of construction. Land management is an existing landowner obligation and it is presumed that having more funds available would not be a hindrance to the management of existing obligations.
Employment opportunities on farms where the wind turbines will be positioned will cease, as the farming of that land has been replaced, which will also affect rural enterprises. I cannot see how the jobs created by these wind farms offset the jobs that could be lost due to increased electricity costs and the diversion of tax money to subsidise these farms.	There is no reason to consider that existing farms would stop employing farm workers because of the wind farm. This is not known to have occurred elsewhere. Jobs created by the construction and operation of the wind farm do not generally offset other jobs, they are additional jobs to those existing. Jobs lost which might be attributed to increased electricity costs are not related to the wind farm application. Taxpayer's money is not diverted to subsidise wind farms. Epuron is not aware of any direct Commonwealth or NSW subsidy for the construction or operation of wind farms. Most wind farms apply for eligibility to create Large Scale Generation Certificates (LGCs), formerly Renewable Energy Certificates, under the Commonwealth's Renewable Energy Target (RET) scheme. Eligible renewable energy generators are able to create 1 LGC for every megawatt hour (MWh) of eligible electricity generated. Other parties, predominantly electricity retailers, known as liable parties, are required to surrender LGCs equivalent to a proportion of their total electricity sales (increasing up to 20% by 2020). Wind farm operators are able to sell the certificates they create to liable parties, thereby gaining additional revenue to help offset the costs of wind energy generation compared to other generation, such as coal or gas. Wind farms have higher upfront capital costs than other forms of generation but they have no ongoing fuel costs where other forms of generation have ongoing and increasing fuel costs.
As a local resident and Managing Director of properties in the Yass Valley Shire I am concerned with the noise and light pollution that each wind turbine could create.	The wind farm would comply with the guidelines specified by the Department of Planning and Infrastructure for noise. There are no aircraft warning lights proposed for the wind farm so there will be no light pollution.

2.4.3 Louise Hufon, Harden

Issue	Response
Night lighting	The installation of obstacle lighting is not currently proposed for the wind farm. The CASA Advisory Circular AC 139-18 in relation to Obstacle Marking and Lighting of Wind Farms has

Issue	Response
	been withdrawn and wind farms that have previously operated red flashing obstacle lighting have now turned these off permanently.
The open house forum proved to be highly uninformative and doesn't provide any understanding of what issues may be of concern.	The submitter has provided very useful information about the possibilities for projects being carried out by the local landcare groups. While the open house may not have provided valuable information to the submitter the proponent is appreciative of the clarification of issues of concern and possible options for addressing them that the submitter has provided.
Where water is to be sourced from.	The water usage over a two year construction period has been estimated to be around 16.2 ML (EA section 8.1.2 on page 197). A number of potential water sources have been identified including Jugiong Creek, Lake Burrinjuck, Goldenfields Water County Council pipeline, Yass Dam and a number of ground water bores. None of these potential water sources would be used for the wind farm to the extent that they placed any restrictions on existing agricultural and potable water usage. The estimated annual water use required for turbine construction (8ML) is less than 0.5% of the total water capacity of Yass Dam alone. Furthermore, the water used for concrete batching may also be sourced from offsite locations. The main construction contractor would discuss water availability and terms with the relevant authorities before commencement of construction.
Management of soil erosion	Areas disturbed during construction will be protected by appropriate erosion and sediment control measures to avoid contributing to any soil and landform degradation. An Erosion and Sediment Control Plan will be prepared as part of the Construction and Environment Management Plan that will be submitted to the Director-General of the NSW Department of Planning & Infrastructure for approval prior to the commencement of construction.
Concerns about loss of television signal strength	Concerns about television reception quality are noted. The draft standard conditions note: <i>Prior to the commencement of commissioning of the Development, the Applicant shall undertake an assessment of the existing quality of the television/radio transmission available at a representative sample of receivers located within 5 kilometres of any wind turbine.</i> The submitter will be invited to be one of the receivers to have existing quality assessed.

2.4.4 The Crisp Galleries, Bowning

Issue	Response
We request that Epuron not build 10 of the 180 proposed wind turbines. These 10 wind turbines will have a serious impact on our existing tourism business and our proposed tourism educational eco sustainable village for 800 people.	The Crisp Galleries tourism village is a proposed eco-tourism development which required the adoption of a new LEP to be permissible. Since the submission this has now occurred. Epuron has had correspondence and a number of meetings with Crisp Galleries and have noted the request through the 2009 submission not to build a number of the proposed wind turbines. The original concerns of the Crisps were night lighting and shadow flicker. No night lighting is proposed for the wind farm and due to the distance between the general location of the tourism village and the wind farm there will be no shadow flicker experienced. For the 2009 Environmental Assessment ERM visited the location of the proposed eco-tourism village and prepared a photomontage. However plans of the layout of the village were not available in 2009 and have not been made available since being requested in April 2013. Epuron considers that as the wind turbines, at over 2.5 km away, would be compliant for noise and shadow flicker in the vicinity of the eco-tourism village. Should the wind farm proceed to construction it would enable the Gallery owners to see the wind farm in situ and determine what screen planting might assist. The proponent would provide any screen plantings requested to screen both the existing overhead transmission lines in the foreground view of the eco-tourism village as well as the wind turbines in the distance. At this stage it is not clear that the proposed eco-tourism village will go ahead and as there are no compliance issues, Epuron is seeking approval for all wind turbine locations. Discussions will remain open between the Proponent and Crisp Galleries to maximise the benefits of

Issue	Response
	the co-existence of the two projects.

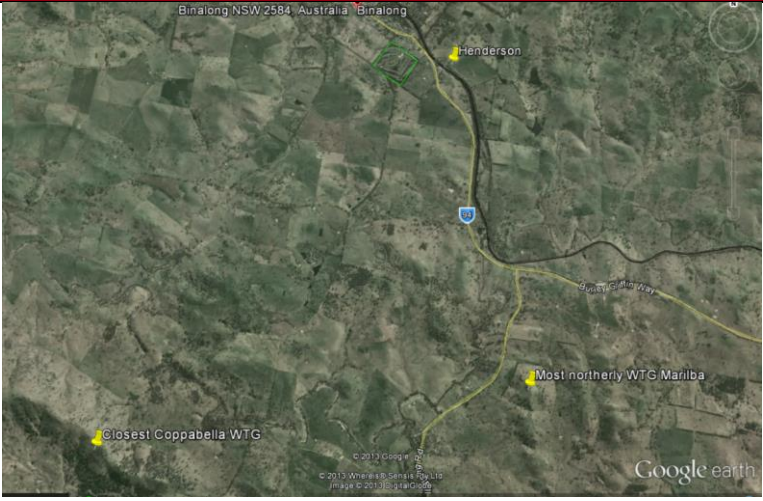
2.4.5 Sam & Rowena Weir, Bookham

Issue	Response
The proposal would transfer the ridgelines of this rural landscape into an industrial zone. The aesthetic beauty of the area would be lost.	As both submitters are on the wind farm CCC their views have been noted. The Landscape and Visual Impact Assessment noted that the proposed Yass Valley Wind Farm will have a generally low visual impact on its surrounds, and the site is a suitable landscape for the construction of a wind farm. It is noted that the recent removal of a tree from the submitters' garden has left a gap. While the nearest wind turbine in the Yass Valley Wind Farm is over 9 km away, there is the potential for a wind turbine from the Conroy's Gap wind farm to be within 4 km. New tree planting should assist with filling in the gap and screening the house from the Conroy's Gap wind farm.
Neighbours most affected receive no compensation or consideration whatsoever, and are forced to suffer huge reductions in the value of their properties and quality of life.	The wind farm will establish a community fund which is intended to benefit the neighbours closest to the wind turbines. The Proponent will contribute \$2,500 per wind turbine per annum and at least 50% of the funds may be allocated to residential clean energy improvements or similar benefits to non-involved properties located within 5km of a wind turbine. The submitters are, however, over 9km from the Yass Valley Wind Farm. The main finding in a report prepared for the NSW Valuer General in August 2009 was that "<i>wind farms do not appear to have negatively affected property values in most cases.</i>" The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded "we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods". It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>"If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim. Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for "the promotion and co-ordination of the orderly and economic use and development of land".</i>
The effect on the district's flora and fauna too, and as importantly, would be detrimental.	The design and layout of the wind farm infrastructure has been optimised to avoid and minimise the potential impact on flora and fauna. Where the residual impacts cannot be avoided, appropriate biodiversity offsets will be provided to mitigate the impacts.
The environmental benefit of wind turbines is questionable. Studies overseas and in Australia show appallingly low rates of efficiency.	The government's greenhouse gas savings tool (see 2.4.1) gives a clear calculation of the electricity produced and the emissions saved. The environmental benefits are tangible. Modern wind turbines are extremely efficient and capture around 50% of the kinetic energy of the wind passing through the swept area of the turbine rotor

Issue	Response
	(The theoretical limit is 59.3% - Betz's law). Depending on the average wind speed on the wind farm site, wind turbines will operate for about 90% of the time with an average capacity factor in the range of 35 – 40%. None of the studies alluded to by the submitter are referenced so a more specific response is difficult. However, it should be noted that wind energy has been installed around the world at increasing rates over the last three decades which is mark of its financial viability, generating efficiency and environmental efficacy.

2.4.6 Rosemary Henderson, Binalong

Issue	Response
Number of turbines The proposed number of turbines could be as high as 152. Consideration should be given to lowering that number which would lessen the impact of the development on surrounding properties and towns.	As a result of the submissions, to minimise the overall impact of the wind farm the number of turbines has been reduced from 152 in the original EA to 148 in the Preferred Project Report exhibited in November 2012 to 144 in this current Preferred Project and Submissions Report.
Height of turbines Turbines could reach 150 metres in height. Could the height be reduced to make the visual impact on surrounding areas less obvious? They are all to be built along ridgelines, if some could be located below the top of ridges and hills they would be less obtrusive. As it is only the fans that are catching the wind there does not appear a necessity for them to be located on the highest points, as the fans could catch the wind, whilst the towers could be lower down the ridgeline making them far less obvious	The maximum tip height is 150, but the actual turbine model selected could be lower. Wind speed increases with increasing height above the ground. The wind turbines are located on the top of ridges and hills to maximise the exposure of the turbines to the wind and hence maximise the energy yield and associated benefits from each wind turbine. For the wind farm to provide the most value in generating electricity it must maximise its use of the available wind resource which means locating the wind turbines at the highest points along the ridges.
Visual impacts The house where I live was built in 2000 to take in the views towards Bookham. This sweeping panorama will now be littered with turbines, totally ruining the views. The visual impact will be very high and very disturbing.	The closest wind turbine in the Marilba precinct is over 6 km and the closest wind turbine in the Coppabella precinct is over 9 km. It is considered that even without vegetation screening the distances are such that the wind turbines would present as very diminished forms in the landscape from the residence. That is not to say that the view would not be an altered one but not sufficiently so to merit action or amendment of the proposal.

Issue	Response
	
Existing environment Throughout the assessment there are constant references to the degraded environment, meaning, I suppose, that more degradation is acceptable. Maybe the authors are unaware that this area has been in drought since 2000, and that it is under stress, but it has been a productive and important source of food and crops for many years, so it was not always as it now appears in 2009, ready for takeover by a wind farm.	While there was drought at the time the EA was written and exhibited the phrase 'degraded environment' refers mainly to how much the environment has changed from its pre-settlement condition. Large scale tree clearing occurred across most farmed areas reducing the native flora and fauna. While this altered landscape does provide a man modified setting with highways, railways, and communications towers etc. it is mainly the biodiversity values that this phrase refers to. However, as it is a highly modified landscape, it is considered more suitable for other infrastructure, particularly development that can occur alongside the existing land use of food production adding the benefit of dual use and diversified income to landholders.
Effect on local wildlife Quote "... impacts will not be significant or unacceptable". With the number of turbines proposed, I cannot believe that, there is no way that birdlife in particular will not be affected. For example there are wedge tail eagles all around this areas and no doubt will be killed in large numbers.	A new study released in November 2013 by Environment Canada titled 'A Synthesis of Human Related Avian Mortality in Canada' looks at the ranking of human activities that kill birds. The results have the top nine killers as: 1. Domestic and feral cats: 200 million 2. Power lines, collisions and electrocutions: 25 million 3. Collisions with houses or buildings: 25 million 4. Vehicle collisions: 14 million 5. Game bird hunting: 5 million 6. Agricultural pesticides 2.7 million 7. Agricultural mowing: 2.2 million young birds, = to 1 million adult birds 8. Commercial forestry: 1.4 million nests, = to 900,000 adult birds 9. Communications towers: 220,000 Wind energy (with 7,000MW installed according to the Canadian Wind Energy Association) is at no. 19 (13,000) after tall buildings (34,000) and marine gill nets (18,000). The total installed capacity of wind energy in Australia in April 2012 was 2,480MW. It is likely that in Australia other activities, including agricultural practices kill many more birds than wind turbines .
Aircraft warning lights Apparently 50 turbines at least will need these lights.	The installation of obstacle lighting is not currently proposed for the wind farm. The CASA Advisory Circular AC 139-18 in relation to Obstacle Marking and Lighting of Wind Farms has been withdrawn and wind farms that have previously operated red flashing obstacle lighting have now turned these off permanently.
TV, radio and mobile reception The assessment is not certain on the effect on TV, radio etc. If this occurs, who will bear the cost of upgrading or whatever is required?	Binalong had digital TV switched on in June of this year. While analogue will be switched off at the end of this year it is likely that most users are already using digital. The submitter's address is in a good predicted coverage area. It is anticipated that there will be very limited potential for interference with digital TV.

Issue	Response
Construction Apparently during construction of this project, it is estimated that 16.23 megalitres of water would be required for building work etc. The proposal is that it be sourced from Jugiong Creek and Burrinjuck Dam. I don't know about Jugiong Creek, but Burrinjuck Dam is presently at a low level, and having being in drought for nearly 10 years with no prospect of rain, doesn't look like filling up any day soon. Groundwater bores are another option apparently, again with the drought this is probably not very environmentally friendly.	The water usage over a two year construction period has been estimated to be around 16.2 ML (EA section 8.1.2 on page 197). A number of potential water sources have been identified including Jugiong Creek, Lake Burrinjuck, Goldenfields Water County Council pipeline, Yass Dam and a number of ground water bores. None of these potential water sources would be used for the wind farm to the extent that they placed any restrictions on existing agricultural and potable water usage. The estimated annual water use required for turbine construction (8ML) is less than 0.5% of the total water capacity of Yass Dam alone. Furthermore, the water used for concrete batching may also be sourced from offsite locations. The main construction contractor would discuss water availability and terms with the relevant authorities before commencement of construction.
Decommissioning and taking down turbines How can there be a guarantee that these turbines will be taken down when they reach the end of their life span in 30 years or whenever?	Decommissioning the wind farm at the end of its commercial life is the proponent's obligation and carried out by, and at the expense of, the wind farm proponent (owner). This is expected to be a condition of any project approval. Refer to the Decommissioning Plan (Attachment 11) for further details.

2.4.7 Brian Murphy, Yass

Issue	Response
I feel this is a move in the right direction for Yass.	Support for the project has been noted.

2.4.8 Simon Walker, Bookham

Issue	Response
Noise and visual impact	Operational noise issues were addressed in section 7.3 of the EA and supported by a specialist report: Appendix 2 – Noise Assessment. The results of the assessment demonstrated full compliance of the proposed turbine layout to the nominated criteria (Wind Farms Environmental Noise Guidelines, South Australian Environmental Protection Agency, 2003 (SA EPA Guidelines)). The visual impact issues were addressed in section 7.2 of the EA and supported by a specialist report: Appendix 1 – Landscape and Visual Impact Assessment. The assessment concluded that <i>"the proposed Yass Valley Wind Farm will have a generally low visual impact on its surrounds, and the site is a suitable landscape for the construction of a wind farm."</i> Nearly all development has its supporters and its detractors. It is accepted that some neighbours to wind farms do not like the look of them and others do. From discussion with the submitter it is understood that a key concern is the approved Conroy's Gap Wind Farm which is more visible from the property address on the submission. The nearest wind turbine on Conroy's Gap Wind Farm will be 2.6 km, the nearest wind turbine on Yass Valley Wind Farm will be 4.8 km. It is incumbent upon the developer of a wind farm to ensure that amenity impacts to the closest neighbours to a wind farm are not unreasonable. We believe that this is the case in this current preferred project.
Aviation lights	The installation of obstacle lighting is not currently proposed for the wind farm. The

Issue	Response
	CASA Advisory Circular AC 139-18 in relation to Obstacle Marking and Lighting of Wind Farms has been withdrawn and wind farms that have previously operated red flashing obstacle lighting have now turned these off permanently.
Property devaluation	The main finding in a report prepared for the NSW Valuer General in August 2009 was that <i>“wind farms do not appear to have negatively affected property values in most cases.”</i> The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded <i>“we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods”</i>. It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>“If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for “the promotion and co-ordination of the orderly and economic use and development of land”.</i>
Health issues	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the “nocebo” effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that “NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary”. The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision

Issue	Response
	in favour of the approval of Infigen's Cherry Tree Wind Farm in Victoria noted that opponents of approval were "unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents". In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: "The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected."
Ecology	Flora and fauna issues were addressed in section 7.4 of the EA and supported by a specialist report: Appendix 3 –Biodiversity Assessment. Please also refer to section 3.5 and Attachment 1 – Supplementary Ecology Report of this Preferred Project & Submissions Report for the response to specific flora and fauna issues raised by NSW OEH. The Supplementary Ecology Report confirms that the area impacted by the revised infrastructure layout has been adequately surveyed and assessed and that appropriate commitments have been made to ensure that impacts are: ▶ Avoided where required; ▶ Minimised and managed where appropriate; and ▶ Offset in accordance with the relevant NSW guidelines. With the implementation of the revised project Statement of Commitments, flora and fauna impacts are assessed to be acceptable and unlikely to pose a significant impact for any NSW or Commonwealth listed species, population or community.
Lack of consultation from the company erecting the turbines	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Ongoing telephone contact ▶ Ongoing individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ An Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued four project newsletters ▶ Established a project website ▶ Establish a Community Consultation Committee (CCC) ▶ Held six CCC meetings ▶ Held six CCC meetings ▶ Contacted or attempted to contact all neighbours with a residence within 5 km of a turbine and in some cases beyond 5kms
Social impact – the dividing of the community	Epuron has created a Community Consultation Committee for the project with representatives from involved landowners, non-involved landowners and other stakeholder groups to be able to provide information to all members of the community. The CCC provides a forum to: ▶ establish good working relationships between the proponent, the community and other stakeholders in relation to the wind farm

Issue	Response
	▶ provide for the ongoing communication of information on the assessment, operation and environmental performance of the wind farm ▶ discuss community concerns and review the resolution of community complaints ▶ advise on the allocation of community enhancement funds in the community ▶ discuss how best to communicate relevant information on the wind farm and its environmental performance to the broader community, and ▶ work together towards outcomes of benefit to the wind farm, immediate neighbours and the local and regional community. Epuron invites feedback from the community on the efficacy of the CCC in relation to the above remit.
Decommissioning of the towers	Decommissioning the wind farm at the end of its commercial life is the proponent's obligation and carried out by, and at the expense of, the wind farm proponent (owner). This is expected to be a condition of any project approval. Refer to the Decommissioning Plan (Attachment 11) for further details.

2.4.9 Sarah Last, Cootamundra

Issue	Response
Decommissioning of this industrial development is not adequately guaranteed.	Decommissioning the wind farm at the end of its commercial life is the proponent's obligation and carried out by, and at the expense of, the wind farm proponent (owner). This is expected to be a condition of any project approval. Refer to the Decommissioning Plan (Attachment 11) for further details.
Negative environmental impacts to endangered and vulnerable Box Gum Grassy Woodland habitat	Flora and fauna issues, including Box Gum Grassy Woodland habitat, were addressed in section 7.4 of the EA and supported by a specialist report: Appendix 3 –Biodiversity Assessment. Please also refer to section 3.5 and Attachment 1 – Supplementary Ecology Report of this Preferred Project & Submissions Report for the response to specific flora and fauna issues raised by NSW OEH. The Supplementary Ecology Report confirms that the area impacted by the revised infrastructure layout has been adequately surveyed and assessed and that appropriate commitments have been made to ensure that impacts are: ▶ Avoided where required; ▶ Minimised and managed where appropriate; and ▶ Offset in accordance with the relevant NSW guidelines. With the implementation of the revised project Statement of Commitments, flora and fauna impacts are assessed to be acceptable and unlikely to pose a significant impact for any NSW or Commonwealth listed species, population or community.
Health impacts	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health

Issue	Response
	is – that some of these cases could be as a result of the “nocebo” effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that “NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary”. The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen’s Cherry Tree Wind Farm in Victoria noted that opponents of approval were “unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents”. In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: “The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected.”
Property devaluation	The main finding in a report prepared for the NSW Valuer General in August 2009 was that “wind farms do not appear to have negatively affected property values in most cases.” The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded “we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods”. It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>“If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for “the promotion and co-ordination of the orderly and economic use and development of land”.</i>
Loss of visual amenity during day and night times (due to aircraft warning lighting).	The installation of obstacle lighting is not currently proposed for the wind farm. The CASA Advisory Circular AC 139-18 in relation to Obstacle Marking and Lighting of Wind Farms has been withdrawn and wind farms that have previously operated red flashing obstacle lighting have now turned these off permanently.

Issue	Response									
Unsustainability, based on our research the “green” outcomes cited by Epuron are dubious generalisations that are unsubstantiated	The proposed wind farm, as described in the Environmental Assessment, is a sustainable project which will generate electricity using a renewable fuel source (the wind). The ‘green’ outcomes are as calculated by the NSW government’s wind farm greenhouse gas savings tool.									
Noise pollution will hinder our quality of life and the research activities of our organisation.	Noise impacts from a wind farm are generally not noticeable at a distance of greater than 1km. Cootamundra is more than 50km away from the wind farm. Operational noise issues were addressed in section 7.3 of the EA and supported by a specialist report: Appendix 2 – Noise Assessment. The results of the assessment demonstrated full compliance of the proposed turbine layout to the nominated criteria (Wind Farms Environmental Noise Guidelines, South Australian Environmental Protection Agency, 2003 (SA EPA Guidelines)).									
Increased fire danger	Epuron wrote to the NSW Rural Fire Service to ask how they viewed the presence of wind farms when fighting fires on the ground or from the air. The August 1, 2013 response from the Assistant Commissioner noted: On the ground... <i>“...fire moving across the area of a wind farm is generally managed in the same way as any other bush fire. Fire fighting strategies by ground-based resources would continue and be subject to prevailing weather and topographic conditions.”</i> And from the air... <i>“...aircraft would avoid wind turbines in the same manner as they avoid other obstructions, such as power lines.”</i>									
Local meteorological and climate impacts	Much of the referenced research can be considered fledgling research into this topic - peppered with words such as "could", "possibly" and "might". Effects observed related to near-surface temperature effects such as very localised mixing of the cooler higher air with slightly warmer air above the ground rather than the much wider phenomenon of climate change. For example the studied effects are not likely to have any impact on the area of the troposphere where clouds are formed or on rainfall.									
Unnecessary divisions in local communities	Epuron has created a Community Consultation Committee for the project with representatives from involved landowners, non-involved landowners and other stakeholder groups to be able to provide information to all members of the community including details of the proposed community fund.									
Obstruction to the future development of local eco and agri tourism	All local developments are free to be submitted to the responsible authority for consideration in the same way that the wind farm is to be transparently assessed and determined on its merits.									
Considerable objective research analysing negative environmental and social impacts is required	The proposed wind farm is sustainable and uses a renewable fuel. Environmental impacts are minimised through the planning process. Social issues are considered during the development of the wind farm and the community while injecting									
There has been no community consultation by the NSW government	The NSW government has established wind farm precincts and a precinct co-ordinator within each precinct to provide an independent source of information to the community. The precinct co-ordinator is an observer member of the CCC and their contact details are included in the CCC minutes.									
Poor greenhouse gas reduction capacity	A comparison of the original estimate and a revised estimate using the NSW government wind farm greenhouse gas savings tool www.greenhousegas.nsw.gov.au is shown below: <table><tr><th></th><th><i>Epuron estimate in Environmental Assessment 2009</i></th><th><i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i></th></tr><tr><td>Number of Turbines</td><td>152</td><td>144</td></tr><tr><td>Turbine Capacity (MW)</td><td>2.5</td><td>2.5</td></tr></table>		<i>Epuron estimate in Environmental Assessment 2009</i>	<i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i>	Number of Turbines	152	144	Turbine Capacity (MW)	2.5	2.5
	<i>Epuron estimate in Environmental Assessment 2009</i>	<i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i>								
Number of Turbines	152	144								
Turbine Capacity (MW)	2.5	2.5								

Issue	Response		
	Wind Farm Capacity (MW)	380	360
	Capacity Factor	0.36	0.36
	Wind Farm Energy Output (MWh)	1,198,368	1,135,296
	Emissions avoided per annum (t CO ₂ -e)	1,143,243	1,097,831
	Equivalent average number of households	142,905	141,912
	The government greenhouse gas savings tool is the most relevant tool to use in these calculations.		
Poor efficiency and predictability of wind as an energy resource. In NSW we have much better and less negatively impacting alternatives, such as domestic solar.	Modern wind turbines are very efficient in converting energy in the wind into electrical energy. It is true that wind farms don't generate electricity if the wind isn't blowing. However, it's not true that we need to build additional back-up power plants in order to compensate for the times when wind farms aren't generating. Australia's energy system is built to deal with changes in demand and supply (Wind Energy The Facts, Clean Energy Council, January 2013). Other forms of renewable energy such as solar PV are significantly more expensive than wind energy.		

2.4.10 Paul Regan, Binalong

Issue	Response
Visual impacts People chose to live in the country for various reasons but top of most lists would be the lack of infrastructure surrounding where we live and/or work. An interesting point to note is that a number of participating landholders in this proposal either do not reside on the land where the turbines are to be located or will not be able to see them from their residence.	The benefiting landowners own 32 (more than 25%) of the 125 residences located within 5km of the wind farm.
Impact on property values Apart from the possible impacts on the value of the land, the mere presence of wind turbines on the ridgeline will reduce potential buyers of the land.	The main finding in a report prepared for the NSW Valuer General in August 2009 was that <i>"wind farms do not appear to have negatively affected property values in most cases."</i> The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded <i>"we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods"</i>. It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>"If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise</i>

Issue	Response
	<i>compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for “the promotion and co-ordination of the orderly and economic use and development of land”.</i>
Environmental impacts The main concerns being removal of trees, the removal of topsoil, construction of roads, construction of foundation pads, and the source of water required for all this construction. The Coppabella range is very steep, very fragile part of our landscape. There is absolutely no way a project of this scale cannot have a significant impact on that group of hills.	Access to surface water from existing dams and creeks or sourcing groundwater from bores may require additional permits or licences. The water usage over a two year construction period has been estimated to be around 16.2 ML (EA section 8.1.2 on page 197). A number of potential water sources have been identified including Jugiong Creek, Lake Burrinjuck, Goldenfields Water County Council pipeline, Yass Dam and a number of ground water bores. None of these potential water sources would be used for the wind farm to the extent that they placed any restrictions on existing agricultural and potable water usage. The estimated annual water use required for turbine construction (8ML) is less than 0.5% of the total water capacity of Yass Dam alone. Furthermore, the water used for concrete batching may also be sourced from offsite locations. The main construction contractor would discuss water availability and terms with the relevant authorities before commencement of construction.
Aerial water bombing plays a major role in controlling and/or reducing the devastating impacts a bushfire can inflict. No mention was made in the Environmental Assessment about the inability to utilise aircraft in the event of a fire within a set area around a wind farm.	Epuron has consulted with the NSW RFS and can confirm that there are no procedures that restrict the operation of an aircraft within the vicinity of a wind turbine. The RFS Aviation section deals with a large number of obstacles in the landscape when fighting fires and they treat wind turbines like any other obstacles in the terrain and work around them to fight fires.
Decommissioning: who is responsible? who finances it?	The proponent (wind farm owner) is responsible (including for financing) for the decommissioning of the wind farm at the end of its economic life. See the draft Decommissioning and Rehabilitation Plan (Attachment 11) for more information.
Social impacts As hard as we try to keep our close community together this project will inevitably cause friction between people. These will not be short term impacts either as these turbines will dominate our landscape for a minimum of 25 years.	The proponent has committed to establishing a community fund for the benefit of the wider community and especially the neighbours living within 5km of the wind farm.
Public consultation Initial consultation with the community was good when the majority of people had little or no knowledge of wind farms. As people’s knowledge and understanding of wind farms increased so did their need for questions to be answered but there was no one to ask. I have spoken to at least 3 people who requested to be on the mailing list of Epuron but have received no correspondence since making the request. I myself only became aware of the Environmental Assessment being on	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Telephone contact ▶ Individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued three project newsletters

Issue	Response
public exhibition through our Catchment Authority officer more than 8 days after it was made available.	▶ Established a project website ▶ Establish a Community Consultation Committee (CCC) ▶ Held six CCC meetings Contacted most neighbours with a residence within 5 km of a turbine.
Quality of the environmental assessment For a project of this scale I thought that the quality of detail in this assessment was very poor. Of particular concern was the quality of maps outlining the location of: access roads, transmission lines, substations. Also the lack of detail regarding earthworks, erosion control, sediment run-off.	The Environmental Assessment was prepared in accordance with the Director General's Requirements issued by the NSW Department of Planning & Infrastructure. Additional and more detailed maps have been included in the Preferred Project & Submissions Report to address the concerns about maps. Details of the earthworks and associated erosion control measures to be applied during construction will be documented in the Construction Environment Management Plan (CEMP) which needs to be approved by the Director General prior to the commencement of construction.

2.4.11 Paul Miskelly, Mittagong

Issue	Response																								
The claimed greenhouse gas (GHG) emissions offsets are grossly exaggerated	A comparison of the original estimate and a revised estimate using the NSW government wind farm greenhouse gas savings tool www.greenhousegas.nsw.gov.au is shown below: <table><tr><th></th><th><i>Epuron estimate in Environmental Assessment 2009</i></th><th><i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i></th></tr><tr><td>Number of Turbines</td><td>152</td><td>144</td></tr><tr><td>Turbine Capacity (MW)</td><td>2.5</td><td>2.5</td></tr><tr><td>Wind Farm Capacity (MW)</td><td>380</td><td>360</td></tr><tr><td>Capacity Factor</td><td>0.36</td><td>0.36</td></tr><tr><td>Wind Farm Energy Output (MWh)</td><td>1,198,368</td><td>1,135,296</td></tr><tr><td>Emissions avoided per annum (t CO₂-e)</td><td>1,143,243</td><td>1,097,831</td></tr><tr><td>Equivalent average number of households</td><td>142,905</td><td>141,912</td></tr></table> The government greenhouse gas savings tool is the most relevant tool to use for these calculations.		<i>Epuron estimate in Environmental Assessment 2009</i>	<i>NSW Government Wind Farm Greenhouse Gas Savings Tool</i>	Number of Turbines	152	144	Turbine Capacity (MW)	2.5	2.5	Wind Farm Capacity (MW)	380	360	Capacity Factor	0.36	0.36	Wind Farm Energy Output (MWh)	1,198,368	1,135,296	Emissions avoided per annum (t CO ₂ -e)	1,143,243	1,097,831	Equivalent average number of households	142,905	141,912
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The noise impact assessment is totally inadequate In my opinion the Meteorological Assessment has been prepared by persons who have no understanding of meteorology whatsoever. Clearly the authors did not attend any of the presentations by Dr Frits van den Berg when he was in Australia in 2006, otherwise they would have been rather less likely to give his findings the airy dismissal shown in this report. Also, clearly, they have	The noise impact assessment has been prepared and reviewed by well qualified practitioners who have significant experience in the relevant noise guidelines, methodology and assessment of the impacts of wind farm noise. The assessment includes consideration of the van den Berg effect and temperature inversions (page 35 of the Noise Impact Assessment)																								

Issue	Response
limited understanding of the likely effects of Temperature Inversion Sound Enhancement as it is called, and discussed at length, in the NSW Industrial Noise Policy. In my opinion this noise impact assessment is flawed.	

2.4.12 Name Withheld, Location Withheld

Issue	Response
The question must be asked, is it 182 or 152 turbines	The number of turbines proposed in the EA (2009) was 152. The number of turbines proposed in the Preferred Project & Submissions Report (December 2013) is 144.
Further discrepancies identified within the EA relates to the location. Evidence submitted through mapping demonstrates the proposal is some 15km from the Yass township, however the executive summary states the closest wind farm precinct being located 20 kilometres west of the township.	This is not a discrepancy. The distance to Yass depends on whether it is to the closest turbine or the approximate distance to centre of the wind farm.
The evidence submitted demonstrates a clear lack in the level of consultation carried out with the people of Yass and the ability to participate in identifying the socio-economic impacts and therefore ability to define the scale and location of the proposed Yass wind farm.	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Telephone contact ▶ Individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued three project newsletters ▶ Established a project website ▶ Establish a Community Consultation Committee (CCC) ▶ Held six CCC meetings Contacted most neighbours with a residence within 5 km of a turbine.
The Environmental Assessment did not assess the ongoing carbon dioxide emissions from the proposed wind farm.	The generation of electricity by a wind turbine does not emit any carbon dioxide.
The findings of the report (Community Perceptions ...) in assessing and measuring potential Yass community concerns and concerns of the impacts from wind farms are inappropriate and invalid.	The findings of the Reark Wind Farm Impact Study are relevant for the Southern Tablelands of NSW including the Yass area. This study was just one of the means used to identify community concerns and queries. Refer to section 5.10 of this report for more details of the community consultation, issues raised and how these issues have been addressed.
The numerous number of potential options for proposed turbines provides too great a variance in the	The selection of the turbine make and model is a commercial decision that can only happen following planning approval of the project. A conservative approach to assessing the impacts has been followed by selecting a worst case (physical

Issue	Response
potential scale of proposed turbines, therefore leaving the potential impacts also greatly undefined as to impacts that individual turbine types may have.	dimensions and noise characteristics) for the visual impact and noise impact assessments.
The evidence on reduced land values submitted within the EA abundantly demonstrate that wind farms have both a real and perceived reduction in the value of landowner's residential properties.	The main finding in a report prepared for the NSW Valuer General in August 2009 was that <i>"wind farms do not appear to have negatively affected property values in most cases."</i> The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded "we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods". It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>"If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for "the promotion and co-ordination of the orderly and economic use and development of land".</i>
The response to identifying the impacts on the health of individuals from constant noise has not been addressed within the EA. Considering the potential severity of these noise impacts on the health and capacity for individuals to sleep cannot be ignored from a professional planning perspective.	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the "nocebo" effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that "NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary". The Victorian Department of Health has issued fact sheets on noise and health

Issue	Response
	(http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen's Cherry Tree Wind Farm in Victoria noted that opponents of approval were "unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents". In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: "The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected."

2.4.13 Deborah Hope, Binalong

Issue	Response
Excessive size and scope of project There is significant potential for cumulative adverse impacts on the hosting shires of Harden and Yass with a project of such inordinate size as is currently proposed. It is imperative that energy conservation schemes and alternative sources of renewable and low-carbon energy are more thoroughly explored before enormous swathes of the high country of rural NSW are lost to industrial wind plants.	The scale of the project provides a number of benefits as outlined in section 5.4 of this report. A project of this size would contribute to both Federal and State Government renewable energy targets. Wind energy is currently one of the lowest cost forms of renewable energy.
Loss of visual amenity and rural character I believe that the photomontages understate the probable visual impact of the wind turbine arrays in several ways. The arguments to support the visual impact assessments are not consistent with an appropriately nuanced and accurate assessment of cumulative visual impact.	The Landscape and Visual Impact Assessment (LVIA) has been prepared in accordance with the Director Generals Requirements, the referenced guidelines and best industry practice. The photomontages have been prepared following an industry accepted methodology. Refer section 1.4.2 of the Supplementary LVIA (Attachment 3) for more details.
Night lighting	The installation of obstacle lighting is not currently proposed for the wind farm. The CASA Advisory Circular AC 139-18 in relation to Obstacle Marking and Lighting of Wind Farms has been withdrawn and wind farms that have previously operated red flashing obstacle lighting have now turned these off permanently.
Adverse impact on threatened or iconic species: Wedge-tail eagle Superb Parrot	Flora and fauna issues, including potential impact on the Wedge-tail eagle and Superb Parrot, were addressed in section 7.4 of the EA and supported by a specialist report: Appendix 3 –Biodiversity Assessment. Please also refer to section 3.5 and Attachment 1 – Supplementary Ecology Report of this Preferred Project & Submissions Report for the response to specific flora and fauna issues raised by NSW OEH. With the implementation of the revised project Statement of Commitments, flora and

Issue	Response
	fauna impacts are assessed to be acceptable and unlikely to pose a significant impact for any NSW or Commonwealth listed species, population or community.
Adverse impact on tourism and residential values. Many of these values are placed under threat by the prospect of a giant industrial wind plant covering the western portion	The main finding in a report prepared for the NSW Valuer General in August 2009 was that <i>“wind farms do not appear to have negatively affected property values in most cases.”</i> The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded <i>“we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods”</i>. It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>“If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for “the promotion and co-ordination of the orderly and economic use and development of land”.</i>
Inadequate community consultation	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Telephone contact ▶ Individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued three project newsletters ▶ Established a project website ▶ Establish a Community Consultation Committee (CCC) ▶ Held six CCC meetings ▶ Contacted most neighbours with a residence within 5 km of a turbine
Increasing concern of the general public	A number of independent studies including <i>Community Attitudes to Wind Farms in NSW</i> prepared by the NSW Department of Environment Climate Change & Water in 2010 confirm increasing support for wind energy development.

2.4.14 Binalong Landcare (Subgroup of Harden Murrumburrah Landcare Group)

Issue	Response
Binalong Landcare seeks funding to assist surrounding landowners offset the impacts on local vegetation, soil structure, water quality and biodiversity.	The proponent has committed to establish community fund with 50% of the fund proposed to be made available to the neighbours living closest to the wind farm (within 5km). The funds could be used for improving soil structure, water quality and biodiversity.
Binalong Landcare is particularly concerned about the impact of the: ▶ Roadwork, ▶ Clearing of vegetation, ▶ Water quality in local dams and streams, ▶ Removal of surface/ subsurface water for construction, ▶ Changes to the composition of native grasses.	The impacts from the construction of the wind farm infrastructure, including roads and associated clearing of vegetation, have been assessed in the EA. The Construction Environment Management Plan (CEMP), which is required to be approved by the Director General prior to construction, will ensure that the appropriate controls and mitigation measures are in place to manage these impacts. Licences will be required if any water for construction is to be sourced from surface or subsurface sources. The composition of the extensive grasslands, both exotic and derived native grasslands has been identified and mapped as part of the biodiversity assessment. No change to the composition of the native grasses is anticipated as a result of the wind farm and weed management protocols will be enforced during construction to prevent the spread of weeds.
Binalong Landcare offers its natural resource management experience and skills to minimise the adverse impacts so that the broader community can fully benefit from the planned clean renewable energies and reduced CO ₂ emissions	The offer of management experience and skills has been noted. A copy of the draft CEMP will be provided to Binalong Landcare for comment and input prior to finalisation.

2.4.15 Kathy Russell – Gnarwarre, Victoria

Issue	Response
Noise The Marshall Day report does not address in any significant manner the known effects of audible wind farm noise due to special audible characteristics (modulation effects in particular) on human perception, annoyance and sleep disturbance. The Marshall Day report does not address in any significant manner the known, but debated, effects of infrasound and low frequency sound on human perception, annoyance and sleep disturbance as well as the debated potential for adverse health effects on persons within the locality of the wind farm. On balance, the Marshall Day report contains substantial technical deficiencies and does not address in any meaningful way the concerns raised by residents.	The Marshall Day report is a scientific document which addresses the guidelines set in the Director General's Requirements for the wind farm. As the submitter may know, being from Victoria, the Victorian Civil and Administrative Tribunal (VCAT), earlier this year deferred its decision on Infigen's Cherry Tree Wind Farm in Victoria until it had considered evidence on health related matters. The Waterloo wind farm had been blamed for a wide array of problems by some wind farm critics, in particular the anti-wind farm lobby group The Waubra Foundation which claims that Waterloo and, indeed, wind farms more generally produce a form of low frequency sound known as infrasound which they claim is dangerous to human health. In December 2012, SA EPA officers met with residents from Waterloo to discuss their concerns regarding the wind farm. Concerns included a rumbling noise and a variable pulsing noise that was dependent on wind direction. The residents spoke of various symptoms such as headaches, sleep disturbance and exhaustion, flu-like symptoms and tinnitus. To assess whether the wind farm was responsible for producing noise harmful to residents the SA EPA put in place noise and weather monitoring at locations at distances of 1.3km to 7.6km and a range of directions from the Waterloo Wind Farm over the period of April to June 2013. In addition they asked residents with concerns about the wind farm to keep a diary documenting experience of disturbing noise and symptoms they believe were caused by the wind farm. As part of the study the wind farm was also shut off six times during wind conditions where it would normally produce power.

Issue	Response
	The SA EPA has concluded from the study that: The Waterloo Wind Farm meets relevant South Australian and international standards and there is no evidence linking the noise from the wind farm to adverse impacts on residents. The study found that: – Noise events that could be attributed to the wind farm were periodically audible at four locations, but at very low levels, which did not dominate the noise environment; however, no attributable events were found at the two remaining houses. Where detectable, the noise levels were compliant with the EPA's wind farm noise guidelines. – While the wind farm did increase the level of low frequency sound under some conditions, it was found at levels "significantly below the accepted perception threshold of 85dB(G)". Instead, background noise resulting from local winds and other noise sources was shown to contribute to increases in low frequency noise that were comparable with, or higher than, contributions from the wind farm. – A barely perceptible 'rumbling' effect was found using resident diary records to focus the analysis. However, in many cases the EPA was unable to determine that described events could be attributed to the turbines; and at times reported events coincided with shutdowns of the plant. See also the health conclusion below. The findings of the SA EPA contributed to the VCAT decision to approve the Cherry Tree Wind Farm.
Health	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the "nocebo" effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that "NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary". The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen's Cherry Tree Wind Farm in Victoria noted that opponents of approval were "unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents". In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: "The views of NSW Health as reported in the Bodangora determination and the

<i>Issue</i>	<i>Response</i>
	Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected."
The siting of turbines too close to each other, near plantations or on gradients greater than 10 degrees is detrimental from an efficiency standpoint, but more importantly detrimental with respect to noise/vibration.	The siting of wind turbines is optimised to maximise the efficiency and energy yield of the wind farm within the identified environmental constraints. The proximity of wind turbines to each other does not have any impact on the noise generated by the wind turbines. The noise assessment has confirmed compliance with the specified noise criteria.
Cost benefit analysis (or lack thereof)	Wind energy is currently the most cost effective form of renewable energy. The Commonwealth Renewable Energy Target (RET) aims to deliver over 20% of Australia's electricity generation from renewable sources by 2020. The RET is technology neutral and allows all renewable technologies to compete equally. Currently large scale wind energy is meeting the majority of RET target demonstrating that it is the most cost effective energy source.

2.5 Response to Government Agency Submissions

2.5.1 Industry & Investment NSW

Industry & Investment provided a coordinated response from the Minerals Resources, Agriculture and Fisheries divisions of the former Department of Primary Industries. No particular issues were raised, but the following recommendations were provided:

Issue	Recommendation
Fisheries mitigation measures	The proposed safeguards and mitigation measures in relation to surface water and ground water should be included in any project approval. The design and construction of any waterway crossings to be carried out in accordance with Industry & Investment guidelines.
Agriculture mitigation measures	A qualified geotechnical engineer should be engaged if any groundwater is required for use on site. A weed management plan should be developed and implemented for all areas that will be subject to surface disturbance.
Minerals mitigation measures	Continue liaison with the holders of Exploration Licences on the wind farm site.

2.5.2 Harden Shire Council

Issue	Response
Potential impact of wind farm water use during construction on availability of water for agricultural and potable water supplies	The water usage over a two year construction period has been estimated to be around 16.2 ML (EA section 8.1.2 on page 197). A number of potential water sources have been identified including Jugiong Creek, Lake Burrinjuck, Goldenfields Water County Council pipeline, Yass Dam and a number of ground water bores. None of these potential water sources would be used for the wind farm to the extent that they placed any restrictions on existing agricultural and potable water usage. The estimated annual water use required for turbine construction (8ML) is less than 0.5% of the total water capacity of Yass Dam alone. Furthermore, the water used for concrete batching may also be sourced from offsite locations. The main construction contractor would discuss water availability and terms with the relevant authorities before commencement of construction.
Planning conditions to ensure that adequate decommissioning of wind turbines & rehabilitation of land	Section 3.5.4 (page 76) of the EA describes the proposed wind turbine decommissioning activities including the commitment that all above ground infrastructure would be removed and that the scrap value of the turbines and other equipment is expected to be sufficient to cover the majority of the costs of their site dismantling and site restoration. In addition, the agreements with the landowners include an obligation to establish a decommissioning fund 5 years prior to the end of the operation of the wind farm to fund the difference (if any) between the expected decommissioning costs and the scrap value of the wind farm equipment. Refer to the draft Decommissioning & Rehabilitation Plan in Attachment 11 for more details.
Lack of details on community fund	As part of the ongoing consultation with all stakeholders in the vicinity of the planned wind farm we welcome any suggestions for possible community projects to be funded by the wind farm. From commissioning the Proponent will contribute \$2,500 per wind turbine built per annum to a Community Enhancement Program. The Proponent will pay the annual contribution to the CCC for distribution. At least 50% of the funds may be allocated to residential clean energy improvements such as solar water heating or solar PV panels or similar benefit to non-involved properties within 5km of a wind turbine. When the wind farm construction contracts are finalised a new CCC is to be elected to represent the neighbouring community through the construction and operation

Issue	Response
	phase and manage the Community Enhancement Program. The CCC is to be constituted in line with Appendix C of the <i>Draft NSW Planning Guidelines: Wind Farms</i> or as updated. The allocation of funds will be determined by the elected CCC to ensure the community benefit is distributed in line with the community's own view of an equitable distribution of funds. Epuron have noted the suggestions for the use of the community fund provided by the Harden Council and others such as the Binalong Landcare and expect that the CCC will take a lead role in the appropriate allocation of the community fund. Please refer to the revised Statement of Commitment 73B.
	Epuron met with the Director of Environmental Services of the Harden Shire Council on 9 th April 2013. No additional concerns regarding the wind farm were raised.

2.5.3 NSW Office of Water

Issue	Response
Potential options for water supply	Access to surface water from existing dams and creeks or sourcing groundwater from bores may require additional permits or licences. The water usage over a two year construction period has been estimated to be around 16.2 ML (EA section 8.1.2 on page 197). A number of potential water sources have been identified including Jugiong Creek, Lake Burrinjuck, Goldenfields Water County Council pipeline, Yass Dam and a number of ground water bores. None of these potential water sources would be used for the wind farm to the extent that they placed any restrictions on existing agricultural and potable water usage. The estimated annual water use required for turbine construction (8ML) is less than 0.5% of the total water capacity of Yass Dam alone. Furthermore, the water used for concrete batching may also be sourced from offsite locations. The main construction contractor would discuss water availability and terms with the relevant authorities before commencement of construction.
Watercourse crossings	Any watercourse crossings will be designed in accordance with NOW guidelines
Potential impacts from blasting	If blasting is required an assessment of the potential impact on groundwater resource and existing users should be carried out.

2.5.4 Australian Department of Defence

The Department of Defence has no concerns regarding the proposed wind farm.

Comment	Recommendation
Tall structures and potential flight safety hazard	Supply final design documentation before construction commences

2.5.5 Department of Environment & Conservation (Now NSW OEH)

Issue	Response
Aboriginal Cultural Heritage for transmission line easements needs to be assessed	Please refer to the supplementary Archaeological and Heritage Assessment in Attachment 2 of this report. An archaeological field survey and assessment was carried out on the proposed powerline route which connects the Coppabella and Marilba precincts to the existing TransGrid 330kV transmission line to the south of the site.

<i>Issue</i>	<i>Response</i>
	The field survey results are in keeping with the patterns of site distribution identified during the earlier 2008 assessment. The recorded sites do not pose a constraint to the proposal, however a number of management and mitigation measures are proposed.
Turbines and associated infrastructure be reduced and/or realigned to decrease impact on Box Gum Woodland EEC	Turbines and associated infrastructure have been deleted and relocated to decrease the impact on Box Gum Woodland EEC. Please refer to the SER (Attachment 1) for further details.
Calculation of impact areas and offsets	Please refer to Appendix B in the Supplementary Ecology Report (Attachment 1A to this report) for the revised impact area calculations and also Attachment 1B. Epuron accepts that where overhead powerline easements pass through forested areas that clearance of trees will be required to achieve technical and safety clearance requirements. The clearance will not need to be for the full easement width. For example, the maximum conductor clearance for an overhead 132kV powerline is 7.5m. The impact of overhead powerlines in areas of pasture is limited to the footings for the power poles which are spaced between 200 and 250m apart and have a foot print of less than 1m x 1m. The revised impact area calculations now include these provisions. An Offset Strategy for the project has been developed to provide more certainty on how offset areas will be identified, secured and managed. Please refer to Appendix H in the Supplementary Ecology Report in Attachment 1 for further details. The Offset Strategy sets out a methodology to calculate, manage and secure an offset site to offset the impacts of the construction of the wind farm. There is ample land of suitable type within the project boundaries to demonstrate that offsets are achievable. The plan provides clear incentives, in the form of pre-set ratios that relate to existing mapping, for the proponent to further minimise impacts and thereby reduce the offset requirement for the proposal.
Additional survey and commitment to survey	Some of the additional surveys including for Hollow Bearing Trees, Bush Stone Curlew, Squirrel Glider, Barking Owl and Burrinjuck Orchid have now been completed and included in the Supplementary Ecology Assessment. To assist with micro-siting of infrastructure and offsetting of unavoidable impacts the Statement of Commitments have been revised to include additional surveys required including for Hollow Bearing Trees, Bush Stone Curlew, Squirrel Glider, Barking Owl and Eastern Bentwing Bat. The ecology Statement of Commitments have been revised to include all measures required to manage the biodiversity impacts of the project to an acceptable level. Please refer to section 5 of this report.
Biodiversity assessment of powerline easements	A biodiversity assessment of the powerline easements has been included in the Supplementary Ecology Assessment in Attachment 1.

2.5.6 NSW Roads and Maritime Services (formerly RTA)

<i>Issue/Comments</i>	<i>Recommendations</i>
Based on compliance with the submitted documentation the RTA would raise no objection to the development.	Noted
Proposed conditions to be included in any approval	The proposed mitigation measures have been noted and will be incorporated into the detailed Traffic Management Plan to be prepared by the transport contractor in consultation with RMS and councils prior to the commencement of construction of the project. Refer to SoC 37.

2.5.7 Yass Valley Council

Issue/Comment	Response
There is a high likelihood that the condition of the subject roads and road safety will be compromised as a result	Neither the original traffic impact study nor the supplementary traffic impact study identified any particular issues in relation to potential impacts on the condition of the public roads or on road safety. The improvement works identified in the traffic impact studies as well as appropriate maintenance over the duration of the construction works will ensure that the condition of the roads and safety of the users will be maintained.
Concern over the road network's ability to withstand the heavy vehicle loadings associated with the proposed development	The required improvement works identified in the traffic impact studies will be carried out to ensure that the ability of the roads to with the heavy vehicle loadings.
Safety is a major concern on the unsealed roads such as Whitefield Road, Waterview Road and Garry Owen Road. Council would require these roads to be upgraded	Safety considerations were assessed in section 4.8 of the Traffic Impact Study. Waterview Road and Garry Owen Road will now not be used for access to the wind farm site. A limited section (approximately 1.2km) of Whitefields Road is planned to be used to provide the primary access to the Coppabella precinct. This section of road will be upgraded to ensure it is adequate for the construction traffic and to ensure safety for all road users. Note that Whitefields Road now forms part of the Harden Shire Council LGA rather than the Yass Valley Council LGA.
A structural assessment of the bridges on Illalong Road should be undertaken prior to heavy vehicles using the roads	The bridge at 3.32km on Illalong Road has been replaced since the original traffic impact assessment in 2009 and there are no structural constraints for heavy vehicles. There are no plans for heavy vehicles to use the two bridges further south on Illalong Road.
The Traffic Impact Study does not adequately address the location and standard of the proposed access points off the road network.	The Traffic Impact Study has considered the impacts, safeguards and upgrades required at the access points off the Hume Highway (sections 5.1 & 5.2 & Appendix C). Any upgrades at the proposed access points will be carried out in accordance with the RMS Design Guidelines and the AUSROADS Pavement Design Guides.
There are a number of mitigation measures detailed in section 5.2 of the Traffic Impact Study which are not explicitly stated in the Statement of Commitments in the Environmental Assessment	The Traffic Impact Study is part of the Environmental Assessment and any mitigation measures specified in the study are considered to be commitments by the Proponent. For clarity, these mitigation measures have been referenced in the updated Statement of Commitments.
Lack of community enhancement fund	As part of the ongoing consultation with all stakeholders in the vicinity of the planned wind farm we welcome any suggestions for possible community projects to be funded by the wind farm. From commencement of operation the proponent will contribute \$2,500 per wind turbine built per annum to a Community Enhancement Program. At least 50% of the funds may be allocated to residential clean energy improvements such as solar water heating or solar PV panels or similar benefit to non-involved properties within 5km of a wind turbine. When the wind farm construction contracts are finalised a new CCC is to be elected to represent the neighbouring community through the construction and operation phase and manage the Community Enhancement Program. The CCC is to be constituted in line with Appendix C of the <i>Draft NSW Planning Guidelines: Wind Farms</i> or as updated. The allocation of funds will be determined by the elected CCC to ensure the community benefit is distributed in line with the community's own view of an equitable distribution of funds.
Community and Council communication	Epuron has established a Community Consultation Committee for the project. The Council has a representative who attends the CCC meetings to stay informed about the project.
	Epuron met with the Director of Planning & Environmental Services and the Strategic Planner of the Yass Valley Council on 2 nd May 2013 to discuss the above issues and our response. No additional concerns were raised.

[illegible]

Submission Number	Visual Impacts	Operational Noise	Biodiversity Impacts	Heritage Impacts	Consultation/ community	Property Value Impact	Health Impacts	Fire Hazards	Aviation Impacts	Traffic Impacts	Soil Erosion	Decommissioning
10									■			
11		■										
12										■		
13												
14												
15			■	■								
16												
17										■		
18									■			
Indicates a government agency submission												

All of these submissions have been considered and addressed in section 3.4 and 3.5 below of this updated Preferred Project & Submissions Report.

3.4 Response to Public Submissions

3.4.1 Mark Glover, Bogolará

Issue/Comment	Response
Supplementary LVIA Section 6.1.4 Views from residential dwellings - The visual impact will be high and very significant.	Section 6 of the supplementary LVIA addresses the cumulative visual impact of the proposed Yass Valley Wind Farm together with other proposed, approved and existing wind farms in the vicinity. The assessment identifies simultaneous views of the proposed Yass Valley Wind Farm and the approved Conroy's Gap Wind Farm, particularly for residential properties located to the east and west of the Conroy's Gap Wind Farm. The assessment concludes that the additional visual impact from the Yass Valley Wind Farm will be relatively low in comparison to the level of impact from the approved Conroy's Gap wind farm.
Section 6.2 Overall cumulative impact is clearly incorrect and should be discounted	Cumulative impact assesses locations from which multiple wind farms can be seen. Conroy's Gap wind farm cannot be seen from Talbaragar so there is visual impact from Yass Valley Wind Farm but not cumulative impact from multiple wind farms from this residence.
Section 7.2 is also incorrect as approval ratings are falling not increasing as stated	The assessment <i>Community Attitudes to Wind Farms in NSW</i> (DECCW 2010) showed strong and increasing support for wind farms.
Section 7.3 This statement is also incorrect. 148 turbines must have a high cumulative impact	The assessment of visual impact considers more than just the number of wind turbines that may be visible. Refer to section 1.4 of the supplementary LVIA for further details on the methodology.
Section 8. The statement that 'the proposed Yass Valley Wind Farm will have a generally low visual impact on it	The conclusion of the LVIA is supported by the assessment which was carried out by qualified landscape architects with significant experience in assessing the visual impact of wind farms. The assessment was carried out in accordance with the

Issue/Comment	Response
surrounds, and that the site is a suitable landscape for the construction of a wind farm is clearly ludicrous and plainly wrong.	Director Generals Requirements and associated guidelines and in accordance with best industry practice.
The area is already in a high bush fire risk zone, these wind farms will only increase that risk.	The wind farm will not change the risk of bush fires in the area. Consultation with the RFS has confirmed that the proposed wind farm access tracks will significantly improve the access for the RFS and help with the management of any bush fire.
Furthermore property values will decline.	The main finding in a report prepared for the NSW Valuer General in August 2009 was that “wind farms do not appear to have negatively affected property values in most cases.” The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded “we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods”. It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>“If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for “the promotion and co-ordination of the orderly and economic use and development of land”.</i>
Farming will be impacted as aerial operations are reduced.	The aeronautical assessment (Attachment 6) noted that the location of individual wind turbines will not impact aerial agricultural operations.
The local community is clearly against this development.	The proponent acknowledges that there are some individuals in the community who do not support the wind farm, but there are also significant numbers of people in the community who do recognise the benefits of the project and do support the project.
EA Section 6.2 Community Consultation This section is totally wrong as Epuron did not consult widely with the community, newsletters were primarily delivered to potential hosts. Face to face meetings with neighbouring landholders did not take place.	Newsletters were delivered to both the involved and non-involved residents around the wind farm. Refer to section 5.10 of this report for more details of meetings and correspondence with the owners of all residences within 5km of the wind farm.
EA Section 7.4 Flora and Fauna This section completely fails to address the adverse impact on the raptor population and also fails to address	The assessment of the potential impacts on bird and bat species recorded on the site can be found in section 6.2.2 (pages 96 -98) and 6.3 (pages 100 – 102) of the Coppabella Biodiversity Assessment and in section 6.2.2 (pages 57 – 60) and 6.2.3 (pages 60 – 62) of the Marilba Biodiversity Assessment (pages 57 – 62). In addition Appendix 3.3 to the EA has a more detailed assessment of wind farm risks to birds

Issue/Comment	Response
the impact on the local bent wing bat population.	and microbats.
EA Section 7.7 Aircraft Hazard Impacts A comment is made that “Due to the current land use of the proposed wind farm site, potential impacts to Ariel spraying of agricultural areas are considered negligible” this statement is absolute nonsense, on the map in this section there are 3 landing strips marked, these are not for private jets but for agricultural aircraft movement primarily for fertilizer application as well as for herbicide use.	The aeronautical impact assessment (Attachment 6) included consultation with the operator (Ted McIntosh of Yass Air) utilising the air strip on Bogalara. The assessment concluded that the location of the wind farm and its individual turbines will not impact on the safety of aerial agricultural operations.
EA Section 7.11 Fire and Bushfire Impacts There is no mention in this section that aerial fire fighting will not be able to occur. Aircraft will not operate within 1km of a turbine and up to 10km downwind. Aircraft were a huge help to the recent Cobbler Rd fire, however there help will in future be absent once these turbines are built.	Epuron wrote to the NSW Rural Fire Service to ask how they viewed the presence of wind farms when fighting fires on the ground or from the air. The August 1, 2013 response from the Assistant Commissioner noted: On the ground... <i>“...fire moving across the area of a wind farm is generally managed in the same way as any other bush fire. Fire fighting strategies by ground-based resources would continue and be subject to prevailing weather and topographic conditions.”</i> And from the air... <i>“...aircraft would avoid wind turbines in the same manner as they avoid other obstructions, such as power lines.”</i>
EA Section 8.4 Land Value Impacts Recent research shows that land values fall by on average 30% for properties close to wind turbines. In both the UK and Victoria councils have had to reduce their rates due to falling land values. The research papers Epuron has sited in this section are all dated and not relevant to the Yass valley proposal.	The main finding in a report prepared for the NSW Valuer General in August 2009 was that “wind farms do not appear to have negatively affected property values in most cases.” The value of a property is made up of a myriad of considerations and not only includes proximity to wind turbines but also to other infrastructure, the potential use of the property and any improvements. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. Studies include those by Hinman – 3,851 sales over 9 years, Carter – 1,298 sales over 13 years and the 2013 study by Lawrence Berkeley National Laboratory which examined 51,276 sales of homes within 10 miles of 67 different wind farms. This study concluded “we find no statistical evidence that home values near turbines were affected in the post-construction or post-announcement/pre-construction periods”. It is important to remember that the issue of impacts to property values was considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>“If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for “the promotion and co-ordination of the orderly and economic use and development of land”.</i>
EA Section 8.10 Health and Safety There is widespread and growing	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link

Issue/Comment	Response
anecdotal evidence of severe health effects occurring in people living up to 10kms from wind turbines. There is no mention of this in this section, this section needs to be completely rewritten taking into account the most recent research and observations.	wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the “nocebo” effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that “NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary”. The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen’s Cherry Tree Wind Farm in Victoria noted that opponents of approval were “unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents”. In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: “The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected.”
Aerial Issues The AAAA has recommended that its members do not fly in areas with wind turbines. The aerial risk is not solely with aircraft coming in direct contact with the wind towers but with the turbulence created by large arrays of these turbines. This effect on the air can extend over 20Kms downwind of turbines. Aerial agriculture operations are carried out close to the ground (where turbulence is greatest) and often with fully loaded planes	The AAAA policy does not restrict flying in the vicinity of wind turbines. Aerial agricultural operations are generally undertaken when the wind speed is less than around 4 m/s. Wind turbines don’t operate until the wind speed is at least 3 m/s and turbulence is negligible in this wind speed range. The Department of Planning & Infrastructure wrote to CASA in relation to the concerns about turbulence and other possible safety effects on aerodromes in the Yass area. CASA advised on 18 September 2013 that none of the aerodromes in the Yass area are Certified or Registered. CASA would not generally impose aviation buffer zones around wind farms based on previous analysis of suitable mitigators.

3.4.2 Dr Mary Ann Robinson, Bookham

Issue/Comment	Response
The Company Epuron in relation to any developments has never contacted	The project proponent (Origin Energy at the time) held meetings with Dr Robinson on 25 March 2010 and on 19 May 2010. Epuron has also more recently visited the

Issue/Comment	Response
me; I have recently made efforts of my own to make contact and have received vague answers to the date of construction etc.	Robinsons' and provided written responses to address the specific queries raised.
I submit that the company assessment is patently incorrect and deliberately confusing in its language and the assessment regarding the visual and overall cumulative visual impact on the residents.	Cumulative impact assesses locations from which multiple wind farms can be seen. Conroy's Gap wind farm cannot be seen from the Robinson residence. There is visual impact from Yass Valley Wind Farm but not cumulative impact from multiple wind farms at this residence.
Therefore I write on behalf of myself and my husband from ground zero of the proposed wind farm to object in the strongest terms to its construction on the grounds that it will have a severe and detrimental effect on our lives via its high visual impact, the destruction of the night sky with aircraft lighting, the reduction in the valuation of our property, the as yet unknown and untested health risks of these turbines, and the lack of clear and professional assessment of the environment if it is based on the above document which I have read in its entirety.	The overall visual impact at this residence has been assessed as medium from the living areas and high from the garden. See section 5.5.4 (page 43) of the supplementary LVIA (Attachment 3) for more details. The installation of obstacle lighting is not currently proposed for the wind farm. The CASA Advisory Circular AC 139-18 in relation to Obstacle Marking and Lighting of Wind Farms has been withdrawn and wind farms that have previously operated red flashing obstacle lighting have now turned these off permanently.

3.4.3 Tony & Barbara Folkard, Bowning

Issue/Comment	Response
Landscape and Visual Impact Assessment Our concern that your assessment does not appear to recognise the widespread visual impact from 148 massive towers 150m high, over productive farming land and you appear more concerned with the impact the Yass Valley Wind Farm will have on tourism and traveller amenity. We also disagree with the statement that the "likely cumulative visual impact is probably low from residential dwellings where towers will have a dominant effect on the landscape". Everyone but the host farmers are horrified at your insensitive and arrogant assessment.	The supplementary landscape and visual impact assessment has considered the visual impact of the proposed wind turbines from publically accessible viewpoints, sequential viewpoints (highways) as well as from individual residences in the vicinity of the wind farm. There are a limited number of residential locations that will be able to see turbines from both the Conroy's Gap and Yass Valley Wind Farms. Many of these dwellings are well screened by existing vegetation, thus the cumulative impact from both wind farms is low. The most effected residential properties will be those that are located immediately to the east and west of the Conroy's Gap Wind Farm where residents may be able to see Conroy's Gap wind turbines while viewing in one direction and then the Yass Valley wind turbines when viewing in another. This potential panorama would be greater for residents to the west of Conroy's Gap Wind Farm. Residents, especially to the west of Conroy's Gap Wind Farm, may have a larger panorama of wind turbines than would be the case if only one wind farm was visible. Therefore there could be a cumulative visual impact. The previous assessment has shown that houses are well screened by existing vegetation. Therefore the probability of residential properties being able to see this enlarged panorama of wind turbines is low. The combination of few effected residential properties and this existing vegetation would lead to the conclusion that the likely cumulative visual impact caused by this increased panorama from residential properties immediately to the east and west of Conroy's Gap Wind Farm is low. If there are residential properties without existing screening vegetation that are within 3km of Conroy's Gap Wind Farm and are also within 3km of Yass Wind farm, then these properties could be offered landscape to mitigate the additional cumulative visual impact.
Other aspects including noise, effect	Each of these particular aspects has been addressed in the EA and this Preferred

Issue/Comment	Response
on native fauna, health concerns and lowering of land values are of equal importance must also be considered.	Project and Submissions Report.
A great many people in any population these days have compromised immune systems for various reasons, and they especially are very likely to be afflicted with health problems, apart from others who also become vulnerable to the insidious effects of the wind farms.	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the “nocebo” effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that “NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary”. The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen’s Cherry Tree Wind Farm in Victoria noted that opponents of approval were “unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents”. In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: “The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected.”
A major concern has recently manifest itself in the local community is the ban imposed on aircraft operating within one kilometre of towers.	The Aerial Agriculture Association of Australia does not have a policy restricting aircraft operation within one kilometre of a wind turbine. Neither does the NSW Rural fire service have any procedures restricting aircraft operation within one kilometre of a wind turbine.
Your assessment of the cumulative visual impact of the Yass Valley Wind Farm has concluded that there would be minimal cumulative visual impact and that the changes to people’s perception of the surrounding area would not be significantly by the presence of multiple wind farms in the locality. A number of public meetings have indicated otherwise.	The assessment of the cumulative visual impact was carried out by qualified landscape architects with significant experience in assessing the impact of wind farms.

3.4.4 David Burraston, Cootamundra

Issue/Comment	Response
Poor community consultation by Epuron The proponent contacted me 3 weeks after I was contacted by the Department.	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Ongoing telephone contact ▶ Ongoing individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ An Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued four project newsletters ▶ Established a project website ▶ Establish a Community Consultation Committee (CCC) ▶ Held six CCC meetings ▶ Contacted or attempted to contact all neighbours with a residence within 5 km of a turbine and in some cases beyond 5 km.
Environmental issues – Box Gum Grassy Woodlands BGGW habitat has been identified as endangered and vulnerable on NSW state and national registers. With many overseas research studies documenting the negative impacts wind turbines have on fauna and natural habitats it is clear that the establishment of wind farm in and around GGGW areas will further fragment this habitat, hinder biodiversity and have a detrimental impact on many of its endangered species, many of which are migratory. There is no peer-reviewed scientific research on mitigation strategies to offset the impact of industrial scale wind turbines on BGGW habitat.	The majority of the wind farm site comprises low diversity native pasture derived from Box-Gum Woodland and is dominated by exotic weeds which is typical of the unimproved grazing land in the district. The wind farm infrastructure will have a direct impact on < 2% of the area of the wind farm site. Nevertheless, the biodiversity assessments have considered the potential impacts on the Box-Gum Woodland Endangered Ecological community. Following the supplementary ecology assessment the wind farm infrastructure layout has been further revised to minimise the impact on Box-Gum Woodland. Residual impacts that can't be avoided will be offset in order to achieve a positive net environmental outcome for the proposal. Refer to Attachment 1 for further details.
Noise and health Important developments in wind turbine noise and health are being studied by the federal department Health Canada (13 February 2013) and these are not addressed in the PPR.	The Health Canada studies haven't been completed yet, however the potential health impacts from wind farms have been extensively investigated in Australia. The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The recent Cherry Tree judgement in Victoria also found no links between wind farms and adverse health effects. The Victorian Civil and Administrative Tribunal (VCAT), stated in its November 2013 decision in favour of the approval of Infigen's Cherry Tree Wind Farm in Victoria noted that opponents of approval were "unable to refer the Tribunal to any judgment or decision of an environmental court or

Issue/Comment	Response
	tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents”. In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: “The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected.”
Local climate impacts The is continued scientific research showing significant local meteorological effects from large scale wind installations that are not addressed in the PPR.	Much of the referenced research can be considered fledgling research into this topic - peppered with words such as "could", "possibly" and "might". Effects observed related to near-surface temperature effects such as very localised mixing of the cooler higher air with slightly warmer air above the ground rather than the much wider phenomenon of climate change. For example the studied effects are not likely to have any impact on the area of the troposphere where clouds are formed or on rainfall.

3.4.5 Stephen Firth, Bogolara

Issue/Comment	Response
Community consultation There has been a singular lack of appropriate community consultation regarding the proposed development of a wind farm in our district.	Epuron has contacted and continues to consult with the neighbouring landowners as noted in section 6.2 and set out in the consultation plan in Attachment 6 to 9 of the EA. The consultation program includes: ▶ Ongoing telephone contact ▶ Ongoing individual meetings with landowners ▶ Newsletters – distributed to landowners, neighbours and the broader community ▶ An Open House information day held on 10 December 2008 During the early stage of the project representatives from Epuron made telephone calls to neighbours in the vicinity of the project and this was followed in most cases with a face to face meeting to provide any further information required and answer individual questions. Since Epuron re-acquired the project from Origin Energy in July 2012 it has: ▶ Issued four project newsletters ▶ Established a project website ▶ Establish a Community Consultation Committee (CCC) ▶ Held six CCC meetings Contacted or attempted to contact all neighbours with a residence within 5 km of a turbine and in some cases beyond 5 km.
Visual impact of the development The assessment of visual impact as in Section 6.1.4 is erroneous and misleading, diminishing the value to residents of the pastoral landscape. There has been no adequate consultation with local residents, and there appears no adequate government assessment of the community value of wind farms which can only survive because of government subsidies.	This section of the supplementary landscape and visual impact assessment relates to the cumulative visual impact from residential dwellings of the Conroy's Gap and Yass Valley wind farms together. It is not clear what aspect of the assessment was considered erroneous or misleading. See also 5.8.3 below for cumulative visual impact
Distraction of the pastoral landscape	The biodiversity assessment was carried out in accordance with the requirements

Issue/Comment	Response
associated with white and yellow box woodland. The wildlife assessment is lacking in convincing research that might support an approval.	and guidelines nominated in the Director Generals Requirements for the project and reviewed by the NSW Office of Environment & Heritage.
There appears no adequate government assessment of the community value of wind farms, which can only survive because of government subsidies.	The benefits of the proposed wind farm are outlined in section 5.4 of this report which includes details of the community fund. Wind farms in Australia do not receive any direct government subsidies. Like any other form of renewable energy generation, wind farms are able to generate renewable energy certificates for every unit of electrical energy generated.
There is international resistance to wind farms on ecological, health and environmental grounds	Numerous studies globally and in Australia show strong support for wind farms, including <i>Community Attitudes to Wind Farms in NSW</i> prepared by the NSW Department of Environment Climate Change & Water in 2010.

3.4.6 Brian & Beverley Joseph, Address Withheld

Issue/Comment	Response
Visual impact Our concern that your assessment does not appear to recognise the widespread visual impact from 148 massive towers 150m high, over productive farming land and you appear more concerned with the impact the Yass Valley Wind Farm will have on tourism and traveller amenity. We also disagree with the statement that the “likely cumulative visual impact is probably low from residential dwellings where towers will have a dominant effect on the landscape”. Everyone but the host farmers are horrified at your insensitive and arrogant assessment.	The supplementary landscape and visual impact assessment has considered the visual impact of the proposed wind turbines from publically accessible viewpoints, sequential viewpoints (highways) as well as from individual residences in the vicinity of the wind farm. There are a limited number of residential locations that will be able to see turbines from both the Conroy’s Gap and Yass Valley Wind Farms. Many of these dwellings are well screened by existing vegetation, thus the cumulative impact from both wind farms is low. See 5.8.3 below for detail from the expert assessor on cumulative visual impact
Other aspects including noise, effect on native fauna, health concerns and lowering of land values are of equal importance must also be considered.	Each of these particular aspects has been addressed in the EA and this Preferred Project and Submissions Report.
A great many people in any population these days have compromised immune systems for various reasons, and they especially are very likely to be afflicted with health problems, apart from others who also become vulnerable to the insidious effects of the wind farms.	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the “nocebo” effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even

Issue/Comment	Response
	though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that “NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary”. The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen’s Cherry Tree Wind Farm in Victoria noted that opponents of approval were “unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents”. In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: “The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected.”
A major concern has recently manifest itself in the local community is the ban imposed on aircraft operating within one kilometre of towers.	The Aerial Agriculture Association of Australia does not have a policy restricting aircraft operation within one kilometre of a wind turbine. Neither does the NSW Rural fire service have any procedures restricting aircraft operation within one kilometre of a wind turbine.
Your assessment of the cumulative visual impact of the Yass Valley Wind Farm has concluded that there would be minimal cumulative visual impact and that the changes to people’s perception of the surrounding area would not be significantly by the presence of multiple wind farms in the locality. A number of public meetings have indicated otherwise.	The assessment of the cumulative visual impact was carried out by qualified landscape architects with significant experience in assessing the impact of wind farms. See Section 5.8.3 below

3.4.7 Craig Turnbull, Berremangra

Issue/Comment	Response
They (Origin) promised me a photomontage from my residences and this has not been produced.	A photomontage from the residences has been produced and provided to the landowner by Epuron.
My original letter raised the objection of loss of visual amenity. This development will replace the natural beauty with an industrial forest of twirling machines.	It is acknowledged that the perception of visual amenity is subjective and that some people find the visual impact from wind turbines acceptable and that others do not. As noted in the supplementary landscape and visual impact assessment, the visual impact of wind turbines diminishes significantly as the distance away from the turbines increases. The Shepstone Park residences are located 4.2 km from the nearest turbine. The visual impact from this location has been assessed as low.
This project will take away the peaceful natural amenity. Therefore this project makes Shepstone Park less attractive for me or any other potential buyer. Therefore it must decrease the value of my property. No	Epuron has proposed a community fund – see section 5.4.5 of this report for further details. It is proposed that around 50% of this fund is available specifically to neighbours within 5km of the wind farm to assist them to reduce their electricity bill by installing solar and energy efficiency options to their homes.

Issue/Comment	Response
compensation for this loss has ever been offered by either developer. Why couldn't every resident within sight of the development be offered free electricity as compensation for their losses.	
I believe that the way Epuron has managed community relations is very divisive and dangerous. My understanding is that the developer has paid the people that will have turbines on their land not to talk to other residents. This has created mistrust and suspicion.	Epuron has not paid the people who will have turbines on their land not to talk to other residents. Epuron has established a Community Consultation Committee that includes several representatives of non-involved landowners to keep all stakeholders informed about the project.
One issue that has not been addressed in the application is health problems associated with wind farms. We have heard stories of sub-sonic sound waves and depression problems.	The National Health and Medical Research Council (NHMRC), the peak national body for research in Australia, issued a <i>Public Statement: Wind Turbines and Health - July 2010</i> stating that there was no published scientific evidence to positively link wind turbines to adverse health effects. This is the most relevant document to reference as it is impartial, expert and considered. It is understood this document is likely to be updated as more independent reports are published. The application of stringent noise criteria as demanded by the <i>Draft NSW Planning Guidelines: Wind Farms</i> provides a precautionary approach to health issues suggested to result from wind farm noise. A very small number of people in Australia have anecdotally reported that they believe that wind turbines are making them ill. The list of symptoms described is long and all are present in the broader community including in areas not near a wind farm and there is no evidence to link the symptom, however real, to wind turbines. Simon Chapman, Professor of Health at UNSW, offers one explanation for ill health suffered by people living near a wind farm who believe the wind farm is causing their ill health is – that some of these cases could be as a result of the “nocebo” effect which has proven that some people who believe that something is making them ill can actually make themselves ill. They suffer a real illness even though there is no physical cause. Consistent with the NHMRC and Professor Chapman, the September 2013 Planning Assessment Commission Determination Report for Bodangora Wind Farm near Wellington notes that “NSW Health also made it clear that noise levels at distances of more than one km from the turbines would not cause health impacts and the 2 km buffer provided in this instance is highly precautionary”. The Victorian Department of Health has issued fact sheets on noise and health (http://www.health.vic.gov.au/environment/windfarms.htm). The Victorian Civil and Administrative Tribunal (VCAT), in its November 2013 decision in favour of the approval of Infigen's Cherry Tree Wind Farm in Victoria noted that opponents of approval were “unable to refer the Tribunal to any judgment or decision of an environmental court or tribunal which has found that there is a causal link between emissions from a wind farm and adverse health effects on nearby residents”. In making its decision, VCAT drew upon findings from the National Health and Medical Research Council, NSW Health and the Victorian Department of Health. The tribunal noted: “The views of NSW Health as reported in the Bodangora determination and the Victorian Department of Health publication, expressly state that there is no scientific evidence to link wind turbines with adverse health effects. These are the views of State authorities charged by statute with the protection of public health. These views must be respected.”

3.4.8 Renee Grogan, Binalong

Issue/Comment	Response
Impacted Residences Amend the PPR to accurately reflect the residences in the area, and amend the impact assessment to include these residences. Update the stakeholder engagement to include a targeted assessment of all impacted residences.	Epuron appreciates having this residence pointed out to us. Occasionally new dwellings do not appear on the mapping and on-ground and Google Earth searches do not have recent enough imagery to identify buildings and dwellings. We have reviewed the layout of the turbines and confirmed compliance at this new residence.
Community Consultation Engage all non-involved and involved landowners in a systematic and inclusive manner, particularly those whose residences are within 2km of the proposed wind turbine locations.	Epuron has written to all neighbours within 5km of the wind farm and met with all neighbours who have requested a visit. Epuron has established a Community Consultation Committee that includes several representatives of non-involved landowners to keep all stakeholders informed about the project. Representatives continue to meet with member of the community to consult on the project.
Meeting held on 28 February 2013 (published minutes indicate the meeting was held on 1 March 2013 but this is an error) was not an open meeting. Concerned non-involved landowners and community members were not permitted entry to the meeting, and as a result conducted a picketing exercise outside the Yass Soldier's Club Hall in protest.	There is often confusion about what is happening in the community. In fact there is no error in our minutes. The NSW Government's Precinct Co-ordinator independently assisted in hosting a meeting of The Wind Farm Host Landholders Network with "involved landowners" in Yass on 28 February. Neither Epuron nor any other developer was invited or attended. Epuron understands it was not an open meeting but was for 'host' landholders and their representatives only. Epuron understands that the landowners who picketed outside the meeting were aware that it was a meeting convened by this group and the Precinct Coordinator and that Epuron was not invited and did not attend. The published minutes dated 1 March are from our Community Consultation Committee which was indeed held on 1 March 2013. This was not an open meeting as it followed the Director General's requirements for CCC meetings. This meeting was not picketed. It was attended by neighbouring landholders who are on the committee.
A number of statements in the original 2009 Environmental Assessment are disengaging, unsupported, and inflammatory, including the statement that <i>"targeted social research on perception clearly demonstrated that there is a very high level of support for wind farms amongst local residents, with 71% supporting wind farms within 1km of their residence"</i>. This social research is not specific to the Yass Valley area and is therefore misleading in its representation of the specific project area.	While the perception study cited was originally commissioned for the Gullen Range Wind Farm it is clearly documented in the Environmental Assessment that this was the case. As there were respondents from the Yass Valley it was considered relevant. There are always opponents to any development in a community and we understand it is our task to find out what the particular concerns are and address them where possible. Epuron consider that 71% support for a wind farm within 1km of a residence is strong support. This level of support is consistently found in impartial professional surveys, even in other countries. Epuron do understand that there are some members of the community who vigorously oppose the construction of wind turbines and if we can understand their concerns and mitigate them we will be pleased to do so.
Non-involved landowners, i.e. landowners whose properties are not proposed for wind turbine locations, but who are likely to be impacted by visual impacts or noise impacts, are concerned that they are not being engaged with, or that compensation discussion have not included them. In the words of a landowner within 2km of proposed wind turbine locations, <i>"No one has come to talk to us"</i>. Further, to define landowners adjacent to the proposed project area as "non-involved" is misleading, given these	In line with the planning process we have designed a wind farm which will comply with the requirements of the planning system. If we discover that we have a non-compliance issue we will ensure it is swiftly addressed. Epuron does not consider that payment is a suitable way forward for those whose land does not host infrastructure. We are unaware of other developments, roads, cattle feedlots, mining etc. where neighbours with no on-ground impacts are compensated. The concept of the community fund is that the wider community whose view is altered or who experience traffic delays during construction etc. might benefit through community initiatives such as solar PV, landcare funding or contributions to the local rural fire service The Land & Environment Court's decision in 2010 for the Gullen Range Wind Farm provides a succinct and authoritative response. Relevant excerpts from the decision are:

Issue/Comment	Response
stakeholders are likely to be exposed to negative impacts of the project, and while not at present involved in compensation discussions, are likely to be significantly affected by the project.	<i>“150 The Guardians [who oppose wind farms] advance the proposition that a consequence of approval of the wind farm will be that a number of properties which are in the vicinity will suffer from “blight” for which there should be payment of compensation if the project were to be approved...</i> <i>154 Such a proposition faces a number of insurmountable hurdles.</i> <i>155 The first is that the wind farm, as earlier noted, is a permissible use on all of the parcels of land upon which it is proposed....</i> <i>159 If the concepts of blight and compensation, as presented by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property...would be exposed to such a claim.</i> <i>160 Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii) for “the promotion and co-ordination of the orderly economic use and development of the land...As a consequence, we decline to consider any issues relating to claims for compensation.”</i> Accordingly, compensation to neighbouring properties of wind farms is not warranted, since this would set a precedent for <i>any</i> private project in which amenity is affected, and would be in contravention to land use planning which seeks to achieve the orderly and economic use of the land.
Section 10.1 outlines the process for implementation of environmental mitigation measures, including the implementation of the Construction Environmental Management Plan and the Project Environmental Management Plan. These plans are not well understood among stakeholders, and a number of stakeholders have expressed concern regarding how controls will be implemented for the project.	Sample plans have been provided to members of the CCC for distribution to all interested parties.
Section 10.2 of the 2009 Environmental Assessment lists 93 proposed proponent commitments in order to manage the potential impacts of the project. These are not well understood among stakeholders, and community stakeholders have not been engaged with during the development of these commitments.	Epuron hope that the Preferred Project Report further explained those aspects that concerned residents who made a submission. Epuron would be happy to discuss any aspect with any landowner who would like to know more about any of the commitments.
A number of non-involved community members have expressed their concern over visual impacts, with emotive comments such as <i>“Our pristine landscape shouldn’t be polluted with steel structures that have questionable environmental value”</i>, and <i>“I don’t want to look at them and I don’t see why I should have to when there are viable alternatives such as solar. We wouldn’t mind having solar panels on our properties, as the visual landscape would not be so dramatically changed”</i>. These comments, while emotive, indicate both that there is not a common understanding of the real (net present as well as future) benefit	Epuron does encounter such comments and does understand that it is confronting to have the surrounding environment changed. Railways, roads, mines, quarries are all met with such remarks and in more densely populated areas there is often concern about the location of hospitals and community facilities but that is why there is a planning department – to find a least harm but most effective location for infrastructure which is required by the wider community. The precinct coordinators have been out and about in each of the renewable energy precincts explaining why each precinct has been determined. In the case of most precincts, and certainly the Yass area, it is because of the excellent wind resource and connection opportunities. Solar, while reducing in cost dramatically remains twice as expensive as wind energy and covers significantly more land to provide the same electricity. It is without doubt an excellent power source on homes with north facing roofs and is increasingly promising for larger 1MW + developments.

Issue/Comment	Response
of wind turbines, or why the area has been selected for wind turbines over windier (but potentially more built up) areas, or why solar has not been considered. These may all be issues that can be addressed by Epuron, but have not been effectively communicated with stakeholders to date.	
The PPR indicates that an erosion and sediment control plan will be implemented, utilising “<i>standard erosion and sediment control measures</i>”. A number of community members have continued to express concern over the potential erosion and sediment impacts due predominantly to the construction of access roads in steep areas and areas of poor quality. In addition, members of the community have expressed concern regarding the construction infrastructure and any impacts these may have on the impacted land, as well as land downstream or in other parts of the regional catchment.	The assessment of the impacts is a matter for the Department of Planning and Infrastructure but if we can assist landholders to understand such control plans better we will endeavour to do so. A sample erosion and sediment control plan has been provided to members of the CCC.
The PPR indicates that “<i>infrastructure will be located on the ridges which are predominantly on basalt rock and less prone to erosion risks</i>”. Table 8-6 of the 2009 Environmental Assessment describes seven soil types, six of which are listed as having a high or extreme erosion potential. This contradicts the statement in the PPR, and it remains unclear how Epuron will manage this risk. Potential downstream impacts of erosion have also not been addressed in detail.	At this pre-approval stage in the development it is important to know what has to be addressed more than the precise detail of how it will be addressed. As noted in the EA we are aware of the very high erosion potential of most of the area. This is often the case in wind farm locations. The width of the ridges is minimal in places and in those areas we would tend to include the access track itself as part of the hardstand. The hardstand can be adapted to be long and thin rather than a square if this is required. The current designs are the exhibited infrastructure layout upon which we undertake a constructability assessment for our own risk assessment purposes. We don't believe there is a discrepancy between our documents. The risks raised here are managed through the CEMP and the detailed design stage which must be signed off by the Director General before construction can commence.
Noise The Epuron website refers to a report by the Victorian EPA, which indicates that wind farms are not a significant contributor to low frequency noise, “<i>at houses located approximately 1.5km away from wind farm sites</i>”. However, the Yass Valley proposal includes a number of residences (including non-involved landowner residences) that are located within 1.5km of the wind farm sites. As such, these residences are likely to be impacted (as indeed the 2009 Environmental Assessment indicates) by noise from the wind farms. The Director General's Requirements	There are three houses owned by non-involved landowners that are located within 1.5km of a proposed wind turbine: G16, M42 and G14. The noise assessment addendum(Attachment 4) has confirmed full compliance with the noise criteria for these three residences and all the other residences located in the vicinity of the wind farm.

Issue/Comment	Response
(dated 2009) requires the proponent to clearly outline the noise mitigation, management and monitoring measures. This has not been completed.	
The 2009 Environmental Assessment did not include all potentially impacted residences in the noise survey, or modelling exercise, as required by the Director General's Requirements.	The noise assessment addendum(Attachment 4) has confirmed full compliance with the noise criteria for all the residences located in the vicinity of the wind farm.
Land Values The PPR indicates that <i>"A number of studies in Australia and overseas have shown that wind farms do not generally have any negative impact on the value of surrounding land..."</i> and more specifically, refers to the findings of the NSW Valuer General in 2009, stating that <i>"wind farms do not appear to have negatively affected property values in most cases"</i>. These are general comments that do not include an assessment of land values in the Southern Tablelands that have been impacted by wind farms. The statements are not conducive to a detailed property evaluation report.	Land values are not considered to be a planning matter but more a consultation matter to explain how the planning system works in relation to land values. The matter is best left to the experts see the Land and Environment Court ruling in relation to the Gullen Range Wind Farm – the issue is addressed in paragraphs 107 to the paragraph after 160 in the decision of <i>King & Anor v Minister for Planning</i> found at http://www.lawlink.nsw.gov.au (<i>King & Anor v Minister for Planning; Parkesbourne-Mummel Landscape Guardians Inc. v Minister for Planning; Gullen Range Wind Farm Pty Limited v Minister for Planning</i> [2010] NSWLEC 1102 (7 May 2012)) In terms of consultation we accept that a wide range of matters may cause individuals to have concerns about the value of their land. However, we know only of instances where people have considered that there may be an impact but not of any actual impacts to land value resulting from wind farms in close proximity. It is possible to find real estate agents who consider there is an impact and those who consider there is not an impact. However, it is objective studies that provide the basis for sound consideration of this matter and numerous studies conclude that wind farms do not have any discernible impact on property values. The issue of impacts to property values was also considered in the 2007 Land and Environment Court ruling in the Taralga Landscape Guardians challenge to the approval of the Taralga Wind Farm. This decision states: <i>"If the concepts of blight and compensation, as pressed by the Guardians, were to be applied to this private project (a proposition which I reject) than any otherwise compliant private project which had some impact in lowering the amenity of another property (although not so great as to warrant refusal on general planning grounds ...) would be exposed to such a claim.</i> <i>Creating such a right to compensation (for creating such a right it would be) would not merely strike at the basis of the conventional framework of land use planning but would also be contrary to the relevant objective of the Act, in s 5(a)(ii), for "the promotion and co-ordination of the orderly and economic use and development of land".</i>
Visual amenity Figure 5-7 (Residential Viewpoints) in Attachment 3 to the PPR does not appear to consider a number of residences in close proximity (i.e. less than 2 km of the proposed turbine locations, including the residence of my parents-in-law and my brother-in-law). The Director General's Requirements (DGRs) dated 2009 require a description of community and stakeholder values of the local and regional amenity, including <i>"perceptions of the project based on surveys and consultation"</i>. This has not been adequately documented. It is not clear what the definition of	Figure 5-7 does not, and was not intended to, show all residential viewpoints towards the wind farm. This figure considers only those locations selected as representative viewpoints from a range of locations around the proposed site. This approach complied with the DGRs when the EA was exhibited. However, we note that it would be more useful for individuals to have an assessment of the potential visual impact to all properties within 2km of a turbine. This fits with the guidance provided in the draft NSW Planning guidelines for Wind Farms which are not a requirement for this project. Photomontages and visual impact assessment have now been carried out for all non-involved dwellings within 2km.

Issue/Comment	Response
low, medium and high impact is, and how this has been quantified.	
Cumulative Impact The methodology of the cumulative impact assessment does not appear to have been calibrated by the perception of cumulative impacts by potentially impacted stakeholders. Statements from the PPR relating to residents along minor roads do not adequately reflect the potential cumulative impacts to those stakeholders, including the statement that <i>“It is considered that the visual impact will be minor from these locations predominantly because the viewer numbers are low”</i>. This is somewhat akin to saying that the cumulative impact of a small car accident in which two people are killed is low, because only two people are impacted. It is an inappropriate assessment of cumulative impacts.	Section 8.14 of the EA deals with Cumulative impacts in relation to visual impacts, noise impacts, biodiversity impacts, air hazard impacts, traffic impacts, economic and resource impacts, social impacts and climate and air quality impacts. This approach, undertaken over 2 years before the Draft NSW Wind Farm Guidelines were issued, is consistent with the Guidelines. Guidelines for mining and other projects may have limited relevance. We are aware of the EU Commission’s document you reference but must be guided by the planning requirements of the jurisdiction in which we operate.
Management Plans A number of commitments proposed are covered by the statement that a plan (such as a Construction Environmental Management Plan, a Decommissioning Plan, a Biodiversity Management Plan, etc.) will be developed. Given the sensitivity (both from a community stakeholder and biodiversity perspective) of the project, there may be value in providing conceptual details of these plans, in order that stakeholders can understand the measurable objectives of these plans.	Epuron will make the draft Construction Environmental Management Plan and draft Biodiversity Management Plan available to the CCC and any other interested stakeholders for comment prior to implementation. A draft Decommissioning Plan has been included in this report. (Attachment 11).
Decommissioning & Rehabilitation Non-involved stakeholders have expressed concerns over how decommissioning and rehabilitation will occur, particularly given the long life of the turbines, and the potential that Epuron may not be the owner of the infrastructure at the end of the project life. One landowner indicated <i>“We are hearing stories of wind turbines being left to fall down, having been sold to offshore owners. How do we know this will not happen in our district?”</i> In addition, stakeholders indicated there does not appear to be a precedent for the successful decommissioning of wind turbines globally, and therefore there was little confidence that this would be carried out effectively in the Yass Valley area.	Epuron will comply with the requirements of the NSW Government’s Draft Wind Farm guidelines which state: ▶ If a DA for a wind farm classed as State significant development is approved, decommissioning requirements will be included in the Conditions of Consent issued by the consent authority. Conditions of Consent will generally require that: ▶ The wind farm owner is responsible for decommissioning (not the landowner) and that the applicant/wind farm owner must provide evidence to demonstrate this prior to construction commencement. ▶ The Decommissioning and Rehabilitation Plan must be updated every 5 years and made public on the applicant’s website as well as providing a copy to the relevant consent authority. ▶ The turbines and associated facilities must be decommissioned within 18 months of cessation of the operation of the project. ▶ Any individual turbine that cease operating for more than 12 months must be dismantled within 18 months The wind farm owner must keep independently verified annual records of each wind turbine electricity generation production. Copies of these records should be made

Issue/Comment	Response
	available to the consent authority on request. See Draft Decommissioning plan at Attachment 11

3.5 Response to Government Agency Submissions

3.5.1 NSW Trade & Investment Crown Lands

Issue	Response																																
Turbines located on or very close to Crown roads	Seven turbine locations have been micro-sited to ensure that no turbines are located on or overhang Crown roads. Please refer to the current wind turbine co-ordinates in Attachment 8. <table><thead><tr><th>Turbine ID</th><th>Easting</th><th>Northing</th><th>Distance moved (m)</th></tr></thead><tbody><tr><td>9</td><td>642,410</td><td>6,155,033</td><td>9.2</td></tr><tr><td>15</td><td>643,186</td><td>6,154,579</td><td>24.8</td></tr><tr><td>144</td><td>659,241</td><td>6,146,899</td><td>46.9</td></tr><tr><td>80</td><td>644,203</td><td>6,150,649</td><td>59.3</td></tr><tr><td>83</td><td>653,720</td><td>6,150,014</td><td>38.7</td></tr><tr><td>89</td><td>653,780</td><td>6,148,628</td><td>100.0</td></tr><tr><td>110</td><td>653,972</td><td>6,153,875</td><td>62.3</td></tr></tbody></table> Note the distance moved listed above reflects to movement to avoid the Crown road, rather than any change from original turbine location in the EA.	Turbine ID	Easting	Northing	Distance moved (m)	9	642,410	6,155,033	9.2	15	643,186	6,154,579	24.8	144	659,241	6,146,899	46.9	80	644,203	6,150,649	59.3	83	653,720	6,150,014	38.7	89	653,780	6,148,628	100.0	110	653,972	6,153,875	62.3
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Substation sites located on or very close to Crown roads	The substation sites have been micro-sited to ensure that they are not located on any Crown roads. The proposed 330kV switchyard location is located on a Crown road. Epuron is currently in the process of adjoining and closing the affected section of Crown road as outlined in the Crown Lands submission. If this is not possible, then the switchyard will be micro-sited to avoid the Crown road.																																
Powerline route crossing Crown Roads	Prior to the commencement of construction the proponent will obtain the necessary agreement from Crown Lands for the powerline crossing in accordance with the Crown Lands Act 1989.																																

3.5.2 Civil Aviation Authority

Comment	Response
Risk to aircraft navigation and obstacle lighting	An Aeronautical Impact Assessment, Obstacle Lighting Review and Qualitative Risk Assessment for the wind farm has been carried out by the Ambidji Group. The assessment recommended that aviation obstacle lighting for the wind farm is not required.
Providing heights and co-ordinates to Airservices and Department of Defence prior to commencement of construction	The proponent has committed to providing heights and co-ordinates of wind turbines to Airservices and Department of Defence prior to commencement of construction.
Consultation with Airservices Australia	Consultation with Airservices Australia is ongoing. Following initial discussion with Airservices Australia a detailed assessment of the potential impact on air traffic control radar has been completed. Further work on identifying appropriate mitigation measures is now underway.
Consultation with Aerial Agricultural Association of Australia	The AAAA was consulted as part of the aeronautical assessment in 2010. The assessed level of risk to aerial agricultural operations in the vicinity of the proposed wind farm was assessed as Low/Medium. It was noted that the location of the wind

<i>Comment</i>	<i>Response</i>
	farm and its individual turbines will not impact on the safety of aerial applications provided pilots conduct proper pre-planning of operations.
Consultation with operators of non-regulated aerodromes	The owners and operators of fourteen non-regulated aerodromes, airfields and airstrips within 100km of the wind farm were contacted. The aeronautical assessment noted that the wind farm and any of its individual turbines will not impact on the approach, circuit work or take-off of aircraft from any of the identified aerodromes airfields or airstrips in the region.
Consultation with Royal Flying Doctor Service	The RFDS was consulted as part of the aeronautical assessment. No concerns with the proposed wind farm were raised.

3.5.3 NSW Environmental Protection Agency

<i>Comment</i>	<i>Response</i>
The EPA has now reviewed the PPR and believes that it adequately addresses the issues raised in the public submissions.	Noted
Noise modelling to be updated once the actual wind turbine to be constructed has been confirmed and on-ground compliance assessed once operation has commenced.	It is expected that these will be included in any conditions of approval for the project.
It is unclear whether the deletion, micro-siting and/or relocation of the wind turbine layout will change the noise impacts to the receivers to the extent that the criterion is no longer complied with.	An updated noise impact assessment has been carried out – please refer to Attachment 4 for more details. The updated assessment confirms that the current wind turbine layout complies with the relevant criterion.

3.5.4 NSW Roads & Maritime Services

<i>Comment</i>	<i>Response</i>
RMS considers that the proposed changes to the development would not represent any further concerns to those raised in the response from the RTA (now RMS) in 2009.	Noted The proposed conditions of approval in the 2009 submission have been directly referenced in the revised Statement of Commitment 37.
The preparation of a detailed Traffic Management Plan and a road dilapidation report may appropriately address the traffic related issues outlined in the previous correspondence from the RTA.	Epuron has committed to a road dilapidation report and preparation of a detailed Traffic Management Plan in consultation with RMS and the councils prior to the commencement of construction.

3.5.5 NSW Catchment Management Authority Murrumbidgee

<i>Comment</i>	<i>Response</i>
The Murrumbidgee CMA concurs with the PPR that the revised Environmental Assessment will reduce residual impacts of the development on the existing environment.	Noted

3.5.6 Department of Defence

Comment	Response
Defence is pleased that its comments have been acknowledged in the PPR submission, and overall, the Department of Defence has no concerns with the proposal at this time.	Noted

3.5.7 NSW Office of Environment & Heritage

Issue	Response
OEH notes that the proponent has addressed many of the issues raised in our submission of 2010, including: recalculation of BGW EEC, mapping of the proposed transmission easement and provision of greater detail on hollow-bearing trees in the areas not mapped in the EA.	Noted
Turbine placement & numbering	A large scale A1 size map (Attachment 13) with consistent turbine numbering has been included in this report together with a list of current turbine coordinates (Attachment 8). This enables a direct comparison with the original turbine placement and numbering shown in the Environmental Assessment. (Figure 3-10 to Figure 3-12 on pages 47 to 50 of the EA)
Offset assessment methodology and offset ratios	The proposed methodology is to use data from the existing field surveys as well as from additional survey data that will be collected prior to construction to determine offset ratios with reference to: ▶ The conservation status of the vegetation; ▶ The condition of the vegetation; and ▶ Whether the habitat provides actual (not potential) threatened species habitat. The additional pre-construction surveys will inform whether the habitat is used by threatened species and whether the proposed offset ratio needs to be increased or not. A large amount of biodiversity survey work has already been undertaken on site providing a substantial baseline from which to propose offsets. Preconstruction surveys would supplement the baseline studies. Using the Biometric Assessment Methodology would be unnecessary and a duplication of these survey efforts. See Attachment 1B
Clarification of terms: native pasture, BGW pasture, native grassland, BGW (native pasture), BGW (grassland), native dominated grassland and secondary grassland	These terms refer to the same community. The community is derived from intact Box Gum Woodland but now is in different condition classes depending on land use practices such as tree clearing, conversion to exotic pasture and grazing intensity. In different areas the community has a varying proportion of native understorey (from entirely exotic to entirely native) and tree cover (from treeless to within benchmark cover for this community). ‘Secondary grassland’ refers to the many areas where the community has now been cleared of overstorey but still retains a proportion of native understorey. It identifies the community was not originally a grassland; this is a secondary state after removal of the overstorey.
Clarification of loss of Hollow Bearing Trees as moderate constraint	In the Marilba and Coppabella Biodiversity Assessments, hollow bearing trees were considered a high constraint. Reasoning for this included risks associated with hollow bearing trees near turbines, the location of mature woodland fragments

<i>Issue</i>	<i>Response</i>
	(particularly along roadsides) and the potential to impact breeding for species such as the Superb Parrot. The field assessments conducted for the additional areas primarily focussed on transmission line infrastructure and turbines on the periphery of the site. Generally speaking, micro-siting poles to avoid hollow-bearing trees is easier to achieve in these areas and the greater abundance of hollows in these areas suggested that minimisation rather than strict avoidance was warranted as a management strategy, to avoid significant impacts. Preclearance surveys have been recommended to address risks to resident fauna. Offsetting would be undertaken to replace the resource.
Request that Biodiversity Management Plan be developed in consultation with OEH and approved by the Director General.	Noted
Recommended conditions of approval	Noted
Procedures for any additional heritage surveys to be documented in a Cultural Heritage Management Plan	Prior to the commencement of construction a Construction Environmental Management Plan will be prepared and submitted to the Director General for approval. The CEMP will include an Aboriginal and non-Aboriginal heritage management plan which will document the procedures to be followed for additional archaeological assessments in any areas which are proposed for impacts that have not been surveyed during the assessments to date. Refer to Statement of Commitments 28 and 29.
Copy of the Heritage Assessment addendum report to be forwarded to other registered Aboriginal stakeholders for their information and comments	A copy of the Heritage Assessment Addendum report has been circulated to all three the registered Aboriginal stakeholders for review: ▶ Buru Ngunawal Aboriginal Corporation, ▶ Ngunawal Heritage Aboriginal Corporation and ▶ Onerwal Local Aboriginal Land Council. An endorsement from the Buru Ngunawal Aboriginal Corporation has been included in Attachment 2.

3.5.8 NSW Department of Primary Industries

<i>Comment</i>	<i>Response</i>
Agriculture NSW advises no issues in respect to agriculture matters.	Noted
Fisheries NSW advise no issues in respect to fisheries matters.	Noted
NSW Office of Water noted that key changes to water legislation related to this project since 2009 include the commencement of Water Sharing Plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources and the commencement of the Water Sharing Plan for the Murrumbidgee Unregulated and Alluvial Water Sources	The proponent will adhere to the provisions of these plans where groundwater or surface water is being taken or intercepted. Water extracted from Harvestable Rights Dams will be used on the property that the dam is located on.
The proponent shall prepare a CEMP and Operational Water Management Plan prior to the commencement of activities.	The proponent has committed to preparing a CEMP prior to construction and will include an Operational Water Management Plan.

<i>Comment</i>	<i>Response</i>
The design of waterway crossings for access roads and cable installations is to be in accordance with the departments guidelines and included in the CEMP	Noted
If rock anchoring is selected for wind tower foundations, a groundwater assessment is to be undertaken and endorsed prior to construction.	Noted

3.5.9 Yass Valley Council

<i>Issue</i>	<i>Response</i>
Complete a more detailed Traffic Impact Study in consultation with the relevant authorities, including Yass Valley Council, prior to commencement of construction including: ▶ Ensure the condition and road user safety is not compromised ▶ Identify hazards along length of each road ▶ A structural assessment of the existing pavements ▶ Review the standard of unsealed roads planned to be used ▶ A structural assessment of all bridges and major drainage structures ▶ Address the location and standard of the proposed access points off the road network ▶ Review the controls for safety and asset protection impacts.	A supplementary Traffic Impact Study (refer Attachment 8) has been completed to take into account changes in the wind farm layout since the preparation of the EA in 2009. The proponent is committed to developing a more detailed traffic management plan in consultation with the relevant authorities (RMS & Councils) prior to the commencement of construction. Refer to the revised Statement of Commitments 37.

3.5.10 Airservices Australia

<i>Issue</i>	<i>Response</i>
Effect of the planned wind farm on the Mt Bobbara SSR (secondary) and Mt Majura PSR/SSR (primary & secondary) air traffic control radars	A detailed technical study on the potential impact of the wind farm on the operation of the radars was completed by IDS in November 2011 and concluded that for: Mt Bobbara SSR – The radar shadowing effect due to the wind farm will be negligible. Mt Majura SSR – On the basis of the preliminary analysis the wind farm will not impact the radar performance. Mt Majura PSR – Some false targets and localised shadowing will be present. These may be mitigated by specific radar processing techniques. Epuron and IDS met with Airservices Australia to review the study and identified some areas of the assessment that require clarification and further work. Some aspects of the work can only be completed after selection of the turbine model and

<i>Issue</i>	<i>Response</i>
	micrositing have been completed. Epuron have now commenced an assessment which will identify and assess several mitigation technologies that that have been successfully implemented in the UK to minimise the impact of wind farms on air traffic control radars. Consultation with Airservices Australia is ongoing.

4 Additional Comments on Preferred Project & Submissions Report

4.1 Revised Preferred Project & Submissions Report

A revised Preferred Project & Submissions Report was submitted to the NSW Department of Planning & Infrastructure on 30 July 2013. The report addressed the submissions received during the exhibition of the Preferred Project Report from January to 1 March 2013 as well as the late submissions that were received up to May 2013.

Copies of the revised Preferred Project & Submissions Report were provided to a number of government agencies who provided additional comments on the report. These additional comments are addressed in section 4.2 below.

4.2 Additional Comments from Government Agencies

4.2.1 Office of Environment & Heritage

Comment	Response
Surveys have not yet been completed to fully identify and map constraints (e.g. Hollow Bearing Trees, Fauna habitat). If the proponent is to comply with their commitment to avoid impacts in all high constraint areas then all constraints must be accurately identified before the project design is finalised.	Detailed protocols would be developed in consultation with OEH as part of the Biodiversity Management Plan. Specifically this would address: ▶ Threatened reptile finds – preclearance in mapped rocky habitats ▶ Hollow-bearing trees – preclearing surveys ▶ Golden Sun Moth habitat – based on summer surveys completed in 2013/14 See Attachment 1B
The EA (2009) and subsequent documents have repeatedly defined high constraint areas as being Box Gum Woodland EEC in good condition according to the Commonwealth EPBC Act listing. However, semi cleared areas with trees and areas of native groundcover are included in the NSW listing of Box Gum Woodland EEC and therefore of High Conservation Value and impacts should also be avoided in these areas.	Vegetation types and condition have now been updated to reclassify 'exotic' and 'pasture' as Box Gum Woodland in 'moderate - good condition'. Discussions with OEH in October 2013 clarified that not all areas of EEC, regardless of condition, need to be avoided. Refer Attachment 1B for further details.
Further information regarding how vegetation of conservation significance is defined, the calculation of area of impact, and the finalisation of an offset is required.	See the further information provided following the OEH site visit with ngh Environmental at Attachment 1B
Turbines and infrastructure are still located within areas of high conservation significance which will have potential impacts both vegetation and fauna	See the further information provided following the OEH site visit with ngh Environmental at Attachment 1B
OEH is concerned that there is an ever increasing cumulative impact on Aboriginal cultural heritage values that is not being addressed.	The changes made to the wind farm layout do not result in an ever increasing cumulative impact on Aboriginal heritage. Refer Attachment 2B for further details.

<i>Comment</i>	<i>Response</i>
OEH requests confirmation that Aboriginal Site Recording Forms have been submitted for all new sites recorded since the original 2008 survey.	Site cards have been submitted to OEH and AHIMS numbers issues.

4.2.2 Roads & Maritime Authority

<i>Comment</i>	<i>Response</i>
RMS notes the indicative alignment of the proposed transmission lines across road reserves, particularly the Hume Highway, however given the scale of the wind farm proposal, specific design details for the transmission lines have not been provided such as detailed alignment plans, pole placement, clearance of transmission lines above roads etc. In this regards RMS refers to the need for further detailed information and the requirement for approval for works within the road under section 138 of the Roads Act, 1993.	The requirement for more detailed information and approval under the Roads Act is noted. The information will be supplied to RMS and the required approval obtained following completion of the detailed design of the transmission line.
Approval for the upgrade of an existing access driveway or construction of a new driveway to the public road network will need to be undertaken in accordance with RMS design guidelines.	This has been previously noted in the Preferred Project & Submissions Report.

4.2.3 NSW Environmental Protection Agency

<i>Comment</i>	<i>Response</i>
The EPA has reviewed the revised PPR and believes that it adequately addresses the issues raised in our previous submission on the original PPR to the Department of Planning and Infrastructure dated 25 February 2013.	Noted.
The EPA would like to reiterate its previous comments regarding the need to remodel the predicted noise impacts of the project once a wind turbine generator make and model has been confirmed, and to conduct an on-ground compliance assessment once the project is constructed.	Noted.

5 Preferred Project

5.1 Justification for the preferred project wind farm layout

5.1.1 Requirements of the planning assessment process

Section 75H of the EP&A Act sets out the process for public exhibition of the EA, written submissions to the EA, response to the submissions by the proponent and where necessary, a preferred project report which outlines any proposed changes to the project to minimise its environmental impact. The relevant sections are outlined below:

75H Environmental assessment and public consultation

- (1) *The proponent is to submit to the Director-General the environmental assessment required under this Division for approval to carry out the project.*
- (2) *If the Director-General considers that the environmental assessment does not adequately address the environmental assessment requirements, the Director-General may require the proponent to submit a revised environmental assessment to address the matters notified to the proponent.*
- (3) *After the environmental assessment has been accepted by the Director-General, the Director-General must, in accordance with any guidelines published by the Minister in the Gazette, make the environmental assessment publicly available for at least 30 days.*
- (4) *During that period, any person (including a public authority) may make a written submission to the Director-General concerning the matter.*
- (5) *The Director-General is to provide copies of submissions received by the Director-General or a report of the issues raised in those submissions to:*
 - (a) *the proponent, and*
 - (b) *if the project will require an environment protection licence under Chapter 3 of the Protection of the Environment Operations Act 1997—the Department of Environment, Climate Change and Water, and*
 - (c) *any other public authority the Director-General considers appropriate.*
- (6) *The Director-General may require the proponent to submit to the Director-General:*
 - (a) *a response to the issues raised in those submissions, and*
 - (b) *a preferred project report that outlines any proposed changes to the project to minimise its environmental impact, and*
 - (c) *any revised statement of commitments.*
- (7) *If the Director-General considers that significant changes are proposed to the nature of the project, the Director-General may require the proponent to make the preferred project report available to the public.*

5.1.2 Minimising the environmental impact of the project

The EA was exhibited at the end of 2009. Following a change in ownership of the project the Preferred Project Report was submitted in November 2012. The Preferred Project Report (PPR 2012) incorporated changes made to the proposed wind turbine locations and associated infrastructure proposed in the EA. The changes were made for a number of reasons including:

- ▶ Reducing the overall environmental impact of the wind farm, including reducing impact on flora and impact on fauna habitat, accommodating operational noise and visual impact constraints;
- ▶ In response to submissions made to the EA;
- ▶ At the request of the involved landowners;
- ▶ To avoid Crown roads;
- ▶ To avoid constructability constraints.

One of the outcomes of minimising the impacts of the project was a change in turbine numbers from 152 to 148. However, in optimising the turbine layout to accommodate changes made for the reasons listed above a number of turbines were deleted and relocated to maximise the energy output of the wind farm.

This revised infrastructure layout, along with responses to submissions on the EA were documented in the PPR 2012. This preferred project significantly reduced and minimised the impacts of the wind farm on the Box Gum Woodland Endangered Ecological Community (EEC) and reduced the preferred overhead transmission line from >75km to approximately 25km which were two particular issues raised in the submission from OEH. (As documented in the Supplementary Ecology Report (Attachment 1)).

Where the changes resulted in infrastructure being relocated, additional assessments were carried out to ensure that the impacts were minimised and did not increase the overall environmental impact of the wind farm and complied with the relevant criteria. The additional assessments included:

- ▶ Ecology – additional field surveys and assessment;
- ▶ Archaeology & Heritage – additional field survey and assessment;
- ▶ Visual – additional photomontages and assessment;
- ▶ Noise – additional background noise monitoring and assessment;
- ▶ Consultation with neighbours within 2km and beyond; and
- ▶ Consideration of impacts in accordance with the draft NSW Planning Guidelines: Wind Farms, particularly in relation to potential noise and visual impacts on residences located within 2km of any relocated turbine.

While the PPR 2012 significantly minimised the overall impacts of the proposed wind farm and reduced the number of wind turbines from 152 to 148, the Department of Planning and Infrastructure considered that some changes were significant enough to merit exhibition of the PPR 2012 so that the public could once again make submissions on the project proposed. This was done in line with section 75H clause (7) of the Environmental Planning and Assessment Act under which the project is being assessed:

(7) If the Director-General considers that significant changes are proposed to the nature of the project, the Director-General may require the proponent to make the preferred project report available to the public.

The PPR 2012 was exhibited from 14 December 2012 to 1 March 2013. Submissions were received from eight individuals and ten agencies. In response to the PPR this new report - the Preferred Project and Submissions Report 2013 has been prepared. This report was submitted to the Department of Planning and Infrastructure in July and DPI sent it out to agencies for comment. Three agencies again commented on the report and DPI has requested that these comments be addressed prior to formal acceptance of the Preferred Project and Submissions Report.

This Preferred Project and Submissions Report (PPSR) documents the further and final changes to the proposed wind farm. There has only been a minimisation of the project in this final iteration. The total number of wind turbines has reduced from 152 in the Environmental Assessment to 148 in the exhibited Preferred Project Report 2012 to 144 in this report. The details of the changes are provided in Table 5-6 and in Figure 5-8 & Figure 5-9 on the following pages.

Table 5-1 Summary of the changes to minimise the Yass Valley Wind Farm from the EA to the PPR

Detail	Environmental Assessment November 2009	Preferred Project Report November 2012	Preferred Project & Submissions Report July 2013	Preferred Project & Submissions Report December 2013
Number of wind turbines	152	148	144	144
Length of high voltage overhead powerline	>75 km	25 km	25 km	25 km
Number of site substations	6	Up to 2	Up to 2	Up to 2
Maximum tip height	150	150	150	150

The layout of the turbines and associated infrastructure which was exhibited in the PPR 2012 from December 2012 to March 2013 is the layout which has been included in newsletters sent out to the community in May and September of this year. The May newsletter included a map of the wind farm layout at A3 scale. This is the wind farm layout which has been used for all community consultation throughout the year (2013).

For the avoidance of doubt all changes from the EA, including those exhibited in the Preferred Project Report 2012, are documented in this report. While the new transmission line to the south and the turbines to the north west of the site are 'new' relative to the EA, they have been exhibited to the community. It is considered that the project under consideration which has been made available to the public is the project exhibited over the summer of 2012-2013.

5.1.3 Minimising the environmental & amenity impact on individual residences

Table 5-6 describes the reason for the turbine deletions and relocations. Although the focus was on reducing the overall environmental impact of the project the changes reflected in the Preferred Project have also been made in order to reduce the impacts on nearby residences to the smallest possible amount.

A number of turbines have been relocated to the north west of the Coppabella precinct. They are numbered 69, 70, 71, 126, 127, 128, 129 and 130 and can be seen in Figure 5-1 and Attachment 13. While the relocation of turbines has the potential for an increase in environmental impact, our assessment has shown that there has not been an increased impact on each of the closest residences in this case. The relocations have minimised the environmental impact of the project and optimised the use of the available wind resource.

The relocated turbine locations are consistent with the requirements of the draft *NSW Wind Farm Planning Guidelines*. The key elements of proximity, consultation, visual impact and noise are considered below:

- ▶ Proximity - None of the relocated wind turbines are within 2 km of existing residences
- ▶ Community consultation –
 - There are two residents within 3 km, C37 and C01, both of whom have been visited and have no outstanding issues. C01 was previously an involved landowner.
 - There are seven further residences within 5 km. All of these residents have been sent newsletters and have been telephoned. Three of these residents have been visited and a photomontage has been prepared for one (C39) and background noise monitoring undertaken at another. There are no known outstanding concerns.
- ▶ Visual amenity – The landscape and visual impact assessor has assessed the two closest properties and a further property C39 which is orientated towards the wind farm across a valley. The assessments are:
 - C01 – 2.7 km – While the nearest wind turbine is located 2.7 km from this residence there are no views from the living areas towards the wind farm due to topography. There will be views from the driveway although the turbines will be partially or wholly screened so the overall visual impact is assessed as low.
 - C37 – 2.5 km - due to its location in a valley and having intervening vegetation there will be no views of the wind farm so the impact is assessed as nil.
 - C39 – 4.3 km – there are some clear views to the wind farm but due to the distance the visual impact has been assessed as medium.
- ▶ Noise – Full details of the noise assessment are in the noise section – see Attachment 4 and summary 4.7 below. The detailed predicted noise levels for the two closest non-involved properties, which show compliance with the noise criteria, are:
 - C01 - 33.1 dB(A)
 - C37 - 32.2 dB(A)

As the table below demonstrates, the impacts to the residences located closest to the relocated wind turbines have been minimized and the potential noise and visual impacts are either not significantly different or have been reduced.

Table 5-2 Changed impacts to individual residences

Receiver ID	Involved	Distance to nearest turbine EA (km)	Current distance to nearest turbine (km)	Predicted noise level EA (dB(A))	Current worse case noise level PPR (dB(A))	Visual impact EA	Current visual impact	Comments
G16	No	1.2	1.1	44.0	41.7	-	med to low	Supportive
C37	No	4.4	2.5	27.9	32.2	-	nil	No issues
C01	No	1.1	2.8	42.4	33.1	-	low	No issues
C74	No	4.2	3.2	-	35.2	N/A	high	No issues
C53	No	5.6	3.5	-	33.4	N/A	medium	No change in impact
C38	No	3.8	3.5	32.8	30.6	N/A	medium	Reduced impact
C07	No	1.8	4.0	37.1	25.7	N/A	low	Reduced impact
C73	No	2.2	4.3	-	26.4	N/A	low	No change
C39	No	4.5	4.4	29.4	27.8	Medium	medium	Concerns addressed
C09	No	2.9	5.3	32.8	24.7	N/A	low	Reduced impact

5.2 Preferred Project Description

5.2.1 General Description

The proposed wind farm includes:

- ▶ Up to 144 wind turbines located within the Coppabella and Marilba precincts. Each wind turbine consists of three blades, a rotor hub and nacelle mounted on a tubular steel tower together with the associated turbine foundation, turbine transformer and crane hardstand area
- ▶ A 330kV switchyard enabling the connection of the wind farm to TransGrid's existing Yass to Lower Tumut 330kV transmission line. The switchyard will incorporate an auxiliary services building and a nearby microwave tower to provide communications to TransGrid's operational control centre. Four alternative 132kV switchyard locations have been identified in the event that the 330kV connection option is not feasible.
- ▶ A high voltage (up to 330kV) pole mounted transmission line approximately 25km long to connect the switchyard to the two substations on the wind farm site. Three alternative 132kV overhead transmission line routes have been identified in the event that the up to 330kV overhead transmission line is not viable.
- ▶ Up to two substations on the wind farm site. Each substation will include transformers to provide connection to the medium voltage electrical reticulation network (Figure 5-2 & Figure 5-3). If a single site substation is used it will be at a location between the Coppabella and Marilba precincts.
- ▶ A medium voltage electrical reticulation network of above ground and underground cabling to connect the individual wind turbines to the site substations
- ▶ Internal site access tracks and minor upgrades to existing public roads to allow the delivery of the wind turbine components and other equipment
- ▶ A permanent operation and maintenance facility including offices, facilities, car parking and equipment storage
- ▶ Up to five permanent wind monitoring masts (As shown in Figure 5-4)
- ▶ Temporary construction facilities including offices, facilities, car parking, equipment laydown area and a concrete batching plant (Figure 5-2 & Figure 5-3).

5.2.2 Wind Turbine Selection

At this stage the turbine supplier and turbine model for the project has not been selected. The maximum blade tip height proposed is 150 m above ground level and any turbine selected would meet this maximum tip height limit. Each wind turbine would have a rated capacity of between 1.5 and 3.6 MW.

For the noise assessment, two turbine models have been considered. The Vestas V90 3MW with an 80m hub height has been used to provide a worst-case noise impact and the REpower MM92 2.05MW with an 80m hub height has been used to provide a representative noise impact.

For the visual impact assessment and photomontages a turbine with 100m diameter rotor on a 100 hub height has been used to provide a representation of the maximum 150m tip height.

Table 5-3 Proposed wind turbine parameters

Wind turbine parameter	
Maximum tip height	150m
Typical rotor diameter	80 – 112m
Typical hub height	78 – 100m
Typical rated capacity	1.5 – 3.6 MW
Maximum wind farm capacity	518.4 MW

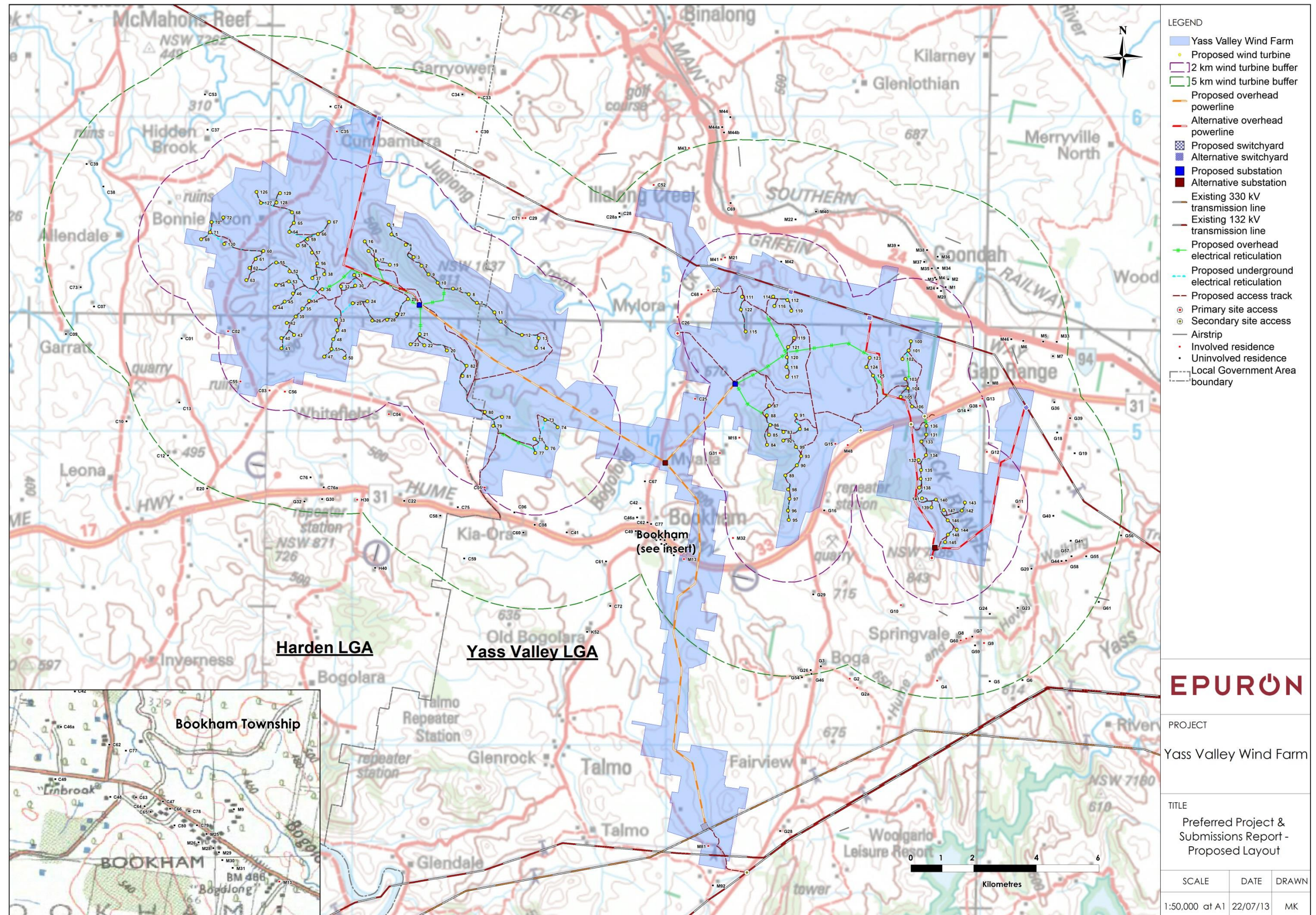


Figure 5-1 Preferred project & submissions report layout (see Attachment 13 for A1 size map)

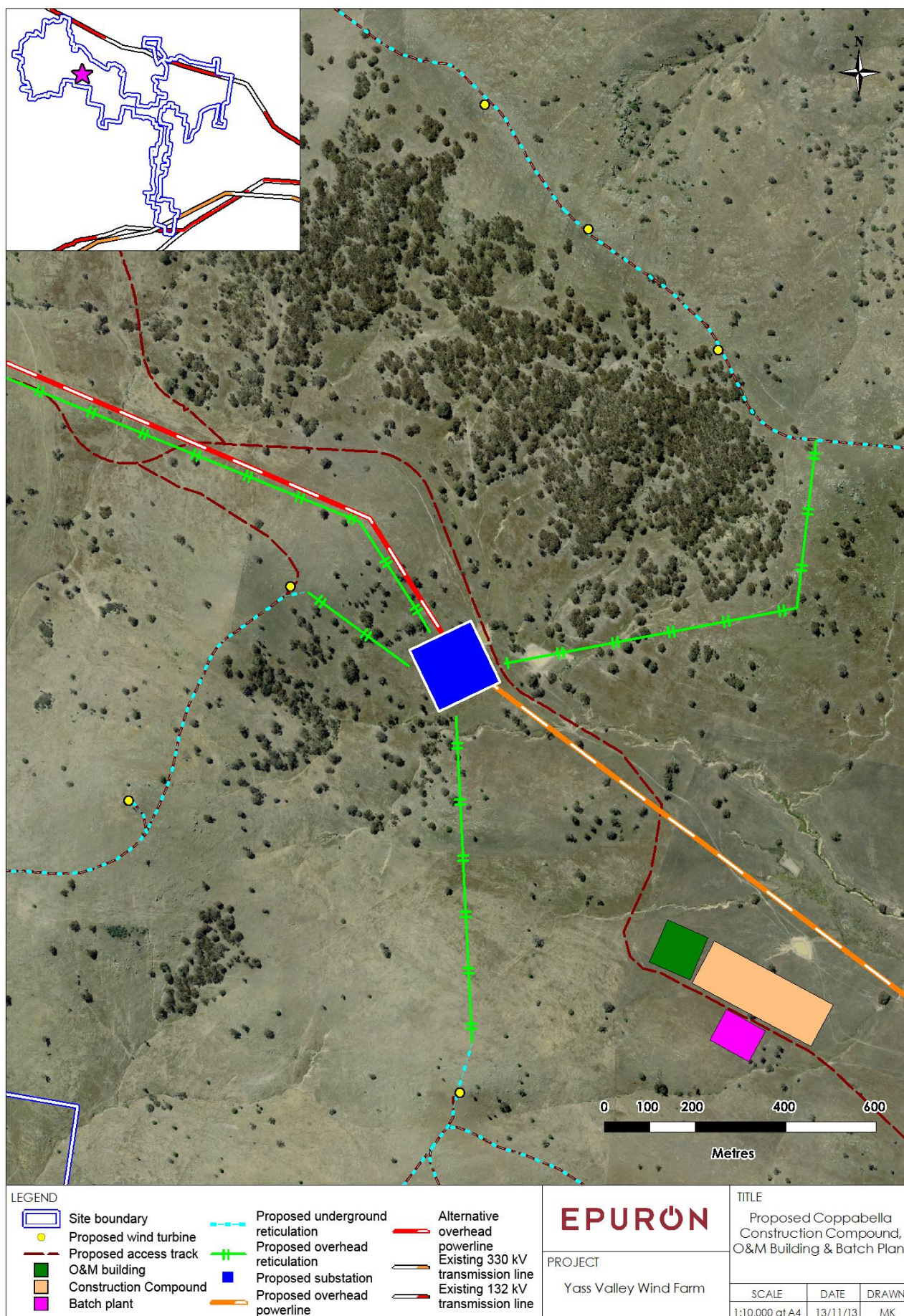


Figure 5-2 Coppabella collection substation, construction compound, O&M building and batch plant

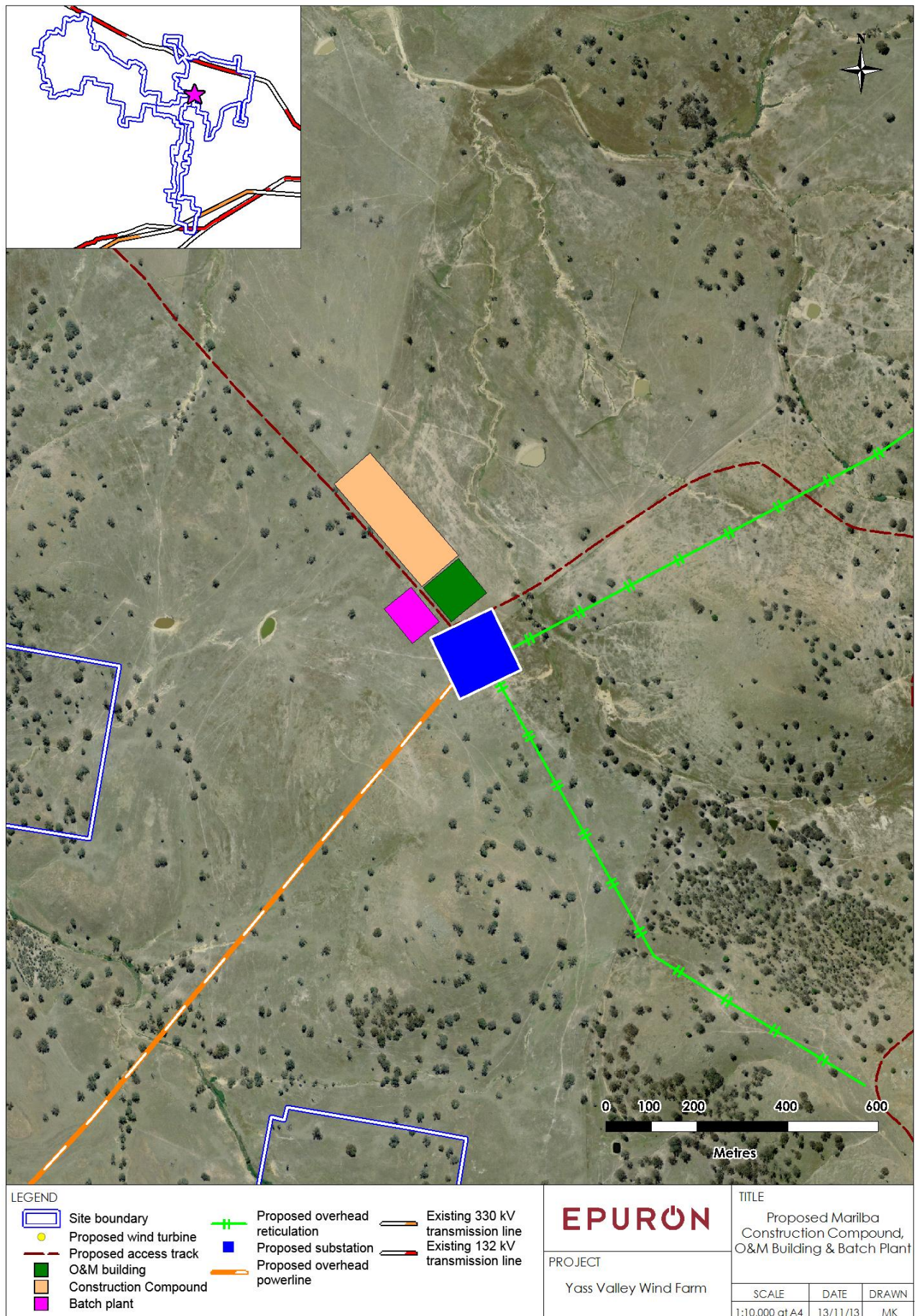


Figure 5-3 Marilba collection substation, construction compound, O&M building and batch plant

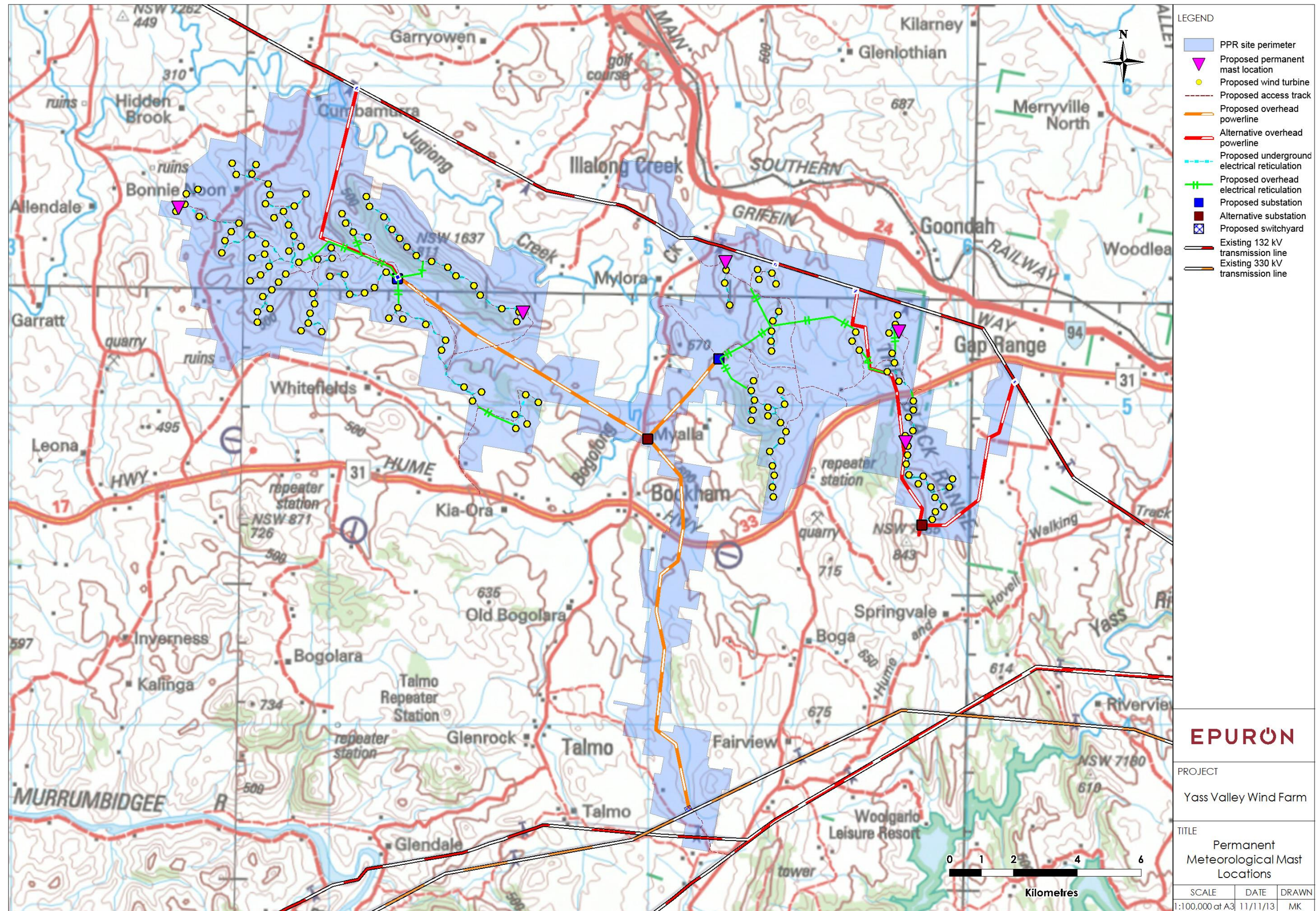


Figure 5-4 Proposed permanent meteorological masts

5.2.3 Grid Connection Options

One of the concerns noted in the OEH submission to the EA was the extent of the overhead powerlines proposed on the site. Epuron reviewed the proposed grid connection concept for the project and identified an alternative connection to the 330kV network approximately 13km to the south of the wind farm site rather than the 132kV network to the north of the wind farm site. This preferred option would reduce the extent of overhead transmission lines from >75km to approximately 25km.

This reduction in the overall length of overhead powerlines will minimise the environmental impacts of the project by:

- ▶ Reducing the direct biodiversity impact through a significantly reduced number of power pole footprints; and
- ▶ Reduced visual impact of power poles and powerlines.

The design process for selecting the revised powerline route was an iterative process which took into account a number of environmental factors and constraints in order to minimise the environmental impacts as follows:

- ▶ Minimising the length of the powerline route and associated impacts;
- ▶ Avoiding areas of woodland and other areas of remnant native vegetation to minimise the biodiversity impacts;
- ▶ Maximising the distance away from existing residences; and
- ▶ Using natural terrain features such as valleys and ridges to screen the views of the powerline from nearby residences and publically assessable viewpoints.

The numbers of non-involved residences in the vicinity of the revised powerline route and substation/switchyard locations are as follows:

Table 5-4 Number of non-involved residences in the vicinity of the revised powerline route

Distance Range	Number of non-involved residences
0 – 500m	-
501 – 1,000m	6
1,000 – 1,500m	9
1,500 – 2,500m	8

Table 5-5 Number of non-involved residences in the vicinity of proposed substations and switchyard

Location	0 – 500 m	501 – 1000 m	1001 – 1500 m	1501 – 2500 m
Coppabella	-	-	-	-
Marilba	-	-	-	-
Alternative	-	1	-	13
Connection Switchyard	-	-	-	2

The supplementary visual impact assessment confirmed that the proposed powerline is well located within the existing landscape.

The preferred 330kV grid connection option for the wind farm will consist of:

- ▶ A 330kV switchyard enabling the connection of the wind farm to TransGrid's existing Yass to Lower Tumut 330kV transmission line located to the south (see Figure 5-6). The switchyard will incorporate an auxiliary services building and a nearby microwave tower to provide communications to TransGrid's operational control centre (seen in Figure 5-5).
- ▶ A high voltage (up to 330kV) pole mounted transmission line approximately 25km long to connect the switchyard to the substations on the wind farm site. The easement would be 45m wide.

- ▶ Two substations on the wind farm site, one for the Coppabella precinct and one for the Marilba precinct. An option of a single substation located between the Coppabella and Marilba precincts is also being considered.

The alternative 132kV grid connection option for the wind farm will consist of:

- ▶ A 132kV switchyard enabling the connection of the wind farm to TransGrid's existing Murrumburrah to Yass 132kV transmission line. The switchyard will incorporate an auxiliary services building and a nearby microwave tower to provide communications to TransGrid's operational control centre. Four possible locations for the switchyard have been identified.
- ▶ A high voltage (up to 132kV) pole mounted transmission line to connect sections of the wind farm to the switchyard.
- ▶ Up to two substations on the wind farm site.

The preferred transmission line route to the TransGrid 330kV line was identified following an iterative process used to ensure that the environmental impact of the new route was minimised. Aerial mapping was used to ensure that native vegetation and nearby residences were avoided and natural terrain features used to minimise the visual impact. The supplementary assessments for ecology, archaeology, visual impact and noise included an assessment of the preferred 25km transmission line route, switchyard and substation locations.

Electromagnetic Fields

An assessment of the potential impacts from electromagnetic fields (EMFs) from the wind farm was provided in section 7.9 (page 174) of the EA. EMFs were considered as part of developing the preferred grid connection option and associated transmission line.

The maximum levels of magnetic field directly under a 330kV powerline are in the order of 300 mG. This figure is significantly less than the 1,000 mG limit recommended for 24 hour exposure. The magnetic field falls away rapidly as the distance increases and is negligible at the edge of the transmission line easement 30m away.

There are no non-involved residences within 500m of the transmission line, the site substations or the switchyard locations. The closest involved residence is approximately 450m from the transmission line.



Figure 5-5 An example of a microwave communications tower from Gullen Range Wind Farm

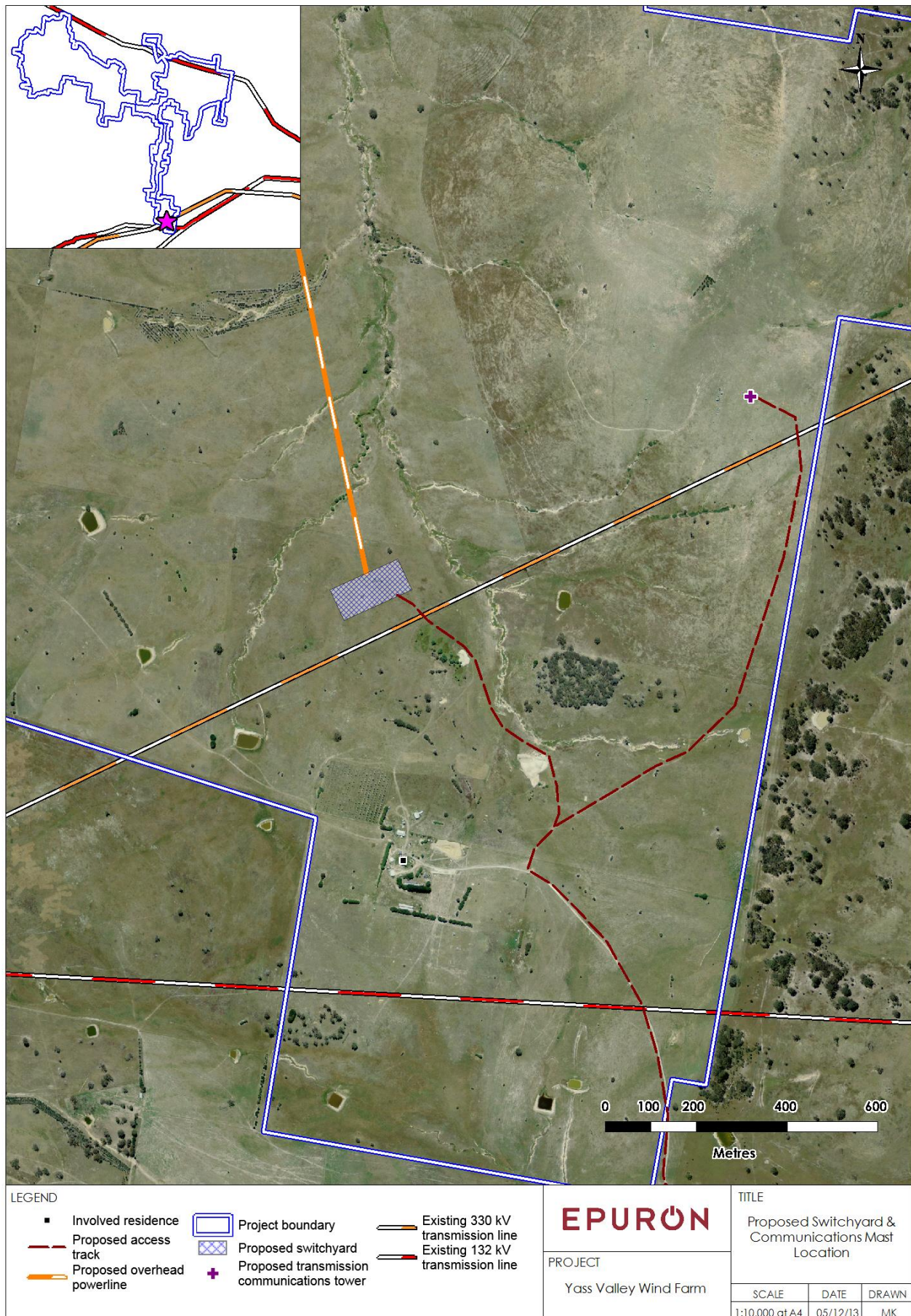


Figure 5-6 Proposed switchyard location and communications mast

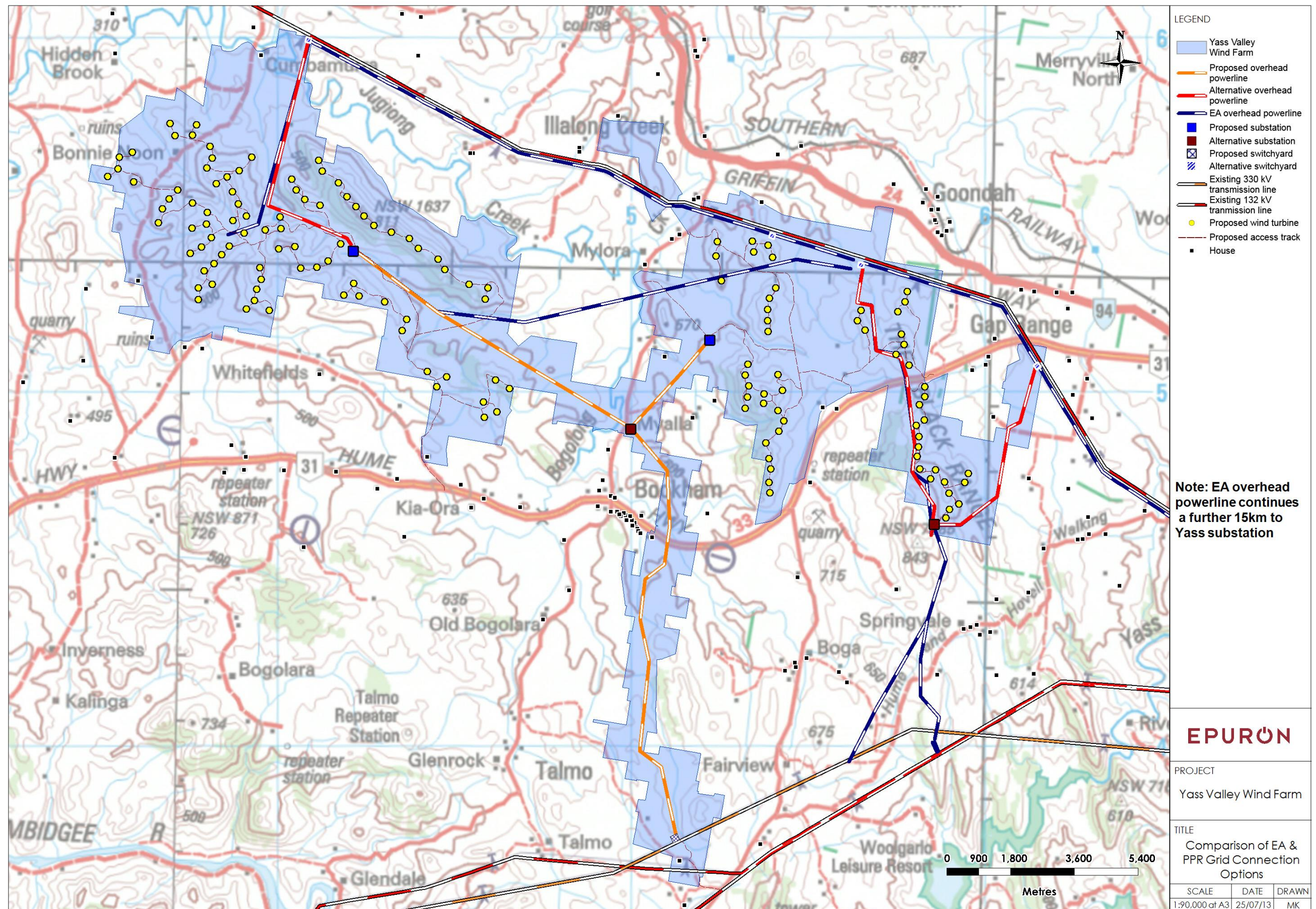


Figure 5-7 Comparison of EA and PPR grid connection options

5.3 Changes to the Proposed Wind Farm Infrastructure

Changes have been made to the proposed wind turbine locations and associated infrastructure compared to the infrastructure layout proposed in the EA (2009). The changes have been made for a number of reasons including:

- ▶ Reducing the overall environmental impact of the wind farm, including reducing impact on flora and impact on fauna habitat, accommodating operational noise and visual impact constraints;
- ▶ In response to submissions made to the EA and Preferred Project Report;
- ▶ At the request of the involved landowners;
- ▶ To avoid Crown roads;
- ▶ To avoid constructability constraints; and
- ▶ To optimise the turbine layout to accommodate changes made for the reasons listed above and maximise the energy output of the wind farm.

The revised infrastructure layout has significantly reduced the impact of the wind farm on the Box Gum Woodland Endangered Ecological Community (EEC) and reduced the preferred overhead transmission line from >75km to approximately 25km which were two particular issues raised in the submission from OEH. Please refer to the Supplementary Ecology Report (Attachment 1) for further details.

In the case where the changes resulted in infrastructure being relocated, additional assessments were carried out to ensure that the impacts did not increase the overall environmental impact of the wind farm and complied with the relevant criteria. The additional assessments included:

- ▶ Ecology – additional field surveys and assessment;
- ▶ Archaeology & Heritage – additional field survey and assessment;
- ▶ Visual – additional photomontages and assessment;
- ▶ Noise – additional background noise monitoring and assessment;
- ▶ Consultation with neighbours within 2km and beyond; and
- ▶ Consideration of impacts in accordance with the draft *NSW Planning Guidelines: Wind Farms*

There is an overall reduction of 8 turbines from the 152 from the EA (November 2009) to the 144 in this Preferred Project & Submissions Report. The details of the changes are provided in Table 5-6 below and in Figure 5-8 & Figure 5-9 on the following pages.

Note that 3 turbine locations (MRL 16, MRL 17 & MRL 18) were deleted at the landowner's request after the completion of the additional ecology, visual impact and noise assessments. These three assessments were based on 147 wind turbine locations although the current proposal now has 144 wind turbines. This change is not material and does not impact on the conclusions reached in each of these assessments.

Table 5-6 Changes to proposed wind turbines

Current turbine ID	Original EA turbine ID	Change	Distance moved	Reason for change
1	COP_1	Moved	46 m	Turbine layout optimisation
2	COP_5	Moved	125 m	Turbine layout optimisation
3	COP_4	Moved	143 m	Turbine layout optimisation
4	COP_3	Moved	7 m	Turbine layout optimisation
5	COP_2	Moved	125 m	Turbine layout optimisation
6	COP_12	Moved	17 m	Turbine layout optimisation
7	COP_10	Moved	177 m	Turbine layout optimisation

<i>Current turbine ID</i>	<i>Original EA turbine ID</i>	<i>Change</i>	<i>Distance moved</i>	<i>Reason for change</i>
8	COP_9	Moved	92 m	Turbine layout optimisation
9	COP_6	Moved	69 m	Moved to avoid Crown road
10	COP_7	Moved	36 m	Turbine layout optimisation
11	COP_11	Moved	24 m	Turbine layout optimisation
12	COP_14	Moved	203 m	Vegetation constraint
13	COP_15	Moved	83 m	Vegetation constraint
14	COP_16	Moved	76 m	Turbine layout optimisation
15	COP_84	Moved	164 m	Moved to avoid Crown road
16	COP_17	Moved	7 m	Turbine layout optimisation
17	COP_19	Moved	138 m	Turbine layout optimisation
18	COP_18	Moved	99 m	Turbine layout optimisation
19	COP_20	Moved	5 m	Turbine layout optimisation
20	COP_62	None	-	
21	COP_57	Moved	12 m	Turbine layout optimisation
22	COP_61	Moved	72 m	Turbine layout optimisation
23	COP_58	Moved	14 m	Turbine layout optimisation
24	COP_50	None	-	
25	COP_44	Moved	132 m	Turbine layout optimisation
26	COP_53	Moved	88 m	Turbine layout optimisation
27	COP_55	None	-	
28	COP_54	Moved	51 m	Turbine layout optimisation
29	COP_52	Moved	30 m	Turbine layout optimisation
30	COP_42	Moved	32 m	Turbine layout optimisation
31	COP_41	Moved	33 m	Turbine layout optimisation
32	COP_43	Moved	475 m	Turbine layout optimisation
33	COP_45	Moved	5 m	Turbine layout optimisation
34	COP_29	Moved	100 m	Turbine layout optimisation
35	COP_30	Moved	15 m	Turbine layout optimisation
36	COP_27	None	-	
37	COP_26	Moved	186 m	Turbine layout optimisation
38	COP_25	Moved	39 m	Turbine layout optimisation
39	COP_31	Moved	45 m	Turbine layout optimisation
40	COP_34	Moved	68 m	Turbine layout optimisation
41	-	Relocated	-	Turbine layout optimisation
42	COP_32	Moved	119 m	Turbine layout optimisation
43	COP_33	Moved	198 m	Turbine layout optimisation
44	COP_40	Moved	17 m	Turbine layout optimisation
45	COP_39	Moved	77 m	Turbine layout optimisation

<i>Current turbine ID</i>	<i>Original EA turbine ID</i>	<i>Change</i>	<i>Distance moved</i>	<i>Reason for change</i>
46	COP_37	Moved	94 m	Turbine layout optimisation
47	-	Relocated	-	Turbine layout optimisation
48	COP_47	Moved	54 m	Turbine layout optimisation
49	COP_46	Moved	16 m	Turbine layout optimisation
50	COP_49	Moved	33 m	Turbine layout optimisation
51	COP_48	Moved	98 m	Turbine layout optimisation
52	COP_81	Moved	70 m	Turbine layout optimisation
53	COP_36	Moved	87 m	Turbine layout optimisation
54	COP_35	Moved	184 m	Turbine layout optimisation
55	-	Relocated	-	Turbine layout optimisation
56	COP_24	Moved	184 m	Turbine layout optimisation
57	COP_23	Moved	94 m	Turbine layout optimisation
58	COP_22	Moved	18 m	Turbine layout optimisation
59	COP_21	Moved	82 m	Turbine layout optimisation
60	-	Relocated	-	Turbine layout optimisation
61	COP_77	Moved	46 m	Turbine layout optimisation
62	COP_78	Moved	70 m	Turbine layout optimisation
63	COP_79	Moved	90 m	Turbine layout optimisation
64	-	Relocated	-	Optimisation and reduced impacts
65	-	Relocated	-	Optimisation and reduced impacts
66	COP_82	Moved	170 m	Vegetation constraint
67	-	Relocated	-	Optimisation and reduced impacts
68	-	Relocated	-	Optimisation and reduced impacts
69	-	Relocated	-	Optimisation and reduced impacts
70	-	Relocated	-	Optimisation and reduced impacts
71	-	Relocated	-	Optimisation and reduced impacts
72	-	Relocated	-	Optimisation and reduced impacts
73	COP_70	None	-	
74	COP_71	Moved	48 m	Vegetation constraint
75	COP_69	Moved	279 m	
76	COP_86	Moved	216 m	Turbine layout optimisation
77	COP_68	Moved	367 m	Turbine layout optimisation
78	COP_65	Moved	262 m	Vegetation constraint
79	COP_66	Moved	198 m	Vegetation constraint
80	COP_85	Moved	123 m	Moved to avoid Crown road
81	COP_63	Moved	56 m	Turbine layout optimisation
82	COP_83	None	-	
83	MRL_26	Moved	55 m	Moved to avoid Crown road

<i>Current turbine ID</i>	<i>Original EA turbine ID</i>	<i>Change</i>	<i>Distance moved</i>	<i>Reason for change</i>
84	MRL_25	Moved	16 m	Turbine layout optimisation
85	MRL_24	Moved	46 m	Turbine layout optimisation
86	MRL_23	Moved	147 m	Turbine layout optimisation
87	MRL_20	Moved	34 m	Turbine layout optimisation
88	MRL_21	Moved	89 m	Turbine layout optimisation
89	MRL_34	Moved	191 m	Moved to avoid Crown road
90	MRL_33	Moved	18 m	Turbine layout optimisation
91	MRL_28	Moved	52 m	Vegetation constraint
92	MRL_27	Moved	8 m	Turbine layout optimisation
93	MRL_32	Moved	73 m	Vegetation constraint
94	MRL_29	Moved	116 m	Vegetation constraint
95	-	Relocated	-	Turbine layout optimisation
96	MRL_39	Moved	120 m	Vegetation constraint
97	MRL_38	None	-	
98	MRL_36	None	-	
99	MRL_31	Moved	37 m	Turbine layout optimisation
100	MRL_43	Moved	49 m	Turbine layout optimisation
101	MRL_44	Moved	32 m	Turbine layout optimisation
102	MRL_45	Moved	54 m	Vegetation constraint
103	MRL_49	Moved	51 m	Turbine layout optimisation
104	MRL_50	Moved	54 m	Turbine layout optimisation
105	MRL_51	Moved	30 m	Turbine layout optimisation
106	MRL_52	Moved	39 m	Turbine layout optimisation
110	MRL_09	Moved	50 m	Moved to avoid Crown road
111	MRL_02	Moved	10 m	Turbine layout optimisation
112	MRL_08	Moved	63 m	Turbine layout optimisation
114	MRL_06	Moved	34 m	Turbine layout optimisation
115	-	Relocated	-	Optimisation and reduced impacts
116	MRL_07	Moved	26 m	Turbine layout optimisation
117	MRL_15	Moved	14 m	Turbine layout optimisation
118	MRL_14	Moved	28 m	Turbine layout optimisation
119	MRL_10	Moved	32 m	Turbine layout optimisation
120	MRL_13	Moved	50 m	Turbine layout optimisation
121	MRL_12	Moved	96 m	Turbine layout optimisation
122	MRL_03	Moved	73 m	Turbine layout optimisation
123	MRL_46	Moved	61 m	Turbine layout optimisation
124	MRL_47	Moved	24 m	Turbine layout optimisation
125	MRL_48	Moved	35 m	Turbine layout optimisation

<i>Current turbine ID</i>	<i>Original EA turbine ID</i>	<i>Change</i>	<i>Distance moved</i>	<i>Reason for change</i>
126	-	Relocated	-	Optimisation and reduced impacts
127	-	Relocated	-	Optimisation and reduced impacts
128	-	Relocated	-	Optimisation and reduced impacts
129	-	Relocated	-	Optimisation and reduced impacts
130	-	Relocated	-	Optimisation and reduced impacts
131	MRL_54	None	-	
132	MRL_57	None	-	
133	MRL_55	None	-	
134	MRL_56	None	-	
135	MRL_58	None	-	
136	MRL_53	None	-	
137	MRL_59	None	-	
138	MRL_60	None	-	
139	MRL_63	None	-	
140	MRL_62	None	-	
141	MRL_61	None	-	
142	MRL_66	None	-	
143	MRL_65	None	-	
144	MRL_68	Moved	47 m	Moved to avoid Crown road
145	MRL_70	None	-	
146	MRL_67	None	-	
147	MRL_64	None	-	
148	MRL_69	None	-	
	COP_8	Deleted	-	Turbine layout optimisation
	COP_13	Deleted	-	High vegetation constraint
	COP_28	Deleted	-	Turbine layout optimisation
	COP_38	Deleted	-	Turbine layout optimisation
	COP_51	Deleted	-	Turbine layout optimisation
	COP_56	Deleted	-	Turbine layout optimisation
	COP_59	Deleted	-	Difficult access
	COP_60	Deleted	-	Difficult access
	COP_64	Deleted	-	Turbine layout optimisation
	COP_67	Deleted		Constructability constraint
	COP_72	Deleted	-	At landowners request
	COP_73	Deleted	-	At landowners request
	COP_74	Deleted	-	At landowners request
	COP_75	Deleted	-	At landowners request
	COP_76	Deleted	-	At landowners request

<i>Current turbine ID</i>	<i>Original EA turbine ID</i>	<i>Change</i>	<i>Distance moved</i>	<i>Reason for change</i>
	COP_80	Deleted	-	Turbine layout optimisation
	MRL_01	Deleted	-	At landowners request
	MRL_04	Deleted	-	Turbine layout optimisation
	MRL_05	Deleted	-	At landowners request
	MRL_11	Deleted	-	Turbine layout optimisation
107	MRL_16	Deleted	-	At landowners request
108	MRL_17	Deleted	-	At landowners request
109	MRL_18	Deleted	-	At landowners request
	MRL_19	Deleted	-	Steep & difficult access
	MRL_22	Deleted	-	Turbine layout optimisation
	MRL_30	Deleted	-	High vegetation constraint for access track
	MRL_35	Deleted	-	High vegetation constraint for access track

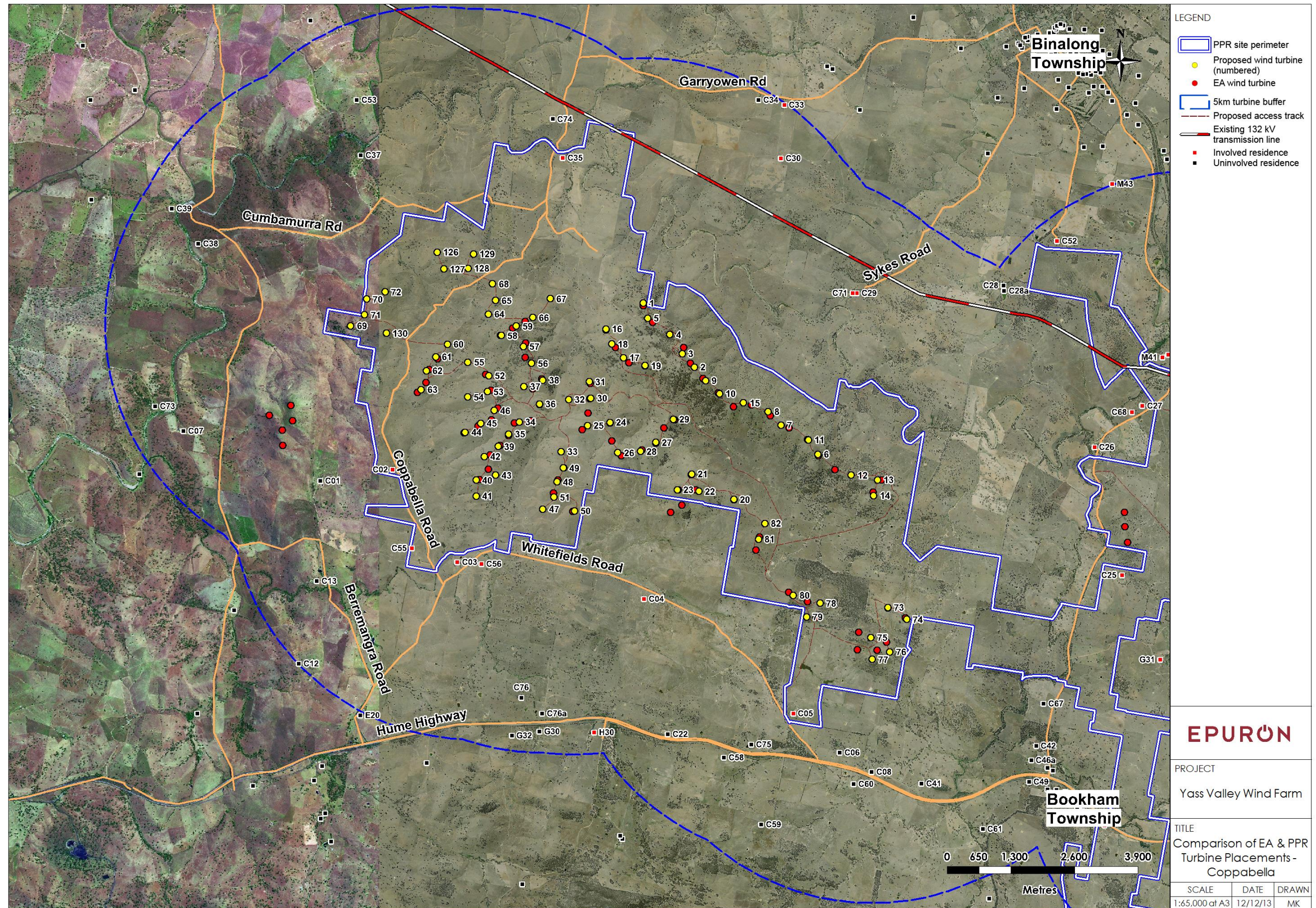


Figure 5-8 Wind turbine location changes Coppabella precinct

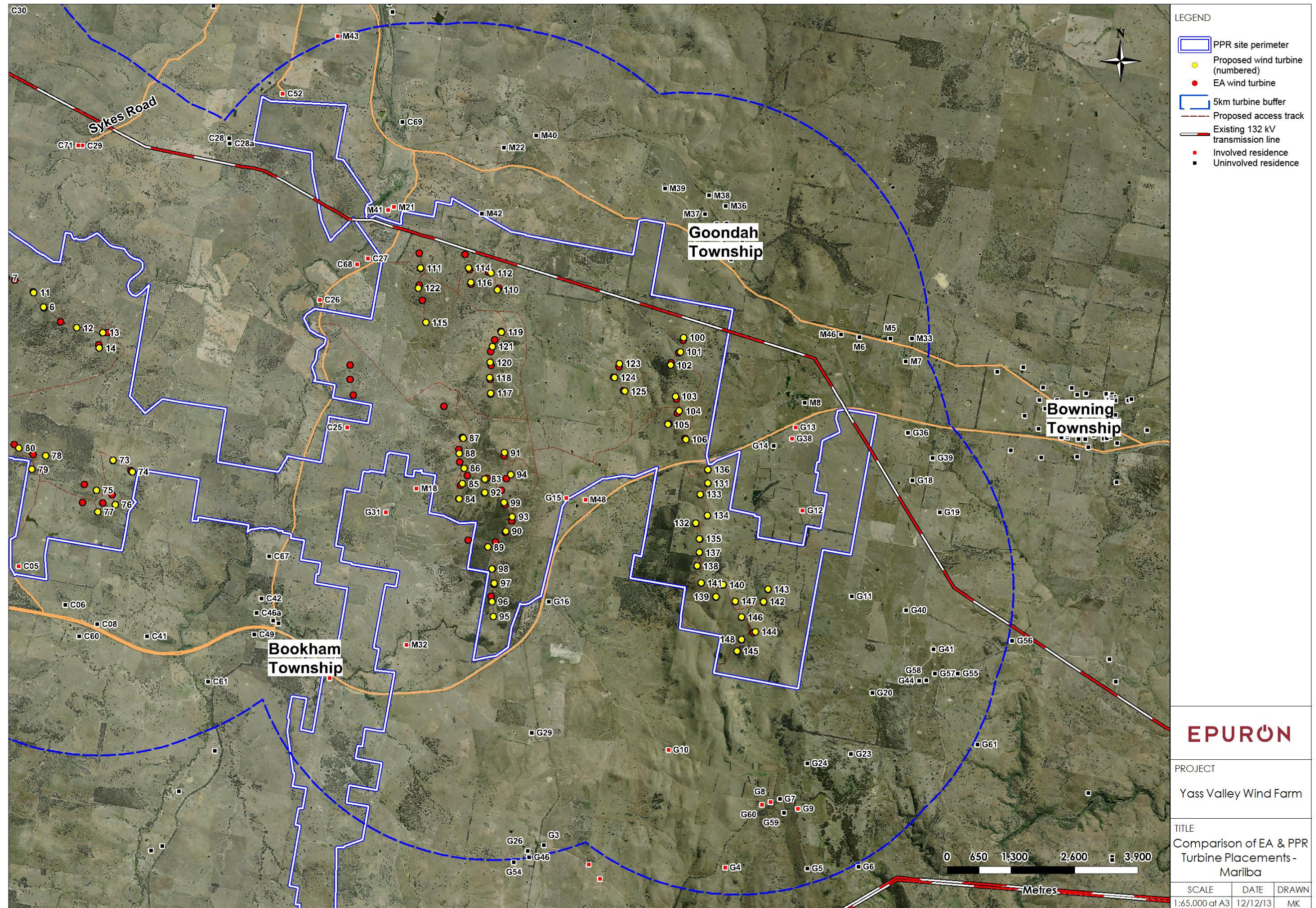


Figure 5-9 Wind turbine location changes Marilba precinct

5.4 Project Justification

5.4.1 Project Benefits

Based on 144 wind turbines using a 2.5MW average sized wind turbine working at a typical 36% capacity factor the Yass Valley Wind Farm would provide the following primary benefits:

- ▶ In full operation, it would generate more than 1,135,000 MWh of electricity per year – sufficient for the average consumption of around 142,000 homes.
- ▶ It would reduce greenhouse gas emissions by approximately 1,098,000 tonnes of carbon dioxide equivalent (CO_{2e}) per annum.
- ▶ With an offered community contribution up to \$360,000 per annum there would be significant domestic renewable solutions installed on neighbouring residences and opportunities for notable community and environment programs.
- ▶ Around 25% of residences within 5km of a turbine are owned by host landowners. These farmers and landowner will receive approximately \$1.4 million in payments, much of which would be spent or invested locally or regionally.
- ▶ Based on a local personal expenditure of \$25,000 per person per annum for a construction worker, with around 150 construction workers this would scale up to \$3.7million in accommodation, food and other services spent regionally per construction year¹. This would result in increased services locally.

5.4.2 Policy Benefits

The Yass Valley Wind Farm would contribute to government policy objectives at both State and Federal level.

Responding to the *NSW 2021 State Plan* the wind Farm would address the following goals:

Table 5-7 Goals addressed from the NSW 2021 State Plan

Goals Addressed	Benefit from the Yass Valley Wind Farm
Goal 1 – improve the performance of the NSW economy	The wind farm would bring jobs and investment of over \$356 million to the state as a direct impact of construction
Goal 3 – Drive economic growth in regional NSW	The wind farm would bring jobs and investment to the Yass region.
Goal 4 – increase the competitiveness of doing business in NSW	The Yass Valley Wind Farm would send a signal that NSW is open for business, attracting a number of key manufacturers and constructions companies to tender for this large infrastructure project
Goal 5 – place downward pressure on the cost of living	As can be seen from AEMO reports from South Australia, the more renewable energy there is going into the grid the greater the downward pressure on electricity prices. The project commits significant funding to neighbours to install solar energy options on their homes reducing individual power prices around the wind farm.
Goal 6 – Strengthen the NSW skill base	This multi-million dollar infrastructure investment project will train personnel in the ongoing operation and maintenance of a wind farm. Such jobs are high value in regional NSW
Goal 11 – keep people healthy and out of hospital	Physical health - The more wind farm projects go up in the state the greater the reduction in air pollution by offsetting coal generation. Mental health - The more farmers benefit from diversified farm income the more likely they are to be resilient through drought.
Goal 19 – Invest in critical	Investing in new clean generation in NSW brings jobs and lower power prices and

¹ Based on Sinclair Knight Mertz report *Wind farm investment, employment and carbon abatement in Australia Report* June 2012

Goals Addressed	Benefit from the Yass Valley Wind Farm
infrastructure	investment to NSW and the region.
Goal 22 – Protect our natural environment	Through minimising the environmental impacts of the wind farm itself, the wind farm helps to reduce coal fired emissions and transition NSW towards a cleaner greener future.
Goal 23 – increase opportunities for people to look after their own neighbourhoods and environments	With a significant community enhancement fund which can be spent on renewable energy solutions for individual homes around the wind farm and community plans such as land care projects, the wind farm will assist significantly with goal 23 at the regional and local level

Responding to the NSW government's *Renewable Energy Action Plan*, the wind farm would demonstrate the key statement of the Plan that NSW is open for business in renewable energy.

The wind farm would attract significant renewable energy investment. Most of the investment in wind farms in the National Electricity Market on the east coast of Australia has to date been in South Australia and Victoria. This large scale project provides an opportunity for investment in clean generation in the most populous state, and consequently assists in driving down electricity prices in NSW, as has occurred in South Australia which now has over 20% renewables powering that State.

5.4.3 Energy context of the proposal

Electricity consumption continues to grow, albeit at a slower rate than in previous years, and the additional demand must be met by either increased fossil fuel generation or an increase in generation from renewable sources such as wind power.

AEMO's Annual Electricity Statement of Opportunities (ESOO 2013) predicts that over the next 10 years energy use in NSW is expected to increase at an average of 0.6% per year (current total of 68,834 GWh for 2012/13). This forecast is down from the 1.1% forecast in the 2012 National Electricity Forecasting Report (NEFR) (see figure below). The Large-scale Renewable Energy Target (LRET) continues to drive the entry of renewable generation capacity. However, demand-driven investment signals for new plant remain muted.

Meeting the predicted demand will require our existing electricity generators to increase their annual output, however at some point additional power generators will be also be required.

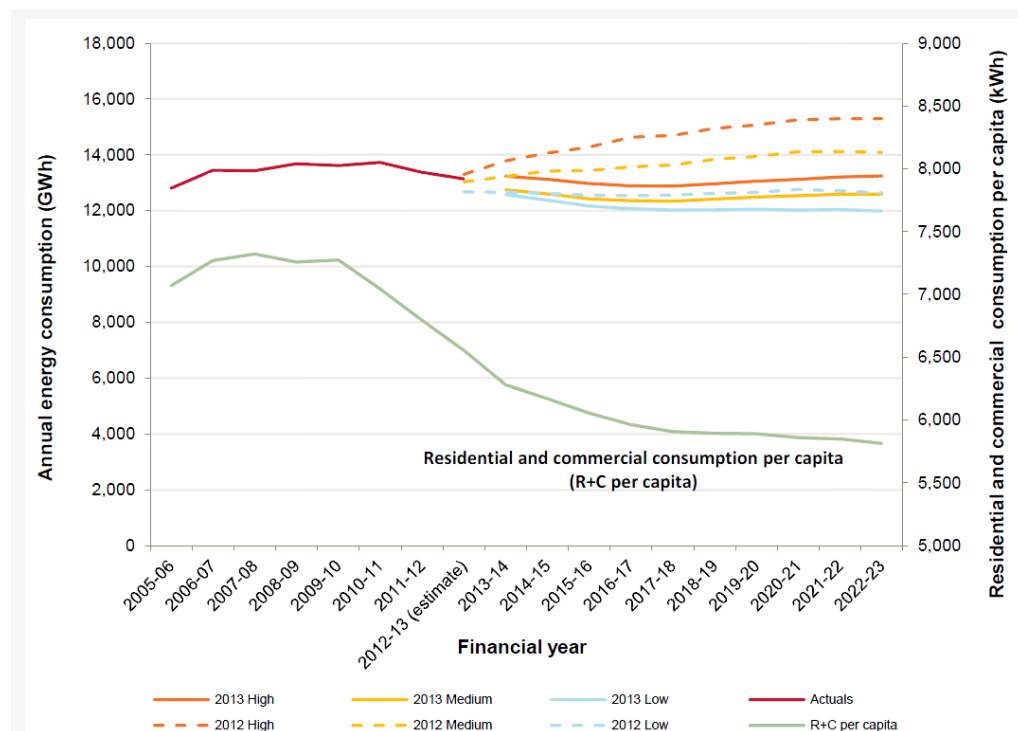


Figure 5-10 Predicted annual energy consumption 2013-2023

5.4.4 The Role of Renewable Energy

The Commonwealth Renewable Energy Target aims to deliver over 20% of Australian's generation by 2020. The Mandatory Renewable Energy Target was introduced in 2001 as a 2% target and was expanded as the Renewable Energy Target to a target of at least 20% of renewable energy by 2020. From January 2011 the target was split into two parts, the Large-scale renewable energy target (LRET), and the Small-scale renewable energy target (SRES). The LRET provides an obligation on retailers to source a percentage of their generation from large scale renewable energy sources. All retailers charge their customers for this.

In NSW the LRET costs around \$40 per customer per year according to IPART (1 July 2013). As all consumers in Australia pay for the LRET, it is important that NSW, the most populous state, and therefore the state contributing most to the cost of the LRET, benefits from it.

The Federal Government's stated long-term target is to reduce greenhouse gas emissions to 80% below 2000 levels by 2050. The Renewable Energy Target Scheme (RET) supports this target as does NSW 2021: A Plan to Make NSW Number One and the NSW Renewable Energy Action Plan.

The Clean Energy Act 2011 introduced a carbon pricing mechanism which commenced on 1 July 2012 and is scheduled to transition to flexible pricing from 1 July 2015 if it remains enacted.

Transitioning to renewable energy and how much new electricity is required, looking to the future, are interconnected but also respond to different drivers.

Supply-demand modelling in the Electricity Statement of Opportunities for the National Electricity Market 2013 (2013 ESOO) by AEMO (the Australian Energy Market Operator) assesses the adequacy of existing and committed electricity supply to meet demand in the NEM by identifying Low Reserve Condition (LRC) points. LRC points indicate when additional investment in generation or demand-side response may be required to maintain electricity supply reliability within the NEM Reliability Standard. 2013 Analysis shows that in the high economic growth scenario for NSW, a Low Reserve Condition point occurs in 2021–22, which is at least a year earlier compared to the 2012 ESOO despite lower projected demand. The change in LRC reflects the larger range of network limitations considered for the 2013 ESOO modelling compared to 2012.

However, additional Renewable Energy Certificates or Large Scale Generation Certificates are expected to be required from 2016 in order to meet the additional Large-scale Renewable Energy Target and the demand for GreenPower.

There is uncertainty surrounding the assumptions used and the predictions made by the Australian Energy Market Operator. Noting that the 2013 ESOO has revised the maximum demand predictions downwards compared with the 2012 ESOO due to:

- ▶ Continued increases in domestic rooftop PV installations incentivised through feed-in tariffs and reduced system installation prices.
- ▶ Lower-than-expected growth in most industrial sectors.
- ▶ Higher estimated impact from energy efficiency measures through capture of changes in building standards and regulations.
- ▶ Higher estimate of customer response to extreme price events based on analysis of historical demand-side participation behaviour.

In 2012–13, it is estimated that 774 MW of rooftop PV generation capacity was installed in the NEM. Rooftop PV generation is treated as a demand offset for the ESOO's supply adequacy assessment, contributing to the reduction in forecast demand.

The changing regulatory, policy and market setting for electricity generation in NSW and more broadly across the National Electricity Market has the potential to affect future modelling predictions. It is wise, accordingly, to take a cautious view of predictions made about additional capacity likely to be required in the future due to factors such as increased demand or the retirement of emissions intensive electricity generators in response to government policy or water shortages or natural disasters. There are a number of uncertainties inherent in the assumptions around matters such as future market conditions, domestic and global economics, demand management and energy efficiency uptake.

Another driver expected to become increasingly relevant is the downward pressure on electricity prices which results when wind farm penetration rises in a local (e.g. NSW) market as has been the case in South Australia. See economic benefits below.

To date the greater part of the investment and jobs from wind farms built under the RET have been in South Australia which has seen documented, attributed price reductions as a result. Victoria is hot on the heels of South Australia in moving towards its potential of installed capacity of wind generation.

With its excellent wind resource and grid connection options, identified across a number of government driven renewable energy precincts, NSW now has the opportunity to be a key beneficiary of the regional investment and lower electricity prices which accompanies the construction of multiple wind farms. New South Wales, which has announced it is open for business in renewable energy, has the opportunity to progress billions of dollars of new generation and associated jobs, community funding and flow-through regional economic benefits.

While a number of projects are available through the planning process it is likely that with the RET in place, even with a longer horizon to achieve the target, a good number of these wind farms will be required to meet that target.

5.4.5 Environmental benefits

The Preferred Project & Submissions Report documents how the Yass Valley Wind Farm would

- ▶ generate more than 1,135,000 MWh of electricity per year from a renewable, sustainable resource - sufficient for the average consumption of around 142,000 homes;
- ▶ reduce greenhouse gas emissions by approximately 1,098,000 tonnes of carbon dioxide equivalent (CO₂e) per annum;
- ▶ it would contribute to the NSW Government's target of reducing greenhouse gas emissions by 60% by the year 2050;
- ▶ up to 1,290 ML of water would be saved is the same amount of electricity was produced in a coal-fired power station;
- ▶ removes the equivalent emissions that 300,000 cars produce annually; and
- ▶ provide opportunities for local environmental projects through the community enhancement fund – such as the solar hot water and rooftop PV opportunities for neighbours to the wind farm, landcare projects and similar initiatives.

5.4.6 Social benefits

The offer of \$2,500 per wind turbine built per annum will result in up to \$360,000 going in to a community fund. Through a statement of commitment this is proposed to go directly to the Community Consultation Committee for distribution through to both the wider community and specifically to neighbours living with 5km of the wind farm. It is proposed that around 50% of this fund is available to neighbours to assist them to reduce their electricity bill by installing solar and energy efficiency options to their homes. This leaves a significant amount for distribution to environmental and community schemes as the community, which includes the two councils, sees fit.

The benefiting landowners own 32 of the 125 residences within 5km of the wind farm. This means the owners of over 26% of residences within 5km of a wind turbine will benefit financially from land agreements with the wind farm.

5.4.7 Economic benefits

Local Benefits

Wind farms bring investment to regional NSW. To build a \$400m wind farm requires a workforce working on site for up to 24 months. The workforce must live and eat locally to be able to work on site. This provides income to local members of the workforce and revenue to accommodation and services providers for those who must stay locally but live elsewhere. Local businesses benefitting are quarries, local construction firms,

machine hire, vehicle hire, plumbers, electricians, labourers; accommodation providers – hotels, motels, B&Bs, house rentals, and restaurants, cafes; office services, communications providers and many more. A community enhancement fund is usually set up to provide funding for whatever purpose the local community sees fit. Roads are often upgraded in locations where they would be unlikely to receive such attention otherwise.

There is considerable confusion about the subsidy associated with wind farms. While a number of individuals are reported to have stated that renewable energy forms around 40% of electricity costs as can be seen below, an inquiry by the Public Accounts Committee of the NSW government's Legislative Assembly, citing the NSW Auditor General, notes that all green schemes in operation form around 7% of an indicative annual electricity bill.

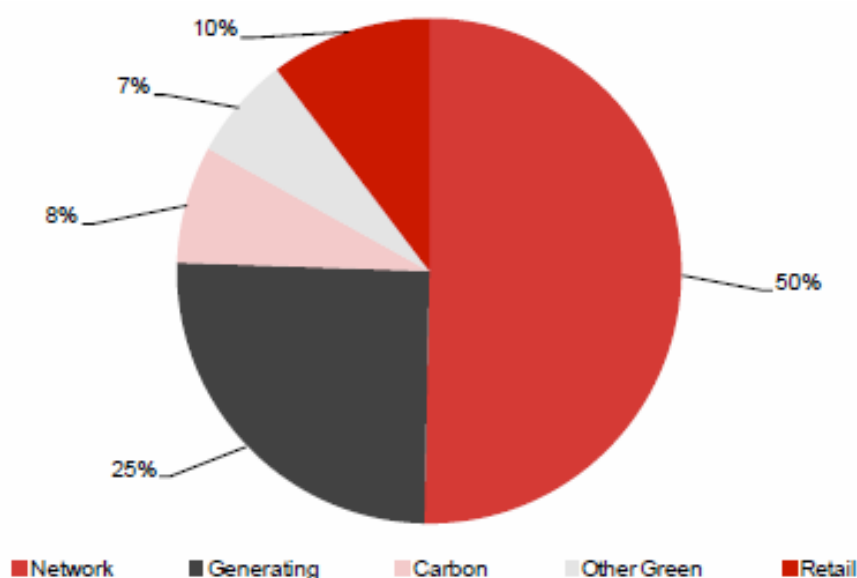


Figure 5-11 Composition of an indicative annual bill for customers in all NSW supply areas

From: Legislative Assembly of NSW, Public Accounts Committee Report on The Economics of Electricity Generation published Nov 2012

Wind Farms Bring Electricity Prices Down

In South Australia it is clearly documented by independent sources that the greater the penetration of wind energy into the State's electricity market the greater the downward pressure on wholesale prices – such price reductions being passed on to consumers.

The 2012 ESOO states that the average spot market prices for electricity in South Australia in 2010-11 and 2011-12 has been lower than expected and similar to the average spot price levels recorded for the years 2001-02 to 2005-06. The reduction in average spot market prices was attributed to certain factors including:

- ▶ mild summer temperatures in both years, with fewer and shorter high-price periods;
- ▶ reduced annual energy and increasing energy contributions from rooftop photovoltaics; and
- ▶ the increasing capacity of connected wind farms which, due to their lower operating costs,
- ▶ put downwards pressure on spot prices.

AEMO stated in its 2012 report that South Australian pool prices were the lowest since the start of the NEM. AEMO data showed the wholesale prices were half of the average during periods of wind and the average wholesale price was 0.5c per kWh cheaper due to wind. The Essential Services Commission of South Australia stated that the cost of wind power added just 0.366c per kWh to an electricity bill or \$18 a year per household.

This year's reports from AEMO show this story continuing with consistent price reduction in wholesale electricity prices resulting from wind generation. SAEMET (2013) notes that "The total South Australian market generation volume-weighted average prices will be lower than the corresponding fossil-fuelled prices, as the total is effectively reduced by the lower renewable generation prices."

The economic benefits of wind farms in Australia have been calculated (SKM 2012) and, for every 50MW in capacity a wind farm delivered the following benefits:

- ▶ Direct employment of up to 48 construction workers, with each worker spending approximately \$25,000 in the local area in shops, restaurants, hotels and other services (totalling up to \$1.2 million)
- ▶ Direct employment of around five staff – a total annual input of \$125,000 spent in the local economy
- ▶ Indirect employment during the construction phase of approximately 160 people locally, 504 state jobs and 795 nationwide jobs
- ▶ Up to \$250,000 per year for farmers in land rental income and \$80,000 on community projects each year.

AGL advised a Senate Enquiry in 2011 that its wind farms at Hallett in South Australia had employed an average of 98 construction workers at any one time from 2005 to 2010. AGL's estimate of jobs associated with the construction of the Macarthur Wind Farm in Victoria, commissioned early this year, is 875 from the region, 2,490 from Victoria and 2,782 from Australia. 18 local residents make up the majority of the permanent site operation and maintenance team at this wind farm and these jobs will remain for at least 20 years.

A study this year (SKM 2013) shows that customers in Australia are on average likely to have a price reduction over the period to 2020 as a result of the LRET. By way of example, a typical Victorian household using 7,000 kWh per annum is saving approximately \$35 per annum under the LRET over the period 2011-2025 (in real mid-2012 dollars) compared to a scenario in which the LRET did not exist.

The price reduction is due to the wholesale price effect of the LRET, which - at approximately \$12/MWh over the period 2011-2025 (in real mid-2012 dollars) – more than outweighs the impact of increased liabilities for certificates as the target grows.

5.5 Planning Context

5.5.1 Status of Environmental Planning Instruments in Transitional Part 3A Projects

Yass Valley Wind Farm is a transitional Part 3A project, being a critical infrastructure project, assessable under the provisions of former Part 3A. As summarised by the Parliamentary Counsel's note to former section 75C, 'section 75R excludes with respect to [a critical infrastructure project] all environmental planning instruments (other than SEPPs that specifically relate to the project)'. However section 75J(3) provides that 'In deciding whether or not to approve the carrying out of a project, the Minister may (but is not required to) take into account the provisions of any environmental planning instrument that would not (because of section 75R) apply to the project if approved...'.

5.5.2 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (SEPP (Infrastructure)) prevails over inconsistencies with local environmental plans (clause 8). Clause 33 and 34 apply to electricity generating works. Clause 33 includes Zone RU1 Primary Production in the definition of 'prescribed rural zone'. Clause 34(1) provides that 'Development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed rural, industrial or special use zone.'

As there is no SEPP that specifically relates to the project, the provisions of LEPs and SEPPs do not apply to Yass Valley Wind Farm (former section 75R). The Minister may, however, wish to take into account that under the environmental planning instruments, the project would be permissible with consent (the prohibitions in the applicable LEPs being overridden by SEPP (Infrastructure) 2007).

5.5.3 Yass Valley Local Environmental Plans

Yass Valley Council was created by council amalgamation in 2004, and as a result three LEPs (Gunning, Yarrowlumla and Yass) applied in different parts of the local government area. The project is located on land which was subject to Yass LEP 1987, zoned No 1(a) Rural Agriculture. Wind farms were permissible with consent in Zone 1(a) Rural Agriculture.

Since the wind farm project entered the planning process Yass LEP 1987 has been replaced with Yass Valley Local Environmental Plan 2013. The project site is now zoned RU1 (Primary Production).

Wind farms would be prohibited in zone RU1 (Primary Production), however SEPP (Infrastructure) would override the prohibition (clauses 8, 33 and 34), resulting in development for the purpose of electricity generating works, such as the proposed wind farm, being permissible with consent.

5.5.4 Harden Local Environmental Plan

The project is located on land which was subject to Harden Interim Development Order No. 1 (dated 4 June, 1976). Since the wind farm project entered the planning process that planning instrument has been replaced with Harden Local Environmental Plan 2011. The project site is now zoned RU1 (Primary Production). As for Yass, the Harden LEP prohibits wind farms in this zone, however SEPP (Infrastructure) 2007 would override the prohibition (clauses 8, 33 and 34).

5.5.5 Commonwealth EPBC Referral

An EPBC referral for the project under the EPBC Act has been made in two parts on 4 September 2013 and 11 September 2013. One section of the wind farm site has been declared a controlled action and will require a more detailed assessment. Epuron is in the process of preparing the additional information required for this assessment. A determination on the other section of the wind farm site is expected prior to the end of 2013.

5.6 Ecology Assessment

A supplementary ecology assessment (Refer Attachment 1) was carried out by ngh Environmental on the wind farm site in the areas not previously surveyed and assessed, including the revised transmission line route. The intent was to assess the relocated wind turbine locations, access tracks, transmission lines and substations. The supplementary assessment also addresses the ecology issues raised by OEH in their submissions including:

- ▶ Additional field surveys that were previously included in Statement of Commitments but have now been completed;
- ▶ The approach to further surveys that will be required prior to the commencement of construction;
- ▶ Providing details of an offset strategy for the project;
- ▶ Providing revised Statement of Commitments.

The supplementary ecology report concluded that the new and original areas proposed to be developed as part of the wind farm have been adequately surveyed and assessed and that appropriate commitments have been made to ensure that any impacts are:

- ▶ Avoided where required;
- ▶ Minimised and managed where appropriate; and
- ▶ Offset in accordance with NSW guidelines.

For more details of the impact calculations by vegetation type see Table 2-11 (page 28) in Attachment 1, Supplementary Ecology Report for the PPR.

ngh Environmental have further responded to OEH in a letter dated 17 December 2013 which addresses the following:

- ▶ Incomplete surveys (response to survey outcomes)
- ▶ Impacts to Box Gum Woodland EEC
- ▶ Additional information on how vegetation of conservation significance is defined
- ▶ Calculation of areas of impact
- ▶ Finalisation of offsets locations of turbines and infrastructure in areas of high conservation significance

Epuron considers that this further response addresses quantification of impacts and protocols for addressing them. See Attachment 1B.

5.7 Archaeology and Heritage Assessment

An additional archaeological field survey and assessment (Refer Attachment 2) was carried out by NSW Archaeology for the revised transmission line route and associated substations. The field work was carried out in conjunction with the Buru Ngunawal Aboriginal Corporation. Three previously recorded Aboriginal object sites have been relocated and a number of new Aboriginal object sites have been recorded. One European historic feature, a dead tree with a surveyor's mark, has been recorded. It is recommended that the tree be avoided during construction.

The field survey results are in keeping with the patterns of site distribution identified in the original 2008 assessment. The recorded sites do not pose a constraint to the proposal. A number of management and mitigation measures have been recommended to conserve the identified sites.

The proposed new wind turbine locations on the north west of the site were considered in the assessment, but based on the original assessment of the adjacent areas it was not considered necessary to include these areas in the field survey. Any areas proposed to be impacted by the proposal not covered by the field surveys to date will be included in the pre-construction surveys in accordance with Statement of Commitment 28.

The consultation process for the archaeology and heritage assessment commenced in 2008 and was undertaken in accordance with the *NSW DECC Interim Guidelines for Aboriginal Community Consultation – Requirements for Applicants (DEC 2004 & 2005)* which forms part of the *Guidelines for Aboriginal Cultural Impact Assessment and Community Consultation (DEC 2005)*. For the additional assessment an advertisement was placed in the Yass Tribune on 6th February 2013. One of the original registered Aboriginal stakeholders responded to the advertisement. A copy of the draft report was distributed to all three registered Aboriginal stakeholders for comment in accordance with the requirements of the guidelines. An endorsement from the Buru Ngunawal Aboriginal Corporation was received which supported the report's recommendations.

5.8 Visual Impact Assessment

A supplementary Landscape and Visual Impact Assessment has been completed by Environmental Resources Management (ERM) and included as Attachment 3A to this report to accommodate the changes made to the wind turbine layout as a result of the submissions received. The supplementary report supports the original conclusion that the proposed Yass Valley Wind Farm will have a generally low visual impact on its surrounds, and the site is a suitable landscape for the construction of a wind farm. The supplementary assessment confirms that the revised transmission line and associated substations will have low to negligible visual impact for most locations within the viewshed.

An additional site visit was undertaken on 25 and 26 March 2013 to assess the following:

- ▶ Visual impact from all non-involved residences located within 2km of a proposed wind turbine;
- ▶ Visual impact of the revised transmission line route; and
- ▶ The cumulative visual impact of the proposed Yass Valley Wind Farm and the approved Conroy's Gap Wind Farm.

5.8.1 Residential viewpoints

In total there are six non-involved residences located within 2km of a proposed wind turbine. One of these (M42) is a new residence that was built in 2012. Revised photomontages have been prepared for each of these locations. The visual impact from residential viewpoints is summarised in Table 5-8 below.

Table 5-8 Summary of visual impacts from residential viewpoints

House ID (EA VP#)	Distance and direction to nearest wind turbine - EA	Overall visual impact - EA	Distance and direction to nearest wind turbine - Current Proposal	Overall visual impact - Current Proposal
G14 (R1)	1.3 km - S (MRL 53)	Low – without screening	1.4 km - SW (136)	Low – without screening

<i>House ID (EA VP#)</i>	<i>Distance and direction to nearest wind turbine - EA</i>	<i>Overall visual impact - EA</i>	<i>Distance and direction to nearest wind turbine - Current Proposal</i>	<i>Overall visual impact - Current Proposal</i>
		Existing screening		Existing screening
M04 (R2)	2.1 km - S (MRL 43)	Low – without landscape mitigation Screening may not be appropriate	2.1 km - SW (100)	Low – without landscape mitigation Screening may not be appropriate
M22 (R3)	2.2 km - S (MRL 05)	Low – without landscape mitigation Screening may not be appropriate	2.5 km - S (114)	Low – without landscape mitigation Screening may not be appropriate
C83 (R4)	10 km - S (COP01)	Negligible – without landscape mitigation Extensive existing screening	9.9 km - SW (129)	Negligible – without landscape mitigation Extensive existing screening
C39 (R5)	4.5 km - SE (COP74)	Medium - without landscape mitigation	4.3 km - SE (69)	Medium - without landscape mitigation
G27 (R6)	2.4 km to the South (CAR 01) 8.1 km to the North (MRL 39)	Low – without screening Existing screening	No turbines to the south. 7.7 km - N (95)	Not applicable Existing screening
M8 (R7)	2.3 km - S (MRL 53)	Negligible – Existing vegetation around gallery Medium – Bamboo garden without mitigation Low – Proposed eco village site	2.3 km – SW (136)	Negligible – Existing vegetation around gallery Medium – Bamboo garden without mitigation Low – Proposed eco village site
C41 (R8)	2.7 km - N (COP 68)	Low - without landscape mitigation	2.7 km – NW (77)	Low - without landscape mitigation
C42 (R9)	3.8 km - NW (COP 71)	Medium - without landscape mitigation	3.5 km – NW (76)	Medium - without landscape mitigation
G11	NA	Not assessed in EA	1.7 km-W (143)	Low – Existing vegetation and orientation of residence
G16	NA	Not assessed in EA	1.1 km-W (96)	Nil - from living areas Medium to Low - from driveway with landscape mitigation
M20	NA	Not assessed in EA	1.8 km-SW (100)	High - from living areas Medium to Low - with landscape mitigation
M24	NA	Not assessed in EA	1.9 km-SW (100)	Low - from living areas Low - with landscape mitigation
M42	NA	Not assessed in EA	1.1 km-S (114)	Nil - from living areas Low - from driveway with landscape mitigation
C01	NA	Not assessed in EA	2.7 km-NE (63)	Nil - from living areas Low - from driveway

<i>House ID (EA VP#)</i>	<i>Distance and direction to nearest wind turbine - EA</i>	<i>Overall visual impact - EA</i>	<i>Distance and direction to nearest wind turbine - Current Proposal</i>	<i>Overall visual impact - Current Proposal</i>
C37	NA	Not assessed in EA	2.5 km-SE (126)	Nil
C67	NA	Not assessed in EA	3.3 km-NW (74)	Medium - from living areas High - from garden without landscape mitigation
G29	NA	Not assessed in EA	2.5 km-N (95)	Medium - from living areas Medium to Low - with landscape mitigation
Goondah	NA	Not assessed in EA	2.3 km-S (100)	Low to Negligible
Bookham	NA	Not assessed in EA	3.8 km-NE (95)	Low to Negligible

In response to a request from the Department of Planning and Infrastructure, the location of all residences located within 8.5 km of a wind turbine has now been identified – see Table 5-9 below summarising the number of residences located within each distance band from the nearest turbine. The location of these residences have been identified on an updated A1 size ZVI map (see Attachment 3D) which provides an indication of the possible number of turbines that will be visible from each location. An assessment of the potential visual impact from each residence has been carried out based on the distance to the nearest turbine, the number of wind turbine hubs potentially visible and the screening from existing vegetation. The results of this assessment are included in tables in Attachment 3C.

Table 5-9 Number of residences within 8.5km of Yass Valley Wind Farm

<i>Distance to nearest turbine</i>	<i>Total number of residences</i>	<i>Involved residences</i>	<i>Non-involved residences</i>	<i>Residential viewpoints assessed</i>	<i>Number of photomontages</i>
0 - 1 km	1	1	0	0	1
1 - 2 km	22	16	6	6	5*
2 - 3 km	29	6	23	4	5
3 - 4 km	35	5	30	2	7
4 - 5 km	37	5	36	3	2
5 - 6 km	25	3	18	1	1
6 - 7 km	32	0	32	0	0
7 - 8.5 km	200	0	200	1	1
>8.5 km	-	-	-	1	4
Total	377	36	345	18	26

*Note that one resident did not provide permission for a photomontage

5.8.2 Revised transmission line

The visual impact assessment of the transmission line follows the same methodology used for the assessment of the wind turbines including defining the viewshed, establishing a zone of visual influence and visual impact assessment from publically accessible locations.

The viewshed of the transmission line is defined by the poles (up to 45m high) and will extend up to a distance of 5km, but the transmission line will be visible from very few locations on the surrounding road network. The overall visual impact of the proposed transmission line will be negligible with the associated substations having a negligible to low visual impact.



Figure 5-12 Typical overhead transmission line configurations: 330kV double circuit steel poles (left) 132kV single circuit concrete (right)

5.8.3 Cumulative visual impact

The presence of multiple wind farms in an area can create a cumulative visual impact. Since the EA for the Yass Valley Wind Farm was lodged in 2009, several other wind farms have been proposed in the region. Operating wind farms including the Gunning, Cullerin Range and Capital Wind Farms lie between 50 km and 60 km to the east of the Yass Valley Wind Farm site.

The approved Conroy's Gap wind farm which is located immediately adjacent to the Yass Valley Wind Farm is the only other wind farm that will provide a cumulative visual impact with the Yass Valley Wind Farm. Cumulative visual impact can occur either by sequential and simultaneous views to wind turbines from publically accessible viewpoints or from private viewing locations, or from changes to communities or visitor's perceptions of a region due to the presence of multiple wind farms in an area.

The two wind farms will be visible simultaneously from a number of viewpoints, particularly along the Hume Highway. Additional photomontages have been prepared from these viewpoints to demonstrate the cumulative visual impact which has been assessed as low. The two wind farms will remain indistinct from each other and therefore will not cumulatively change the wind farm landscape character.

There may be simultaneous and sequential views of the proposed Yass Valley Wind Farm and the approved Conroy's Gap Wind Farm from residences around these wind farms.

The most affected residential properties will be those that are located immediately to the east and west of the Conroy's Gap Wind Farm where residents may be able to see Conroy's Gap wind turbines while viewing in one direction and then the Yass Valley wind turbines when viewing in another. This potential panorama would be greater for residents to the west of Conroy's Gap Wind Farm. Residents, especially to the west of Conroy's Gap Wind Farm, may have a larger panorama of wind turbines than would be the case if only one wind farm was visible. Therefore there could be a cumulative visual impact. The previous assessment has shown that houses are well screened by existing vegetation. Therefore the probability of residential properties being able to see this enlarged panorama of wind turbines is low. The combination of few affected residential properties and this existing vegetation would lead to the conclusion that the likely cumulative visual impact caused by this increased panorama from residential properties immediately to the east and west of Conroy's Gap Wind Farm is low.

Residents to the north of Conroy's Gap Wind Farm and the Yass Valley Wind Farm may be able to view turbines from both wind farms silhouetted against each other. However if this occurs, it would be difficult to differentiate the Yass Valley wind turbines in the foreground from the Conroy's Gap wind turbines in the background as they would appear as the one wind farm with the visual impact created by the nearer wind turbines within the Yass Valley Wind Farm. There would be minimal cumulative visual impact created by being able to see Conroy's Gap wind turbines in the distance.

Similarly residents to the south of Conroy's Gap Wind Farm and the Yass Valley Wind Farm may be able to view turbines from both wind farms silhouetted against each other. However if this occurs, it would be difficult to differentiate the Conroy's Gap wind turbines in the foreground from the Yass Valley wind turbines in the background, as they would appear as the one wind farm, with the visual impact created by the nearer wind turbines within the Conroy's Gap Wind Farm. There would be minimal cumulative visual impact created by being able to see the Yass Valley wind turbines in the distance.

Therefore the additional visual impact will be relatively low in comparison to the level of impact that these properties will incur from the presence of the nearest wind turbines.

Residential properties without existing screening vegetation that are within 5km of Conroy's Gap Wind Farm and also have a cumulative view of Yass Wind farm would be offered landscaping to mitigate the additional cumulative visual impact.

5.9 Noise Impact Assessment

An updated noise impact assessment (Attachment 4) has been completed by Marshall Day Acoustics. The assessment updated the previous assessment included in the EA and includes:

- ▶ Operational noise predictions for the revised turbine layout for all identified receivers;
- ▶ Identifying any receivers where the noise criteria will be exceeded;
- ▶ Assessment of construction noise predictions for receivers in proximity to the revised transmission line route;
- ▶ A worst case noise contour map with all identified receivers; and
- ▶ A consideration of the draft *NSW Planning Guidelines: Wind Farms* including the assessment of low frequency noise.

5.9.1 Predicted operational noise

The worst case noise level predictions for the relevant receivers are summarised in Table 5-10. The results show compliance for all relevant receivers with the MM92 turbine (typical proposed turbine model) and the V90 turbine (worst case turbine model).

Table 5-10 Worst case operational noise level predictions

	MM92 Turbine (typical)	Criteria at 10m/s (hub height) [#]	Compliance at all wind speeds?	V90 Turbine (worst case)	Criteria at 15m/s (hub height) [~]	Compliance at all wind speeds?
C02*	37.8	45	✓	39.7	45	✓
C03*	37.1	45	✓	39.3	45	✓
C04*	35.7	45	✓	37.9	45	✓
C25*	39.9	45	✓	42.2	45	✓
C26*	35.8	45	✓	38.2	45	✓
C27*	37.1	45	✓	39.3	45	✓
C55*	35.8	45	✓	38.1	45	✓
C56*	37.8	45	✓	40.1	45	✓
C68*	36.5	45	✓	39.1	45	✓
C74	<35	37.5	✓	35.2	44.5	✓
G11	<35	44	✓	37.2	47	✓
G12*	37.0	45	✓	38.9	45	✓
G13*	35.1	45	✓	37.4	45	✓
G14	37.3	44	✓	39.3	47	✓

	MM92 Turbine (typical)	Criteria at 10m/s (hub height) [#]	Compliance at all wind speeds?	V90 Turbine (worst case)	Criteria at 15m/s (hub height) [~]	Compliance at all wind speeds?
G15*	40.2	45	✓	42.3	45	✓
G16	39.5	44	✓	41.7	47	✓
G31*	37.4	45	✓	39.6	45	✓
G38*	35.8	45	✓	38.1	45	✓
M08	<35	44	✓	36.2	47	✓
M18*	41.0	45	✓	43.1	45	✓
M20	<35	43.8	✓	35.2	50.8	✓
M21*	35.2	45	✓	37.1	45	✓
M32*	<35	45	✓	36.0	45	✓
M41*	<35	45	✓	37.5	45	✓
M42	35.1	39.4	✓	36.3	43.8	✓
M48*	39.5	45	✓	41.3	45	✓

* Involved receiver

[#] hub height wind speed at which MM92 turbine is at maximum sound power level (104.2dB) i.e. 10m/s

[~] hub height wind speed at which V90 turbine is at maximum sound power level (107.1dB) i.e. 15m/s

5.9.2 Cumulative noise

Cumulative noise impacts have been considered for the consented Conroy's Gap Wind Farm, which comprises of 18 Repower MM92 turbines. When including noise emissions from Conroy's Gap Wind Farm, the predicted noise has increased at 5 receivers when compared to Yass Valley Wind Farm predicted noise levels alone. The cumulative predicted noise level is less than the base line limit for all 5 receivers as shown in Table 5-11 when using both the MM92 and V90 at Yass Valley Wind Farm.

Table 5-11 Cumulative predicted noise levels

Dwelling	Conroy's Gap noise level	Yass noise level		Cumulative noise level (Yass + Conroy's Gap)		Base line limit	Comply
		MM92 [#]	V90 [~]	MM92 [#]	V90 [^]		
G11*	26.4	<35	37.2	35.2	37.5	45	✓
G12*	24.2	37	38.9	37.2	39.1	45	✓
G13*	21.2	35.1	37.4	35.3	37.5	45	✓
G16*	26.3	38.5	41.7	39.7	41.8	45	✓
M32*	23.0	<35	36	34.2	36.2	45	✓

* Involved receiver

[#] hub height wind speed at which MM92 turbine is at maximum sound power level (104.2dB) i.e. 10m/s

[~] hub height wind speed at which V90 turbine is at maximum sound power level (107.1dB) i.e. 15m/s

[^] predicted level using maximum sound power level for MM92 turbine (which occurs at hub height wind speed of 10m/s) and V90 turbine (which occurs at hub height wind speed of 15m/s)

5.9.3 Substation and transformer noise

Noise levels have been predicted for the dwellings closest to the revised substation locations based on a single (Option A) and double substation (Option B) configuration. Both configurations were found to comply with the NSW Industrial Noise Policy criteria as shown in Table 5-12.

Table 5-12 Noise level compliance at substations and transformers

Dwelling	Distance to closest substation (km)	Option A Predicted noise level (dB L_{Aeq})	Option B Predicted noise level (dB L_{Aeq})	Night-time RBL	INP intrusiveness criteria ($L_{A90} + 5dB$)	Comply?
C04	3.6	<10	<10	36	41	✓
C25	1.4	19	18	30	35	✓
C67	0.8	<10	31	30	35	✓

5.9.4 Construction noise

Site construction noise has been re-assessed including for the revised transmission line route and associated substations. Specifically, noise levels at additional receivers have been presented to account for the worst case receivers, being those locations nearest to the proposed turbine sites and the revised transmission layout. For an assessment in line with the ICNG, the assessment requirements are determined by the receiver locations where predicted noise levels are expected to be highest. The construction noise predictions, assessment and recommendations presented account for all potentially affected receiver locations by considering those receivers nearest to the proposed turbines and transmission line.

The construction generated noise levels have been predicted at nine properties that represent the receiver locations where the noise levels are expected to be highest due to their close proximity to the proposed construction activities. The results are shown in Table 5-13.

Table 5-13 Predicted construction noise level (L_{Aeq}) at worst-case receiver location

	Management level	Access road construction	Turbine foundation construction	Cable trench digging	WTG assembly	Batching plant	Transmission line construction	Cumulative level	Noise affected	Highly noise affected
C25*	40	45-50	45-50	40-45	30-35	30-35	45-50	50-55	Yes	No
C27*	40	40-45	40-45	35-40	25-30	15-20	25-30	40-45	Yes	No
C67	40	25-30	25-30	20-25	15-20	15-20	40-45	40-45	Yes	No
G15*	44	40-45	40-45	35-40	30-35	15-20	25-30	45-50	Yes	No
G16	44	40-45	40-45	40-45	30-35	10-15	25-30	45-50	Yes	No
M13*	44	25-30	25-30	25-30	15-20	<10	45-50	45-50	Yes	No
M18*	40	35-40	35-40	30-35	20-25	25-30	40-45	45-50	Yes	No
M42	40	35-40	35-40	35-40	25-30	10-15	20-25	40-45	Yes	No
M48*	40	40-45	40-45	35-40	25-30	15-20	25-30	40-45	Yes	No

Eight out of nine assessed receivers would be considered to be noise affected for some of the construction stages. Based on worst-case scenario assuming all construction stages occur simultaneously, all receivers would be considered noise affected receivers. Note that worst-case scenario is very conservative and unlikely given the sequential nature of construction. No receivers would be considered as being 'highly noise affected' as defined by the guidelines. The ICNG recommends that where receivers are noise affected then the proponent should apply all feasible and reasonable work practices to meet the noise affected management level and the proponent should also inform all potentially impacted residents of the nature of the works to be carried out, the expected noise levels and duration, as well as contact details. As such the following work will be completed once a more detailed construction methodology, process and duration is finalised: revised noise level

calculations for each construction stage and determine the extent of noise affected receivers, develop a construction noise management plan which will include discussion on the expected construction duration and noise levels for each stage and identify best practise methodologies to reduce the overall impact of construction activities, where out of hours constructions activities are required, conduct an assessment in line with the requirements of the ICNG.

5.9.5 Consideration of Draft NSW Planning Guidelines

5.9.5.1 Night-time noise criteria

In general, the night-time criteria for a given receiver are lower than the 24 hour or daytime criteria. To provide an indication of the potential affect the application of night-time noise criteria could have for the project, the predicted noise levels for the identified relevant receivers have been compared to the night-time criteria developed from the data collected for the 2009 assessment.

The analysis shows only one receiver, receiver M42, may be affected by the application of night-time criteria. Based on the 24hr criteria, the predicted noise levels achieve compliance at all integer wind speeds. When considering the night-time noise-criteria, the predicted noise levels for the V90 turbine exceed the criteria by up to 0.6dB between 10 and 13m/s and the predicted levels for the MM92 turbines exceed the criteria by up to 0.1dB between 10 and 11m/s.

Should it be demonstrated that non-compliance does occur during operation this can be ameliorated through turbine optimised de-rating.

5.9.5.2 Low Frequency Noise

Detailed guidance on proposed noise assessment methods is contained in Appendix B of the draft NSW Planning Guideline: Wind Farms and does not explicitly indicate a requirement to predict low-frequency noise levels. The proposed methodology does however nominate a method of identifying the presence of low frequency special audible characteristics which may result in the application of a 5dB penalty to predicted or measured noise levels.

The Site Compatibility Certificate application referred to in Section 1.3 of the guidelines makes reference to the prediction of low-frequency noise levels at dwellings within 2km where consent has not been obtained. Whilst specific details of the low frequency noise predictions that are required are not specified in Section 1.3, we anticipate that the intent of the guidelines is that the prediction of C-weighted noise levels is required, in line with the advice provided in Appendix B of the guidelines.

The C-weighting refers to the way in which the frequency content of the noise is adjusted to produce a total decibel value for the noise level. The most common form of assessment relies on the A-weighting which is intended to adjust noise frequencies in a way that results in a total noise level corresponding to general human perception of loudness. The A-weighting is however recognised as being less appropriate for noise levels characterised by significant or prominent low-frequency components (specifically, frequencies of noise lying below approximately 200Hz). The value of noise levels which are predicted or measured using the C-weighting are more sensitive to the influence of low-frequency noise, and are therefore often referred to as an indicative measure when evaluating low-frequency considerations. For a given noise source and character, the noise level measured using a C-weighting will be greater than measured using an A-weighting in most cases.

The low frequency noise criteria presented in the guidelines are summarised as follows:

- ▶ Day: 65 L_{Ceq} dB
- ▶ Night: 60 L_{Ceq} dB

In the absence of an international standard engineering prediction method specifically developed for the prediction of C-weighted noise levels, the ISO 9613 methodology has also been used with a set of adjustments to low frequency noise level predictions at non-involved receivers within 2km of a proposed turbine location. Specifically, reference has been made to Danish Statutory Order No. 1284, dated 15 December 2011 (DSCO 1284), which provides a methodology for predicting low frequency noise between 10-160Hz. These predictions are provided to address the information requirements proposed in the draft NSW guidelines. The prediction of low frequency noise levels are however subject to increased margins of uncertainty. This uncertainty relates to

the use of sound power level data below the normal frequency range reported by turbine manufacturers, combined with the application of engineering prediction methods specifically intended for the calculation of A-weighted noise levels. Based on this the C-weighted noise levels can only be regarded as indicative predictions. The uncertainty associated with the C-weighted predicted noise levels is expected to be similar to, or greater than the uncertainty associated with the C-weighted sound power of the turbines.

For the MM92 turbine, the predicted C-weighted noise level is below both the daytime and night-time criteria for all non-involved receiver locations within 2km of a turbine. For the worst case V90 turbine, the predicted C-weighted noise levels are below the daytime criteria of 65dBC but exceed the night-time criteria 60dBC for four non-involved receiver locations within 2km of a turbine. Prior to final turbine selection there will be an updated C-weighted noise level prediction.

Table 5-14 Maximum C-weighted predicted receiver noise levels

Dwelling	Nearest turbine	Distance to nearest turbine (km)	Predicted noise level MM92, L_{ceq} dB	Threshold exceeded?		Predicted noise level V90, L_{ceq} dB	Threshold exceeded?	
				Daytime	Night-time		Daytime	Night-time
G11	143	1.71	56	No	No	61	No	Yes
G14	136	1.42	58	No	No	63	No	Yes
G16	95	1.15	60	No	No	64	No	Yes
M20	100	1.87	55	No	No	60	No	No
M24	100	1.90	55	No	No	60	No	No
M42	114	1.15	58	No	No	63	No	Yes

In summary there is no requirement to predict Low Frequency Noise but it is in the best interests of the proponent and the community to attempt to do so. Regardless of the current limitations and inadequacies described above no exceedence is anticipated with the typical turbine of MM92.

5.10 Community Consultation

5.10.1 Local community

The nearest turbine of the proposed Yass Valley Wind Farm would be located approximately 16 km west of Yass. The wind farm would be located on hills to the north and south of the Hume Highway, extending 24 km west to east and 12 km north to south. The properties on which it would be located are mainly sheep grazing.

5.10.2 Consultation

There are 23 neighbouring residences within 2 km of a proposed wind turbine, 17 of which belong to involved landholders and 6 of which are not involved in the wind farm. Within 3 km of a proposed wind turbine there are 23 involved landowners and 29 not-involved landowners. Widening out that distance to 5 km includes 124 residences. Of these 124 residences, 91 are not-involved and 33 are involved. See Table 5-15 below.

Table 5-15 Residences within 5km of the proposal

Landowners	Involved	Not Involved
Within 2 km	17	6
Total Within 3 km (includes 2km)	23	29
Total within 5 km	33	91
% ownership of residences within 5 km	26%	74%

Epuron personnel have visited all residences within 2 km on at least one occasion. At the time of this report, in total the project team had visited 36 non-involved landowners at their property or residence. During phone calls to residences within 5 km eight residents said they did not want or need to be visited. Epuron have visited

9 residences beyond 5 km, most of whom live in the area which will have some proximity to both Yass Valley Wind Farm and Conroy's Gap. Epuron has met with three landowners in Sydney.

Further meetings are planned with residents within 5km and phone contact is continuing.

Details of the consultation can be found in the consultation spreadsheet (Attachment 7) which has properties identified but not names. This spreadsheet should be read in conjunction with the A1 map in Attachment 13.

Newsletters

All residences within 5km have been sent newsletters. Since Epuron took the project back from Origin Energy in 2012 there have been three newsletters sent out to the community, in August 2012, December 2012 and June 2013. The mailing list for the newsletters started with 130 addresses and has grown to contain 174 addresses. Newsletters have been sent to everyone within 5km and Harden Shire and Yass Valley Councils have assisted with addresses for residences owned by companies or trusts. Ten newsletters were returned to sender from the August 2012 mail out of 130 addresses and the address list has been refined and expanded. From the May 2013 mail out to 174 addresses five newsletters were returned to sender and these have been re-addressed and resent. The newsletter is also sent out to agencies and community representatives and anyone else who has registered an interest in the project.

5.10.3 Details of consultation

5.10.3.1 Residences within 2 km

There are six uninvolved residences within 2 km. Epuron has had face to face meetings with 5 of these.

The sixth, residence G16, is owned by the owners of Bogo quarry. Epuron is in touch with the owners who live off site and it is anticipated that the quarry would provide materials for the construction of the wind farm.

M42 is a new house (completed late 2012) whose presence was unknown to Epuron until contacted by the owner. Background noise data has been gathered for this house and this has resulted in the removal of the closest turbine which was proposed in the exhibited Preferred Project and Submissions Report. Discussion is on-going with the owners of G11 and G14 to determine preferred mitigation options. G14 has stated an interest in screen planting and a large shed which will assist in focussing views towards more distant turbines.

5.10.3.2 Residences between 2-3 km

There are 23 non-involved residences between two and three kilometres of a wind turbine. All of the 23 residences have been sent newsletters. Origin Energy visited 6, Epuron has visited a further nine, and beyond these 15 residents Epuron has made phone contact with a further landowner and sent letters to seven residents.

There has been limited contact with 2 landowners, M38 and G20, other than newsletters. The reason for this is that one, M38, is in a company name and Epuron has made numerous attempts to find the correct address but has had newsletters returned to sender and has resent them to other addresses listed for the same name. There has been no contact back from the last post out so it is hoped that the current address to which the newsletter has been sent is correct. G20 has been sent each of the newsletters but there has been no one in when passing and there is no phone number publicly listed.

The owners of property M8, Crisp Galleries, have shown Epuron personnel the general area of a proposed eco-tourism development which will require the adoption of a new LEP for the development to be permissible.

Epuron has had correspondence and a number of meetings with Crisp Galleries and have noted the request through the 2009 submission not to build a number of the proposed wind turbines. The original concerns of the Crisps were night lighting and shadow flicker. No night lighting is proposed for the wind farm and due to the distance between the general location of the tourism village and the wind farm there will be no shadow flicker experienced. For the 2009 Environmental Assessment ERM visited the location of the proposed eco-tourism village and prepared a photomontage. However plans of the layout of the village were not available in 2009 and have not been made available since being requested in April 2013. Epuron considers that as the wind turbines, at over 2.5 km away, would be compliant for noise and shadow flicker in the vicinity of the eco-tourism village, should the wind farm proceed to construction it would provide visual certainty. The proponent

would provide any screen plantings requested to screen both the existing overhead transmission lines in the foreground view of the eco-tourism village as well as the wind turbines in the distance. At this stage it is not clear that the proposed eco-tourism village will go ahead and as there are no compliance issues Epuron is seeking approval for all wind turbine locations. Discussions will remain open between the Proponent and Crisp Galleries to maximise the benefits of the co-existence of the two projects.

5.10.3.3 Residences between 3-5 km

There are 30 residences between 3 and 4 km from a turbine location. All have been sent newsletters. Epuron has met with nine residents, had phone contact with eleven, and written separately to eight residents.

There are 36 residences between 4 and 5 km from a turbine location. All of these residents have been sent newsletters. Origin met with eight residents and had phone contact with two. Epuron has met with six of the residents (five of who also met with Origin), had phone contact with nine and written separately to three.

In addition to photomontages for residences within 2km and viewpoints in the Landscape and visual impact assessment, Epuron has prepared photomontages upon request for four residents between 3 and 5 km and one resident between 5 and 6 km.

5.10.3.4 Residences between 5-6 km

Thirteen residents between five and six kilometres from a wind turbine are registered on the database. Some of these have made contact directly and some are neighbours to Conroy's Gap Wind Farm and in proximity to the five kilometre buffer with Yass Valley Wind Farm turbines. Epuron has sent newsletters to all of these residents, met with three and had phone contact with the same three and one further resident.

5.10.3.5 Total contact ~5 km

- ▶ Newsletters to all residents
- ▶ Face to face meetings with 28 residents, three in Sydney
- ▶ Phone contact with 50 residents
- ▶ Separate letters to 22 residents

5.10.4 Community Consultation Committee

Epuron has established a Community Consultation Committee (CCC) for both the Yass Valley Wind Farm and the adjacent approved Conroy's Gap Wind Farm which has had met 6 times since its inception early in 2013. The Minutes of the CCC are available at <http://www.epuron.com.au/project/yass-valley/>

The CCC consists of: an independent chair, an involved landowner, a representative of the Bookham Agricultural Bureau, two neighbours living within 5 km of Conroy's Gap Wind Farm, two neighbours (living beyond 5km) of Yass Valley Wind Farm, representatives of Harden Shire and Yass Valley Councils, two representatives of Epuron and an observer from the State government's renewable energy precincts program. The CCC also includes a number of members of the wind farm opposing Landscape Guardians group. Epuron is trying to expand the representation to include landowners within 2 km of the Yass Valley Wind Farm turbines. Epuron appreciates the on-going time commitment of the current members of the CCC.

The CCC has requested that Epuron contact everyone within 5 km of the Yass Valley and Conroy's Gap Wind Farms. To date Epuron has ensured that all resident in this 5 km zone have received information about the project and has focused on those individuals who through topography or proximity are considered most likely to have amenity impacts. Epuron continues to attempt to personally contact all residents in this proximity.

During on-going consultation residents living within 2km and 5km of a turbine have mentioned to Epuron that they would like to have been involved in the CCC but as they did not receive the August newsletter they did not have the opportunity to declare an interest in becoming a member of the CCC. The current members of the Community Consultation Committee responded to the August newsletter which included a nomination form for the CCC.

The current membership of the CCC includes one neighbour living within 5kms of the Yass Valley Wind Farm, who is also a neighbour to the Conroy's Gap Wind Farm. All other community members live beyond 5kms. The

Draft NSW Planning guidelines: Wind Farms directs that at least 2 of the community representatives be neighbours within 2kms of a wind turbine.

Should the project receive planning approval there is a statement of commitment which is intended to both remedy the current 'non-compliance' with the existing committee and provide an opportunity for new nominees (and existing members) and to put forward for selection on the new CCC which would be for Yass Valley Wind Farm only.

5.10.5 Issues raised through consultation

A number of issues were raised in face to face meetings with the community. They are summarised below.

Table 5-16 Summary of issues raised through consultation

<i>Issue</i>	<i>Detail</i>	<i>Response</i>
Consultation	A number of people said they had not been adequately consulted	Continue to phone and visit neighbours and keep updating mailing list.
Community Benefit	A number of people said the community fund should go to the neighbours who bear the impacts. Most were interested in free electricity. Several said the community did not need halls or sporting facilities. Common theme that the fund not be given to the councils for roads.	Create a Statement of Commitment that allocates at least 50% of the Community Enhancement Fund to clean energy options for neighbours. Have the CCC, with council representation, in charge of the allocation of the funds.*
Property Values	Concern about the impact of the wind farm on property values.	Provide Valuer General's advice.
Visual Impact	Two aspects to visual impact – one was the impact on views and the other was the visual impact impacting upon property values.	Screening planting offered to mitigate both
Traffic and site access	Some queries about where the construction traffic would enter the site.	Detail provided
Do they work?/ Power prices	Some noted that they 'wouldn't mind wind farms if they worked' and if they didn't cost so much in subsidies	Provided information re SA and lower prices and AEMO reports Provided 'my bill has gone up' information sheet
Follow through on commitments	Some queries about how neighbours can trust that any new owner will follow through on promises we make	Explanation of statements of commitment and how any future company would be bound.
Screening planting	Requested by a number of residents	SoC to offer screening planting to residences within 5km
Aerial fire fighting & agriculture	Number of questions about ability to fight fires aerially. Questions about aerial super spraying	RFS information provided about turbines being treated like any other obstacle. Any additional costs to be met by the proponent.
Health impacts	A few queries about health	Provided Victorian Department of Health April 2013 information re health impacts

* Through consultation with neighbours to the wind farm several have mentioned that they consider the model of 50% of the community enhancement fund being allocated to clean energy options for neighbours within 5km to be a suitable arrangement for the equitable distribution of benefits to the impacted community. Some residents have noted that it would be productive to have individuals who are supporters of the wind farm on the CCC. It is proposed that the management of the community enhancement fund be through a sub-committee of the CCC which is elected when the project moves to construction.

5.1.1 Updated Traffic Impact Assessment

A Traffic Impact Study was prepared as part of the Environmental Assessment in December 2008. The assessment was prepared in accordance with the DGRs and the Guide to Traffic Generating Developments (RMS, formerly NSW RTA). The Traffic Impact Assessment has been reviewed in consideration of the changes in the wind farm infrastructure reflected in this Submissions & Preferred Project Report and submissions received from RMS and the Councils in relation to traffic and access issues. A Supplementary Traffic Impact Study (Refer Attachment 8) was prepared in November 2013 which addresses the additional issues raised.

5.1.1.1 Predicted traffic and transport impacts

The current wind farm site access proposal has been developed in consideration of the traffic impact issues raised in the original traffic impact study with the result being a significantly reduced traffic impact at many locations. The number of site access points has been reduced and a number of local roads are no longer required to be used by the wind farm traffic.

5.1.1.2 Revised transmission line and 330kV grid connection point

The traffic generated during the construction of a transmission line is not significant relative to the impacts from the delivery of the major wind turbine components on the wind farm site. The revised transmission line route which runs between the wind farm site and the grid connection point approximately 12km to the south will require access along the route for the installation of the power poles and stringing of the conductor cables. The transmission line construction will not require any oversize or overmass vehicles and the construction vehicles will use existing farm tracks as well as access from the switchyard and substation locations.

A 330kV switchyard will be required at the revised 330kV grid connection point at TransGrid's existing 330kV transmission line. The switchyard doesn't include a main transformer so will not require overmass vehicle access. The proposed access route for construction of the switchyard and associated infrastructure is via Burrinjuck Road as shown in the next section.

5.1.1.3 Access routes and site access points

The access route to the wind farm will be via the Hume Highway. Three primary site access points are via:

- ▶ Whitefields Road for the Coppabella precinct;
- ▶ Illalong Road for the Marilba precinct; and
- ▶ Paynes Road for the section of the Marilba precinct located south of the Hume Highway.

Secondary access and egress points from the site have been identified from Burrinjuck Road, Illalong Road and off the Hume Highway. Please refer to Figure 5-13 on the following page for further details.

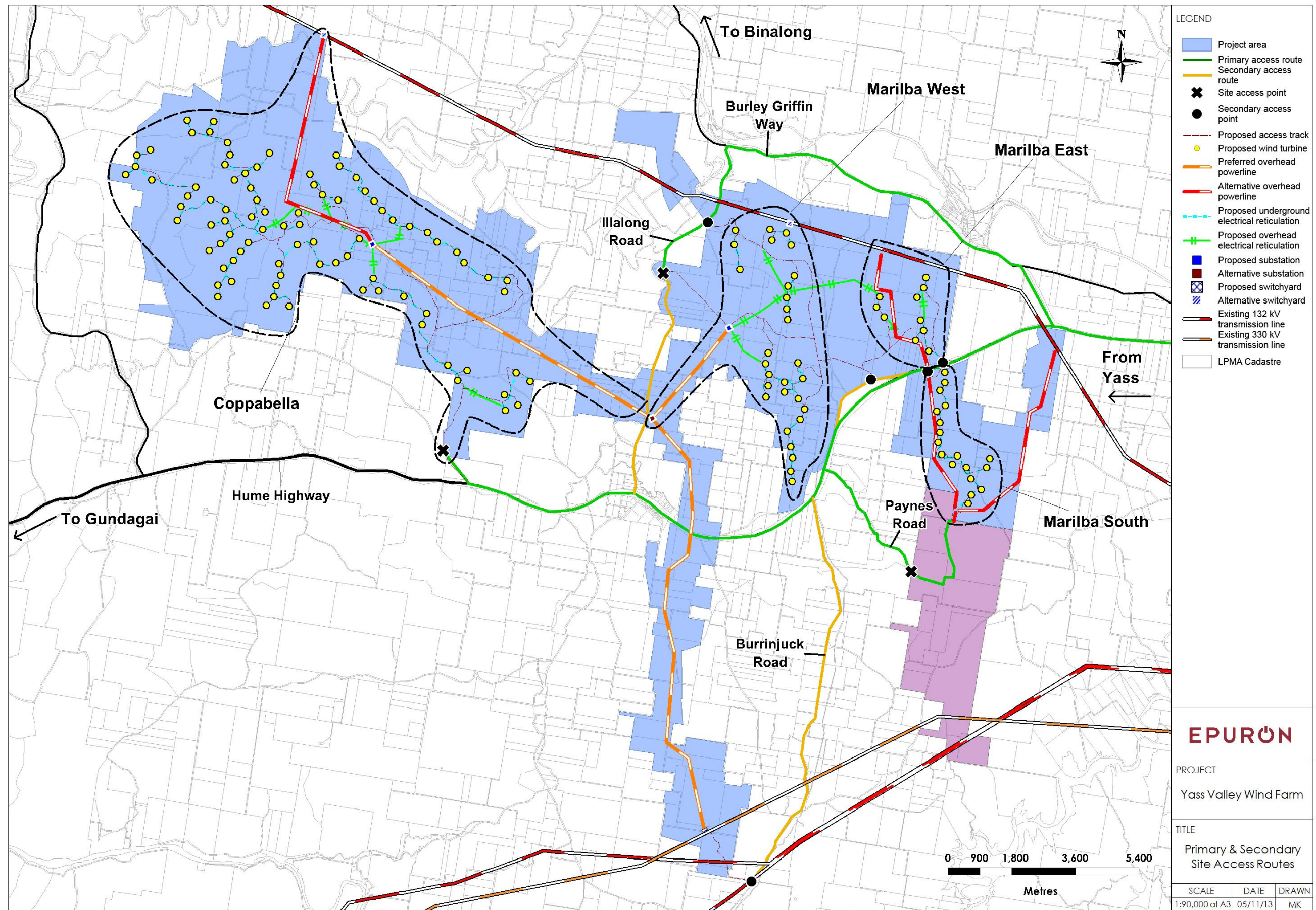


Figure 5-13 Wind farm access routes and site access points

5.11.4 Additional issues

No additional traffic and transport issues have been raised by the road authorities (RMS, Yass Valley Council and Harden Shire Council) in respect of the proposed changes to the infrastructure layout, including the revised transmission line route.

5.11.5 Mitigation measures

The Traffic Impact Study (EA Appendix 6) recommended a number of safeguards and mitigation measures to be implemented to ensure the safety for all road users and asset protection. Epuron has committed to developing a detailed Traffic Management Plan in consultation with the road authorities to reduce the traffic and transport impact, particularly during the construction phase. The Traffic Management Plan and other mitigation measures will be implemented in accordance with the process outlined in the RTA (now RMS) submission dated 16 December 2009.

5.12 Blade Throw

Blade throw refers to the event in which ice or a turbine blade itself becomes separated from the nacelle into the surrounding environment. On the occasions where part of the blade has become separated from the tower, the most common causes are lightning strikes, storms, material fatigue or poor operation and maintenance practices. Wind turbines manufacturers have been implementing new design features to reduce the risk of these events occurring even further. Some of these advances include increasing lightning protection along the blades to reduce the damage from strikes and developing greater control systems to monitor any decrease in structural integrity and implement an automatic shutdown. Furthermore, modern turbines have an automatic braking system when wind speeds exceed a set value.

Ice throw occurs when the surrounding environment drops below freezing temperature and ice develops on the turbine blade. The ice is then dislodged when the turbine blade begins to rotate or the surrounding temperature increases. Rye Park and the surrounding regions have been known to regularly have sub-zero nights throughout winter and therefore this must be considered as a low possibility for the winter months.

While there is a possibility of these events occurring, the likelihood of a landowner being near a turbine during storms or freezing conditions is considered low; however, land owners will be advised to avoid turbines during these conditions.

6 Revised Statement of Commitments

Note changes are highlighted in bold

6.1.1 Visual

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
1	Deterioration of visual amenity at surrounding residences	Mitigate impacts	The proponent would offer vegetative screening of any residence within 3.5 km of a wind turbine. The proponent would write to the owner of each residence outlining the offer and process. A site visit would determine the extent and type of planting required. Species selection would be determined in consultation with landholders using specialist advice. This offer would remain in place for a period of 1 year after project construction, to allow people time to either adjust or to decide that landscape filtering or screening is warranted. Planting would be completed within 2 years of completion of project construction.	Post Construction	OEMP
2	Deterioration of visual amenity at surrounding residences	Mitigate impacts	The Proponent would make reasonable efforts to locate powerlines, substations and control buildings in areas which minimise the visual impact where practical. Vegetative screening would be provided around substations and control buildings where they were visible from neighbouring residences.	Planning	DoP

6.1.2 Noise

6.1.2.1 Construction

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
3	Construction noise	Minimisation	The Proponent will employ appropriate noise reduction strategies to ensure the recommendations of the NSW Environmental Noise Control Manual are met. Strategies may include the re-orientation of machinery, rescheduling of noisy activities, installation of temporary noise barriers, improved vehicle noise control and the use of 'quiet work practices' (such as reducing or relocating idling machinery).	Detailed design	CEMP
4	Construction noise	Minimisation	The Proponent would only undertake construction activities associated with the project that would generate audible noise at any residence during the hours: ▶ 7:00 am to 6:00 pm, Monday to Friday, ▶ 8:00 am to 1:00 pm Saturday; and	Detailed design	CEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
			► At no time on Sundays or public holidays		
5	Construction noise	Minimisation	Meet ANZECC guidelines for control of blasting impact at residences.	Detailed design	CEMP

6.1.2.2 Operation

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
6	Operational noise	compliance	The Proponent will ensure final turbine selection and layout complies with the SA EPA Noise Guidelines of 35 dB(A) or background plus 5 dB(A) (whichever is higher) for all non-involved residential receivers. (other than those which have entered into a noise agreement with the Proponent in accordance with the SA EPA Noise Guidelines)	Detailed design	OEMP
7	Operational noise	Compliance	The Proponent will ensure final turbine selection and layout complies with the World Health Organisation Guidelines for Community Noise requiring 45 dB(A) or background plus 5 dB(A) (whichever is higher) for all involved residential receivers and all non-involved residential receivers which have entered into noise agreement with the Proponent in accordance with the SA EPA Noise Guidelines	Detailed design	OEMP
8	Operational noise	Compliance	Prior to construction, the Proponent will prepare and submit to the Department of Planning a noise report providing final noise predictions based on any updated background data measured, the final turbine model and turbine layout selected, to demonstrate compliance with the relevant guidelines for all residences	Detailed design	OEMP
9	Operational noise	Mitigate	If operational monitoring identifies exceedances, the Proponent would give consideration to providing mechanical ventilation (to remove the requirement for open windows), building acoustic treatments (improving glazing) or using turbine control features to manage excessive noise under particular conditions.	Detailed design	OEMP
10	Operational noise	Compliance	Develop and implement an operational noise compliance testing program. The compliance program will commence 3 months before construction commencement and continue on a permanent basis for 2 years post commissioning. Permanent noise loggers will be installed at selected receivers for the duration of the compliance program, with noise data regularly downloaded and any potential exceedances noted for detailed analysis. The selected house locations will comprise of all houses within 2km of a turbine and selected representative houses within 2-5km.	Detailed design	OEMP

6.1.3 Flora and Fauna

SoC	Impact	Objective	Mitigation Tasks	Project Phase	Auditing ²
11	Loss or modification of habitat	Avoid, minimise, offset	All infrastructure would be sited entirely within the development envelope assessed in the Biodiversity Assessments. Where this is not possible, additional assessment would be undertaken and the appropriate approval would be sought (i.e. variation to Conditions of Approval).	Detailed design of infrastructure layout	CEMP
12	Loss or modification of habitat	Avoid, minimise, offset	All infrastructure would be sited to avoid high constraint areas (including high constraint habitat features) and minimise impacts in moderate constraint areas. These areas are identified within Appendix 3.1 of the Coppabella Hills Precinct Biodiversity Assessment (Figure 7.1), and Appendix 3.2 of the Marilba Hills Precinct Biodiversity Assessment (Map set 4) and Appendix E of the SER. [Note: this now includes areas of moderate-good and good condition EEC/CEEC areas identified in the new assessment areas; site 11, site 25, site 31 and site 35]. The exception to this will be site 13 of the newly assessed areas where powerline infrastructure will be micrositied with input from an ecologist to minimise impacts on CEEC. Associated access tracks in this area will be located to avoid the high constraint CEEC.	Detailed design of infrastructure layout	CEMP
13	Loss or modification of habitat	Avoid, minimise, offset	Where high constraint areas cannot be avoided, micrositied of infrastructure would be undertaken with input from an ecologist, to minimise impacts (includes road widening and transmission easement). This SoC has been deleted – all high constraint areas would be avoided in accordance with SoC12.	Detailed design of infrastructure layout	CEMP
14	Loss or modification of habitat	Avoid, minimise, offset	Where hollow-bearing trees cannot be avoided, nest boxes would be installed to replace this resource. This measure is considered supplementary to offsets that would also take into account the removal of hollows. Note this is now stipulated in the Offset Strategy	Detailed design of infrastructure layout	CEMP
15	Loss or modification of habitat	Avoid, minimise, offset	Works should be sited outside known Yass Daisy population areas and Commonwealth-listed CEEC areas identified in Appendix 3.1 Coppabella Hills Precinct Biodiversity Assessment (Figure 5.6), and Appendix 3.2 Marilba Hills Precinct Biodiversity Assessment (Map set 2) and the SER (Figure 2-32). [Note this includes the proposed cable route at site 35] The proposed cable route would be located to avoid direct or indirect impacts to all recorded plants and colonies, with a minimum 2 metre buffer. The Yass Daisy population would be identified and protected during the construction and operation phases. Special rehabilitation measures would be used for works in the vicinity of the population, including topsoil removal,	Detailed design of infrastructure layout	CEMP

² The Construction and Operation Environmental Management Plans (CEMP and OEMP) are documents submitted to Dept. Planning & Infrastructure prior to construction and operation. Incorporation of these commitments within these management plans allows each commitment to be auditable.

SoC	Impact	Objective	Mitigation Tasks	Project Phase	Auditing ²
			storage and replacement, whole sod removal and replacement if practicable and effective weed control at all stages. Exposed areas along the trench line would be revegetated with local native grasses (<i>Microlaena stipoides</i> and/or <i>Themeda triandra</i>). If works are proposed outside of the targeted survey area within the area of occupancy for the Yass Daisy mapped in ngh Environmental (2009c), further survey or micrositeing by an ecologist would be undertaken to ensure that the works avoid Yass Daisy plants and colonies.		
16	Loss or modification of habitat	Avoid, minimise, offset	Where rocks and boulders cannot be avoided, they would be placed directly adjacent to the works area to preserve the availability of refuge.	Construction	CEMP
17	Loss or modification of habitat	Avoid, minimise, offset	Should dams be required to be removed during site development, alternative watering points would be established to compensate for their loss, where practical and with the agreement of the landowner.	Construction	CEMP
18	Loss or modification of habitat	Avoid, minimise, offset	Additional targeted surveys would be undertaken, if the identified areas would be impacted by the proposal. These areas include: Coppabella Hills ▶ Hollow-bearing trees targeted for removal. Marilba Hills ▶ Hollow-bearing trees targeted for removal. ▶ Burrinjuck Spider Orchid, undertaken in mid October, where the dry forest remnant in the far south of Cluster 7 would be impacted by the proposed works. ▶ Threatened grassy woodland species, undertaken in Spring, if the secondary grassland on the south western side of Cluster 7 would be substantially impacted. Refer Appendix G of the SER for details of these surveys that have been completed	Detailed design of infrastructure layout	CEMP
19	Loss or modification of habitat	Avoid, minimise, offset	Contractors and staff would be made aware of the significance and sensitivity of the constraints identified in the Biodiversity Assessment constraint map set for each precinct during the site induction process.	Construction	CEMP
20	Loss or modification of habitat	Avoid, minimise, offset	A buffer twice the distance of the tree drip-line would be established in sensitive areas identified in the Biodiversity Assessment constraint map set for each precinct to ensure indirect impacts (such as compaction, noise and dust) are minimised where practical..	Construction	CEMP
21	Loss or modification	Avoid,	The Proponent would commit to preparing and implementing an Offset Plan, to offset the quantum	Prior to construction	CEMP

SoC	Impact	Objective	Mitigation Tasks	Project Phase	Auditing ²
	of habitat	minimise, offset	and condition of native vegetation to be removed, in order to achieve a positive net environmental outcome for the proposal. Offset areas would reflect the actual footprint of the development (i.e. footing areas and new tracks) not the maximum impact areas. The Offset Plan would be prepared in consultation with OEH, prior to construction. The Offset Plan would be prepared in accordance with the offset strategy included as Appendix H of the SER. [Note the offset strategy sets out the method to calculate, manage and secure appropriate offsets].		
22	Loss or modification of habitat	Avoid, minimise, offset	An adaptive Bird and Bat Monitoring Program would be developed prior to construction and would include the collection of baseline (pre-operation) as well as operational monitoring data.	Prior to construction	CEMP, OEMP
23	Loss or modification of habitat	Avoid, minimise, offset	A Biodiversity Management Plan would be prepared within the CEMP to document the implementation of biodiversity measures, sourcing the Biodiversity Assessments prepared for each precinct for area specific measures. This would include construction and operational activities. The plan would include specific additional survey work which would be used to microsite infrastructure, where practical, and offset impacts, where they cannot be avoided. The target features / species include: ▶ Hollow bearing trees ▶ Bush Stone-curlew ▶ Barking Owl ▶ Squirrel Glider ▶ Striped Legless Lizard ▶ Eastern Bentwing Bat Survey approach would be developed in consultation with OEH.	Prior to construction	CEMP
24	Loss or modification of habitat	Avoid, minimise, offset	An EPBC referral would be submitted to determine whether the proposal constitutes a 'controlled action' under the meaning of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> .	Detailed design of infrastructure layout	CEMP
25	Loss or modification of habitat	Avoid, minimise, offset	A flora and fauna assessment would be undertaken prior to decommissioning to identify biodiversity constraints and develop specific impact mitigation measures.	Decommissioning	OEMP

6.1.4 Aboriginal Archaeology

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
26	Unavoidable disturbance to Aboriginal objects (stone artefacts) located in generally continuous albeit low density distribution across the proposal area.	Mitigate disturbance	A salvage program of archaeological excavation and analysis would be undertaken in a sample of impact areas prior to construction. The development of an appropriate research project would be undertaken in consultation with an archaeologist, the relevant Aboriginal communities and the NSW Department of Conservation and Climate Change.	Construction and decommissioning	CEMP
27	Disturbance to an Aboriginal object of low/moderate or moderate significance	Minimise disturbance	The Proponent would minimise the extent of impacts to areas assessed to be of low/moderate or moderate archaeological significance, where possible. A program of salvage subsurface excavation would be undertaken in impact areas at these locales prior to construction as a form of Impact Mitigation. The scope of this program is provided in Tables 19, 20 and 21 of Section 12 of the Archaeological Assessment, which identify the survey units that would be targeted in the program.	Construction and decommissioning	CEMP
28	Disturbance to an unidentified Aboriginal object	Minimise risk	The Proponent would conduct additional archaeological assessment in any areas which are proposed for impacts that have not been surveyed during the current assessment.	Construction and decommissioning	CEMP
29	Inadvertent impacts to Aboriginal objects	Minimise risk	The Proponent would develop a Cultural Heritage Management Protocol which documents the procedures to be followed for minimising risk and implementing mitigation strategies. This would be undertaken in consultation with an archaeologist, the relevant Aboriginal communities and the NSW Department of Conservation and Climate Change.	Construction and decommissioning	CEMP

6.1.5 Aircraft Hazards

SoC	Impact	Objective	Mitigation Tasks	Project Phase	Auditing
30	Creation of Hazard	Minimise risk	Liaise with CASA and determine the appropriate number, location and type of aircraft warning beacons to be fitted on wind turbines prior to the commencement of construction.	Pre-construction	DoP
31	Creation of Hazard	Minimise risk	The Proponent would liaise with all relevant authorities (CASA, Airservices, and Department of Defence) and supply location and height details once the final locations of the wind turbines	Pre-construction	DoP

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation Tasks</i>	<i>Project Phase</i>	<i>Auditing</i>
			have been determined and before construction commences.		
31B	Potential impacts on air traffic control radars	Avoid operational impacts	Complete further detailed assessment following turbine model selection of the potential impacts on the operation of the Mt Bobarra SSR and Mt Majura PSR/SSR air traffic control radars in conjunction with Airservices Australia and identify and implement mitigation measures to avoid.	Pre-construction	DoP

6.1.6 Communication

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation tasks</i>	<i>Project phase</i>	<i>Auditing</i>
32	Deterioration of signal strength	No deterioration of signal strength	The Proponent would locate wind turbines to avoid existing microwave link paths that cross each precinct, or liaise with the owners of such links to relocate services to avoid potential impacts from turbines.	Pre-construction	
33	Deterioration of signal strength	No deterioration of signal strength	The Proponent would undertake a detailed investigation to develop appropriate mitigation measures associated with potential impacts to navigational aids from the Coppabella Hills and Marilba Hills Precincts. The Proponent would liaise with Airservices Australia to ensure all mitigation measures are acceptable.	Pre-construction and operation	
34	Deterioration of signal strength	No deterioration of signal strength	Ensure adequate television reception is maintained for neighbouring residences as follows: ▶ Undertake a monitoring program of houses within 5km of the wind farm site to determine any loss in television signal strength if requested by the owners. ▶ In the event that after construction television interference (TVI) is experienced by existing receivers within 5km of the site, investigate the source and nature of the interference. ▶ Where investigations determine that the interference is caused by the wind farm, establish appropriate mitigation measures at each of the affected receivers in consultation and agreement with the landowners. Specific mitigation measures may include: ▶ Modification to, or replacement of receiving antenna ▶ Provision of a land line between the affected receiver and an antenna located in an area of favourable reception	Operation	

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
			▶ Improvement of the existing antenna system ▶ Installation of a digital set top box or ▶ In the event that interference cannot be overcome by other means, negotiating an arrangement for the installation and maintenance of a satellite receiving antenna at the Proponents cost		

6.1.7 Electromagnetic Fields

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
35	Radiation exposure from EMFs	Minimise exposure	Adhere to standard industry approaches and policies with respect to EMF through maintenance of adequate easements around transmission lines.	Operation	OEMP
36	Radiation exposure from EMFs	Minimise exposure	The turbines, control building, substation and transmission lines would be located as far as practical from residences, farm sheds, and yards in order to reduce the potential for both chronic and acute exposure.	Operation	OEMP

6.1.8 Traffic and Transport

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
37	Safety and asset protection	Minimise Risk	The Proponent would develop and implement a Traffic Management Plan (TMP) in consultation with roads authorities to facilitate appropriate management of potential traffic impacts. The TMP would include provisions for: ▶ Scheduling of deliveries and managing timing of transport ▶ Limiting the number of trips per day ▶ Undertaking community consultation before and during all haulage activities ▶ Designing and implementing temporary modifications to intersections, roadside furniture, stock grids and gates ▶ Managing the haulage process, including the erection of warning and/or advisory speed signage prior to isolated curves, crests, narrow bridges and change of road	Construction	CEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
			conditions ▶ Designation of a speed limit would be placed on all of the roads that would be used primarily by construction traffic ▶ Preparation of a Transport Code of Conduct to be made available to all contractors and staff ▶ Identification of a procedure to monitor the traffic impacts during construction and work methods modified (where required) to reduce the impacts ▶ Provide a contact phone number to enable any issues or concerns to be rapidly identified and addressed through appropriate procedures ▶ Reinstatement of pre-existing conditions after temporary modifications to the roads and pavement along the route. The Traffic Management Plan and other mitigation measures will be implemented in accordance with the process outlined in the RTA (now RMS) submission dated 16 December 2009.		
38	Safety and Asset protection	Minimise Risk	The Proponent would use a licensed haulage contractor with experience in transporting similar loads, responsible for obtaining all required approvals and permits from the RTA and Councils and for complying with conditions specified in those approvals.	Construction	CEMP
38A	Safety and Asset protection	Minimise Risk	In the case of any existing or proposed connection for access from the wind farm onto a Classified Road the proponent would obtain RMS and the council's concurrence under section 138 of the Roads Act (1993) prior to the commencement of any work as noted in the RTA (now RMS) submission dated December 2009.	Construction	CEMP
39	Safety and Asset protection	Minimise Risk	The Proponent would prepare road dilapidation reports covering pavement and drainage structures in consultation with roads authorities for the route prior to the commencement of construction and after construction is complete. The Proponent would repair any damage resulting from the construction traffic (except that resulting from normal wear and tear) as required during and after completion of construction at the Proponent's cost or, alternately, negotiate an alternative for road damage with the relevant roads authority.	Construction	CEMP
40	Safety and Asset protection	Minimise Risk	Route specific mitigation measures, as detailed Section 5.2 of the Traffic Impact Study, would be adopted where significant increases in use are anticipated as a consequence of the proposal.	Construction	CEMP

6.1.9 Fire and Bushfire

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
41	Bushfire risk	Minimise risks	The Proponent would prepare a Bushfire Management Plan as part of the Construction Environmental Management Plan. The Rural Fire Service and NSW Fire Brigade would be consulted in regard to its adequacy to manage bushfire risks during construction, operation and decommissioning. The plan would as a minimum include: ▶ Hot-work procedures, asset protection zones, safety, communication, site access and response protocols in the event of a fire originating in the wind farm infrastructure, or in the event of an external wildfire threatening the wind farm or nearby persons or property ▶ Flammable materials and ignition sources brought onto the site, such as hydrocarbons, would be handled and stored as per manufacturer's instructions. ▶ During the construction phase, appropriate fire fighting equipment would be held onsite when the fire danger is very high to extreme, and a minimum of one person on site would be trained in its use. The equipment and level of training would be determined in consultation with the local RFS ▶ Substations would be bunded with a capacity exceeding the volume of the transformer oil to contain the oil in the event of a major leak or fire. The facilities would be regularly inspected and maintained to ensure leaks do not present a fire hazard, and to ensure the bunded area is clear (including removing any rainwater) ▶ Substations would be surrounded by a gravel and concrete area free of vegetation to prevent the spread of fire from the substation and reduce the impact of bushfire on the structure. The substation area would also be surrounded by a security fence as a safety precaution to prevent trespassers and stock ingress ▶ Asset protection zones (APZs), based on the RFS Planning for Bushfire Protection, would be maintained around the control room, sub-station and in electricity transmission easements. Workplace health and safety protocols would be developed to minimise the risk of fire for workers during construction and during maintenance in the control room and amenities ▶ Fire extinguishers would be stored onsite in the control building and within the substation building ▶ Shut down of turbines would commence if components reach critical temperatures or if directed by the RFS in the case of a nearby wildfire being declared (an all hours contact point would be available to the RFS during the bushfire period). Remote	Construction Operation Decommissioning	CEMP and OEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
			alarming and maintenance procedures would also be used to minimise risks ▶ Overhead transmission easements would be periodically inspected to monitor regrowth of encroaching vegetation		

6.1.10 Hydrology

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
42	Deterioration of water quality (Surface Water)	Minimise risk	Infrastructure placement, including turbines, substations, control buildings, stockpiles, and site compounds and turnaround areas, would not be sited within 40 metres of a major drainage line or water course. Where access track are required to cross water courses they will be designed in consultation with NSW Office of Water and DPI (Fisheries).	Detailed design	CEMP
43	Deterioration of water quality (Surface Water)	Achieve neutral or beneficial water quality impact	The Proponent would prepare a Sediment / Erosion Control Plan (SECP) as a sub plan of the Construction Environmental Management Plan. This plan would include the following provisions: ▶ Sediment traps would be installed wherever there is potential for sediment to collect and enter waterways ▶ Stockpiles generated as a result of construction activities would be bunded with silt fencing, (mulch bunds or similar) to reduce the potential for runoff from these areas ▶ On the steeper slopes check banks would be installed across the trench line, as appropriate, following closure of the trench. These would discharge runoff to areas of stable vegetation ▶ Stabilisation and site remediation would be undertaken as soon as practicable throughout and post construction. ▶ Soil and water management practices would be developed as set out in Soils and Construction Vol. 1 (Landcom 2004)	Construction	CEMP
44	Deterioration of water quality (Surface Water)	Minimise risk	Design water crossings to minimise impact on existing banks, water flow and animal passage.	Construction	CEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
45	Water supply	Minimise risk	Undertake liaison with representatives of Golden Fields County Council regarding the potential supply of construction water	Construction	CEMP
46	Deterioration of water quality (Surface Water)	Minimise risk	All vehicles onsite would follow established trails and minimise onsite movements	Construction Operation	CEMP OEMP
47	Deterioration of water quality (Surface and Ground Water)	Minimise risk	Machinery would be operated and maintained in a manner that minimises risk of hydrocarbon spills	Construction Operation	CEMP OEMP
48	Deterioration of water quality (Surface and Ground Water)	Minimise risk	Maintenance or re-fuelling of machinery would be carried out on hard-stand in accordance with industry standards for fuel transfer	Construction	CEMP
49	Deterioration of water quality (Surface and Ground Water)	Minimise risk	Design of concrete batch plants would ensure concrete wash would not be subjected to uncontrolled release. Areas of the batching would be bunded to contain peak rainfall events and remediated after the completion of the construction phase. Waste sludge would be recovered from the settling pond and used in the production of road base manufactured onsite. The waste material would be taken from the batching plant to be blended in the road base elsewhere onsite.	Construction	CEMP
50	Deterioration of water quality (Surface and Ground Water)	Minimise risk	Carry out dust suppression as required through either watering or chemical means (environmentally friendly polymer based additives to water).	Construction Decommissioning	CEMP
51	Deterioration of water quality (Surface Water)	Achieve neutral or beneficial water quality impact	A Site Restoration Plan (SRP) would be prepared as part of the Construction Environmental Management Plan. This would set out protocols for restoration works including: ▶ Site preparation ▶ Stabilisation ▶ Revegetation ▶ Monitoring	Construction Decommissioning	CEMP
52	Deterioration of water quality (Surface and	Minimise risk	A Spill Response Plan would be prepared as part of the CEMP and OEMP including: ▶ Identify persons responsible for implementing the plan if a spill of a dangerous or	Construction Operation	CEMP OEMP

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation tasks</i>	<i>Project phase</i>	<i>Auditing</i>
	Ground Water)		hazardous chemical/waste would occur ▶ Identify all chemicals required for the Proposal, including physio-chemical properties, risks posed to water quality objectives and appropriate methods of storage of these chemicals. ▶ Locate Material Safety Data Sheets (MSDS) for all chemical inventories at on site and readily available ▶ Comply with manufacturers recommendations in relation to application and disposal where chemicals are used ▶ Report any spill that occurs to the Construction Manager regardless of the size of the spill ▶ Establish clearly defined works and refuelling areas ▶ Spill protocols in this plan would dictate when the EPA would be notified ▶ Chemical / fuel storage areas would be identified, and be bunded to prevent loss of any pollutants ▶ Hydrocarbon spill kits would be stored at the site. A number of site staff are to be trained in the use of the spill kits	Decommissioning	
53	Deterioration of water quality (Surface and Ground Water)	Minimise Risk	The Proponent would notify the NSW DECC EPA in the event of any spill that had the potential to pollute waters.	Construction Operation	CEMP OEMP
54	Protection of ground water	Minimise risk	Undertake investigations, as part of the geotechnical investigation, to ensure that the project would have no material adverse effect on groundwater/aquifers as a result of blasting activities.	Pre-construction	CEMP
55	Deterioration of water quality (Surface and Ground Water)	Minimise risk	Monitor bunded infrastructure to ensure that volume of oil could be fully contained in the event of leak	Operation	OEMP
56	Deterioration of water quality (Surface and Ground Water)	Minimise risk	Maintain septic systems, if installed, to meet appropriate Australian standards	Construction Operation Decommissioning	CEMP OEMP

6.1.11 Soils and Landforms

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation tasks</i>	<i>Project phase</i>	<i>Auditing</i>
57	Landform stability	Minimise risk	The Proponent would undertake geotechnical investigations in the area of the proposed turbines to determine ground stability.	Pre - construction	DoP
58	Contamination	Minimise risks	Consult with involved property owners in relation to areas of land potentially contaminated by past land use and manage impacts in these areas to avoid affecting the any areas of contamination.	Pre - construction	CEMP
59	Soil quality	Minimise risks	Subsoil would be separated from topsoil for rehabilitation purposes. Topsoil from the excavation sites would be stockpiled and replaced. On steep slopes, topsoil would be stabilised. Any excess subsoil would be removed from the site and disposed of at an appropriate fill storage site.	Construction	CEMP
60	Soil quality	Minimise impact	Avoid compaction of soil resulting from vehicle access and laying of materials particularly during saturated soil conditions, and remediate as necessary	Construction	CEMP
61	Soil quality	Minimise impact	The Proponent would prepare a protocol in the instance that suspected contamination is unexpectedly found. Should contamination or potential contamination be disturbed during excavation works, the area would be assessed by appropriately qualified consultants. The DECC would be notified if warranted.	Construction	CEMP
62	Soil loss or stability of landform loss	Minimise risks	Concrete wash would be deposited in an excavated area, below the level of the topsoil, or in an approved landfill site. Where possible, waste water and solids would be reused onsite.	Construction	CEMP
63	Soil loss or stability of landform loss	Minimise risks	Access routes and tracks would be confined to already disturbed areas, where possible. All contractors would be advised to keep to established tracks.	Construction	CEMP

6.1.12 Mineral Exploration

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation tasks</i>	<i>Project phase</i>	<i>Auditing</i>
64	Conflict with mineral exploration	Minimise conflict	The Proponent would liaise with the current mineral licence holder providing a final turbine and infrastructure layout, prior to the construction phase	Pre-construction	CEMP
65	Conflict with mineral exploration	Minimise conflict	The Proponent will continue to liaise with the holder of EL7984 which is the only mineral licence which overlaps with the wind farm site.	Pre-construction / Construction	CEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
66	Conflict with mineral exploration	Minimise conflict	The Proponent would provide a point of contact to the current mineral licence holder	Pre-construction	CEMP
67	Conflict with mineral exploration	Minimise conflict	The Proponent would liaise with the involved land owners and current mineral lease holders prior to rehabilitation, to ensure that any project access roads that they may wish to retain are retained. Several of these access roads are likely to be of benefit both to routine agricultural activities as well as to exploration activities onsite	Construction	CEMP

6.1.13 Economic

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
68	Effect on local community	Maximise positive impact of Proposal	Liaise with local industry representatives to maximise the use of local contractors and manufacturing facilities in the construction and decommissioning phases of the project.	Construction	CEMP
69	Effect on local community	Maximise positive impact of Proposal	Liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works and to the extent practical coordinated with local events	Construction	CEMP
70	Effect on local community	Maximise positive impact of Proposal	Liaise with Yass Valley and Harden Shire Councils and the Department of State and Regional Development to provide information to assist in attracting people to the local area to facilitate meeting the expected demand for human resources for both construction and operation of the Proposal	Construction Operation	CEMP
71	Effect on local community	Maximise positive impact of Proposal	Make available employment opportunities and training for the ongoing operation of the wind farm to local residents where reasonable	Operation	OEMP

6.1.14 Community Wellbeing

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
72	Community wellbeing	Provide accurate information	Dissemination of accessible and independent information on wind farm impacts	Pre-construction	CEMP
73	Community	Provide	Biodiversity monitoring information collected during the operation of the wind farm would be	Operation	OEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
	wellbeing	accurate information	made publicly available		
73B	Community wellbeing	To provide a benefit to those residents that are most affected	From commissioning the Proponent will contribute \$2,500 per wind turbine built per annum to a Community Enhancement Program. The Proponent will pay the annual contribution to the CCC for distribution. At least 50% of the funds may be allocated to residential clean energy improvements such as solar water heating or solar PV panels or similar benefit to non-involved properties within 5kms of a wind turbine. When the wind farm construction contracts are finalised a new CCC is to be elected to represent the neighbouring community through the construction and operation phase and manage the Community Enhancement Program. The CCC is to be constituted in line with Appendix C of the <i>Draft NSW Planning Guidelines: Wind Farms</i> or as updated. The allocation of funds will be determined by the elected CCC to ensure the community benefit is distributed in line with the community's own view of an equitable distribution of funds.	Construction & Operation	OEMP

6.1.15 Tourism

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
74	Effect on local activities	Minimise disruption	Co-ordinate construction activities with local tourist operators. The Proponent would liaise with the local visitor information centres to ensure that construction and decommissioning timing and haulage routes are known well in advance of works	Pre-construction	CEMP
75	Effect on local activities	Maximise benefits	The Proponent would work with the involved landowners, the community and both Yass Valley and Harden Shire Councils to allow for the development of the wind farm as a tourist attraction, if this option becomes desirable to these three parties.	Operation	OEMP

6.1.16 Agricultural

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
76	Impact on current land use	Minimise disruption	Stock would be restricted from works areas where there is a risk stock injury or where disturbed areas are being stabilised.	Construction	CEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
77	Impact on current land use	Minimise impact	Develop, implement and monitor the effects of a Site Restoration Plan . The plan would aim to stabilise disturbed areas as rapidly as possible. The Plan would consider: ▶ Appropriate stabilisation techniques across the precincts ▶ Suitable species for re-seeding (native species would be given preference due to their superior persistence and for conservation purposes) ▶ Monitoring for weed and erosion issues	Construction and Decommissioning	CEMP
78	Impact on current land use	Minimise disruption	Liaison would be undertaken with neighbouring landowners and landowners adjoining access roads, to provide information about the timing and routes to be used during construction and decommissioning. This could be in the form of advertising and provision of a contact point for further inquiries. The aim would be to reduce the risk of interference with agricultural activities on affected roads and road verges.	Construction	CEMP
79	Impact on current land use	Minimise impacts	Ensure that the switchyard and substation is appropriately fenced to eliminate stock ingress.	Operation	OEMP

6.1.17 Health and Safety

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
80	Safety of persons or stock	Minimise risks	A detailed Health and Safety Plan (H&SP) would be prepared, as a sub plan of the Construction Environmental Management Plan , identifying hazards associated with construction works, the risks of the identified hazards occurring and appropriate safeguards would be prepared prior to the commencement of construction works. The Plan would include, but not be limited to: ▶ Inductions for all contractors requiring site access. ▶ Ensure all staff are appropriately qualified and trained for the roles they are undertaking	Construction	CEMP
81	Safety of persons or stock	Minimise risks	Site fencing would be installed where there is a risk to the safety of the general public (i.e. when the trench is left open for extended periods)	Construction and Decommissioning	CEMP
82	Safety and Asset protection	Minimise Risk	Establish procedures to ensure that soil is not carried onto the Hume Highway on the wheels of construction traffic	Construction	CEMP
83	Safety / nuisance to persons or stock	Minimise risks	If shadow flicker is found to be a nuisance to residents, conditions would be pre-programmed into the control system and individual wind turbines automatically shut down whenever these	Operation	OEMP

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
			conditions are present		
84	Safety of persons or stock	Minimise risks	Shadow flicker effects on motorists would be monitored following commissioning and any remedial measures to address concerns would be developed in consultation with the RTA and the Department of Planning	Operation	OEMP
85	Safety of persons	Minimise risk	Establish a turbine maintenance program in accordance with industry standards.	Operation	OEMP

6.1.18 Historic Heritage

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
86	Disturbance to a non-Indigenous potential heritage item	Minimise disturbance	The Proponent would limit the extent of impacts to the three identified heritage items.	Construction and decommissioning	CEMP

6.1.19 Climate and air quality

SoC	Impact	Objective	Mitigation tasks	Project phase	Auditing
87	Air quality	Minimise risks	A cost benefit analysis would be completed on differing potential mitigation options for dust suppression, for inclusion in the CEMP.	Construction	CEMP
88	Air quality	Minimise risks	Dust levels at stockpile sites would be visually monitored. Dust suppression would be implemented if required. Stockpiles would be protected from prevailing weather conditions	Construction	CEMP
89	Air quality	Minimise risks	Undertake ongoing visual dust monitoring and suppression (if required) during the construction phase. Monitoring would regularly assess the effectiveness of dust suppression activities. Monitoring would regularly assess the effectiveness of dust suppression activities.	Construction	CEMP
90	Air Quality	Minimise risks	Should a complaint relating to dust by a resident be received, monitoring at the boundary of the construction site would be undertaken using dust gauges. The Proponent would assess the dust gauges and identify additional mitigation measures, where required.	Construction	CEMP
91	Air quality	Minimise risks	Should blasting be required, it would be carried out in accordance with all relevant statutory requirements and residences within 1km of blasting activities would be informed prior to blasting	Construction	CEMP

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation tasks</i>	<i>Project phase</i>	<i>Auditing</i>
92	Air quality	Minimise risks	Dust filters would be installed on silos, where required	Construction	CEMP

6.1.20 Resource impacts

<i>SoC</i>	<i>Impact</i>	<i>Objective</i>	<i>Mitigation tasks</i>	<i>Project phase</i>	<i>Auditing</i>
93	Waste generation	Minimise waste and maximise recycling of materials	The Proponent would prepare a Waste Management Plan to be included within the Construction Environmental Management Plan. It would include but not be limited to the following: ▶ The scope for reuse and recycling would be evaluated ▶ Provision for recycling would be made onsite ▶ Wastes would be disposed of at appropriate facilities ▶ Toilet facilities would be provided for onsite workers and sullage from contractor's pump out toilet facilities would be disposed at the local sewage treatment plants or other suitable facility agreed to by Council ▶ Excavated material would be used in road base construction and as aggregate for footings where possible. Surplus material would be disposed of in appropriate locations on site (on agreement with the landowner), finished with topsoil, and revegetated	Construction Operation	CEMP OEMP

7 Conclusion

Epuron believes that this Preferred Project and Submissions Report has adequately addressed all of the issues raised in the submissions to the exhibition of the Environmental Assessment, the submissions received in response to the exhibition of the Preferred Project Report and the additional comments received from the agencies and the department to enable the Department of Planning & Infrastructure to complete its assessment and determination of the Proposal.

The net changes to the wind turbine and associated infrastructure layout as a result of the issues raised in the submissions have resulted in a reduced environmental impact for the project. Since the project was on public exhibition over December 2012 to March 2013 the changes have only minimised the impacts of the project. The preferred project defined in section 5 of this report is the infrastructure layout that Epuron is seeking approval for.

The revised Statement of Commitments listed in section 6 of this report will ensure that the proposed Yass Valley Wind Farm can be constructed while minimising any residual impacts to the existing environment.

8 References

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9 Glossary and acronyms

Abbreviation	Description
An	Annum
APZ	Asset Protection Zone (for bushfire compliance)
CASA	Civil Aviation Safety Authority
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CMA	Catchment Management Authority
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
dB(A)	Decibels (A weighted)
DEC	NSW Department of Environment and Conservation (now OEH)
DECC	NSW Department of Environment and Climate Change (now OEH)
DECCCW	NSW Department of Environment, Climate Change and Water (now OEH)
DGRs	NSW Department of Planning and Infrastructure's Director General's Requirements.
DP&I	NSW Department of Planning and Infrastructure
DPI	Department of Primary Industries
EA	This Environmental Assessment report
EEC	Endangered Ecological Community
EMF	Electromagnetic fields
EMP	Environmental Management Plan
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPA	Environmental Protection Agency
EPBC Act	Federal Environmental Protection and Biodiversity Conservation Act 1999
GHG	Greenhouse Gas
GWh	gigawatt-hour
ha	hectare (unit of area 100m x 100m)
HBT	Hollow-bearing tree
HF	High Frequency
kg	kilogram
kL	Kilolitres
km	kilometre
kV	kilovolt
LAeq	Equivalent Sound Power (A weighted)
LEP	Local Environmental Plan
LGA	Local Government Area
LVIA	Landscape and Visual Impact Assessment
m	metre

Abbreviation	Description
m/s	meters per second
mG	milligauss
ML	Megalitres
MW	megawatt
MWh	megawatt-hour
ODPMUK	Office of the Deputy Prime Minister United Kingdom
OEH	Office of Environment and Heritage
OEM	Original Equipment Manufacturer
OEMP	Operational Environmental Management Plan
OLS	Obstacle Limitation Surface
RET	Renewable Energy Target
RFS	Rural Fire Service
RMS	Roads and Maritime Service
SA EPA Guidelines	South Australian Environment Protection Authority Environmental Noise Guidelines: Wind Farms (2003)
SIS	Species Impact Statement
SoC	Statement of Commitments
TMP	Traffic Management Plan
TVI	Television Interference
V	volt
VHF	Very High Frequency
W	watt
WHO	World Health Organisation
WTG	Wind Turbine Generator

Attachment 1A – Supplementary Ecology Report



Attachment 1B – Further response to OEH



Attachment 2A – Supplementary Archaeological & Heritage Assessment



Attachment 2B – Response to Heritage Comments



Attachment 3A – Supplementary Landscape and Visual Impact Assessment



Attachment 3B – Response to LVIA Comments



Attachment 3C – Table of Residences to 8.5km & Visual Impact



Attachment 3D – ZVI Map (A1 size) with residences to 8.5km

Attachment 4 – Noise Assessment Addendum



Attachment 5 – Shadow Flicker Addendum Report



Attachment 6 – Aviation Impact Assessment



Attachment 7 – Community Consultation Information



Attachment 8 – Supplementary Traffic Impact Study



Attachment 9 – Turbine Coordinates



Attachment 10 – Land & Infrastructure Details



Attachment 11 – Draft Decommissioning and Rehabilitation Plan



Attachment 12 – Draft NSW Planning Guidelines: Wind Farms



Attachment 13 – Site Map A1 Size

