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Karl Okorn
Team Leader, Energy Assessments
Planning and Assessment
Department of Planning, Industry & Environment

Via email: karl.okorn@planning.nsw.gov.au

24 June 2021

Dear Mr Okorn

Subject: Broken Hill Battery energy Storage System – Environmental Impact Assessment

Thank you for your request dated 28 May 2021 seeking advice from the Biodiversity and Conservation Division (BCD) of the Department of Planning, Industry and Environment (the Department) about the Environmental Impact Statement (EIS) for the Broken Hill Battery Energy Storage System (BESS).

We have reviewed the exhibited EIS against the Secretary's Environmental Assessment Requirements (SEARs) provided by the Department to the proponent on 23 December 2021.

BCD considers that the EIS **does not** meet the Secretary's requirements for biodiversity and flooding. Additional work is needed by the applicant to address issues 1 to 3 identified in **Attachment A**.

A summary of our assessment, advice and recommended conditions of approval is provided in **Attachment A**. Detailed comments are in **Attachment B**.

All plans required as a Condition of Approval that relate to biodiversity or flooding should be developed in consultation and to the satisfaction of BCD, to ensure that issues identified in this submission are adequately addressed.

If you have any questions about this advice, please contact Miranda Kerr, Senior Biodiversity Conservation Officer, via rog.southwest@environment.nsw.gov.au or 02 6022 0607.

Yours sincerely

Andrew Fisher
Senior Team Leader Planning
South West Branch
Biodiversity and Conservation Division
Department of Planning, Industry and Environment

ATTACHMENT A – BCD Assessment Summary for Broken Hill BESS Environmental Impact Statement (SSD 11437498)
ATTACHMENT B – Detailed comments for Broken Hill BESS Environmental Impact Statement (SSD 11437498)

ATTACHMENT A BCD Assessment Summary for Broken Hill BESS Environmental Impact Statement (SSD 11437498)

Key Issues

1.	<i>Flood risk</i>	<p>The qualitative flood risk assessment completed as part of the EIS does not satisfy the submitted BCD environmental assessment requirements related to flooding.</p> <p>Recommended action:</p> <p>1.1. <i>Complete quantitative flood modelling and assessments of the overland flow and ephemeral drainage lines to determine the flood liability of the site from all contributing catchments for appropriate design storm events</i></p>
	<i>Extent and Timing</i>	Pre-determination

2.	<i>Biodiversity</i>	<p>The BDAR needs more detail to meet BAM minimum requirements:</p> <ul style="list-style-type: none"> • The development footprint must be clearly identified and mapped and include all ancillary infrastructure. • Information about assessed vegetation zones is missing from the BDAR. • More evidence is needed to justify use of BAM Plot 3 to represent the assessed vegetation zone #1 (PCT 155 low condition). • Additional justification is needed for exclusion of species credit species from the assessment. <p>Recommended actions:</p> <p>2.1. <i>Provide a map and spatial data for the assessed development footprint</i></p> <p>2.2. <i>Ensure all ancillary activities and infrastructure, such as vehicle tracks, security fencing and material lay-down areas, have been included in the assessed development footprint</i></p> <p>2.3. <i>Table 7 to include the area of each vegetation zone in the project area (mapped in Figure 3)</i></p> <p>2.4. <i>BAM plot numbers to be included on Figure 3 (matching plot numbers in Annex 2 and spatial data)</i></p> <p>2.5. <i>Provide more evidence to justify use of BAM Plot 3 to represent the assessed vegetation zone #1 (PCT 155 low condition)</i></p> <p>2.6. <i>Provide further justification for removal of crowned gecko and Swainsona murrayana from the assessment</i></p> <p>2.7. <i>Revise offset requirements in Section 5 (page 31) based on any resulting changes to the BAM calculator case</i></p>
	<i>Timing</i>	Pre-determination

3.	<i>Mitigation Measures</i>	<p>The BDAR needs to include specific avoidance and mitigation measures for BCD to be confident that the assessment will achieve the 'avoid and minimise' principles of the Biodiversity Offsets Scheme.</p> <p>Recommended action:</p> <p>3.1. <i>Include specific details for measures in Table 15 to ensure biodiversity impacts are avoided, minimised and mitigated</i></p>
	<i>Extent and Timing</i>	Pre-determination

ATTACHMENT B Detailed comments for Broken Hill BESS Environmental Impact Statement (SSD 11437498)

Flooding

BCD has reviewed the flooding component in Section 14.0 of the EIS (and Appendix G).

The EIS does not fully address the Secretary's requirements for flooding.

The EIS (Chapter 14.0 - Surface water, flooding and water use & Appendix G - Surface Water Assessment) also does not address the BCD environmental assessment requirements related to flooding.

Issue 1. The qualitative flood risk assessment does not meet DPIE requirements

A simple hydrological assessment has been completed that examines the overland flow-related flooding that would occur during high intensity rainfall events originating within the industrial subdivision. However, no assessment seems to have been undertaken of the flows residing in the adjacent ephemeral flow path (that runs adjacent to the site). It is possible that any overland flow event could coincide with a flow emanating in this ephemeral flow path due to the relatively small upstream catchment, which may impact on the site. The flood liability of the proposed development site remains unknown until the flows from these catchments are hydraulically modelled to determine the extent, depths and velocities of the design flood events.

Note that this additional modelling does not have to encompass a complex fully 2-D hydraulic model. It could be a simple 1-D approach that includes the major drainage lines, most crucially the ephemeral drainage line, that allows for the mapping of the major design flood events. It will also allow for the flood liability of the site to be determined and the impacts resulting from the development (internal and external to the site) to be determined.

Recommended action:

- 1.1 *Complete quantitative flood modelling and assessments of the overland flow and ephemeral drainage lines to determine the flood liability of the site from all contributing catchments for appropriate design storm events*

Biodiversity

The Biodiversity Development Assessment Report (BDAR) at Appendix C does not meet the Secretary's requirements for biodiversity.

We confirm that the Biodiversity Assessment Method (BAM) 2017 can be applied to the project, rather than BAM 2020. BAM 2020 came into force in October 2020. The SEARs were issued in December 2020, and BCD advice to Planning and Assessment refers to BAM 2020. However, a transitional period is in place to enable Biodiversity Assessment Reports (BARs) for state significant development/infrastructure projects to be prepared using BAM 2017 until 22 October 2021.

BCD acknowledges that the proposed site of the Battery Energy Storage System (BESS) on Lots 57 and 58 appears to be highly disturbed. However, the adjoining Crown land appears on aerial imagery to be more intact and includes a non-perennial stream. Further justification is needed for several aspects of the assessment to demonstrate application of the BAM and meet the minimum requirements specified in BAM Appendix 10.

Specific comments on the BDAR and related sections in the EIS are as follows.

Issue 2. The BDAR needs more detail to meet BAM minimum requirements

The development footprint must be clearly identified and mapped

The development footprint (area of direct impact) within the subject land has not been mapped in the BDAR. Section 1.2.1 (page 3) describes the footprint. The BESS site on Lots 57 and 58, DP 258288, is mapped and the rest of the footprint could be inferred from the Australian Bustard species polygon, however it is not clearly shown on maps or included with the spatial data.

Table 15 (page 27) includes a mitigation measure to establish a clearing exclusion zone and mentions laydown of equipment. All vehicle movements and laydown areas should be within the assessed area for direct impact.

Recommended actions:

- 2.1. *Provide a map and spatial data for the assessed development footprint*
- 2.2. *Ensure all ancillary activities and infrastructure, such as vehicle tracks, security fencing and material lay-down areas, have been included in the assessed development footprint.*

Information about assessed vegetation zones is missing from the BDAR

The native vegetation assessment results in Table 7 (page 15) are limited to the development footprint.

The BDAR should include a table summarising all native vegetation mapped on the subject land ('project area' in the BDAR) indicating the required number of plots. The survey effort and intent of the plot-based vegetation survey is to identify the PCTs (BAM 2017 cl 5.2.1.4).

The plot-based survey must be stratified and targeted to assess the expected environmental variation (BAM 2017 cl 5.2.1.7), which means both the mapped condition states for PCT 155 should be adequately sampled.

The data for PCT 155 mapped as 'moderate' condition should be included in the BDAR and BAM-C. Vegetation zones in BAM-C and the BDAR should match the spatial data for zones clipped to the subject land boundary (datasets dated 20 May 2021):

GIS Label	PCT ID	Area (ha)
Bluebush shrubland - low condition	155	2.63
Bluebush shrubland - moderate condition	155	0.06
Exotic	0	0.54

While it is not critical for our review of a simple development site such as this, the BDAR and spatial data should include the BAM-C vegetation zone identifier to enable cross-checking (e.g. Zone 1).

Recommended actions:

- 2.3. *Table 7 to include the area of each vegetation zone in the project area (mapped in Figure 3)*

More evidence is needed to justify use of BAM Plot 3 to represent the assessed vegetation zone #1 (PCT 155 low condition).

The area around BAM Plot 3 does not appear to be representative of the vegetation to be impacted by the transmission connection on the adjacent Crown land (Lot 7302, DP 1181129).

BAM plot numbers should be included on the vegetation zones map for cross-checking.

The Broken Hill aerial imagery available to BCD was captured in 2013 (figure A.1). Aerial imagery from 2021 available on Google Maps has also been reviewed (figure A.2) and shows the difference in vegetation pattern between Lots 57 and 58 and the Crown land traversed by the proposed transmission line (particularly within the blue line).

Recommended actions:

- 2.4. *BAM plot numbers to be included on Figure 3 (matching plot numbers in Annex 2 and spatial data)*
- 2.5. *Provide more evidence to justify use of BAM Plot 3 to represent the assessed vegetation zone #1 (PCT 155 low condition)*

Figure A.1 Aerial imagery dated 2013 (DPIE) showing native vegetation patterns on the subject land. Area within the blue boundary does not appear to match Plot 3 location.

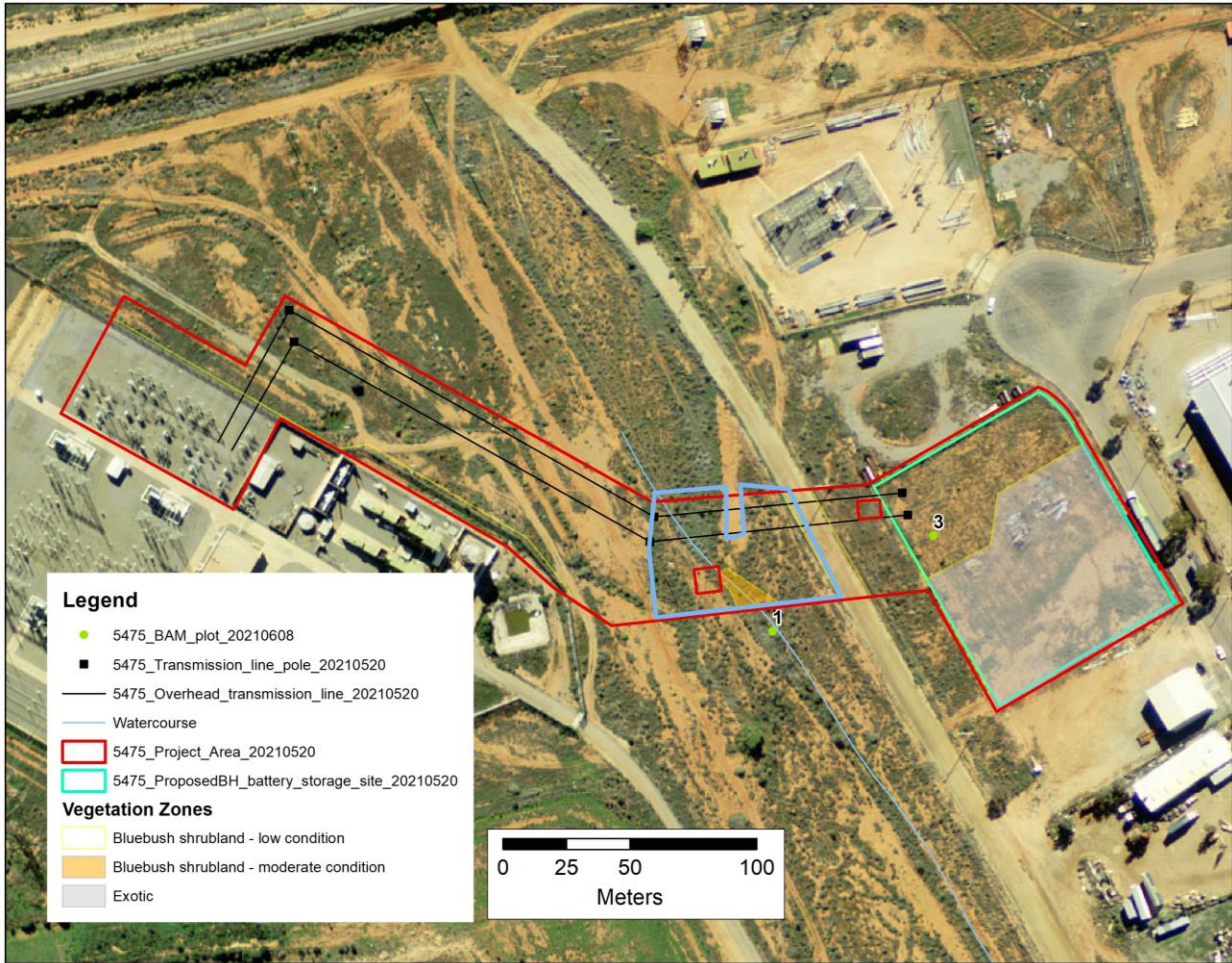
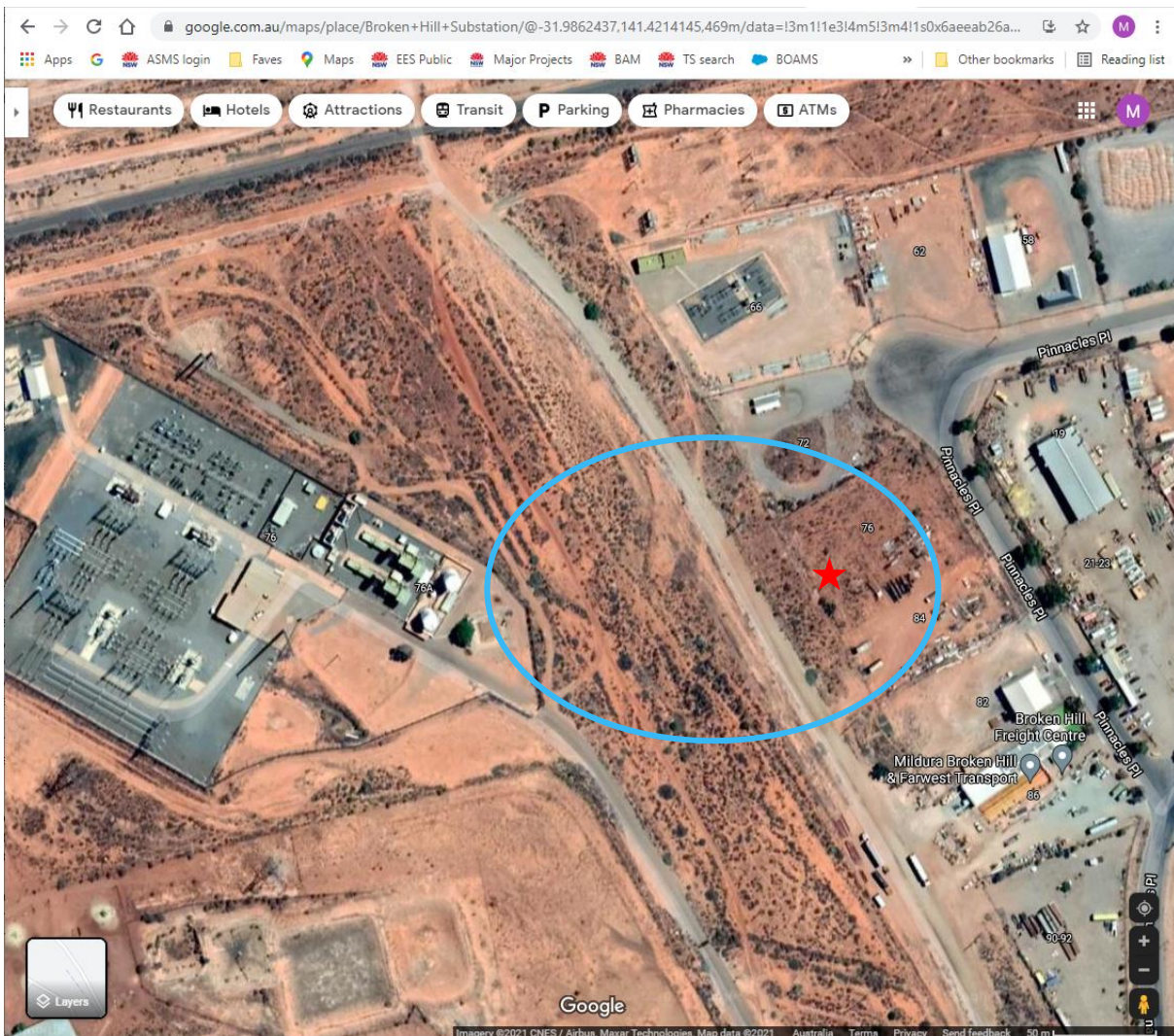


Figure A.2 Google Maps imagery for the project site dated 2021



Justification is needed for exclusion of species credit species from the assessment

Swainsona murrayana was surveyed outside the specified survey months. The survey guideline for threatened plants¹ describes circumstances when the required survey season for threatened plant survey may be adjusted. However, any alteration to survey timing must be agreed with DPIE before the BDAR is submitted. For example, survey timing could be delayed for species that are above ground and identifiable outside the optimal season, or by predicting emergence and flowering times based on rainfall in the preceding months.

An opportunistic fauna survey as described in Section 3.2.2 and Table 12 (page 22) is inadequate for demonstrating presence or absence of species credit species.

Crowned Gecko (*Lucasium stenodactylum*) does not have specified habitat constraints in BioNet. Further justification is needed for excluding this species from the assessment, according to BAM s6.4 Steps 3 and 4, including description of habitat requirements and evidence from the field assessment that these components of the vegetation are degraded.

¹ DPIE 2020. *Surveying threatened plants and their habitats – NSW survey guide for the Biodiversity Assessment Method*. Department of Planning, Industry & Environment, Sydney.

Recommended actions:

- 2.6. *Provide further justification for removal of crowned gecko and *Swainsona murrayana* from the assessment*
- 2.7. *Revise offset requirements in Section 5 (page 31) based on any resulting changes to the BAM calculator case.*

Issue 3. Specify avoidance and mitigation measures

Avoidance and mitigation measures require specific information for BCD to be confident that the assessment will achieve the 'avoid and minimise' principles of the Biodiversity Offsets Scheme. The BAM Stage 2 Operational Manual² (Section 2.6, page 20) describes the level of detail expected for these measures, including the requirement for spatial identification of avoided areas. Each measure should have a unique identifier to allow tracking through to management plans and compliance auditing.

For example, hygiene protocols are proposed in Table 15 (page 27) to prevent spread of weeds or pathogens "between affected and unaffected areas". The BDAR does not provide a map to show the affected and unaffected areas (to be included in the construction environmental management plan) or indicate how or when a weed map will be prepared.

Recommended actions:

- 3.1. *Include specific details for measures in Table 15 to ensure biodiversity impacts are avoided, minimised and mitigated*

Corrections and editorial comments to be noted by the Accredited Assessor

BDAR Section 1.2 The project area (page 3)

The mention of a lack of 'larger woody vegetation' throughout the site could be taken by the reader to mean that non-woody or shrubland vegetation is inherently less important than sites with trees or large shrubs. Unless describing particular habitat elements, this characterisation of the environment is unnecessary in environments in western NSW that are naturally treeless or sparsely vegetated.

BDAR Section 1.3.1 State approval and assessment process (page 3-4)

S1.3.1. describes the BOS threshold test, which does not apply to major project applications. The BC Act requires that an SSD or SSI application must be accompanied by a BDAR unless the Planning Agency Head (or delegate) and the Environment Agency Head (or delegate) determine that the proposed development is not likely to have any significant impact on biodiversity values. This determination is referred to as a BDAR waiver. More information about BDAR waivers is provided in the DPIE fact sheet³ and on the Major Projects website.

BDAR Section 3.1.2.2 Threatened flora survey effort (page 17 and Table 8)

Please note that random meanders are not the preferred method for threatened flora survey. Parallel traverses are considered to be the most reliable for detecting threatened flora, as explained in the BAM survey guide – 'Surveying threatened plants and their habitats' (DPIE 2020).

BDAR Section Annex 2 (page 37)

Zygophyllum eremaeum has been renamed to *Roepera eremaea*.⁴

² <https://www.environment.nsw.gov.au/research-and-publications/publications-search/biodiversity-assessment-method-operational-manual-stage-2>

³ <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Biodiversity/apply-biodiversity-development-assessment-report-waiver-190593.pdf>

⁴ <https://plantnet.rbg Syd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Roepera-eremaea>