NSW GOVERNMENT | Office of Environment & Heritage

Your reference: MP 08_0022 Mod 3
Our reference: DOC16/377825
Contact: Peter Ewin
Ph: 6022 0606

Ms Melanie Prior
DA Coordinator
Resource Assessments
Department of Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Dear Ms Prior

RE: Exhibition of Silverton Wind Farm Modification 3 (MP 08_0022 Mod 3)

I refer to your email dated 29 July 2016 seeking the comments from the Office of Environment and Heritage (OEH) on the Environmental Assessment for the above proposal. This response is in regard to statutory matters relating to application of the *National Parks and Wildlife Act 1974* (NPW Act) and the *Threatened Species Conservation Act 1995.*

We have reviewed the information provided and consider that reduction of the development footprint for Modification 3 is likely to result in a reduced impact to Aboriginal cultural heritage (ACH) values than the original proposal.

However, it is unclear from the information presented whether the modification will result in a reduced risk to wildlife, including threatened species. There are some inconsistencies presented in relation to clearing footprint – the decrease in area due to the reduction in the length of track required is partly offset by the required larger footprint at each turbine because of the larger turbine size. The final reduction in area is also inconsistent – Page 12 identifies it as 10 hectares while in Table 3-7 it is listed as 22.1. Further clarification is required on the area, though it is noted that offsets are not proposed at this stage, with the key management action proposed to address vegetation impacts related to goat management.

Although the smaller development footprint will reduce threatened species impacts due to vegetation clearing, the risk of injury and death to threatened species still exists. The RSA (Rotor Swept Area) is lessened but there may be an increased risk to some groups of species due to larger turbine blades and closer proximity to tree canopies. Sufficient information has not been presented to determine how siting of the turbines has taken into account impacts on nesting raptors or the location of caves and mine shafts.

The Environmental Report does not provide a rationale for the revised turbine layout. Environmental constraints that we believe should have been considered in the positioning of turbines are detailed in **Attachment A**. OEH agrees that the initial siting is critical to minimise the impacts of bird and bat strike, as *'management such as turbine shut downs would be expensive and initial re-siting of turbines is likely to provide a better long term result for the project'* (Appendix 3 – Page).

It is important that a Bird and Bat Adaptive Management Plan (BBAMP) is put in place before clearing for construction begins, with at least twelve months of survey undertaken to assist in the identification of resident and migratory species. Monitoring needs to be regular so that response times for serious incidents, particularly those involving threatened species, are sufficient to minimise further risk. The monitoring protocol needs to particularly focus on the isolated wind turbines, which may provide an increased risk to biodiversity. A procedure for response to serious incidents must be part of the protocol. Further details about the BBAMP are provided in **Attachment A**.

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OEH understand that measures to ameliorate impacts to heritage values (both Aboriginal and non-Aboriginal) have not altered, and will be in accordance with the Environmental Assessment and Submissions Report mitigation measures. We consider that the reduced footprint for Modification 3 is more likely to address ESD principles concerning heritage values, and have no specific issues regarding ACH.

If you require further information about this matter please me on 6022 0606 or at peter.ewin@environment.nsw.gov.au.

Yours sincerely

P.E 30/8/16

PETER EWIN
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Enclosure: ATTACHMENT A – Detailed comments for Exhibition of Silverton Wind Farm Modification 3

ATTACHMENT A Detailed comments for Exhibition of Silverton Wind Farm Modification 3

Aboriginal cultural heritage

OEH consider that Modification 3 provides a more favourable heritage conservation and archaeological outcome than proposed for the original concept plan. There appear to be fewer impacts to heritage values due to the reduced footprint for Modification 3 than anticipated from the original proposed impact area.

Table A1 provides a brief overview of outcomes from the modification, as reported in the 'Modification 3 Report: Silverton Wind Farm' (NGH Environmental, July 2016).

Table A1 Comparison of heritage impacts due to original proposal and Modification 3.

Original impact	Mod 3 impact	Net
403 Aboriginal objects	296 Aboriginal objects	107 less Aboriginal objects impacted
65 Historic heritage objects	34 Historic heritage objects	31 less historic objects impacted

It is acknowledged that measures to ameliorate impacts to heritage values (both Aboriginal and non-Aboriginal) have not altered, and will be in accordance with the Environmental Assessment and Submissions Report mitigation measures.

In summary OEH has no specific issues with the reduction of the impact footprint, and consider that Modification 3 is more likely to address ESD principals concerning heritage values.

Biodiversity

OEH believes further information needs to be presented to be satisfied that the proposed modification will result in a reduced risk to wildlife, including threatened species. The area of clearing is identified as being reduced, though it is unclear whether the footprint is to be reduced by 10 (Page 12) or 22.1 hectares (Table 3-7). This discrepancy may be created by the inclusion of "temporary clearing" areas that are proposed for rehabilitation, though OEH has concerns about the likely success of rehabilitation in arid landscapes following disturbance, particularly with the likely ongoing presence of goats. Further clarity on the overall footprint would be helpful, particularly a map of tracks that are no longer proposed to be cleared. It is also noted that the significant reduction in clearing required for the 30 fewer kilometres of tracks is partly negated by the increased clearing footprint required for the larger turbines, despite the reduction in numbers.

Although the smaller footprint of the development will reduce threatened species impacts due to vegetation clearing, the turbines have larger blades and are closer to tree canopies and habitat. The risk of injury and death to threatened species still exists, and there may be an increased risk to some groups of species due to the altered extent of the RSA.

Silverton Wind Farm Environmental Report

Section 3.4.2 - Revised Modification 3 Layout (page 35)

We note that the area of Porcupine Grass – Red Mallee CEEC proposed for clearing is 0.24 ha more than the original development footprint. There is an increased impact now totalling 1.05 ha on this vegetation type, which since the original EA has been listed as critically endangered under the NSW *Threatened Species Conservation Act 1995.*

Although it has not been comprehensively surveyed, the current total extent of Porcupine Grass – Red Mallee CEEC is thought to be about 400 ha. We consider it unlikely that there will be a significant impact on the CEEC due to the clearing of an additional 0.24 ha.

Section 3.4.4 - Mitigation Strategies (page 36)

Table 3.9 notes that some sections of access track occur in areas where vegetation mapping has not been undertaken. It is unclear from the maps where this six hectares occurs. Further discussion of this area is required to address the overall impact of the proposal.

Pre-construction vegetation mapping of all areas to be cleared to determine the presence of the CEEC or threatened species habitat is a requirement of condition 5.3(b) development of the Construction Environmental Management Plan – Flora and Fauna Management Plan.

OEH require clarification about how the total impact to threatened species and ecological communities has been calculated without a complete development clearing footprint.

Appendix 3 Bird and Bat Risk Assessment

The Bird and Bat Risk Assessment Report (Appendix 3 to the Modification 3 Environmental Report) has been assessed against draft guidelines for the preparation of Bird and Bat Adaptive Management Plans (BBAMP) for wind farm proponents. The guidelines are being finalised and consolidate recent available knowledge about impacts of wind turbines on wildlife, and best-practice pre-construction surveys and post-development monitoring of wind farms.

The Environmental Report does not provide a rationale for the revised turbine layout, particularly in relation to biodiversity impacts. The following points outline environmental constraints that need to be considered in the positioning of turbines:

- Mapped buffers around raptor nests (section 2.4). Wedge-tailed Eagles nests are identified at Lakes Knob and Mount Robe (Page 8) but these are not identified on the maps provided. Although the current conditions of approval (2.31) state a 200 metre buffer, recent evidence from wind farms in south eastern NSW show that 500 metres are more appropriate. We believe further information needs to be presented, even if in accordance with the existing condition, to identify the potential impacts on raptors.
- Mapping of caves and mines with a buffer to minimise and assess the impact to the cave-dwelling Little Pied Bat. Appendix B (Species Risk Assessment, page xi) does not mention the proximity of caves and mines during the risk assessment to Little Pied Bat (Section 3.1.1, page 9, and Appendix B). The initial assessment identified a number of natural caves and mine shafts which are potential roosting sites for bats, but again these have not been identified in the mapping, and it is difficult to determine if they have been used to guide the final turbine locations.
- Gum Coolibah is listed in Table 3-1 as having a maximum height of 30 metres (with a note saying it is unlikely to reach this height), but Table 3-3 presents a maximum height for the community that this species occurs in as 20 metres. Data needs to be presented, either based on initial survey or from more recent visits on the height of this species (likely the highest within the proposed layout) to finalise the impact assessment.
- Further justification is required for the statement that the new layout poses lower alienation risk because there is 500 metres between the turbines.
- We support most of the recommended changes to the risk assessment for bird and bat strike however we recommend the following changes to Table 4.3:
    - Nankeen Kestrel should be high collision risk based on evidence in other parts on NSW;
    - Collared Sparrowhawk has been hit in south-eastern NSW so should be moderate risk; and
    - White-throated Needletail is internationally migratory so should be high risk (see also paragraph in section 4.2.1), though we recognise it is likely to be an irregular migrant in this part of the state.
- All 'at risk' raptors are significant due to the importance of high-order predators in the ecosystem.
- Section 5.2.2 references Natural England Technical Note TIN051 as the currently accepted way to calculate blade distance from habitat. If there is a distance of 50 metres from blade-tip to the top of the canopy, there should be a buffer of around 70 metres. The assessment doesn't seem to use the results of this formula, and instead discusses increased collision risk in areas with less than 10 metres clearance to the vegetation. Buffering of vegetation is supported, but may require further information to be appropriately implemented.

Any vegetation within the new rotor swept area (RSA) must be considered to be impacted and considered in the clearing footprint. Page 12 of the Modification Report does discuss the increased footprint associated with the larger turbine, indicating an increased area of 17.1 hectares because of this. It is also assumed that micro-siting may allow increase distance from trees, particularly those less than 10 metres from the rotor blade, but the overall footprint may be larger because of the sweep of the larger turbines.

- The key mitigation measure needs to be revisited to include adaptive management. Monitoring programs should not be designed to document bird and bat mortalities.
- The mitigation measure to "modify turbine ridge habitat" based on the results of monitoring during operation (Section 5.2) is not supported by OEH. Modification of the turbine layout provides an opportunity to avoid known impacts and reduce the likelihood of costly turbine shut-downs in the future, as stated in Section 5.2.1.

Bird and Bat Adaptive Management Plan

A Bird and Bat Adaptive Management Plan (BBAMP) should be prepared and implemented before construction starts. OEH is drafting a guideline for plan development, including survey requirements, so the BBAMP should be developed in close consultation with OEH.

In general, monitoring needs to be regular enough for any serious incidents, particularly involving threatened species, to enable a response that minimises further risk. Monitoring also needs to focus on the isolated wind turbines that may have an increased risk. A procedure for response to serious incidents must be part of the protocol.

It is suggested that the monitoring protocol should have two components.

- Monitoring of bird and bat activity around wind turbines after construction to see whether fauna are successfully avoiding turbines when they are in operation.
- Monitoring of any deaths that are occurring once the wind turbines are in operation.

A number of factors have not been adequately addressed in the Bird and Bat Risk Assessment and should be included in the BBAMP, including but not limited to:

- NGH Environmental previously concluded that nomadic honeyeaters, including the threatened Pied Honeyeater, are not at risk because they fly within the site "not greatly exceeding canopy height". Table 1 lists the canopy height of Gum Coolibah as 30 metres, which is within the revised RSA (Section 3.1.1, page 9).

  As part of the first 12 months of BBAMP monitoring, more adequate survey needs to be undertaken to record flight height for Painted Honeyeaters outside drought conditions.
- Identified 'at risk' species in Section 4.2.1 should be targeted in BBAMP baseline studies and be included in twelve months of utilisation surveys of the site.
- BBAMP baseline studies should assess any other species that have not yet been recorded, but have the potential to occur. Baseline studies should include detectors at RSA for high-flying bats – use of detectors between 30 and 180 metres is recommended to give a complete picture on the potential species using the RSA.
- The BBAMP must test and report on the hypotheses presented by the risk assessment in Section 4.2.1. For example, "*the potential for alienation and barrier effects was identified as a low to moderate risk. However, eight outlier turbines that may present an increased collision risk to birds and bats were identified (P147, P113, P082, P080, A001, A066, B027, B021*)."
- Further to Section 5.2.3, if high risk species are hit, adaptive management to be detailed in the BBAMP will be triggered in consultation with OEH.