Sunshine Estate Battery Energy Storage System (BESS)

Application Number: **03254** Commencement Date: **04/12/2025** Status: **Locked**

1. About the project

1.1 Project details

1.1.1 Project title *

Sunshine Estate Battery Energy Storage System (BESS)

1.1.2 Project industry type *

Energy Generation and Supply (renewable)

1.1.3 Project industry sub-type

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1.1.4 Estimated start date *

01/02/2027

1.1.4 Estimated end date *

01/02/2078

1.2 Proposed Action details

1.2.1 Provide an overview of the proposed action, including all proposed activities. *

The Sunshine Estate Battery Energy Storage System (SE BESS) (the proposed action), including the development, construction , operation, maintenance and decommissioning of a BESS with capacity of approximately 120MW/480MWh (4-hour storage).

The SE BESS would store electricity from the National Electricity Market (NEM) during periods of low demand and discharge during times of high demand or low generation. In addition to load shifting, the BESS will also provide ancillary services to the NEM including system strength and inertia support along with frequency and voltage control services to help maintain the stability of the electricity network.

The Project area (total spatial extend and land holding within which all components of the proposed action will occur, including both direct and indirect impact zones) is approximately 50 hectares.

The disturbance footprint, representing the specific area within the broader Project area where physical disturbance will occur as a direct result of the proposed action is approximately 12 hectares. This includes the BESS and associated permanent and temporary infrastructure, as well as connection to the adjacent Ausgrid substation and intersection upgrades. It should be noted that this is modelled as a worse-case scenario allowing for uncertainty in design and will be reduced following detailed design.

The Avoidance Area is approximately 38 hectares, representing areas within the Project area that have been intentionally excluded from disturbance to prevent impacts on MNES or other sensitive environmental values.

The proposed action will connect directly to the existing Rothbury Zone Substation. The SE BESS will involve the following key infrastructure:

- 140 Battery Containers measuring approximately 6.1m x 2.5m x 2.9m. Each container would house 40 battery modules.
- 42 Inverters (also known as Power Conversion Systems (PCS)). Each PCS includes a medium-voltage transformer (converts the inverter output voltage to the medium-voltage of the system (33kV)); and the medium voltage switchgear (which contains the medium voltage circuit breakers and disconnectors for the PCS). The PCS units, associated MV transformer and MV-LV room are on a common 20-foot container skid (6.1m x 2.5m x 2.9m)

Additional facilitating equipment would include the following:

- A 33kV switch room (collects all the individual medium voltage cables from the PCS units in one location before connection to the high-voltage transformer).
- 132kV high voltage switch gear, a 132/33kV high voltage transformer, associated structures, foundations and secondary systems such as metering and control equipment.
- A control room, which will contain battery-monitoring equipment and allows operators to control the plant remotely.
- An overhead or underground transmission line which connects the proposed BESS to the adjacent Rothbury substation. The connection type is subject to Ausgrid requirements.

Associated ancillary infrastructure works would include:

- Internal access tracks
- On-site car parking
- Operations and maintenance (O&M) building
- Auxiliary low-voltage transformers
- Underground cables connecting site infrastructure
- Staff amenities
- Water tanks
- Pumpable sewerage holding tank
- Security fencing.
- Bunding and drainage

- Landscaping
- Construction storage areas and laydowns

Connection Assets

- An overhead or underground transmission line which connects the proposed BESS to the adjacent 132kV Rothbury Substation.
- Any augmentation to the Rothbury Substation required by Ausgrid to facilitate the connection of the SE BESS. The design requirements will be agreed with Ausgrid and assessed as part of the EIS.

Access

- The main Project area will require an upgraded access point from Wine Country Drive.
- Access will also be required to the 132kV Rothbury Substation via upgraded access points on Wine Country Drive or Old North Road.

1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

This proposed action will be assessed under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and is a “State Significant Development (SSD)”, under Part 4 of the EP&A Act. A Scoping Report (Attachment 1) has been lodged, and NSW Secretary’s Environmental Assessment Requirements (SEARS) have been obtained.

SSD projects must enter the Biodiversity Offsets Scheme (BOS) and a Biodiversity Development Assessment Report (BDAR) will be required to assess biodiversity impacts following the Biodiversity Assessment Method (BAM 2020) in accordance with the NSW *Biodiversity Conservation Act* 2016 (BC Act). The BC Act relates to the conservation of biodiversity, and its purpose is to maintain a healthy productive and resilient environment for the greatest well-being of the community consistent with the principles of ecological sustainable development. The BC Act provides a framework for biodiversity survey, assessment and offset methodologies. It also requires specific consideration of irreversible impacts. The proposed action will impact on native vegetation and biodiversity values.

A BDAR will be prepared to supplement the proposed action Environmental Impact Statement (EIS), which is a mandatory document in the NSW planning scheme for SSD projects. The BDAR will be prepared in line with the NSW BC Act requirements.

A review of land categorisation under the *Local Land Services Act Amendment Act 2016* (LLS Act) to clarify the historical native vegetation management regime was undertaken. Where applicable to do so (land applicable to the LLS Act i.e. rural), the potential for land to be mapped as Category 1 exempt land (Cat 1 land) was evaluated, as land mapped or determined as Cat 1 land can be excluded from the assessment under the BAM, with exception to prescribed impacts. This was then compared to, and reconciled with, the Native Vegetation Regulatory (NVR) mapping provided by NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) for the Project area. Following completion of all required surveys and further consultation with the Conservation Programs, Heritage & Regulation Division (CPHR), this will be reviewed in more detail though comprehensive assessment and design revision where appropriate, particularly around Critically Endangered Ecological Communities (CEECs) and Endangered Ecological Communities (EECs) listed under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or BC Act, as well as Serious and Irreversible Impacts (SAII).

Key fish habitat is defined under the NSW *Fisheries Management Act 1994* (FM Act) as aquatic habitat important to the maintenance of fish populations generally and the survival and recovery of threatened aquatic species. Waterway crossings as well as clearing and excavation near key fish habitat must consider impacts on aquatic habitat, have pollution risks mitigated and be designed in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management and the Policy and Guidelines for Fish Friendly Waterway Crossings.

The NSW *National Parks and Wildlife Act 1974* (NPW Act) establishes the fundamental functions of the NSW National Parks and Wildlife Service. These include the conservation of nature, objects, features, places and management of land reserved under the Act. Specifically, the conservation of nature includes:

- Landforms of significance, including geological features and processes.
- Landscapes and natural features of significance including wilderness and wild rivers.

Animal and plant provisions of the NPW Act have been repealed and replaced by the BC Act. Guidelines for developments adjacent to National Parks and Wildlife Service lands are also relevant to the proposed action and will be considered; namely in relation to erosion control, storm and wastewater, pest and weed management, fire and access requirements including aerial and ground measures, visual, noise and other amenity impacts, connectivity impacts, impacts to groundwater dependant ecosystems and cultural heritage.

The EPBC Act is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (Cth DCCEEW). Under the EPBC Act, if the Minister determines that an action is a ‘controlled action’ which would have or is likely to have a significant impact on a Matter of National

Environmental Significance (MNES) or Commonwealth land, then the action may not be undertaken without prior approval of the Minster.

This referral has been submitted to determine whether the proposal is a controlled action under the EPBC Act. Based on ecological assessments to date, there is potential for a significant impact on one MNES, the Hunter Valley Delma.

The NSW Assessment Bilateral Agreement (the Agreement), made under the EPBC Act, streamlines the assessment process for major projects that require both NSW and Commonwealth environmental approval. Under the Agreement, NSW proponents who needs an EPBC Act approval can use the NSW BOS to assess and meet their biodiversity offset requirements, and use the BAM as the underpinning methodology for calculating biodiversity credit requirements.

1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. *

A structured program of community and stakeholder engagement has been undertaken throughout both the Scoping and the current Environmental Impact Statement (EIS) phases of the Project. Engagement during Scoping began in May 2025 and focused on understanding community sentiment, identifying potential impacts, and informing the development of mitigation measures. Activities conducted over a 12-week period included targeted letters and emails, in-person and online meetings, two information sessions, and a community feedback survey. Feedback received during this phase indicated generally positive or neutral sentiment toward the Project once its purpose and operation were explained.

Engagement for the EIS phase commenced in October 2025 and will continue past lodgement into 2026. Communication with directly impacted landowners, targeted stakeholders, and the broader community has been maintained through a mix of letters, emails, phone conversations, hand-delivered information packs, meetings, interviews, and use of the project website. Two community information sessions held in November 2025 provided opportunities for residents to learn about the Project, the assessment process, and potential community benefits, as well as to ask questions and provide feedback.

Overall, community response during both the Scoping and the EIS phase was characterised by low levels of opposition and varied levels of engagement, shaped in part by broader regional change and consultation fatigue. Some residents raised site-specific concerns, while others noted potential benefits such as employment and training opportunities. Clear and accessible information was provided through multiple channels, including the hand-delivery of materials to neighbours within 500 metres of the site, supporting an open and transparent engagement process consistent with the *Undertaking Engagement Guidelines for State Significant Projects* (2024).Consultation with Indigenous stakeholders is currently being undertaken through the process of the preparation of an Aboriginal Cultural Heritage Assessment (ACHA), and will be undertaken in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010).

1.3.1 Identity: Referring party

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1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

ABN/ACN	65006175097
Organisation name	Biosis Pty Ltd
Organisation address	Suite 8, 27 Annie Street, Wickham NSW 2293

Referring party details

Name	Maya Rychner
Job title	Graduate Environmental Planner
Phone	0417695816
Email	mrychner@biosis.com.au
Address	38 Bertie Street Port Melbourne

1.3.2 Identity: Person proposing to take the action

1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

ABN/ACN	681573526
Organisation name	AE BESS 11 Pty Ltd
Organisation address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061

Person proposing to take the action details

Name	Simon Kerrison
Job title	Director
Phone	0438 799 970
Email	Simon.kerrison@avenisenergy.com.au
Address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061

1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

1.3.2.15 Are you proposing the action as part of a Trust? *

Yes

1.3.2.16 Describe the nature of the trust arrangement in relation to the proposed action. *

AE BESS 11 Pty Ltd as Trustee for AE BESS 11 Unit Trust (Project Trust) is a Trust that has been established to hold all of the assets of the Project, including land agreements, grid contracts and planning consents. The Project Trust engages third party consultants to obtain these agreements/consents on behalf of the Trust.

1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

AE BESS 11 Pty Ltd as Trustee for AE BESS 11 Unit Trust has recently been established for the proposed Project and it does not have a history of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against it.

1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

AE BESS 11 Pty Ltd as Trustee for AE BESS 11 Unit Trust is committed to working respectfully and transparently with the communities in which it plans and operates, ensuring that project development aligns with local expectations and protects environmental and cultural values. AE BESS 11 Pty Ltd as Trustee for AE BESS 11 Unit Trust promotes responsible environmental stewardship by applying robust risk-management processes, adhering to all regulatory requirements, and implementing industry best practice in environmental planning, monitoring and mitigation. Avenis Energy has not breached any environmental management standards and maintains a strong record of compliance across its operations. The company is also not involved in any past or current proceedings under Commonwealth, State or Territory legislation relating to environmental protection or the conservation and sustainable use of natural resources.

1.3.3 Identity: Proposed designated proponent

1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

ABN/ACN	681573526
Organisation name	AE BESS 11 Pty Ltd
Organisation address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061

Proposed designated proponent details

Name	Simon Kerrison
Job title	Director
Phone	0438 799 970
Email	Simon.kerrison@avenisenergy.com.au
Address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061

1.3.4 Identity: Summary of allocation

Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

ABN/ACN	65006175097
Organisation name	Biosis Pty Ltd
Organisation address	Suite 8, 27 Annie Street, Wickham NSW 2293
Representative's name	Maya Rychner
Representative's job title	Graduate Environmental Planner
Phone	0417695816
Email	mrychner@biosis.com.au
Address	38 Bertie Street Port Melbourne

Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	681573526
Organisation name	AE BESS 11 Pty Ltd
Organisation address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061
Representative's name	Simon Kerrison
Representative's job title	Director
Phone	0438 799 970
Email	Simon.kerrison@avenisenergy.com.au
Address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061

Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

1.4 Payment details: Payment exemption and fee waiver

1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)?

Yes

1.4.2 Select reason for exemption

Small Business

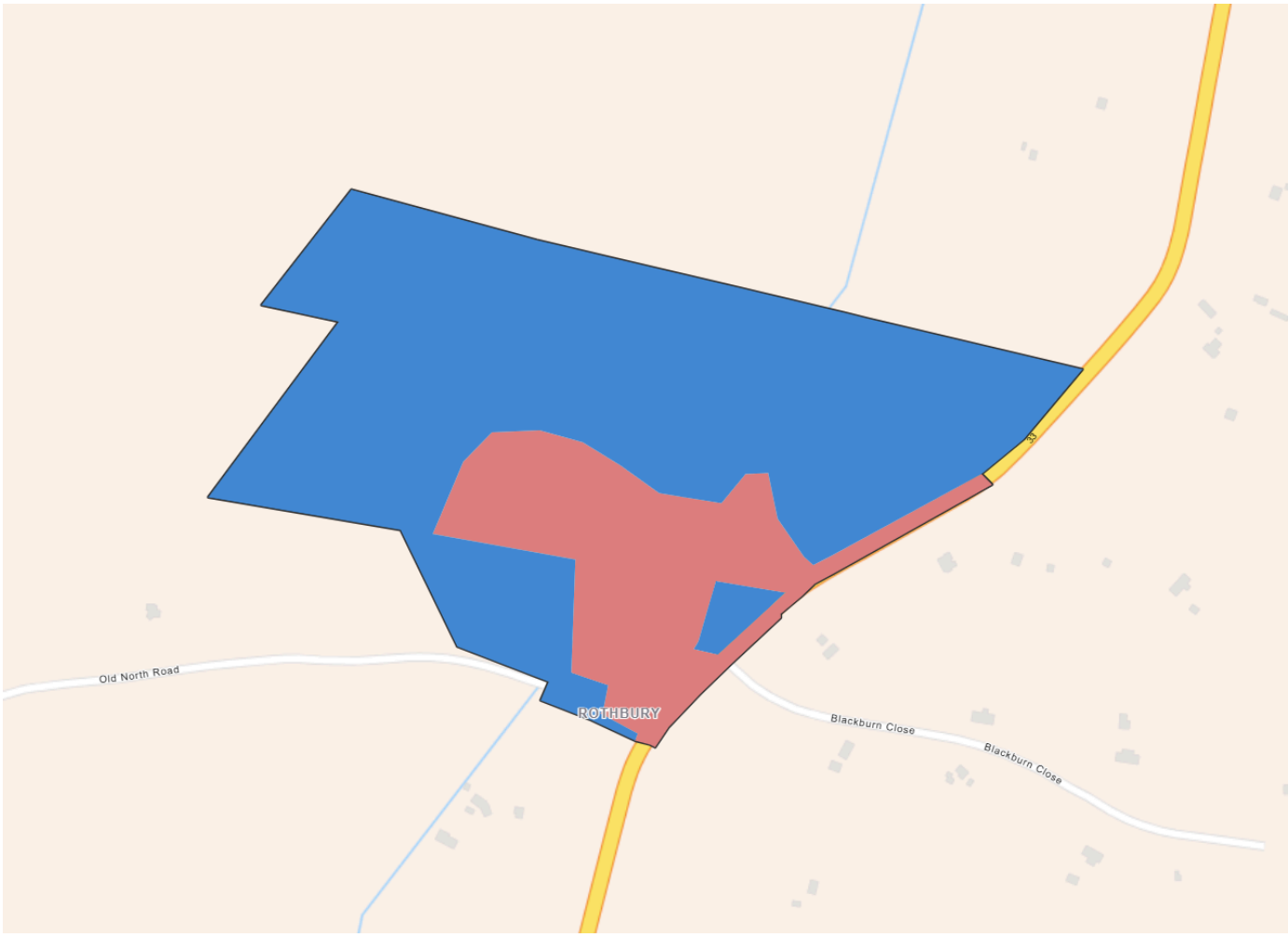
1.4 Payment details: Payment allocation

1.4.11 Who would you like to allocate as the entity responsible for payment?

Person proposing to take the action

2. Location

2.1 Project footprint



Project Area: 49.94 Ha **Disturbance Footprint:** 11.71 Ha **Avoidance Area:** 38.22 Ha

2.2 Footprint details

2.2.1 What is the address of the proposed action? *

1337 Wine Country Drive, Rothbury (Lot 182 DP 787820) and Rothbury Substation - 1309 Wine

2.2.2 Where is the primary jurisdiction of the proposed action? *

New South Wales

2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

2.2.5 What is the tenure of the action area relevant to the project area? *

The proposed action occurs primarily on Freehold land at 1337 Wine Country Drive, Rothbury, within Lot 182 DP 787820. The land is zoned as RU2: Rural Landscape under the *Cessnock Local Environmental Plan* (LEP) 2011.

Additional land involved includes the lots and easements that are intersected by the proposed action. This includes Ausgrid land proposed for the grid connection (Lot 4, DP 598847), Transport for NSW land associated with Wine Country Drive required for site access and the upgrade of the Rothbury Substation Access point (zoned SP2L Infrastructure) and/or Cessnock City Council road easement and land associated with Old North Road for a potential alternative site access to Rothbury Substation (for grid connection only).

3. Existing environment

3.1 Physical description

3.1.1 Describe the current condition of the project area's environment.

The proposed action is located approximately 4 kilometres south-west of North Rothbury within the Cessnock Local Government Area (LGA). Other nearby towns include Branxton (5.8 kms north), Cessnock (13.8 kms south-east), Rutherford (17 km east), Kurri Kurri (18.6 kms south-east) and Singleton (33 kms north-west).

The region is characterised by agricultural and rural residential land uses, and nearby areas of both underground and open-cut coal mines. The Project area occurs within lands that have a history of past and present disturbance. The adjacent land to the north, and land to the east is zoned as RU2. The land to the south has been zoned as RU4 Primary Production Small Lots.

As a result of past and current land uses, the Project area is predominantly cleared of native vegetation, containing cleared and modified grasslands largely dominated by exotic species. The land has undergone intensive modification including vegetation clearing associated with past land uses of agriculture, viticulture and recreational motorsports resulting in degradation of the Project area environment.

Planted native trees have been added to the to the Rothbury Substation lot to screen the Substation area. There is also a stand of planted exotic pine trees between the proposed BESS and Black Creek. On the northwestern side of Black Creek, the land is zoned as C3: Environmental Management. The western extent of the Project area transitions into higher quality habitats associated with Black Creek, and the Tiraki Nature Reserve beyond that. Werakata National Park is approximately 7 km southeast of the Project area.

3.1.2 Describe any existing or proposed uses for the project area.

The proposed action is within the nominated Hunter-Central Coast Renewable Energy Zone (HCCREZ), adjacent to the Rothbury 132 kV substation which feeds east-west through the HCCREZ and intersects with the 330kV network at Mount Thorley in the west and Kurri Kurri to the East.

The Project area is also located within land mapped as Strategic Agricultural Land (SAL) – Viticulture but is not mapped as having Equine or Biophysical strategic values.

The proposed action would involve earthworks, ground disturbance and a change of the current land use to energy storage infrastructure

The Project area contains a residential dwelling within the wider property as well as ancillary farm sheds and stock fencing, and former areas used for viticulture. Current use of the property involves light cattle grazing and equine stocking. Remnant landforms suggest that the property has recently been used for recreational motor sports. Land use is currently mapped on the NSW Land Use database as grazing native vegetation and modified pastures, with areas of perennial horticulture from historic viticulture that no longer occurs on the property (ceasing around 2015).

A portion of the project area is currently occupied by the existing Ausgrid substation, which supports local electricity distribution and forms an established infrastructure footprint within the landscape. In addition to this, the project area is bordered by key local transport corridors, including Wine Country Drive and Old North Road, both of which provide access to surrounding rural properties, vineyards, and tourism destinations. These roads form well-defined boundaries to the site and contribute to the highly modified character of the immediate environment, with regular vehicle use, roadside vegetation maintenance, and existing service infrastructure further reducing habitat quality in these edge areas. Together, the substation and adjoining road network reflect long-standing anthropogenic use within and around the Project area.

3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

The Project area occurs within the Sydney Basin Interim Biogeographic Regionalisation for Australia (IBRA) Bioregion and the Hunter IBRA subregion.

There are no areas of outstanding biodiversity value within or adjacent to the Project area. The Project area does not occur within 10km of the following MNES: World Heritage Properties, National Heritage Places, Wetlands of International Importance, Great Barrier Reef Marine Park or Commonwealth Marine Area.

Biodiversity values within the Project area predominantly include widespread and common species. However, the following threatened flora, fauna, and ecological communities were recorded.

Threatened MNES flora species recorded during targeted field surveys included:

- North Rothbury Persoonia *Persoonia pauciflora* (Critically Endangered, EPBC Act and BC Act).

Threatened MNES fauna species recorded during targeted field surveys included:

- Hunter Valley Delma *Delma vescolineata* (Endangered, EPBC Act and BC Act).
- Large-eared Pied Bat *Chalinolobus dwyeri* (Endangered, EPBC Act and BC Act).
- Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable, EPBC Act and BC Act).
- White-throated Needletail *Hirundapus caudacutus* (Vulnerable, EPBC Act and BC Act).

Threatened MNES ecological communities present within the Project area:

- *Central Hunter Valley eucalypt forest and woodland (Critically Endangered Ecological Community* [CEEC], EPBC Act) and *Central Hunter Ironbark-Spotted Gum-Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions* (Endangered Ecological Community [EEC], BC Act).
- *Central Hunter Valley eucalypt forest and woodland* (CEEC, EPBC Act) and *Central hunter Grey Box-Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions* (EEC, BC Act).
- *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community* (EEC, EPBC Act) and *Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions* (EEC, BC Act).

3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project area occurs on a gentle slope from Wine Country Drive to Black Creek, from an elevation of approximately 50 metres above sea level to 40 metres above sea level. Cessnock Council's flood mapping shows that the Project area is mapped under both the 1% Annual Exceedance Probability (AEP) and Probable Maximum Flood (PMF) extents.

3.2 Flora and fauna

3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.

The project area has been heavily modified from past land uses including agriculture and grazing, as well containing the existing Ausgrid substation A Constraints and Opportunities assessment report has been undertaken for the proposed action as well as targeted flora and fauna surveys to support preparation of the BDAR.

Three Plant Community Types (PCTs) occur across the Project area:

- PCT 3315 - Central Hunter Ironbark-Spotted Gum Forest
- PCT 3431 - Central Hunter Ironbark Grassy Woodland
- PCT 4023 - Coastal Valleys Swamp Oak Riparian Forest

Background searches identified 30 threatened flora and 75 threatened fauna species as being recorded (NSW DCCEEW 2025) or predicted to occur (Cth DCCEEW 2025) within the locality. In terms of MNES alone, 57 MNES entities that have a moderate to higher likelihood of occurrence within the project area and may therefore be impacted by the project. This includes 50 threatened flora and fauna species, inclusive of thirteen migratory species, and seven threatened ecological communities Of these, only three MNES may be subject to direct impacts as a result of the Project. Detailed impact assessments have been completed for these MNES against EPBC Significant Impact Criteria.

Numerous habitat features for threatened flora and fauna occur within the Project area including grassy woodlands, perennial and ephemeral waterways, hollow-bearing trees and fallen logs.

Preliminary biodiversity surveys have been completed within the Project area including the following targeted survey techniques:

- Spotlighting
- Call playback
- Ultrasonic detectors
- Thermal camera survey
- Roost exit surveys/fly-out counts
- Koala Spot Assessment Technique (SAT)
- Targeted flora transect surveys

Surveys were targeting the following threatened species to confirm presence:

- Brush-tailed Phascogale
- Bush Stone-curlew
- Eastern Cave Bat
- Green and Golden Bell Frog
- Koala
- Large-eared Pied Bat
- Southern Greater Glider
- Southern Myotis
- Squirrel Glider

The following threatened species were recorded during targeted survey within the Project area:

- North Rothbury Persoonia *Persoonia pauciflora* (Critically Endangered, EPBC Act and BC Act). Note: Persoonia was planted by the landholder and is located in the garden of the existing onsite dwelling, outside of the disturbance footprint.
- Dusky Woodswallow *ArtamusCyanopterus cyanopterus* (Vulnerable, BC Act).
- Eastern Coastal Free-tailed Bat *Micronomus norfolkensis* (Vulnerable, BC Act).
- Eastern False Pipistrelle *Falsistrellus tasmaniensis* (Vulnerable, BC Act).
- Greater Broad-nosed Bat *Scoteanax rueppellii* (Vulnerable, BC Act).
- Grey-crowned Babbler *Pomatostomus temporalis* (Vulnerable, BC Act).
- Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable, EPBC Act and BC Act).

- Hunter Valley Delma *Delma vescolineata* (Endangered, EPBC Act and BC Act).
- Large (Eastern) Bent-winged Bat *Miniopterus orianae oceanensis* (Vulnerable, BC Act).
- Large-eared Pied Bat *Chalinolobus dwyeri* (Endangered, EPBC Act and BC Act).
- Little Bent-winged Bat *Miniopterus australis* (Vulnerable, BC Act).
- Southern Myotis *Myotis Macropus* (Vulnerable, BC Act).
- Squirrel Glider *Petaurus norfolcensis* (Vulnerable, BC Act).
- White-throated Needletail *Hirundapus caudacutus* (Vulnerable, EPBC Act and BC Act).

Avoidance and minimisation to biodiversity values, particularly EPBC Act listed species and communities, have been undertaken throughout the development and design of the proposed action resulting in the current disturbance footprint. This has resulted in residual impacts to one MNES, the Hunter Valley Delma, which has been identified as having the potential to experience significant impacts as a result of the Project.

3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

The proposed action is located within the Hunter Subregion of the wider Sydney Bioregion. The Hunter Subregion includes a large part of the Hunter River basin and the entire Macquarie-Tuggerah Lakes basin. The region is known for is reserves of coal and contains two Ramsar-listed wetlands (Australian Government, 2019). Many areas within the landscape hold high levels of biodiversity value due to the extensive ranges, reserves, national parks, state forests and conservation areas.

Landforms of the Hunter subregion are typified by rolling hills and wide valleys, with meandering river systems. Soils exhibit a variety of harsh texture contrasts on hillslopes, while soils in valley floors typically consist of deep sandy loam alluvium. Soil salinity is common on some bedrocks in the upper catchment (NSW National Parks and Wildlife Service, 2003), however mapping does not indicate a soil salinity risk in the Project area.

More localised soil data from eSPADE places the Project area within the Branxton Soil Landscape. Soils forming this landscape are characterised as having high erosion hazard and loose but occasionally hardsetting topsoils.

The NSW Land and Soil Capability (LSC) Scheme (NSW OEH, 2012) has classified the soils underlying the Project area as Class 3 – Moderate Limitations. Class 3 land is considered important agricultural land in terms of its ability to sustain intensive agricultural activities.

Where native vegetation occurs, a range of condition states were observed, however the majority would be considered to have depleted ecological condition due to the historic land management practices such as grazing and improved pasture as well as plantings for screening of the existing substation, which have caused degradation to the native vegetation throughout the site.

PCT 3315 – Central Hunter Ironbark-Spotted Gum Forest occurs in two conditions and is associated with the following Threatened Ecological Communities (TECs):

- Moderate Condition (1.97 ha)
- Scattered Trees Condition (1.48 ha)
- Of the above, 1.44 ha meets the criteria of Central Hunter Valley Eucalypt Forest and Woodland (Critically Endangered Ecological Community under the EPBC Act – Confirmed to occur within the Project area, but not within the disturbance footprint).

PCT 3431 – Central hunter Ironbark Grassy Woodland occurs in only one condition and is associated with the following Threatened Ecological Communities (TECs):

- Scattered Trees Condition (2.1 ha)
- Of the above, 2.1 ha meets the criteria of Central Hunter Valley Eucalypt Forest and Woodland (Critically Endangered Ecological Community under the EPBC Act – Confirmed to occur within the Project area, but not within the disturbance footprint).

PCT 4023 – Coastal Valleys Swamp Oak Riparian Forest occurs in three conditions and is associated with the following Threatened Ecological Communities (TECs):

- High Condition (6.39 ha)
- Of the above, 5.78 ha Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community (Endangered Ecological Community under the EPBC Act - Confirmed to occur within the Project area, but not within the disturbance footprint)
- Moderate Condition (0.03 ha)
- Not associated with any TEC
- Derived Native Grassland (3.09 ha)
- Not associated with any TEC

Non-native vegetation including urban native/exotic vegetation represents 3.29 hectares.

There is 29.13 hectares of cleared land, designated as Category 1 – exempt land, excluded from assessment under the BAM.

3.3 Heritage

3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

There are no Commonwealth Heritage Places within the Project area.

Desktop searches were undertaken on 1 December 2025 of the relevant historic heritage registers including the Australian Heritage Database, the NSW State Heritage Inventory (SHI) and Section 170 registers, to identify any items that are currently listed within or adjacent to the Project area. The Australian Heritage Database (AHD) includes items on the National and Commonwealth Heritage Lists while the SHI includes items on the State Heritage Register and items listed by state agencies and local Government.

The results of the Australian Heritage Database search indicated that:

- There are 27 heritage sites listed on the Register of National Estate (a non-statutory archive) within the Cessnock LGA, however none are located within the Rothbury suburb or proximity of the Project area.

The results of the NSW SHI database search indicated that:

- There are 5 previously recorded heritage sites listed on the State Heritage Register within the Cessnock LGA. None are located within or adjacent to the Project area.
- There are 221 previously recorded locally listed heritage sites within the Cessnock LGA. None are located within the Project area, the closest being the Old North Road remnant, 293m south of the Project area.
- There are two previously recorded s.170 listed heritage sites within the Cessnock LGA. None are located within or adjacent to the Project area.

3.3.2 Describe any Indigenous heritage values that apply to the project area.

There are a range of landscape features that have higher potential to contain Aboriginal objects. Landforms with increased Aboriginal heritage potential include:

- Areas within 200 metres of water.
- Areas located within a sand dune system.
- Areas located on a ridge top, ridge line or headland.
- Areas located within 200 m below or above a cliff face.
- Areas within 20 m of a cave, rock shelter or cave mouth.

Black Creek, which is a 6th order stream, is located approximately 250 metres to the west of the Project area. Given the significance of the watercourse, it is possible that Aboriginal objects may be found within the Project area.

An Aboriginal Cultural Heritage Assessment (ACHA) is currently being undertaken to determine any possible Aboriginal Heritage values associated with the Project area, and any potential impacts that would arise from the project.

There is one Aboriginal Place within the Cessnock LGA, being Mount Yengo, 51km southwest of the Project area.

3.4 Hydrology

3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

Black Creek runs in a northerly direction to the west of the Project area. Black Creek is a 6th order stream under the Strahler Stream Order classification and runs from Cessnock in the south, north towards Stamford where it enters the Hunter River. There are also numerous farm dams within the property.

A review of the Cessnock Council Interactive Planning Map was undertaken on the 6 March 2025 to determine flood hazard on the Project. The Map shows that the Project area is mapped under both 1%AEP and PMF extents.

The Bureau of Meteorology's (BOM) Australian Groundwater Explorer shows there are no groundwater bores within the Involved Lands. There are two bores located on a neighbouring property to the east, of which one is for stock-related water supply, and one is for the purpose of monitoring.

The BOM Groundwater Dependant Ecosystem Atlas shows that there are no Groundwater Dependant Ecosystems (GDEs) within Project area, however, there are GDEs in the vicinity of the Site.

The Project area is not mapped within an area of known groundwater vulnerability, acid sulphate soil presence or notable salinity.

Detailed assessment including hydrological hazard modelling will guide infrastructure placement and mitigation measures, to protect the hydraulic function of waterways and prevent erosion. Assessment and confirmation of flooding hazard within the Project area is currently being undertaken in the form of a hydrology impact assessment undertaken by a suitably qualified hydrologist. Flood hazard will be assessed pre- and post-construction to ensure the development does not negatively affect offsite flood behaviours.

The EIS will include an assessment of potential impacts related to surface water and water quality, and recommend mitigation measures to manage surface water, erosion, groundwater resources, riparian lands, and any contamination risks.

4. Impacts and mitigation

4.1 Impact details

Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.

EPBC Act section	Controlling provision	Impacted	Reviewed
S12	World Heritage	No	Yes
S15B	National Heritage	No	Yes
S16	Ramsar Wetland	No	Yes
S18	Threatened Species and Ecological Communities	Yes	Yes
S20	Migratory Species	No	Yes
S21	Nuclear	No	Yes
S23	Commonwealth Marine Area	No	Yes
S24B	Great Barrier Reef	No	Yes
S24D	Water resource in relation to large coal mining development or coal seam gas	No	Yes
S26	Commonwealth Land	No	Yes
S27B	Commonwealth Heritage Places Overseas	No	Yes
S28	Commonwealth or Commonwealth Agency	No	Yes

4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no World Heritage places in or near the Project.

4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no National Heritage places in or near the Project.

4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Ramsar wetland
No	No	Hunter Estuary Wetlands

4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no Ramsar wetlands in or near the Project. The nearest Ramsar site includes the Hunter Estuary Wetlands, which occurs 20-30km away.

4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Threatened species

Direct impact	Indirect impact	Species	Common name
No	No	Acacia bynoeana	Bynoe's Wattle, Tiny Wattle
No	No	Anthochaera phrygia	Regent Honeyeater
No	No	Aprasia parapulchella	Pink-tailed Worm-lizard, Pink-tailed Legless Lizard
No	No	Botaurus poiciloptilus	Australasian Bittern
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Callocephalon fimbriatum	Gang-gang Cockatoo
No	No	Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo
Yes	Yes	Chalinolobus dwyeri	Large-eared Pied Bat, Large Pied Bat
No	No	Climacteris picumnus victoriae	Brown Treecreeper (south-eastern)
No	No	Cynanchum elegans	White-flowered Wax Plant
No	No	Dasyurus maculatus maculatus (SE mainland population)	Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)
Yes	Yes	Delma vescolineata	Hunter Valley Delma
No	No	Erythrotriorchis radiatus	Red Goshawk
No	No	Eucalyptus glaucina	Slaty Red Gum
No	No	Euphrasia arguta	
No	No	Falco hypoleucos	Grey Falcon
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Grantiella picta	Painted Honeyeater
No	No	Heleioporus australiacus australiacus	Giant Burrowing Frog, Eastern Owl Frog

Direct impact	Indirect impact	Species	Common name
No	No	Hirundapus caudacutus	White-throated Needletail
No	No	Lathamus discolor	Swift Parrot
No	No	Litoria aurea	Green and Golden Bell Frog
No	No	Melanodryas cucullata cucullata	South-eastern Hooded Robin, Hooded Robin (south-eastern)
No	No	Neophema chrysostoma	Blue-winged Parrot
No	No	Nyctophilus corbeni	Corben's Long-eared Bat, South-eastern Long-eared Bat
No	No	Ozothamnus tesselatus	
No	No	Persoonia pauciflora	North Rothbury Persoonia
No	No	Petauroides volans	Greater Glider (southern and central)
No	No	Petaurus australis australis	Yellow-bellied Glider (south-eastern)
No	No	Petrogale penicillata	Brush-tailed Rock-wallaby
No	No	Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)	Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory)
No	No	Prasophyllum sp. Wybong (C.Phelps ORG 5269)	a leek-orchid
No	No	Prostanthera cineolifera	
No	No	Pseudomys novaehollandiae	New Holland Mouse, Pookila
Yes	Yes	Pteropus poliocephalus	Grey-headed Flying-fox
No	No	Pterostylis gibbosa	Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood
No	No	Rhizanthella slateri	Eastern Underground Orchid
No	No	Rhodamnia rubescens	Scrub Turpentine, Brown Malletwood
No	No	Rostratula australis	Australian Painted Snipe
No	No	Rutidosis heterogama	Heath Wrinklewort
No	No	Stagonopleura guttata	Diamond Firetail
No	No	Syzygium paniculatum	Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly,

Direct impact	Indirect impact	Species	Common name
			Brush Cherry
No	No	Thesium australe	Austral Toadflax, Toadflax
No	No	Thismia clavarioides	

Ecological communities

Direct impact	Indirect impact	Ecological community
No	No	Central Hunter Valley eucalypt forest and woodland
No	No	Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community
No	No	Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
No	No	Hunter Valley Weeping Myall (Acacia pendula) Woodland
No	No	Kurri sand swamp woodland of the Sydney Basin bioregion
No	No	River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria
No	No	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

Yes

4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. *

The following MNES were recorded within the Project area:

- Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable, EPBC Act).
- Hunter Valley Delma *Delma vescolineata* (Endangered, EPBC Act).
- Large-eared Pied Bat *Chalinolobus dwyeri* (Endangered, EPBC Act).
- North Rothbury Persoonia *Persoonia pauciflora* (Critically Endangered, EPBC Act).
- White-throated Needletail *Hirundapus caudacutus* (Vulnerable, EPBC Act).
- *Central Hunter Valley eucalypt forest and woodland (Critically Endangered Ecological Community* [CEEC], EPBC Act).
- *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community* [EEC], EPBC Act).

Of these, three species may be subject to direct or indirect impacts from the project primarily due to habitat removal:

- Grey-headed Flying-fox *Pteropus poliocephalus* (Vulnerable, EPBC Act).
- Hunter Valley Delma *Delma vescolineata* (Endangered, EPBC Act).
- Large-eared Pied Bat *Chalinolobus dwyeri* (Endangered, EPBC Act).

Direct or indirect impacts to these species as a result of the proposed action include:

- Removal of up to 1.51 hectares of native vegetation, which constitutes marginal foraging and transient habitat for Grey-headed Flying-fox.
- Removal of 1.38 hectares of potential foraging habitat for Large-eared Pied Bat, largely via the removal of small patches or single trees. There may also be indirect impacts via noise, light dust or vibration to surrounding foraging habitat, primarily during construction.
- Removal of approximately 8.63 hectares of potential habitat for the Hunter Valley Delma. Potential mortality to individuals from machinery and construction activities.

These entities have been assessed against the EPBC Significant Impact Criteria. Additional information can be found in Attachment 7.

4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

Yes

4.1.4.5 Describe why you consider this to be a Significant Impact. *

Yes. Assessment of impacts against the EPBC Significant Impact Criteria determined that there is potential for significant impacts to occur to the Hunter Valley Delma as a result of the proposed action. The proposed action would remove approximately 8.63 hectares of potential, albeit modified, habitat for the Hunter Valley Delma.

The species was recorded on two occasions across five pitfall trap configurations deployed throughout the Project Area. Though not recorded within the Disturbance footprint of the proposed action, the presence of individuals within the Project area in similarly disturbed and modified habitat suggests that it may also function as suitable habitat and there remains a potential risk of mortality to individuals during construction of the project. Furthermore, areas underneath and in close proximity to BESS infrastructure will need to be concreted in, so no habitat will persist in these areas for the species as a result of the proposed action.

Significant Impacts for other recorded MNES, particularly Large-eared Pied Bat and Grey-headed Flying-fox were considered unlikely to occur. Additional information can be found in Attachment 7.

4.1.4.7 Do you think your proposed action is a controlled action? *

Yes

4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

Consideration of impacts against the EPBC Significant Impact Criteria indicates that it is likely that there is potential for significant impacts to occur to the Hunter Valley Delma as a result of the proposed action.

4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Avoidance and minimisation of impacts to biodiversity values and in particular, EPBC Act listed species and communities, have been undertaken throughout the development and design of the proposed action from initial desktop-based constraints information, followed by design workshops and updates based on a number of rounds of collection of ground-validated data. Throughout the site selection and design process, the Applicant has considered alternative site locations based on proximity to the NSW electricity grid (existing and proposed) and the storage requirements within the region. During initial phases of the proposed action feasibility, multiple properties and regions within the broader HCCREZ with potential connection to existing transmission lines and nearby exiting substation infrastructure were considered. Many areas within this landscape hold high levels of biodiversity value due to the extensive ranges, reserves, national parks, state forests and conservation areas.

Biosis was commissioned by the Applicant in late 2024 to undertake a preliminary biodiversity opportunities and constraints assessment within the project area to inform avoidance and minimisation as part of the Project. The constraints and opportunities assessment was undertaken via desktop assessment, followed by detailed field investigations and targeted surveys to verify findings. The key objectives of the constraints assessment and following detailed surveys was to identify high level constraints and describe biodiversity values within the project area and neighbouring properties, and allowed for recommendations to be provided in terms of avoidance, mitigation and/or further detailed assessment of biodiversity, guiding concept, preliminary and final designs.

High level constraints have been identified to minimise potential impacts. This includes avoiding and minimising impacts to areas of highest biodiversity value such as high condition TECs, known and recorded threatened species, avoiding direct impact and managing setbacks from Black Creek, habitat trees containing large hollows, retaining connectivity throughout the landscape and minimising direct impacts to ephemeral riparian areas as far as practicable.

Locating BESS infrastructure within areas of low constraint and Category 1 land has been prioritised to lower impacts to biodiversity.

Residual impacts however include the potential for significant impacts to Hunter Valley Delma, through the removal of 8.63 hectares of potential habitat, and possible direct mortality to individuals during construction.

Proposed mitigation includes the avoidance of up to 22.98 hectares of habitat for Hunter Valley Delma. A Biodiversity Management Plan (BMP) as part of a Construction and Environment Management Plan (CEMP) for the proposed action would be prepared, detailing salvage and translocation measures to be put in place during construction to minimise direct mortality to individuals. Works would occur outside of the breeding season (December to February) for this species, to further reduce potential impacts.

4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

The NSW BOS will apply to this project and an offset requirement will be generated for impacts on biodiversity values.

Assessment against the EPBC Significant Impact Criteria is provided in the attached MNES report.

4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

Direct impact	Indirect impact	Species	Common name
No	No	Actitis hypoleucos	Common Sandpiper
No	No	Apus pacificus	Fork-tailed Swift
No	No	Calidris acuminata	Sharp-tailed Sandpiper
No	No	Calidris ferruginea	Curlew Sandpiper
No	No	Calidris melanotos	Pectoral Sandpiper
No	No	Cuculus optatus	Oriental Cuckoo, Horsfield's Cuckoo
No	No	Gallinago hardwickii	Latham's Snipe, Japanese Snipe
No	No	Hirundapus caudacutus	White-throated Needletail
No	No	Motacilla flava	Yellow Wagtail
No	No	Pandion haliaetus	Osprey

4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

A total of 14 listed migratory species are predicted to occur within a 5 kilometre buffer of the Project area.

One migratory species, White-throated Needletail *Hirundapus caudacutus* has been recorded within the Project area. This is an exclusively aerial species that forages for insects well above ground level. It is not anticipated to be impacted by ground-level activities and the nature and scale of the proposed action is considered unlikely to result in any significant impacts to this species.

Fork-tailed Swift *Apus pacificus* is another aerial species that has potential to occur. It has not been recorded in the Project area and similar to the White-throated Needletail, being an aerial insectivore it is unlikely to be impacted by ground-level disturbance.

Osprey *Pandion haliaetus* may occasionally fly above the Project area but is unlikely to be impacted by the nature and scale of the project. There are no potential nesting sites, and this species is generally associated with large waterbodies or open rivers where it forages for fish. Given the absence of suitable habitat within the Project area, it is unlikely to be present or impacted by the project.

4.1.6 Nuclear

4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action does not involve a nuclear action.

4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There are no Commonwealth Marine Areas in or near the Project.

4.1.8 Great Barrier Reef

4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Great Barrier Reef is over 1000 km away from the Project area.

4.1.9 Water resource in relation to large coal mining development or coal seam gas

4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action does not involve coal mining or coal seam gas extraction.

4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

There is no Commonwealth Land in or near the Project.

4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The proposed action does not involve impacts to Commonwealth heritage places overseas.

4.1.12 Commonwealth or Commonwealth Agency

4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? *

No

4.2 Impact summary

Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

- Threatened Species and Ecological Communities (S18)

Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

4.3 Alternatives

4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? *

No

4.3.8 Describe why alternatives for your proposed action were not possible. *

Alternatives for the proposed action have been considered, including alternative site locations and alternative energy generating/storage technologies. The critical components of a BESS include battery models and nearby grid connection infrastructure. The location of the proposed action is highly suitable for its grid connection opportunities. Underlying technology surrounding BESS development has been rapidly advancing in recent years and the Applicant would utilise the latest technical and cost-efficient technology available at the time of construction.

Lithium-ion technology was chosen for electricity storage because it is cost-effective and a proven technology which is readily available for broad scale deployment at the site. At this stage there are no notable battery technologies competing with Lithium-ion for this scale of development.

The Applicant reviewed numerous potential sites within the Hunter region and decided to progress with this proposed action due to:

- Sufficient levels of available capacity on the grid distribution system.
- Proximity to a grid connection, being the Rothbury 132kV substation adjacent to the site.
- Suitable planning context.
- Low potential impacts to biodiversity and heritage.
- Low potential social impacts, such as noise and visual.
- Excellent road access off Wine Country Drive.
- Low land use conflict.

Once the general area was selected by the Applicant, the only alternative option is to not undertake the Project.

The do-nothing option considers the consequences of not carrying out the development. The strategic need for the proposed action is justified to address the NSW current need for storage methods that address grid firming to support climate change commitments that are moving away from reliance on fossil fuels. Not undertaking the proposed action would not assist in the transition away from fossil fuel reliant energy production.

The do-nothing option would have the benefit of not having the environmental impacts of the proposed BESS; however, the scale of the proposed action is not expected to have significant local or regional impacts, with further impact considerations and mitigation measures to be considered in the EIS.

5. Lodgement

5.1 Attachments

1.2.6 Commonwealth or state legislation, planning frameworks or policy documents that are relevant to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 1.1 Appendix B - Sunshine Estate BESS Engagement Summary Report.pdf Scoping Report Appendix B		Yes	High
#2.	Document	Attachment 1.1 Appendix B - Sunshine Estate BESS Engagement Summary Report_Redacted.pdf Redacted version of Attachment 1.1		No	High
#3.	Document	Attachment 1.2 Appendix C - Sunshine Estate PSIA.pdf Scoping report Appendix C		No	High
#4.	Document	Attachment 1.3 Appendix D - MNES layers.pdf Scoping report Appendix D		No	High
#5.	Document	Attachment 1_scoping report-compressed (1).pdf Scoping report for Sunshine Estate BESS	01/08/2025	No	High

1.3.2.16 (Person proposing to take the action) Nature of the trust arrangement in relation to the proposed action

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 2_AE BESS 11 Unit Trust - signed and stamped.pdf	16/10/2024	Yes	

3.1.1 Current condition of the project area's environment

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 3_41373_F1_ProjectArea.pdf Mapping of project area	13/11/2025	No	High
#2.	Document	Attachment 4_41373_F2_VegZones.pdf Mapping of vegetation zones within the project area	28/11/2025	No	High
#3.	Document	Attachment 5_41373_F3_ThrtSpp.pdf Mapping of threatened species within the project area	13/11/2025	Yes	High
#4.	Document	Attachment 6_41373_F4_EPBC_TECs.pdf Mapping of threatened ecological communities within the project area	13/11/2025	No	High

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 7_41373.SunshineEstate.MNES.FIN01.20251203.pdf Sunshine Estate BESS MNES report	03/12/2025	No	High

4.1.4.5 (Threatened Species and Ecological Communities) Why you consider the direct and/or indirect impact to be a Significant Impact

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 7_41373.SunshineEstate.MNES.FIN01.20251203.pdf Sunshine Estate BESS MNES report	02/12/2025	No	High

4.1.4.11 (Threatened Species and Ecological Communities) Proposed offsets relevant to avoidance or mitigation measures

	Type	Name	Date	Sensitivity	Confidence
#1.	Document	Attachment 7_41373.SunshineEstate.MNES.FIN01.20251203.pdf Sunshine Estate BESS MNES report	02/12/2025		High

5.2 Declarations

Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

ABN/ACN	65006175097
Organisation name	Biosis Pty Ltd
Organisation address	Suite 8, 27 Annie Street, Wickham NSW 2293
Representative's name	Maya Rychner
Representative's job title	Graduate Environmental Planner
Phone	0417695816
Email	mrychner@biosis.com.au
Address	38 Bertie Street Port Melbourne

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ By checking this box, I, **Maya Rychner of Biosis Pty Ltd**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

ABN/ACN	681573526
Organisation name	AE BESS 11 Pty Ltd
Organisation address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061
Representative's name	Simon Kerrison

Representative's job title	Director
Phone	0438 799 970
Email	Simon.kerrison@avenisenergy.com.au
Address	Suite 2, Level 10. 52 Alfred Steet, Milsons Point NSW 2061

- [x] Check this box to indicate you have read the referral form. *

- [x] Check this box to confirm these are the correct identification details. *

- [x] I, **Simon Kerrison of AE BESS 11 Pty Ltd**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

- [x] Check this box to indicate you have read the referral form. *

- [x] Check this box to confirm these are the correct identification details. *

- [x] I, **Simon Kerrison of AE BESS 11 Pty Ltd**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

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