

25 February 2022

Ms Nicole Brewer
Director - Energy Assessments
Department of Planning and Environment
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2150

Dear Ms Brewer

BOWMANS CREEK WIND FARM (SSD-10315)

1. INTRODUCTION

Epuron Projects Pty Ltd (the Proponent) is seeking approval for the construction, operation, maintenance and decommissioning of the Bowmans Creek Wind Farm (the Project), which is generally located at Bowmans Creek, approximately 10 kilometres (km) east of Muswellbrook and 120 km north-west of the Port of Newcastle in NSW.

The Proponent is seeking State Significant Development (SSD) Consent (SSD 10315) under Division 4.7 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) and an Environment Protection and Biodiversity Conservation Approval (Referral 2020/8631) under Section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The *Bowmans Creek Wind Farm Environmental Impact Statement* (EIS) (Hansen Bailey, 2021) was prepared in accordance with the SEARs, deemed adequate for public exhibition and subsequently placed on public exhibition between 31 March 2021 and 11 May 2021.

During public exhibition of the EIS, a total of 167 submissions were received from both government agencies and the general public. A *Submissions Report* (James Bailey and Associates (JBA), 2021a) was prepared to respond to issues raised during the exhibition period.

An *Amendment Report* (JBA, 2021b) has also been prepared, which outlines a number of changes to the Project that are proposed in response to issues raised by stakeholders and to further mitigate or minimise environmental impacts. The Submissions and Amendment Reports were submitted to the Department of Planning, Industry and Environment (DPIE) (now referred to as Department of Planning and Environment (DPE)) on 8 October 2021.

A request to provide additional information on a number of matters was received from DPE on 15 October 2021. In addition to this, both Heritage NSW and the Department of Planning, Industry and Environment - Biodiversity and Conservation Division (BCD) provided further recommendations to DPE following their review of the Submissions and Amendment Reports.

This letter has been prepared to provide further information and respond to recommendations, as requested by DPE, Heritage NSW and BCD.

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2. DPE REQUEST FOR ADDITIONAL INFORMATION

2.1 VISUAL

DPE requested additional assessment and justification of visual impacts on potentially significantly impacted non-associated residences and public viewpoints, as discussed in the following sections. Green Bean Design (GBD) have prepared an additional report Bowmans Creek Wind Farm (SSD-10315) 'Response to DPIE Request for Additional Information' (GBD, 2022) (Visual Additional Information) in response to this request. This is included in **Appendix A**.

2.1.1 Project Design / Mitigation

- Consider further mitigation where neighbour agreements have not been entered into, including project design (and justify if an agreement has not been entered into for residences recommended for an agreement in the LVIA).
- Evidence of neighbour agreement.
- Justify that the vegetation screening proposed in the EIS will be effective at residences given topography.
- Provide a consolidated table of assessment of significance for non-associated residences with potentially significant visual impacts.

A number of amendments have been made to the project throughout the design, planning and assessment process, to mitigate unacceptable visual impacts, including a reduction from 72 Wind Turbine Generators (WTGs) to 56 WTGs and the relocation of several more WTGs, as well as a material reduction in the need for road development and power reticulation establishment.

Table 2 and Table 3 in **Appendix A** provides an updated consolidated assessment of the potential visual impact on residences within 3 km (below the black line) and between 3 km – 4.4 km (between the black and blue lines) of the proposed turbine layout respectively. All residences within 3 km and between 3 km – 4.4 km of a proposed turbine are compliant with the Bulletin, except for P22-1. Should ongoing discussions with the landowner at P22-1 not result in a Neighbour Agreement, the Proponent has committed to the removal of turbines T22 and T23. Residual impacts on the remaining non-associated dwellings within 3 km can be effectively reduced using screen planting.

Screen planting has been demonstrated as an effective mitigation measure through preparation of detailed cross sections and photomontages for all non-associated dwellings below the black line where views toward wind turbines have been identified. This is illustrated in Figures 1 to 20 in **Appendix A**.

The cross sections prepared illustrate that planting less than 10 m in height, at a distance of 30 m from dwellings, would screen views toward wind turbines in elevated locations. The height of effective screen planting will gradually reduce if planting can be installed closer to dwellings. In some locations effective screening height may be reduced to around 5m or below, where larger trees may be replaced by small trees or large shrubs closer to dwellings (between 10m to 15m).

Screen planting between the black and the blue line would also be considered effective given the reduced view angle toward wind turbines from distances beyond 3km of the wind turbines (i.e., if wind turbines can be screened from dwellings below the black line, then planting will also provide an effective mitigation measure to screen/filter views from dwellings between the black and blue lines).

Neighbour agreements are discussed in **Section 2.1.2** below.

2.1.2 Number of Non-Associated Residences

- Confirm the number of non-associated residences within 3 km and 4.4 km of turbines.

Table 1 below includes a summary of the number of non-associated landholders located within 4.4 km of a WTG and **Appendix B** includes a list of all the dwellings located up to 4.4 km from a WTG, noting that there are a number of landholders who may have more than one dwelling located within 4.4 km of a WTG.

Agreements have been offered to Neighbour Landholders. Discussions are ongoing and evidence of agreements will be supplied to DPE as discussions conclude.

Table 1 Number of Non-associated Landholders within 4.4 km of a WTG

Landholder Category	No. Landholders < 3km	No. Landholders 3 km – 4.4 km	Total
Neighbour Landholders	14	-	14
Non-Associated Landholders	-	30	30
TOTAL	14 (17 Dwellings)	30 (36 Dwellings)	44 (53 Dwellings)

2.1.3 Night-Lighting

- Assess the impacts of the proposed night-lighting on all potentially impacted receivers.

An assessment of the potential visual impacts of night-lighting is provided in **Appendix A**.

Night time lighting associated with the wind farm is unlikely to have a significant visual impact on the majority of public receiver locations. Obstacle lighting visibility would tend to be very short and partially screened by undulating landform along some sections of local road corridors and also influenced by the direction of travel.

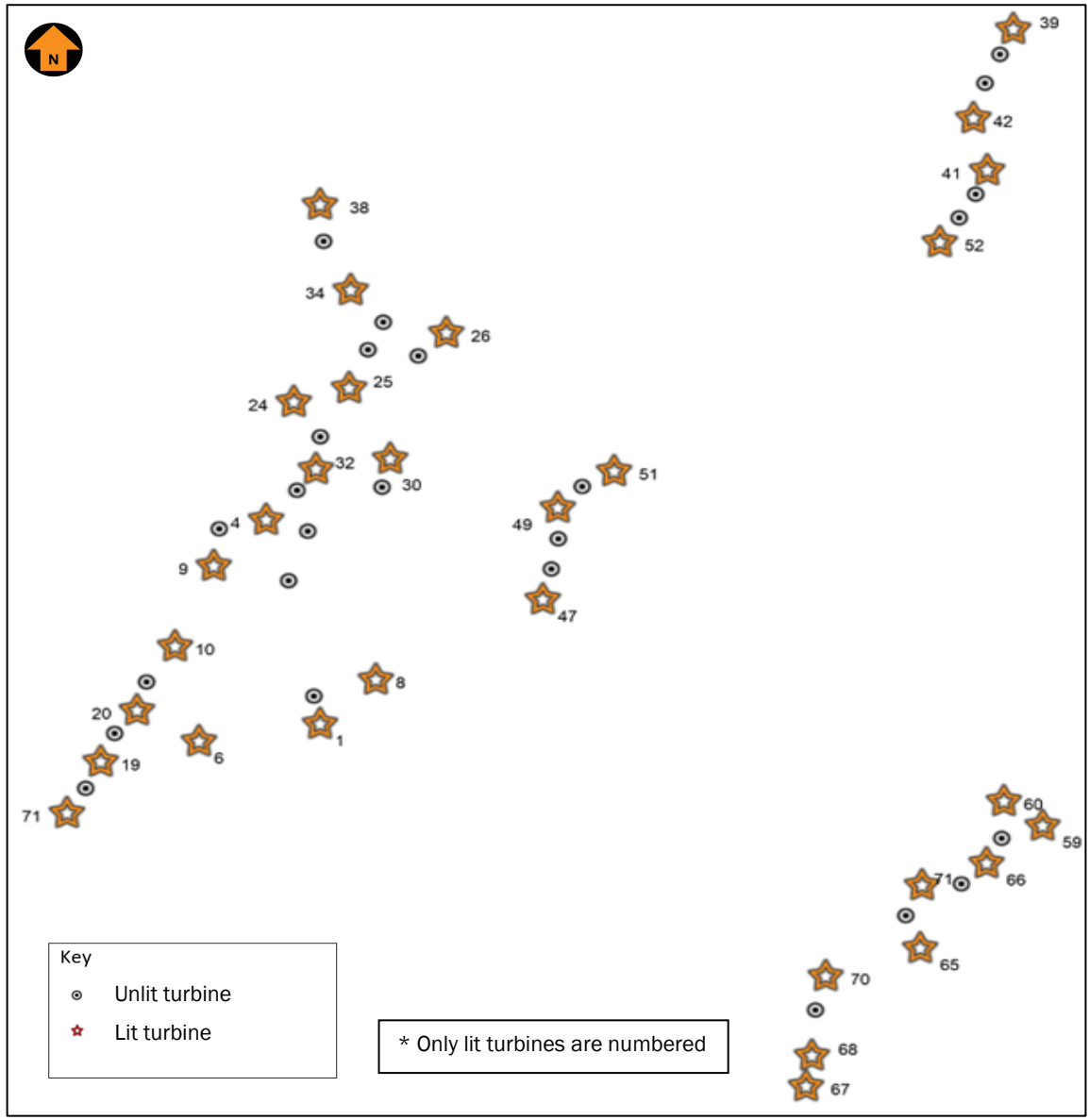
Night time obstacle lighting associated with the wind farm would be visible from a number of the residential receiver locations surrounding the wind farm; however, topography and screening by vegetation and planting around residential dwellings would screen or partially obscure views toward night time obstacle lighting.

Further to the above, extensive consultation has been undertaken with the Department of Defence (DoD) and Civil Aviation Safety Authority (CASA) over the requirement for aviation hazard lighting of the WTGs. The Proponent wishes to establish protocols to limit the amount of time the lights are energised, as well as minimise the lighting intensity to 200 candela.

CASA considered it would be acceptable to reduce the obstacle lighting intensity from medium 2000 candela intensity to minimum 200 candela intensity on the basis that there is limited background illumination. Furthermore, CASA recommended that the obstacle lights are energised during the hours of darkness and periods of low visibility as there could be civil aircraft in the area at night when the DoD Restricted Area is not active.

The DoD has confirmed that the night time lighting is not required for DoD operations as low level flying is not undertaken in the area during the night. Obstacle lighting requirements for DoD operations would only be implemented for low light daytime conditions of less than 5,000 lux. A lighting intensity of 2000 candelas would therefore be more appropriate. DoD have also agreed that daytime lighting could operate on a photoelectric switch, coupled with a time of day switch, which would automatically enable the lighting under poor visibility conditions.

The Obstacle Lighting Plan reflecting DoD and CASA requirements is provided in **Figure 1** below.



1. Light and Shielding Specification:
 - Lights:*
 1. **Medium intensity** steady red obstacle lights - must be visible in all directions in azimuth;
 2. The peak effective intensity of medium-intensity obstacle lights must be 2 000 +/- 25% cd with a vertical distribution as follows:
 - a. for **vertical beam spread** – a minimum of 3 degrees;
 - b. at -1 degree elevation – a minimum of 50% of the lower tolerance value of the peak intensity;
 - c. at 0 degrees elevation – a minimum of 100% of the lower tolerance value of the peak intensity.
 3. For subsection (2), **vertical beam spread** means the angle between 2 directions in a plane for which the intensity is equal to 50% of the lower tolerance value of the peak intensity.

- Shielding:*
1. Shielding of the downward component of obstacle lighting is permitted, and if used must be such that:
 - a. no more than 5% of the nominal light intensity is emitted at or below 5° below horizontal
 - b. no light is emitted at or below 10° below horizontal
 2. Obstacle lights must be provided on top of the generator housing in a way that allows lights to be seen from every angle in azimuth (may require 2 lights to fulfil this requirement).

Department of Defence obstacle lighting requirement:

1. Operation of lights is for low light **daytime operations only (<5000 lux)**
2. **Not required to be lit at night (all lights OFF at night as no low-level flying operations taking place)**
3. the frequency range of the LED light emitted must fall within the range of wavelengths 655 to 930 nanometers.

2. References
 1. Civil Aviation Safety Authority, *Part 139 (Aerodromes) Manual of Standards 2019*, dated 13 August 2020; Chapter 9 Division 4 Obstacle lighting (Sections 9.31, 9.32 and 9.33)
 2. Department of Infrastructure and Regional Development, Australian Government, National Airport Safeguarding Framework, *Guideline D Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation*, v4.1.3, 15 July 2012, paragraphs 35, 36 and 37

2.1.4 Residences within 4.4 km

- Assess four residences that do not appear to be included in the EIS at Davis Creek Road (2), Bowmans Creek Road (1) and Muscle Creek Road (1).

One additional house identified as E17-7 has been assessed and included in **Appendix A**. An assessment was conducted at E17-3 and used as a representative location for a cluster of dwellings in accordance with the Visual Bulletin. The assessment at E17-3 is considered suitable as a representative location due to the close proximity.

The remaining residences identified by DPE are associated dwellings.

2.1.5 Excluded Public Viewpoints Within 4.4 km

- Assess, or justify why an assessment has not been provided, for viewpoints within 4.4 km of turbines, including public roads.

GBD confirm that within 4.4 km of the wind turbines there are no:

- Recreation, cultural or scenic sites of National, State or regional significance;
- Interstate and state passenger rail lines with daily daylight services;
- State Highways, freeways and classified main roads, classified tourist roads;
- Land management roads;
- Walking tracks of moderate local significance or infrequent recreation usage;
- Navigable waterways;
- Community Halls and showgrounds; and
- Sports facilities, playgrounds, skateparks or dog parks.

There are a small number of low use travel routes around the site largely providing access to rural dwellings. An assessment of these rural roads is included in **Appendix A**.

2.1.6 Receivers Beyond 4.4 km

- Justify why residential receivers beyond 4.4 km have not been assessed (including consideration of Multiple Wind Turbine Effects).

The *Landscape and Visual Impact Assessment* (LVIA) prepared by GBD (Appendix H of the EIS) included the assessment of dwellings beyond 4.4 km. A number of representative view locations were selected in proximity to these dwellings with multiple Wind Turbine Tool Diagrams provided for each of the view locations.

- Consideration of impacts on Mount Royal National Park (including Pieries Point Lookout), noting its listing as part of Gondwana Rainforest of Australia World Heritage Area.

The Mount Royal National Park (Pieries Point Lookout) was included in the LVIA (refer to LVIA View Location 5), in accordance with the Visual Bulletin.

The Mount Royal National Park is densely forested over much of the park area and as such views from facilities within the park (including the Youngville campground, picnic area and barbeque facilities) are screened by trees.

2.1.7 Photomontages / Wireframes

- Provide for the following:
 - Residence F18-1;
 - Residences Q17-1, Q17-2, Q17-3 (representative) capturing all potential views of turbines; and
 - Confirm the residence reference number for Figure 30 of the LVIA (this may be K23-1, not O22-1).

Additional photomontages are provided in **Appendix C**. The residence reference for Figure 30 of the LVIA should have been noted as K23-1 (not O22-1). The amended photomontage for k23-1 is provided in **Appendix C**.

2.2 VOLUNTARY PLANNING AGREEMENT

DPE requested details on the final position of Voluntary Planning Agreements (VPAs) with Muswellbrook Shire, Singleton and Upper Hunter Shire Councils, and if terms have been agreed, provide the general terms.

The Proponent has consulted with the shire councils in the three Local Government Areas (LGAs). After careful consideration of the request submitted by each council, the Proponent has revised its offer for a VPA contribution of \$3,000 per turbine per year, to \$3,400 per turbine per year. This will be provided to the three councils for each turbine located within their respective LGAs, on an annual basis.

2.3 TRAFFIC

Additional information is sought by DPE for the schedule of road works, as outlined below.

2.3.1 Agreement to Scope of Road Works

- Confirm each of the relevant road authorities agree to the schedule of road works outlined in Appendix C (OSOM route assessment) of the Traffic and Transport Impact Assessment (TTIA), or works as otherwise agreed.

The Proponent has consulted with Traffic for NSW (TfNSW) and the local councils over the proposed road upgrades required for the Over Size Over Mass (OSOM) vehicle route.

Extensive consultation was undertaken with TfNSW over concerns with the forecast increase in heavy vehicles which are proposed to use the Hebden Road South intersection with the New England Highway during the peak construction period. A number of mitigation measures were considered to ensure the safety of left turning heavy vehicles leaving Hebden Road South and turning onto the New England Highway in the absence of an acceleration lane on the Highway. It was agreed that the Proponent will install temporary traffic safety mitigation measures at the intersection for the duration of the construction period including but not necessarily limited to:

- The installation of traffic warning signs with flashing lights, which will operate during the construction period when 'truck and dog' traffic are utilising the intersection;
- 'Truck & Dog' traffic to have limited operating hours to avoid peak south bound traffic; and
- Documented driver education to ensure that 'truck & dog' vehicle drivers are adequately trained in how to safely navigate the intersection.

2.3.2 Schedule of Works

- Provide an agreed schedule of works that details the relevant roads/intersections, location of works, indicative scope of works, and proposed timing of the works.

Appendix C of the TTIA included in the EIS contains a schedule of likely works necessary to facilitate the OSOM vehicle route from the Port of Newcastle to the site access points. Cardno (NSW/ ACT) Pty Ltd (Cardno) has reproduced this schedule with the additional information, as requested. This is included in **Appendix D**, along with Figure 39 from the EIS, which shows the location of the works with a cross reference to this schedule of works.

2.4 BIODIVERSITY

- An updated version of Figures 9 to 13 of the Amendment Report that shows the amended development footprint and identifies the turbines and key infrastructure was requested by DPE.

Updated Figures 9 to 13 are provided in **Appendix E**.

- Once the schedule of road upgrades is finalised, confirm that all disturbance associated with road upgrades has been assessed.

All disturbance associated with the road upgrades have been assessed accordingly. This is included in the Addendum to the BDAR (refer to **Appendix H**).

- Confirm which threatened flora and fauna species would be the subject of targeted surveys.

Table 2 lists the threatened species that will be the subject of targets surveys.

Table 2 Targeted Survey Threatened Species

Scientific Name			
<i>Acacia bynoeana</i>	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	<i>Prasophyllum petilum</i>	<i>Rutidosis heterogama</i>
<i>Asperula asthenes</i>	<i>Monotaxis macrophylla</i>	<i>Prostanthera cineolifera</i>	<i>Senna acclinis</i>
<i>Cynanchum elegans</i>	<i>Ozothamnus tessellatus</i>	<i>Pterostylis chaetophora</i>	<i>Thesium australe</i>
<i>Diuris tricolor</i>	<i>Pomaderris queenslandica</i>	<i>Pterostylis gibbosa</i>	

Note: No fauna species are proposed to be the subject of further targeted surveys however further tree hollow assessments are proposed at micro-siting

2.5 FIGURES

DPE requested updates to a number of figures, including:

- *Regional Context (EIS Figure 2) and Project Layout (Amendment Report Figure 2): Increase clarity and include key features, including satellite imagery, major roads, associated / non-associated residences; railways; waterways/creek lines; internal and access route roads;*
- *Road Upgrades: Provide an overview (regional scale) map of proposed road works, with location of works marked and cross referenced with the agreed schedule of works;*
- *Heritage: Provide a consolidated Archaeology and Cultural Heritage (ACH) and Historic heritage figure showing the amended project layout, including:*
 - *Historic heritage sites (3 LEP listed sites, 2 new sites); and*
 - *Aboriginal heritage sites identified during surveys and the three AHIMS sites within the Survey area (ensure sites are identified).*

Update figures are provided in **Appendix E**.

2.6 OTHER

2.6.1 Extent of Impacts

- *Ensure the full extent of the final impacts of all project related works and infrastructure, including road upgrades and transmission lines, are assessed.*

The full extent of the final impacts of all project related works have been definitively assessed in the EIS, Amendment Report (JBA, 2021) and this Report.

2.6.2 Landowners Consent

- *Provide landowners consent for all land (including Crown Land) proposed to be developed, including road works, road crossing(s), cabling, transmission lines and all project related infrastructure (including a clear list cross-referencing all lots).*

An updated Schedule of Lands is provided in **Appendix F**. The proponent will provide an updated status of landowner consent to DPE in due course.

2.6.3 NSW Rural Fire Services

- *Provide evidence of consultation and feedback from NSW Rural Fire Services (NSW RFS) regarding the possibility of night aerial fire fighting operations, noting that the Submissions Report and Amendment Report commit to additional consultation with RFS regarding aerial firefighting.*

The proponent has consulted with NSW Rural Fire Services (NSW RFS) over the potential for night aerial fighting operations (refer to **Appendix G**). NSW RFS have confirmed that night aerial fire-fighting operations is not an approved activity currently undertaken by the NSW RFS. The NSW RFS has no objection to the proposed development and supports the recommendations made in the Submissions Report with regards to bushfire management.

2.7 GENERAL

- *DPE have indicated that any changes to the project should be documented in an Amendment Report. If you propose to lodge an Amendment Report, please write to the Department providing an overview of the likely changes and scope of additional assessment so that the proposed amendments can be considered as per the requirements of the Environmental Planning and Assessment Regulation 2000.*

There are no further amendments currently proposed to the Project.

3. BCD RECOMMENDATIONS

Following review of the Amendment Report and the Submissions Report, BCD provided further recommendations as detailed in the following sections. Cumberland Ecology have prepared an Addendum Report in relation to the *Amendment Report Biodiversity Assessment Report – Response to BCD Submission* (AR-BDAR) (Cumberland Ecology, 2021). This is included in **Appendix H**.

3.1 BIODIVERSITY

1. *The proponent should undertake targeted surveys for all potentially occurring threatened flora species in accordance with *Surveying threatened plants and their habitats: NSW Survey Guide for the Biodiversity Assessment Method* (DPIE 2020). Where surveys are not possible (due to safety or access reasons) either, the assumed presence technique should be applied, or an expert report should be prepared.*

In consultation with BCD, it was accepted that the assumed presence pathway will be utilised for most threatened flora species with further information and justification provided for an additional five species, including:

- *Acacia pendula*;
- *Callistemon linearifolius*;
- *Eucalyptus glaucina*;
- *Rhodamnia rubescens*; and
- *Rhodomyrtus psidioides*.

As agreed at the 24 November 2021 meeting with BCD, the BAM-C calculations have been updated to include assumed presence of the five species listed above following acceptance by the BCD of a proposed methodology for flora species with a unit measure of 'Count' (email from Robert Gibson, dated 3 December 2021). The specific details for assumed presence for each of these species is detailed in the Addendum Report included in **Appendix H**. The updated species polygons for assumed presence of these five flora species is shown in Figures 15.1 – 15.6 in **Appendix H**.

The summary table listing all threatened flora species for which presence has been assumed (Table 21 of the AR-BDAR) has been updated and is provided as Table 1 in **Appendix H**. The summary of credit requirements for assumed presence of threatened flora (Table 32 of the AR-BDAR) is provided in Table 2 in **Appendix H**.

2. *The accredited assessor should demonstrate how fauna survey effort has met the minimum required survey effort for each species. If that is unable to be done then the species must be assumed to be present or an expert report is provided to assess the likely presence of the species on the development footprint.*

The minimum survey effort for the 10 threatened fauna species has been met as detailed in the Addendum Report (**Appendix H**). As minimum survey effort has been met, the calculation of credits as per the AR-BDAR in relation to threatened fauna species is maintained. The fauna survey effort figures (Figures 6.1 – 6.21 of the AR – BDAR) have been updated to provide further clarity on location of the surveys and these are included in the Addendum Report in **Appendix H**. Table 6 of the AR-BDAR has also been amended to state which threatened survey guidelines were used for each species, and to state the minimum survey effort required and to show how each element of the surveys undertaken compared with the minimum requirements for each species (refer to Table 3 in **Appendix H**).

3. *Further information should be provided to show how the requirements of Sections 6.7.1.6, 6.7.1.8 (prescribed impacts) and 9.2.1.8 (blade strike) of the BAM have been met. If survey effort has not been met then BCD recommends further surveys are undertaken that allow for a full assessment of potential prescribed impacts and the impact of wind turbine strike on protected animals to be made.*

As outlined above, the minimum survey requirements to determine presence of threatened avifauna and threatened microchiropteran bats has been fulfilled and as such the requirements of Section 6.7.1.6 of the BAM for targeted surveys has been met. Nonetheless, in accordance with correspondence received from BCD (email from Robert Gibson dated 9 December 2021), further surveys will be conducted as part of micro-siting studies as well as during on-going monitoring under the proposed Bird and Bat Adaptive Management Plan, in consultation with the BCD.

It is also maintained that the requirements of Section 6.7.1.8 of the BAM have been met as the surveys indicated that the site is not considered to be a habitual flight path for nomadic and migratory species. Predicted flight paths for waterbirds are mapped in Figure 16 of the AR-BDAR whilst Figures 8.1 – 8.21 and 10.1 – 10.21 in the AR-BDAR map the likely habitat.

Further information has been provided to satisfy Section 9.2.1.8 of the BAM. The indicative location of Yellow Rock Cliff has been shown in updated versions of Figure 11, Figure 17 and Figure 18 of the AR-BDAR which are also provided in **Appendix H**, although it is noted that this area no longer occurs within the assessment area as a result of the project amendments described in the Amendment Report. The indirect impacts on aerial species are not predicted to be significant. Furthermore, significant avoidance behaviour by migratory species such that they are affected by indirect habitat loss is also predicted to be not significant.

4. *The direct and indirect impacts of the project that cannot be avoided should be described in terms of the frequency and intensity of direct and indirect impacts that are unable to be avoided.*

Table 27 of the AR-BDAR has been updated to provide further information about indirect impacts as outlined in the advice received from BCD (email from Robert Gibson, dated 3 December 2021). This is included in Table 4 in **Appendix H**.

5. *A copy of the field data sheet for BAM plot Q63 (August 2021) should be included in the BDAR.*

As outlined in Section 5.4 of the AR-BDAR all datasheets were provided in the BAM-C, including Q63. A further copy of all the datasheets utilised for the AR-BDAR have also been provided directly to BCD via email to Robert Gibson, dated 29 November 21.

3.2 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The BCD also requested additional information be provided on the assessment of Matters of National Environmental Significance (MNES) including:

- Details regarding the survey effort for the Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act) listed threatened species;
- Potential impact to any of the matter listed in the Referral Decision (dated 3 June 2020);
- Provide a summary of the BAM assessment results on MNES; and
- Identify if any EPBC Act listed species have not been assessed by the BAM.

Assessments for all threatened species, including 14 MNES species, have been conducted in accordance with the BAM. As presence has been assumed for threatened flora, the Commonwealth survey guidelines are currently not considered to be applicable. Nonetheless, relevant Commonwealth guidelines will be taken into consideration when planning future targeted surveys in conjunction with relevant BAM survey guidelines.

The potential impacts to each of the matters listed in the Referral Decision is summarised in Table 5 in **Appendix H**. A summary of the results of the BAM assessment of the impacts of the project on MNES, including consequences of the impacts, proposed offsets and consistency with relevant Recovery Plans and Threat Abatement Plans is provided in Table 6 in **Appendix H**.

There were two EPBC Act species listed in the Referral Decision that were not included in the BAM-C; the Fork-tailed swift (*Apus pacificus*) and Eastern Bristlebird (*Dasyornis brachypterus*).

The potential impacts to the Fork-tailed Swift have been assessed in accordance with the BAM. This is detailed in Section 6.5 of the AR-BDAR with further information provided in Section A.4.3 and Table 5 of this addendum report (**Appendix H**).

The Eastern Bristlebird is listed as Endangered under the EPBC Act and the *Biodiversity Conservation Act, 2016*. This species was filtered out by the BAM-C as this species is not associated with the PCTs/IBRA subregions present within the subject land. This is detailed in Section 6.1.2, Section 6.4 and Table 36 of the AR-BDAR and in Table 5 in **Appendix H**. Several migratory species listed in the PMST search conducted for the Referral were not included in the BAMC. The justification for the removal or retention of these species is outlined in Table 36 of the AR-BDAR and summarised in Table 7 in **Appendix H**.

4. HERITAGE NSW RECOMMENDATIONS

The following sections provides a response to the comments received from Heritage NSW on the Amendment Report and the Submissions Report in relation to Aboriginal Cultural Heritage matters.

4.1 ARCHAEOLOGICAL SURVEY

Heritage NSW commented that given the previous survey results, those parts of the new impact areas in land with a slope equal to or greater than 10 degrees will not require survey. It is recommended that mapping the slope analysis for the new areas of access track and corridor for overhead electricity reticulation at an appropriate scale to identify areas requiring additional survey. Heritage NSW support undertaking any additional survey prior to project determination to accurately identify the significance of any Aboriginal objects and cultural values that are present, understand the full project impact on Aboriginal cultural heritage, and to develop appropriate site specific mitigation measures where project impacts cannot be avoided.

Further surveys were undertaken on the 18th and 19th of January 2022 in the additional areas that have a slope less than 10 degrees, as requested by Heritage NSW. A copy of the *Revised Aboriginal Cultural Heritage Assessment Report* (Revised ACHAR) prepared by OzArk Environment and Heritage (OzArk) and the *Revised Heritage Impact Statement* (Revised HIS) (OzArk, 2022) are included in **Appendix I**.

There were two new Aboriginal sites (isolated finds) recorded along Sandy Creek (Sandy Creek IF1 and Sandy Creek IF-2) during the additional survey. The Revised ACHAR now considers a total of 18 Aboriginal sites, with 15 new and 3 previously recorded sites (ANT 4, Hunter Gas Project PAD and ANT 22). In summary, in terms of impact:

- Eleven sites will be avoided by the Project including 10 sites that are located outside the Survey Boundary and one site ANT 22, which will be avoided through design and careful management;
- Seven sites have potential to be harmed by the Project, including:
 - Two isolated finds (Sandy Creek IF-1 and IF-2), which will be totally impacted by the construction of an access track;
 - Two sites (Albano Road OS-02 and Albano Road OS-03), which will be partially harmed by works associated with the Transport Route disturbance;
 - One PAD (Hunter Gas Project PAD) that will be partially harmed by works associated with the Electricity Transmission Line (ETL) corridor; and
 - Two sites (Coalhole Creek OS-01 and Liddell Power Station-IF1), which are likely to be avoided by considered project design of the ETL corridor.

There were no further historic heritage sites identified during the latest survey, in addition to the two historic heritage sites (Hilliers Creek-HS01 and Rock Lily Gully-HS01) which were previously recorded. As such there are no changes to the management and mitigation measures recommended in the HIS.

The location of all sites recorded during the assessment is provided in Figure 4 in **Appendix E**.

4.2 TEST EXCAVATIONS

Heritage NSW support upfront test excavations prior to project approval where there is potential for a project to impact areas of Potential Archaeological Deposit (PAD).

Heritage NSW support not undertaking test excavations at site 37-2-2029 if impacts can be avoided through strategic placement of electricity structures.

Heritage NSW strongly recommend test excavations be undertaken at sites 37-3-1588 and 37-3-1589 prior to project approval to inform the amended project design as avoidance of these sites is not possible. Upfront assessment will ensure adequate consideration and management of Aboriginal cultural heritage values. Appropriate triggers and management measures will be required if the SSD is to be approved prior to completion of the test excavation program.

Additionally, Heritage NSW would recommend the proposed archaeological research design and methodology be prepared and submitted to DPE to be considered as part of the approval.

OzArk have prepared an advice in response to Heritage NSW recommendation, *Heritage Advice Test Excavation at 37-3-1588 and 37-3-1589*, (January 2022) (refer to **Appendix I**).

OzArk considers that the areas of the PAD within the Survey Boundary should be investigated by limited archaeological excavation following the methodology set out in the ACHAR. Given the assessed nature of the PADs in question, the uncertainty around whether Project impacts will ever eventuate, and the fact that delaying subsurface excavations until after approval is consented is not without precedent, OzArk considers the recommendations in the ACHAR as a prudent measure to ensure that Aboriginal cultural values are not unnecessarily harmed. That is, that this work should take place following approval of the Project but before any ground disturbing impacts occur around the sites.

4.3 RAVENSWORTH ESTATE

Heritage NSW note that a public submission was made regarding a lack of consideration for a Section 10 application that has been made under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* for Ravensworth Estate. A consideration of the specific values which make Ravensworth Estate significant has been addressed against possible project impacts in Table 7 of the Submissions Report. This assessment concludes that the project will not impact on any of these values. Heritage NSW considers that this matter has been adequately addressed.

Noted.

5. CONCLUSION

The responses to your inquiries contained in this brief letter report reaffirm that the proposed contractions to the Bowmans Creek Wind Farm, as described in the *Amendment Report* (JBA, 2021b), have materially reduced the potential deleterious impacts of the Project whilst only slightly reducing its very material benefits to society.

We trust that our responses to your enquiries provide the detail that you require to complete your assessment of the Project, however, please do not hesitate to contact the undersigned if you require any further information.

Regards

JAMES BAILEY & ASSOCIATES



James Bailey
Director