White Rock Wind Farm Pty Ltd

Level 23, 201 Elizabeth Street, Sydney, NSW 2000
ABN 45 153 592 173

The Secretary
Department of Planning and Environment
Level 22, 320 Pitt Street
Sydney NSW 2000

21 April 2017

Attention: Stephen O'Donoghue (by email: stephen.odonoghue@planning.nsw.gov.au

Dear Secretary,

White Rock Wind Farm – Part 3A Project Approval MP10_0160
Section 75W Modification Application No. 4 – Supplementary information

1. Overview

White Rock Wind Farm Pty Ltd (**WRWFPL**) is the proponent of the White Rock Wind Farm, a critical infrastructure project located in the New England Tablelands of NSW comprising of up to 119 wind turbines and associated infrastructure. The construction and operation of the White Rock Wind Farm is authorised under Project Approval MP10_0160 granted by the Minister for Planning on 10 July 2012 (**Project Approval**) under Part 3A of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**).

This letter supplements the information already provided in support of Modification Application No. 4 (**MOD 4**) submitted under section 75W of the EP&A Act (which continues to apply to 'transitional Part 3A projects' by virtue of clause 12 of Schedule 6A to the EP&A Act) which is currently pending. MOD 4 primarily relates to alternative grid connection infrastructure and provides for connection at 330kV rather than 132kV as set out in the Environmental Assessment Report dated December 2016.

Condition C1(b) of the Project Approval currently restricts clearing of Ribbon Gum - Mountain Gum – Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion Endangered Ecological Community (**RG-MG EEC**) to a maximum of 22 ha. As a result of recent reviews, it has become apparent that the approved Stage 1 construction cannot be completed within the clearing limit currently specified in Condition 1(b).

The Environmental Assessment Report dated December 2016 prepared in support of MOD 4 (MOD 4 EA) included, as Appendix 3A, a Biodiversity Assessment prepared by Environmental Assessments, November 2016 (**Mod 4 Biodiversity Assessment**). The Mod 4 Biodiversity Assessment confirmed that WRWFPL would seek an increase in the clearing limit for RG-MG EEC contained in Condition C1(b) of the Project Approval.

Accordingly, WRWFPL now seeks, as part of MOD 4, to increase the clearing limit for RG-MG EEC contained in condition C1(b) of the Project Approval by 6 ha so as to allow for the clearing of a maximum of 28 ha of RG-MG EEC. The increase addresses impacts of Stage 1 of the White Rock Wind Farm and the MOD 4 alternate grid connection infrastructure.

2. Background

White Rock Wind Farm is being constructed in 2 stages with:

- Stage 1 being the construction of 70 wind turbines and associated infrastructure; and
- Stage 2 being the remainder of the White Rock Wind Farm as approved by the Project Approval.

Construction of Stage 1 commenced on 25 May 2016. Stage 1 works are now well advanced with:

- a substantial part of the access tracks developed or under construction;
- 14 of the 70 Stage 1 turbines erected; and
- construction of the 132kV substation and 8km of 132kV transmission line scheduled for completion in June 2017.

All construction activities for Stage 1 have complied with the native vegetation conditions imposed on the Project Approval. In particular, WRWFPL has complied with:

- the current clearing limits for RG-MG EEC imposed under condition C1(b);
- condition C1 which requires it to minimise the clearing of native vegetation;
- condition C5 which requires all reasonable and feasible effort to be made to avoid native vegetation disturbance (including clearing of hollow bearing trees) during micro-siting and construction of the project so as to reduce as far as possible the extent of vegetation disturbance required for the project; and
- the Construction Flora and Fauna Management Plan required by condition E22(f) which details how construction impacts on ecology are minimised and managed.

The need for an increased clearing limit has arisen due to the following:

- the significantly more detailed knowledge of the site challenges and development requirements in 2017, now that construction is well advanced, compared to when the application was prepared in 2011 and, the clearing limit being established in 2012;
- limitations of preliminary engineering design during pre-construction planning and at the time MOD 3 was prepared;
- limitations of topographic data, LIDAR derived terrain, where there is substantive tree cover;
- various constructability issues due to the challenging topography.

3. Progressive review of Stage 1 impacts

To ensure compliance with the conditions of the Project Approval, WRWFPL has been undertaking regular reviews of vegetation clearance during the design and construction process for Stage 1. In particular, to improve the reliability of vegetation estimates, in late February 2017, WRWFPL obtained aerial imagery of the Stage 1 works. GIS software was then used to confirm the extent of vegetation clearance and analysis of vegetation impacts undertaken, based on vegetation mapping layers updated by RPS in 2015. The result of WRWFPL's recent assessment of Stage 1 impact on the RG-MG EEC, based on imagery from late February 2017, is shown in Table 1.

Table 1 – Impacts of progressive Stage 1 clearing works (RG-MG EEC) at February 2017

Hardstands, tracks, ancillaries	Clearance 132kV line	33kV installed	Permanent Met Masts	Sub-total (hectares) as at February 2017
15.88	0.32	0.65	0.46	**17.31**

Further detail is contained in the report prepared by Eco Logical Australia (Attachment 1).

4. Further Clearing of RG-MG EEC Required for Stage 1 and MOD 4 infrastructure

The 22 ha clearing limit for RG-MG EEC, currently contained in condition C1(b) of the Project Approval, was derived from initial estimates based on the preliminary project layout and design contained in the White Rock Wind Farm Environmental Assessment dated 2011.

These early estimates need to be updated to reflect the remaining clearing required for Stage 1 given the detailed civil design for Stage 1 and estimated impact for the alternative grid connection infrastructure the subject of MOD 4.

WRWFPL retained Eco Logical Australia (**ELA**) to provide an updated estimate of the additional impact on RG-MG EEC required for the construction of the remainder of Stage 1 (Attachment 1), excluding the alternative grid connection infrastructure already assessed in the MOD 4 EA (Dec 2016) and not including details for Stage 1 rotor assembly (Attachment 2).

Additionally, for turbine rotor assembly as part of Stage 1, the associated clearing (mainly vegetation pruning) was omitted from the ELA assessment. CNC was subsequently engaged to provide an estimate of the further clearing required for this project element. The CNC assessment identified the extent of clearing or pruning of vegetation required for the Stage 1 rotor assembly, beyond the project clearing already assessed by ELA. (Attachment 2)

Table 2 below summarises the assessment of future clearing required for Stage 1 as completed by ELA (see the MOD 4 Offset Assessment and Attachment 1) and CNC (see Attachment 2).

Table 2 – Estimate of further clearing to complete WRWF Stage 1 and MOD 4 infrastructure

Clearance 132kV line	33kV OH line and UG cabling	Permanent Met Masts	Stage 1 Rotor assembly	MOD 4	Total (hectares)
5.80	3.46	0.0	0.53	0.53	**10.32**

Based on the above, it is now estimated that the full extent of Ribbon Gum – Mountain Gum EEC that will be required to be cleared for Stage 1 and MOD 4 will be approximately 27.63 ha. This consists of:

- 17.31 ha which has already been cleared for Stage 1 as at the end of February 2017; and
- a further 10.32 ha which is required to enable construction of Stage 1 works to be completed (including the MOD 4 infrastructure).

Please refer to the reports prepared by Eco Logical Australia and CNC Project Management that are provided as Attachments 1 and 2 and the MOD 4 Offset Assessment already submitted as part of Mod 4 (Appendix 3C of MOD 4).

WRWFPL confirms that the further clearing required to enable construction of Stage 1 to be completed is not associated with any additional changes to the approved project layout other than those already assessed as part of Mod 4. Rather, it is simply the outcomes of the more accurate estimates now prepared of the actual and likely clearing associated with the approved Stage 1 project, now that the Stage 1 construction works are advanced.

WRWFPL also notes that it is likely that the construction of Stage 2 will also necessitate the clearing of additional RG-MG EEC. However:

- WRWRPL only seeks a clarification to condition C1(b) of the Project Approval as part of MOD 4 to cover the clearing of RG-MG EEC required for Stage 1 and MOD 4; and
- any further clearing of RG-MG EEC required for Stage 2 will be the subject of a further modification application for Stage 2 which will address the cumulative impact of the project as a whole.

Accordingly, WRWFPL seeks to increase the total clearing limit for RG-MG EEC in condition C1(b) of the Project Approval by 6 ha to allow for the clearing of a maximum of 28 ha so as to make provision for the construction of the remainder of Stage 1 of the White Rock Wind Farm and MOD 4 infrastructure.

5. WRWF Biodiversity Offset Package – increased offset

The existing Biodiversity Offset Package submitted under condition C7 of the Project Approval will be amended to further increase the credits proposed for RG-MG EEC to ensure sufficient credits are provided to offset the increased clearing limit sought as part of MOD 4. A Biobank Agreement application was submitted to OEH in December 2016 to register a 184 ha Biobank site over part of the 650 ha Tangari property owned by WRWFPL. As Eco Logical Australia have confirmed in the attached letter (Attachment 1), this existing biobank site will generate sufficient credits to offset the impacts associated with increasing the clearing limit for Ribbon Gum – Mountain Gum EEC to 28 ha. An overall increase of 6 ha would require additional credits in the order of approximately 180 credits for impact on Ribbon Gum – Mountain Gum EEC.

6. Conclusion

This letter supplements the information already provided in the MOD 4 EA and confirms that WRWFPL seeks a modification to increase the clearing limit for RG-MG EEC contained in condition C1(b) of the Project Approval by 6 ha so as to allow for the clearing of a maximum of 28 ha of RG-MG EEC for Stage 1 of the White Rock Wind Farm.

The proposed modification to condition C1 of the Project Approval is as follows:

> *The Proponent shall:*
>
> *(a) minimise the clearing of native vegetation on site; and*
>
> *(b) not clear more than ~~22~~ 28 hectares of the Ribbon Gum - Mountain Gum – Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion EEC onsite.*
>
> *Note: The clearing limits for Ribbon Gum - Mountain Gum – Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion EEC are based on the mapping undertaken by RPS Ecology in December 2015 and cover Stage 1 only and MOD 4 infrastructure.*

WRWFPL confirms that it will:

- continue to comply with the conditions of the Project Approval, including condition C5 which requires all reasonable and feasible effort to be made to avoid native vegetation disturbance (including clearing of hollow bearing trees) during micro-siting and construction of the project so as to reduce as far as possible the extent of vegetation disturbance required for the project; and
- update the Biodiversity Offset Package to ensure that, the additional 6 ha of RG-MG EEC which is required to be cleared to enable the construction of Stage 1 to proceed, is fully offset.

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

Yours Sincerely

Jeff Bembrick
Development Compliance Manager, on behalf of White Rock Wind Farm Pty Ltd.

Attachments:

1. Eco Logical Australia – Independent assessment regarding clearing of Ribbon Gum – Mountain Gum – Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion EEC – to support White Rock Wind Farm – Section 75W Modification Application No. 4 – Part 3A Project Approval MP10_0160 (19 April 2017)

2. CNC Project Management – Additional Vegetation Removal for Rotor Assembly at White Rock Wind Farm, 20 April 2017

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White Rock Wind Farm Pty Ltd
Suite 2, Level 23, 201 Elizabeth Street
Sydney NSW 2000

Attention: Jeff Bembrick

Your Ref:

Our Ref: 17SUT-6878

19 April 2017

Dear Mr Bembrick,

RE: Independent assessment regarding clearing of Ribbon Gum – Mountain Gum – Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion EEC – to support White Rock Wind Farm – Section 75W Modification Application – Part 3A Project Approval MP10_0160

Background

Eco Logical Australia (ELA) has been commissioned by White Rock Wind Farm Pty Ltd (WRWFPL), the proponent of the White Rock Wind Farm (WRWF), to undertake an independent assessment of clearing of Ribbon Gum – Mountain Gum – Snow Gum Grassy Forest/Woodland Endangered Ecological Community (EEC) as part of the construction of Stage 1 of the wind farm.

Based on ELAs assessment of the extent of clearing of the EEC to date, ELA understands that the approved clearing limit of the EEC contained in Condition C1(b) of the Project Approval may be inadequate to complete Stage 1 of the wind farm.

ELA has been engaged by WRWFPL to prepare an independent assessment in support of a modification application to increase the clearing limit of the EEC from 22 ha to 27.5 ha (being an increase of 5.5 ha).

Clearing of the EEC permitted by the Project Approval

The construction and operation of the WRWF is authorised under Project Approval MP10_0150 granted by the Minister for Planning on 10 July 2012 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Condition C1 of the Project Approval, as originally approved, authorised the clearing of '*no more than 22 hectares of native vegetation, unless otherwise agreed by the Director-General*'.

In July 2015, a WRWFPL sought to modify Condition C1 of the Project Approval (Mod 2) to clarify that the clearance limit of 22 hectares applied to the EEC only. On 24 July 2014, the modification application was determined.

Condition C1 of the Project Approval (as modified) states that:

The proponent shall:

a) *Minimise the clearing of native vegetation on-site; and*
b) *Not clear more than 22 hectares of the Ribbon Gum – Mountain Gum – Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion EEC on site.*

In December 2015, WRWFPL lodged a further modification application relating to, among other things, minor changes to the proposed layout. For the purposes of Mod 3, RPS (2015) re-calculated the estimated impacts prepared based on refined/updated vegetation mapping in December 2015. RPS 2015 mapped the vegetation in the study area into four categories:-

1. Ribbon Gum – Mountain Gum woodland – that is described as being representative of the EEC;
2. Yellow Box grassy woodland - that is described as being representative of the EEC;
3. Scattered Native Vegetation - that was stated as being native vegetation but not representative of the EEC due to the extent of modification; and
4. Pasture grasses – not a native vegetation type.

RPS 2015 impact calculations based on the revised Mod 3 project layout are shown in **Table 1** which shows an estimated 18.675 ha of Ribbon Gum – Mountain Gum EEC to be impacted as well as 1.188 ha of Yellow Box EEC and 5.208 ha of scattered native vegetation.

Table 1: Pre-construction clearing estimates as calculated by RPS in Table S2 of RPS 2015

	Pre-construction clearing estimate RPS 2015 Estimates			
Infrastructure	**Ribbon Gum / Mountain Gum Woodland (ha)**	**Yellow Box Woodland (ha)**	**Scattered Native Vegetation (ha)**	**Total Native Vegetation Impacted (ha)**
Ancillary Facilities	0.002	-	-	**0.002**
Substation	-	-	0.041	**0.041**
Access Tracks (14–22 m)	6.403	0.095	3.003	**9.501**
Turbines (footings, hardstand and rotor blades)	3.336	-	1.274	**4.61**
132 kV Lines (8 km)	5.429	1.039	0.299	**6.767**
33 kV underground cables	1.214	0.015	0.506	**1.735**
33 kV overhead lines	0.385	0.039	0.029	**0.453**
Masts (permanent & temporary)	1.906	-	0.056	**1.962**
Total	**18.675**	**1.188**	**5.208**	**25.071**

An offset package for this predicted clearing was submitted and approved by the Department of Planning and Environment (DPE) in August 2016 (AEP 2016; ELA 2016a). The approved offset package was prepared using the Major Projects Framework for Biodiversity Assessment (FBA) and included offsets for all vegetation impacted (as required by the FBA), not just mapped EECs as stated in Condition C1 of the Project Approval. The approved offset package is shown in **Table 2**. It is noted that the approved offset package included impacts to 19.85 ha of the Ribbon Gum – Mountain Gum EEC as mapped by RPS and an additional 2.65 ha of scattered native vegetation that in RPS opinion did not meet the definition of the EEC but was attributed to the EEC.

Table 2: Approved Biodiversity Offset Package for estimated Stage 1 impacts (includes all native vegetation)

Vegetation Zone	Condition Class	Area (ha)	Credits Required	Credits / ha	Total Credits Required
Ribbon Gum – Mountain Gum – Snow Gum grassy open forest (BR329)	Moderate / Good	19.85	595	29.97	**647**
Ribbon Gum – Mountain Gum – Snow Gum grassy open forest (BR329) (Area estimated from 50% Scattered Native Vegetation)	Poor	2.65	52	19.62	
Blakely's Red Gum – Yellow Box grassy woodland (BR272)	Moderate / Good	2.09	69	33.01	**120**
Blakely's Red Gum – Yellow Box grassy woodland (BR272) (Area estimated from 50% Scattered Native Vegetation)	Poor	2.65	51	19.25	

Extent of clearing of the EEC during construction of Stage 1 of the project

Construction for Stage 1 of the wind farm commenced in May 2016 and is ongoing. To ensure compliance with the Project Approval during the construction period, ELA understands that WRWFPL undertook regular reviews of vegetation clearing. In November 2016 and late February 2017, WRWFPL commissioned high resolution aerial photographs of the study area so that an accurate assessment of the actual extent of clearing could be made.

To undertake this assessment, ELA was provided with:-

- the GIS layers for the approved Mod 3 footprint,
- the 2015 RPS revised vegetation mapping layer,
- the aerial image used to compile the pre-construction vegetation layer (September 2010); and
- post construction aerial images dated November 2016 and February 2017. The resolution of these images allows ELA to capture the loss of individual trees.

ELA has undertaken a 'desk top' review of the mapping undertaken by RPS and have added an additional 0.08 ha of 'scattered native vegetation' to the project pre disturbance footprint. ELA has mapped the extent of soil/ground cover disturbance in the project site using the February 2017 image and intersected this layer with the modified RPS 2015 vegetation layer to calculate the extent of Ribbon Gum – Mountain Gum EEC and other native vegetation (as mapped by RPS) impacted. ELA have not re-mapped or re-classified the vegetation mapping undertaken by RPS. An example of this process is shown in **Figures 1, 2** and **3**. The areas of each vegetation type impacted are shown in **Table 3** and compared to RPS' estimates in **Table 4**.

Table 3 shows that as of the end of February 2017, 17.31 ha of the Ribbon Gum – Mountain Gum EEC as mapped by RPS 2015 has been cleared.

Estimated Impacts of clearing required for Mod 4 - alternative powerline.

A further modification application 4 (Mod 4) has been submitted to DPE for an alternative 330 kv grid connection (ELA 2016b).

An assessment using the FBA calculated that 0.53 ha of Ribbon Gum – Mountain Gum EEC would be impacted as part of Mod 4. In addition Mod 4 would also impact on 4.92 ha of Blakely's Red Gum – Yellow Box and 11.64 ha of White Box.

Impact of additional clearing required to complete Stage 1 of the project and proposed measures to offset impact

Separately to the additional clearing required for MOD 4, clearing for the 132kv powerline and 33kv overhead/underground cables required as part of Stage 1 is not yet complete. Estimates for the extent of additional clearing required for these components of the project, assuming clearing all native vegetation within a 45m and 10m easement respectively, will add a further 9.26 ha of Ribbon Gum – Mountain Gum EEC to the total already cleared for Stage 1.

Impacts to other native vegetation have also been minimised and include 0.39 ha of Yellow Box EEC clearing to date and an additional estimated 0.76 ha (Total 1.15 ha) and 7.39 ha of scattered native vegetation and estimated additional 1.16ha (Total 8.55 ha).

Total Additional Clearing of Ribbon Gum – Mountain Gum EEC

As set out above, it is now estimated that the full extent of Ribbon Gum – Mountain Gum EEC that will be required to be cleared for the Stage 1 project will be approximately 27.10 ha. This consists of:

- 17.31 ha which has already been cleared for Stage 1 as at the end of February 2017;
- a further 0.53 ha which will be required to be cleared if Mod 4 is approved; and
- a further 9.26 ha which is required to enable construction of Stage 1 (excluding the works the subject of Mod 4) to be completed.

Accordingly, WRWFPL seeks to modify Condition C1(b) to increase the clearing limit for Ribbon Gum – Mountain Gum EEC to 27.5 ha, an overall increase of 5.5 ha.

ELA have not undertaken an 'impact assessment' of this additional clearing as:

- the clearing associated with Mod 4 has already been separately assessed in the Environmental Assessment Report prepared for Mod 4; and
- the further clearing required to enable construction of Stage 1 (excluding the works the subject of Mod 4) to be completed is not associated with any changes to the approved Mod 3 layout. Rather, it is simply the outcomes of the more accurate estimates now prepared of the actual and likely clearing associated with the approved Stage 1 project.

It is proposed that the Biodiversity Offset Package (**BOP**) for Stage 1 will be amended to take into account the additional clearing.

A Biobank Agreement application was submitted to OEH in December 2016 to register a 184 ha Biobank site over part of the 650 ha Tangari property owned by WRWFPL.

This biobank site will generate 1,816 ecosystem credits that is sufficient to meet the offsets for:

- the RPS 2015 estimated Stage 1 impacts shown in Table 2 (767 credits)
- the offsets for the alternative powerline subject to Mod 4 (251 credits); and
- an estimated additional 233 credits for the additional 5 ha of Ribbon Gum – Mountain Gum EEC clearing (which is the subject of this revised clearing assessment) and the associated other vegetation types (Yellow Box and scattered native vegetation).

Accordingly, WRWFPL's existing biobank site will generate sufficient credits to offsets the impacts associated increasing the clearing limit for Ribbon Gum – Mountain Gum EEC to 27.5 ha, being an overall increase of 5.5

ha. In this regard, WRWFPL proposes to submit an amendment to the Biodiversity Offset Package to address/offset these additional impacts.

Robert Humphries

Robert Humphries
Eco Logical Australia

Attachments:

Table 3: Area of each vegetation community impacted to 10 April 2107 and predicted to be cleared

Table 4: Comparison of cleared and predicted Ribbon Gum – Mountain Gum impacts to RPS 2015

Figure 1 – Approved Mod 3 footprint and predicted vegetation impacts

Figure 2 – Extent of disturbance associated with construction to 27 February 2017

Figure 3 – Extent of mapped vegetation impacted by current disturbance

References

AEP (2016) White Rock Wind Farm Stage 1 Draft Biodiversity Offset Package March 2016

ELA (2016a) Final Offset package – White Rock Wind Farm – Letter to Department of Planning and Environment, 11 July 2016.

ELA (2016b) FBA Assessment of White Rock Wind Farm Alternative Grid Connection. Letter to White Rock Wind Farm Pty Ltd, 2 December 2016.

RPS (2011) Ecological Assessment Report – White Rock Wind Farm, near Glen Innes, NSW. Report to Epuron Pty Ltd, March 2011.

RPS (2015) White Rock Wind Farm, Native Vegetation Impact Review – Modification Application. Prepared for White Rock Wind Farm Pty Ltd, Final Rev 5 / December 2015.

Table 3: Area of each vegetation Community impacted and predicted to be impacted as mapped by ELA, February 2017

	Native Vegetation cleared to date (as of 27/02/2017)								
Vegetation type (as mapped by RPS 2015)	**Hard stands, facilities and roads**	**132kV Easement**	**33kV cables**	**Wind Masts**	**Sub-total (cleared to date)**	**Predicted clearing in full 45m 132kv easement (nth and sth sections)**	**Predicted clearing in full 45m 132kv easement (central section)**	**33kV predicted assuming 10m width**	**Grand Total**
Ribbon Gum - Mountain Gum Woodland EEC	15.88	0.32	0.65	0.46	17.31	3.81	1.99	3.46	26.57
Yellow Box - Blakely's Red Gum Woodland EEC	0.08	0.31	0.00	0.00	0.39	0.70	0.00	0.06	1.15
Scattered Vegetation	6.98	0.02	0.39	0.00	7.39	0.30	0.00	0.86	8.55
					0.00				0.00
Grand Total	**22.94**	**0.65**	**1.04**	**0.46**	**25.09**	**4.81**	**1.99**	**4.38**	**36.27**

Table 4: Comparison of cleared and predicted Ribbon Gum – Mountain Gum impacts to RPS 2015.

	Pre-construction clearing estimate RPS 2015 Estimates				Actual clearing as of April 2017		
Infrastructure	**Ribbon Gum / Mountain Gum Woodland (ha)**	**Yellow Box Woodland (ha)**	**Scattered Native Vegetation (ha)**	**Total Native Vegetation Impacted (ha)**	**Ribbon Gum / Mountain Gum EEC (ha)**		
					Impacted (ha)	**Projected impact (ha)**	**Total Estimated**
Ancillary Facilities	0.002	-	-	**0.002**	**15.88**		**15.88**
Substation	-	-	0.041	**0.041**			
Access Tracks (14–22 m)	6.403	0.095	3.003	**9.501**			
Turbines (footings, hardstand and rotor blades)	3.336	-	1.274	**4.61**			
132 kV Lines (8 km)	5.429	1.039	0.299	**6.767**	**0.32**	**5.8**	**6.12**
33 kV underground cables	1.214	0.015	0.506	**1.735**	**0.65**	**3.46**	**4.11**
33 kV overhead lines	0.385	0.039	0.029	**0.453**			
Masts (permanent & temporary)	1.906	-	0.056	**1.962**	**0.46**		**0.46**
Total	**18.675**	**1.188**	**5.208**	**25.071**	**17.31**	**9.26**	**26.57**

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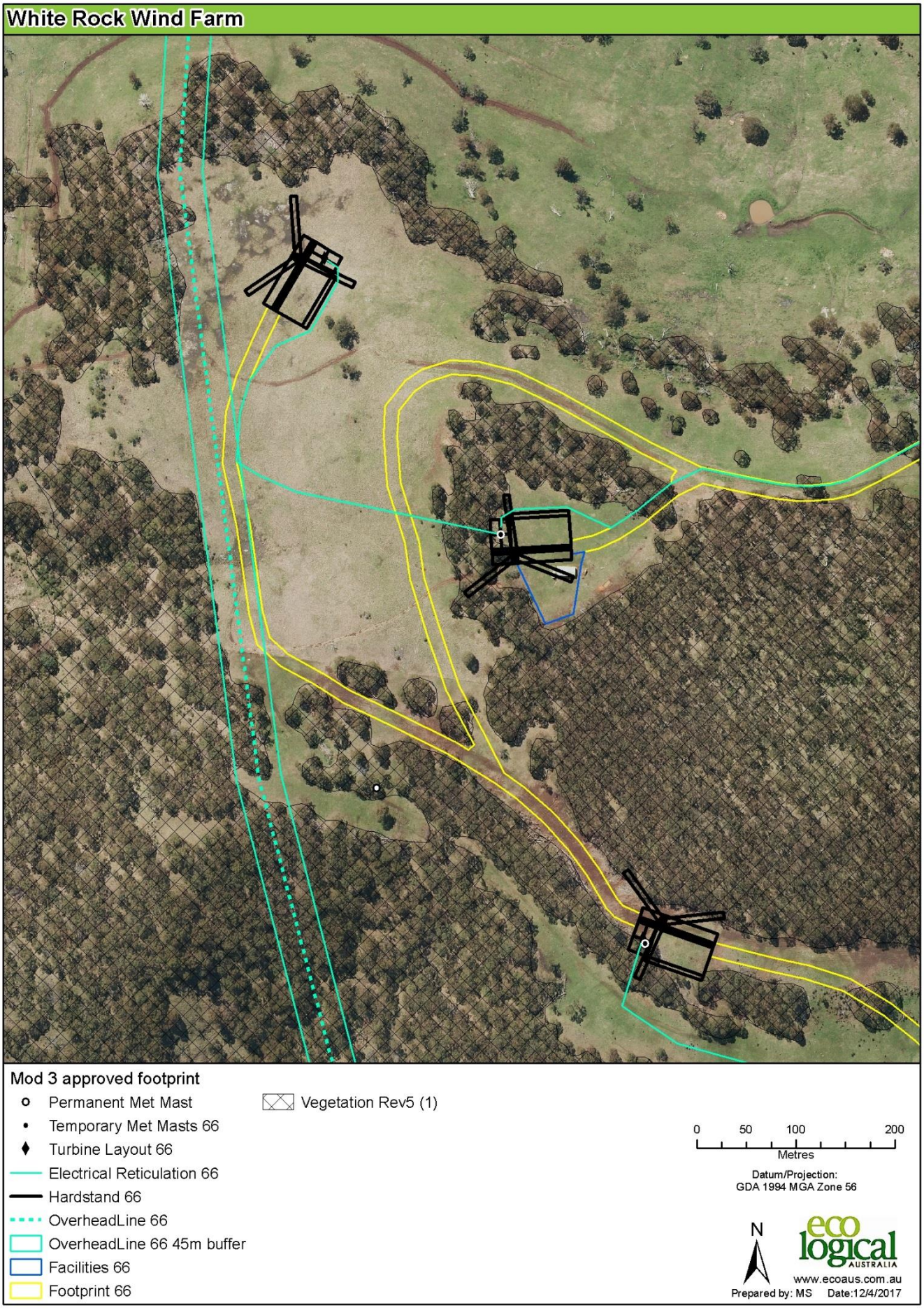


Figure 1: Approved Mod 3 footprint and predicted vegetation impacts

Figure 2: Extent of disturbance associated with construction to 27 February 2017

Figure 3: Extent of mapped vegetation impacted by current disturbance

20 April 2017

Adrian Maddocks
Development Manager
White Rock Wind Farm

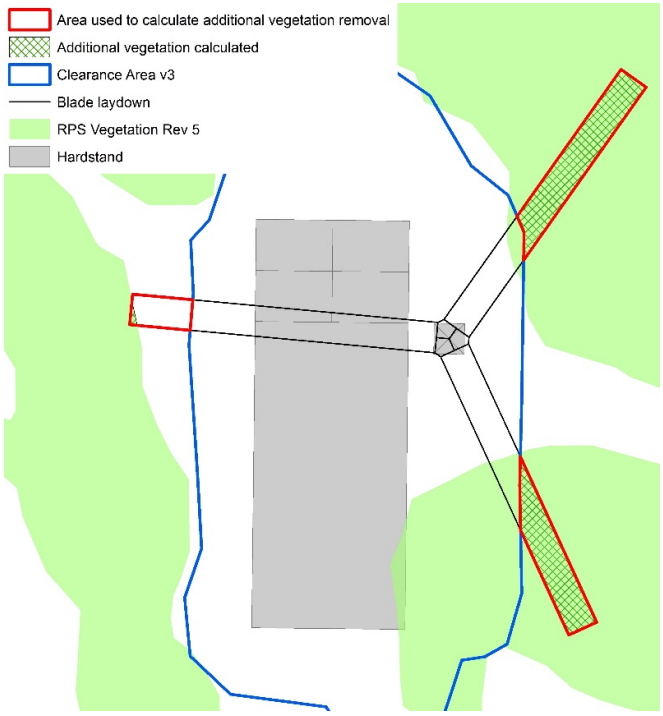
Submitted via email to: adrianmaddocks@goldwindaustralia.com

RE: Additional vegetation removal for rotor assembly at White Rock Wind Farm

Dear Adrian,

CNC Project Management has calculated the additional vegetation removal required for the blade laydown areas at White Rock Wind Farm. Blade laydown areas are required to layout and assemble the rotor hub and blades on the ground prior to lifting via crane and attaching to the nacelle at the top of the tower.

The blade laydown area consists of a hardstand to place the rotor hub and laydown for 3 blades attached to the hub. The turbine blades being installed at White Rock Wind Farm are 59.5m long. CNC has calculated the blade laydown areas as 60m long and 6m wide. A 6m width is used to address potential 'blade sail' during the lifting operation. The area is used is shown in the sketch below:



CONTACT US

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CNC is proudly certified to

QUALITY | ENVIRONMENTAL MANAGEMENT | OCCUPATIONAL HEALTH & SAFETY

Any vegetation overhanging these area will require to be lopped or removed to be able to safely crane the rotor and blades without damage into place.

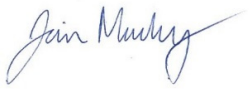
As the majority of the civil work and vegetation clearance for the project has already been carried out, CNC has only calculated vegetation removal for the blade laydown that sits outside of the already cleared area. This cleared area was mapped from Aerial Imagery flown on the 23rd of February 2017 and referred to as Veg Clearance Area v3.

Using the RPS vegetation survey data (revision 5), this results in the additional clearance of:

0.53ha of Ribbon Gum - Mountain Gum Woodland.

0.18ha Scattered Vegetation.

Yours sincerely,



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