Bellambi Heights Battery Energy Storage System

Modification Report

Prepared for Vena Energy Services (Australia) Pty Ltd

July 2025

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Vena Energy Services (Australia) Pty Ltd

E250441 RP2

July 2025

Version	Date	Prepared by	Reviewed by	Comments
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Approved by

Kate Cox
Associate Director
31 July 2025

Level 10 201 Pacific Highway
St Leonards NSW 2065
ABN: 28 141 736 558

Executive Summary

ES1 Introduction

Vena Energy Services (Australia) Pty Ltd (Vena) has approval to develop the Bellambi Heights Battery Energy Storage System (Bellambi Heights BESS), a major grid-scale battery with delivery capacity of 408 megawatt (MW) and associated infrastructure. Approved on 2 May 2024, the project is situated in the locality of Beryl – approximately 6.5 kilometres (km) north-west of the township of Gulgong in the Central West of New South Wales within the Mid-Western Regional Council (MWRC) local government area (LGA) and the Central-West Orana (CWO) Renewable Energy Zone (REZ).

Vena is seeking to modify State Significant Development (SSD) SSD-33344237, pursuant to section 4.55(1A) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to accommodate minor changes to the approved development footprint to facilitate the connection of the project with the existing 330 kilovolt (kV) transmission line.

ES2 Strategic context

Vena is seeking to modify the development footprint to accommodate updates to the project layout and connection to the existing 330 kV Wollar to Wellington transmission line. The project's broader strategic context in relation to decarbonisation goals (at both state and federal levels), facilitating the rollout of renewable energy projects, and contributing to a stable and reliable National Electricity Market (NEM) are unchanged from the approved project.

The modified development footprint has been designed to avoid constraints that are present, notably biodiversity values (Category 2 – Regulated land), Aboriginal heritage sites and waterways. The modification of the project will not substantially change the nature of the project or its anticipated impacts.

ES3 Description of modification

The changes to the project involve alterations to the approved development footprint to facilitate:

- an optimised substation and switching yard layout
- the consolidation of development footprint within the Transgrid 330 kV easement to facilitate the full scope of cut in works, including:
    - construction of a new transmission tower and decommissioning of the existing tower
    - strengthening of an existing transmission tower
- a reduction in the approved development footprint occupied by the BESS compound
- a reduction in the size of the BESS temporary construction laydown area.

The modified development footprint has been optimised to avoid environmental constraints (including Category 2 land). There will be a minor increase in the overall development footprint, from approximately 25.3 hectares (ha) to approximately 26.8 ha (a 1.5 ha increase).

ES4 Statutory context

Under section 4.55 of the EP&A Act, a consent authority may modify an SSD consent provided the development to which the consent as modified relates is substantially the same as the development for which the consent was originally granted. A modification under section 4.55(1A) of the EP&A Act is the appropriate pathway given that:

- the nature of the project (being a grid-scale BESS) remains the same
- the delivery capacity remains the same
- the approved associated infrastructure and grid connection remains the same
- the operational lifespan of the project remains the same
- the development footprint remains substantially the same, with a net increase in area of approximately 1.5 ha
- as demonstrated in this modification report, the modification will result in minimal environmental impact beyond those previously assessed and approved under SSD-33344237.

As the modified development will remain substantially the same development for which consent was originally granted and the modification will result in minimal environmental impact, the modification can be considered under section 4.55(1A) of the EP&A Act.

ES5 Engagement

Consultation has continued to occur since the project received development consent in May 2024. Key stakeholders that continue to be consulted include the Mid-Western Regional Council, Registered Aboriginal Parties, and Transgrid. Due to the minor changes to the project that are associated with the modification, no changes to the consultation practices laid out in the approved Engagement Management System (EMS) are necessary. For this reason, consultation has continued to proceed in accordance with the approved EMS and the conditions of the development consent and will continue to be undertaken as per the measures stipulated in these documents.

ES6 Assessment of impacts

The potential impacts of the modification have been compared to the impacts assessed in the Environmental Impact Statement (EIS) for the approved project. Impact assessments have been undertaken for those environmental and social values where the modification could result in changes to those values. The potential impacts are summarised as follows:

- Biodiversity – a net reduction in impacts to biodiversity values. Approximately 0.27 ha of native vegetation will be avoided compared to the approved development footprint. No additional biodiversity credits are required.
- Aboriginal heritage – the modified development footprint will not impact any identified Aboriginal cultural heritage sites. Therefore, no additional impacts are anticipated based on the original Aboriginal cultural heritage assessment (ACHA) findings.
- Historical heritage – there several sites in Lot 102 that have potential heritage values, however these will not be encroached upon by the modified development footprint. Therefore, no additional impacts are anticipated based on the original Statement of Heritage Impact (SoHI) findings.

- Land and rehabilitation – the increase in area of the modified development footprint is minor (approximately 1.5 ha) and will not encompass differing soil types or high-capability soils. No additional land or rehabilitation constraints are present. Therefore, no additional impacts are anticipated based on the original land and rehabilitation assessment (LRA) findings.

- Landscape and visual – the modification may increase the visibility of the project due to changes to the heights and positioning of electrical infrastructure. However, the change in project layout will result in visual impacts of this infrastructure being reduced by increasing its setback from the Castlereagh Highway. The modification is not expected to increase the impacts to the landscape or visual amenity. No additional mitigation measures are necessary.

- Noise and vibration – no changes to noise and vibration impacts are anticipated as a result of the modification.

- Traffic and transport – no changes to traffic and transport impacts are anticipated as a result of the modification.

- Water resources – the potential surface water and groundwater impacts during construction and operation for the project remain minor. No additional mitigation measures are necessary.

- Hazards and risk – no changes to hazards and risks are anticipated as a result of the modification.

- Bushfire – no changes to bushfire risks are anticipated as a result of the modification.

- Social – no changes to social impacts are anticipated as a result of the modification.

- Other matters – no changes to other impacts are anticipated as a result of the modification.

ES7 Justification of the modified project

Assessment of impacts undertaken for this modification indicate that the proposed modification will result in minimal changes to the environmental impact of the approved project, and hence it is considered to be substantially the same development for which consent was originally granted.

Benefits arising as a result of the modified project are also expected to closely resemble those anticipated to be generated by the approved project. The project will contribute to energy security and reliability in NSW, facilitate decarbonisation, and help to prepare for the retirement of large-scale coal-fired power generation. The project will also provide local economic stimulus and local employment opportunities during construction, which will have economic benefits for both the local economy within the Mid-Western Local Government Area (LGA) and the regional economy more broadly.

The Bellambi Heights BESS has the potential to provide an important contribution to the objectives of the CWO REZ by contributing to the continued growth of renewable energy generation and storage capacity. It will complement nearby existing and proposed renewable energy generation assets by smoothing out fluctuations in electricity supply from these intermittent power sources while contributing to the overall storage capacity and reliability of the NEM. The project will also provide economic benefits for the local economy within the Mid-Western Regional LGA.

The modification will result in minimal environmental impacts beyond the approved project. The assessment of impacts in this modification report demonstrates that the project can be developed and operated within acceptable limits through the application of existing mitigation measures. The project (as modified) will not result in significant impacts to the environment or the local community.

The project (as modified) will remain substantially the same development for which consent was originally granted. As such, it is considered that the modification can be approved pursuant to section 4.55(1A) of the EP&A Act.

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1 Introduction

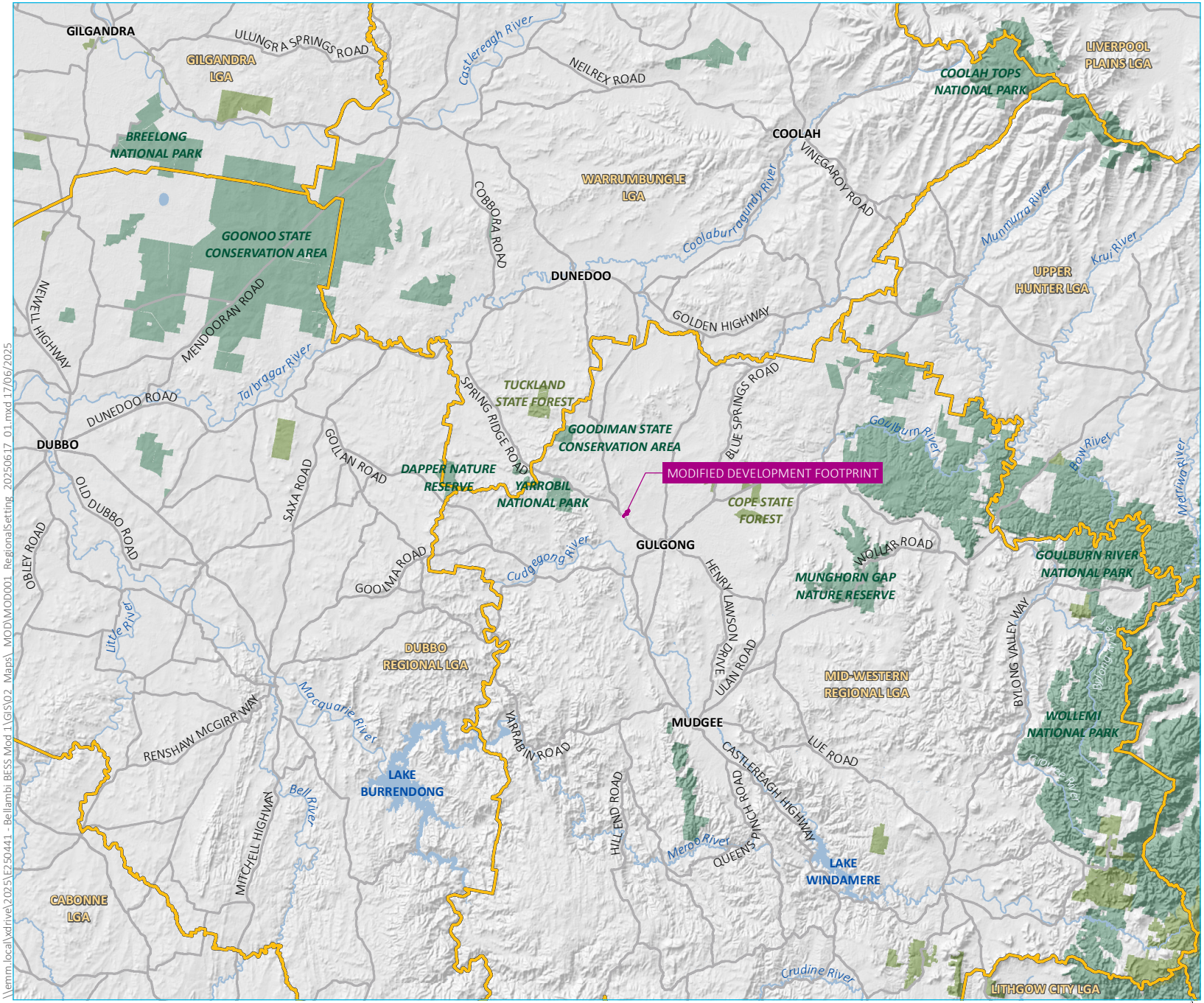
1.1 Overview

Vena Energy Services (Australia) Pty Ltd (Vena) received approval to develop the Bellambi Heights Battery Energy Storage System (Bellambi Heights BESS), a major grid-scale battery and associated infrastructure (the project), on 2 May 2024. The project is situated in the locality of Beryl, approximately 6.5 kilometres (km) north-west of the township of Gulgong, in the Central West of New South Wales (NSW) on the property known as 'Bellambi Heights' (the site). Figure 1.1 and Figure 1.2 show the project's location, which lies within the Mid-Western Regional Council (MWRC) local government area (LGA) and the Central-West Orana (CWO) Renewable Energy Zone (REZ).

The project will have a delivery capacity approximately 408 megawatts (MW). It will connect to the National Electricity Market (NEM) via a switching station that will be constructed as part of the project. The switching station is adjacent to the existing Wollar to Wellington 330 kilovolt (kV) transmission line (the 330 kV transmission line) which traverses the site.

Vena is seeking to modify State Significant Development (SSD) SSD-33344237, pursuant to section 4.55(1A) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to accommodate minor changes to the approved development footprint to facilitate the connection of the project with the 330 kV transmission line.

This modification report has been prepared to support the application to modify SSD-33344237.



Source: EMM (2025); ABS (2021); DFSI (2020, 2021); GA (2011)

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Regional context

Bellambi Heights Battery Energy Storage System
Modification Report
Figure 1.1

EMM
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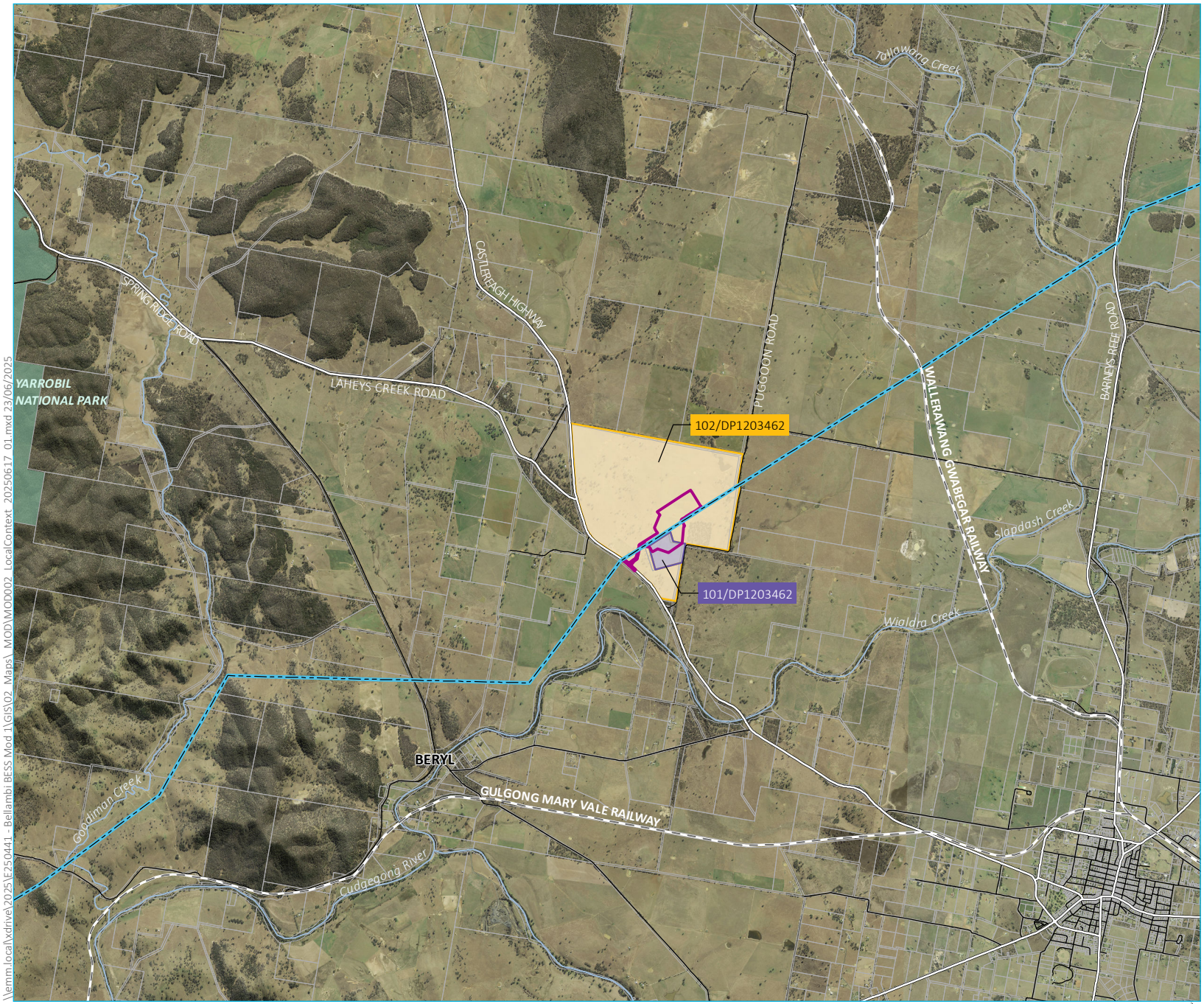

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Source: EMM (2025); ABS (2021); DFSI (2020, 2021); DCSSS (2023); GA (2011); ESRI (2025)

Local context

Bellambi Heights Battery Energy Storage System
Modification Report
Figure 1.2

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1.2 Approved project

The approved Bellambi Heights BESS project is a major grid-scale battery and associated infrastructure located approximately 6.5 km north-west of the township of Gulgong in the Mid-Western Regional Council LGA and within the CWO REZ. The project will be connected to the existing 330 kV transmission line via a new switching station and substation approved to be constructed as part of the project.

The approved project includes a 408 MW BESS and supporting infrastructure, and primarily consists of the following components:

- a BESS compound, which will house battery containers and supporting infrastructure
- a BESS substation, which will house various electrical infrastructure such as two 330/33 kV transformers and connecting transmission cables
- a switching station, containing overhead transmission lines, high voltage switchgear, current and voltage transformers, a control room, and other electrical equipment
- ancillary infrastructure, including internal access tracks, drainage, security fencing, lighting and closed-circuit television, temporary construction facilities and laydown areas, and firefighting water supplies.

The approved project is contained within a development footprint of 25.3 ha within a broader site of approximately 305 ha, which comprises Lots 101 and 102 of Deposited Plan (DP) 1203462 at 696 Castlereagh Highway and 79 Puggoon Road, Beryl, NSW. Within the development footprint, the approved operational footprint covers approximately 23 ha.

The approved layout of Bellambi Heights BESS is shown in Figure 1.3. The approved project components are listed in greater detail in Table 3.1.

The Environmental Impact Statement (EIS) identified design elements subject to change during detailed design, which, if altered within the approved development footprint, would not likely change the outcomes of the assessment of environmental impacts. This included works on the switching station and BESS substation to accommodate project connection to the existing 330 kV transmission line. Further design has resulted in changes to the layout of the switching station/substation and connection to the 330 kV transmission line (also referred to as ‘cut-in works’). These changes require changes to the approved development footprint to accommodate project infrastructure.

Source: EMM (2023); DCSSS (2023)

0 250 500 m

GDA2020 MGA Zone 55

N

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KEY

- Approved development footprint

Project component

- BESS compound
- BESS substation
- Switching station
- Temporary construction laydown area
- Site access intersection

Existing environment

- 330 kV transmission line
- Major road
- Minor road
- 330 kV transmission easement

Approved development footprint

Bellambi Heights Battery Energy Storage System
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Figure 1.3

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1.3 Proposed modification

Vena is seeking to modify the project layout, following further design of the switching station and BESS substation. The changes involve alterations to the approved development footprint to facilitate:

- an optimised substation and switching yard layout
- the consolidation of development footprint within the Transgrid 330kV easement to facilitate the full scope of cut in works, including:
  - construction of a new transmission tower and decommissioning of the existing tower
  - strengthening of an existing transmission tower
- a reduction in the approved development footprint occupied by the BESS compound
- a reduction in the size of the BESS temporary construction laydown area.

The modified development footprint has been optimised to avoid environmental constraints (including Category 2 land). There will be a minor increase in the overall development footprint, from approximately 25.3 ha to approximately 26.8 ha (a 1.5 ha increase). The modified development footprint is presented in Figure 1.4.

The proposed delivery capacity of the project will not be altered by the proposed modification. The project will remain unchanged with regard to construction, operation, and decommissioning.

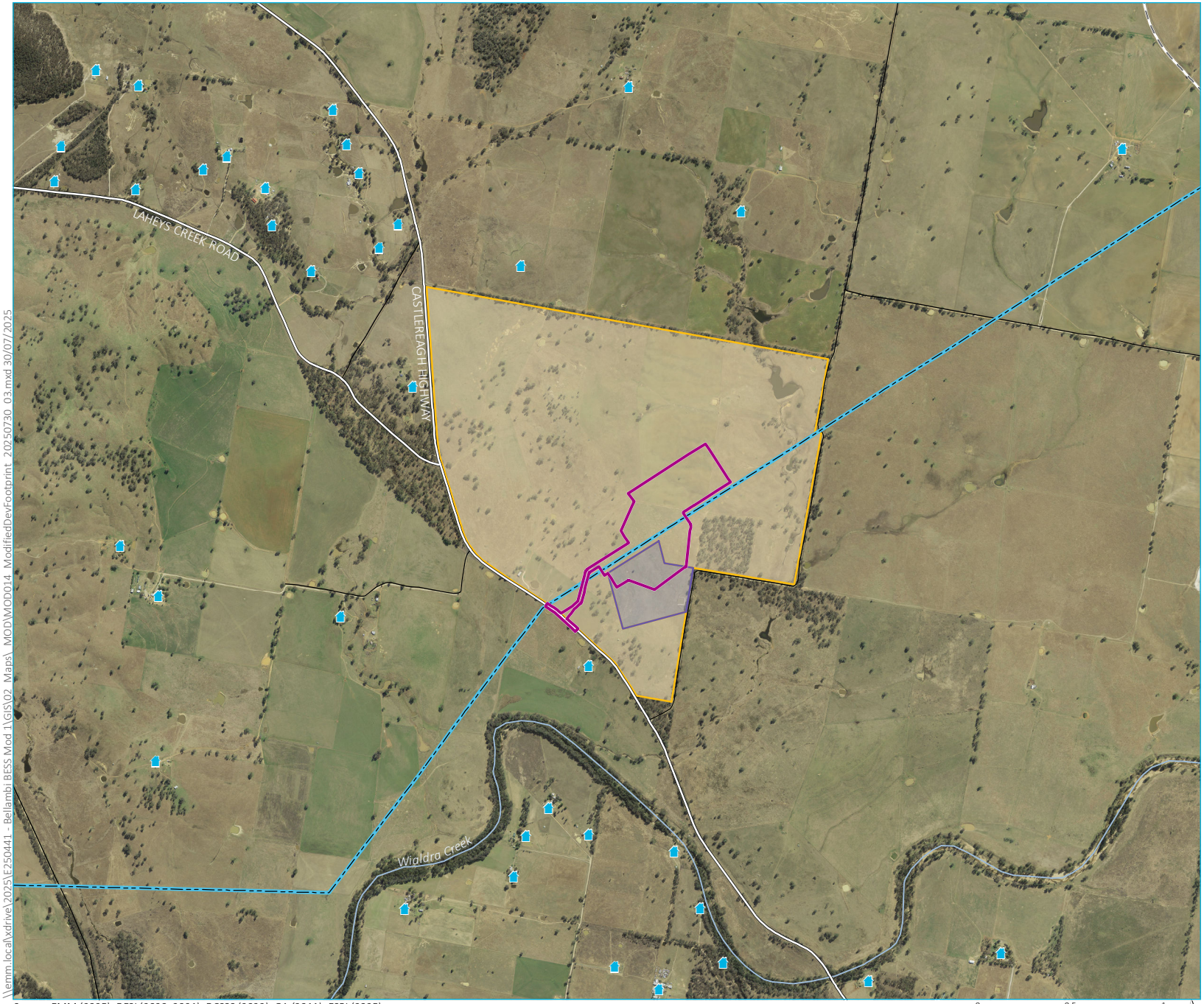
The nature of the proposed modification is described in further detail in Chapter 3. This modification report provides an assessment of the impacts and benefits associated with the proposed modification, as well as proposed management and mitigation measures for residual impacts.

1.4 The applicant

The applicant is Vena Energy Services (Australia) Pty Ltd, a subsidiary of Vena Energy. Vena Energy is a leading renewable energy company in the Asia-Pacific region that owns, develops, constructs, operates, manages, and commercialises a renewable energy portfolio consisting of solar photovoltaic, onshore wind, offshore wind, energy storage, and hybrid renewable energy projects. Applicant details are provided in Table 1.1.

Table 1.1 Applicant details

Name	Vena Energy Services (Australia) Pty Ltd
Postal address	Suite 2, Level 7, 200 Mary Street, Brisbane QLD 4000
Contact	Andrew Brownlow
ABN	89 609 132 747



KEY

- Modified development footprint
- Site boundary
- Lot 101 DP1203462
- Lot 102 DP1203462
- Existing environment
- 330 kV transmission line
- Dwelling
- Rail line
- Major road
- Minor road
- Named watercourse

Source: EMM (2025); DFSI (2020, 2021); DCSSS (2023); GA (2011); ESRI (2025)

0 0.5 1 km

GDA2020 MGA Zone 55

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Modified development footprint

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Modification Report
Figure 1.4

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1.5 Terminology

The terms defined in Table 1.2 are used throughout this modification report.

Table 1.2 Terminology

Term	Definition
Approved development footprint	The extent of surface disturbance required for construction and operation of the approved project, as assessed by the EIS. This would be superseded by the modified development footprint, if approved.
Associated dwellings	Dwellings on land that are owned by the host landholder and associated with the project. There are two associated dwellings.
BESS compound	The portion of the development footprint containing the battery enclosures/containers, power conversion systems and ancillary infrastructure, operations and maintenance (O&M) buildings and spare parts warehouses.
BESS substation	The portion of the development footprint containing the BESS substation, which will comprise two 330/33 kV transformer bays including oil retention bunds, indoor medium voltage switchgear units, control rooms housed in buildings, and other ancillary infrastructure.
Modified development footprint	The extent of surface disturbance required for construction and operation of the modified project.
Sensitive receptors (non-associated dwellings)	Dwellings identified in the vicinity of the project area that are not related to the project. There are 72 sensitive receptors, being rural residential dwellings on surrounding properties, within approximately 4 km of the project area.
Site access intersection	Site access intersection with the Castlereagh Highway, which will replace the existing access for the property at 696 Castlereagh Highway, and is within the approved development footprint.
Study area	The locations across which technical studies were undertaken during EIS assessments.
Switching station	The portion of the development footprint containing a switching station that will connect the BESS to the transmission network, and will include overhead transmission lines, high voltage switchgear, current and voltage transformers, a control room and other high voltage electrical equipment.
Temporary construction laydown area	Temporary area for storing equipment, materials and plant used during construction.
The project	An inclusive term covering the entirety of the approved Bellambi Heights BESS.
The site	The property known as 'Bellambi Heights', on Lots 101 and 102 of DP 1203462 at 696 Castlereagh Highway and 79 Puggoon Road, Beryl, NSW. The development footprint occupies less than 10% of the site.
Transmission network	Existing 330 kV electrical transmission infrastructure network.

2 Strategic context

2.1 Justification for the project

Australia's electricity industry is currently undergoing a transformation, as coal-fired generation is being replaced by renewables, energy storage and other forms of 'firming' capacity as part of the transition towards a net zero emissions future.

The transition from reliance on a small number of large-scale fossil fuel generators to a reliance on an array of smaller scale, widely dispersed wind and solar generators presents reliability and security challenges to the NEM. Notably, the weather-dependent nature of wind and solar technologies makes their output variable and sometimes unpredictable. BESS facilities, such as the project, can provide the firming capacity necessary to meet demand during periods of low generation by storing excess energy generated during times of low demand and dispatching energy back into the grid during periods of peak demand.

BESS facilities such as the project also function to smooth out price differences during peak and off-peak periods and potentially balance out price increases during unanticipated outages thereby putting downward pressure on spot prices. Once operational, the Bellambi Heights BESS will provide a valuable contribution to the energy security of NSW and the east coast of Australia. Specifically, it will:

- provide dispatchable capacity to support renewable energy generation in the NEM
- support and enable new renewable energy projects, which are crucial to replace coal fired generation capacity and provide additional capacity to the NEM, and will provide broader security to the grid by providing back-up power during network disruptions
- be developed consistent with the objectives of the *Energy Infrastructure Investment Act 2020*, and likely to facilitate the achievement of those objectives
- be located within the CWO REZ adjacent to existing electrical transmission infrastructure which will allow benefits from the project to be realised immediately without the need for new transmission infrastructure.

The operation of the project, in conjunction with other large-scale renewable energy storage projects in NSW, has potential to fill the need for replacement power as ageing coal-fired generators face closure. It is also consistent with and will support the achievement of the emissions reductions objectives of the Commonwealth Government's Large Scale Renewable Energy Target (LRET), Paris Agreement targets, and the NSW Government's Net Zero Plan and Energy Roadmap, amongst other strategies, policies and objectives.

The modification of the project will not substantially change the nature of the project or its anticipated impacts. As such, the justification of the project remains aligned with that presented in the EIS. That is, anticipated impacts arising as a result of the project are not predicted to be significant and can be adequately managed through appropriate design, mitigation and management during construction and operation. On balance, it is therefore considered that the project is in the public interest.

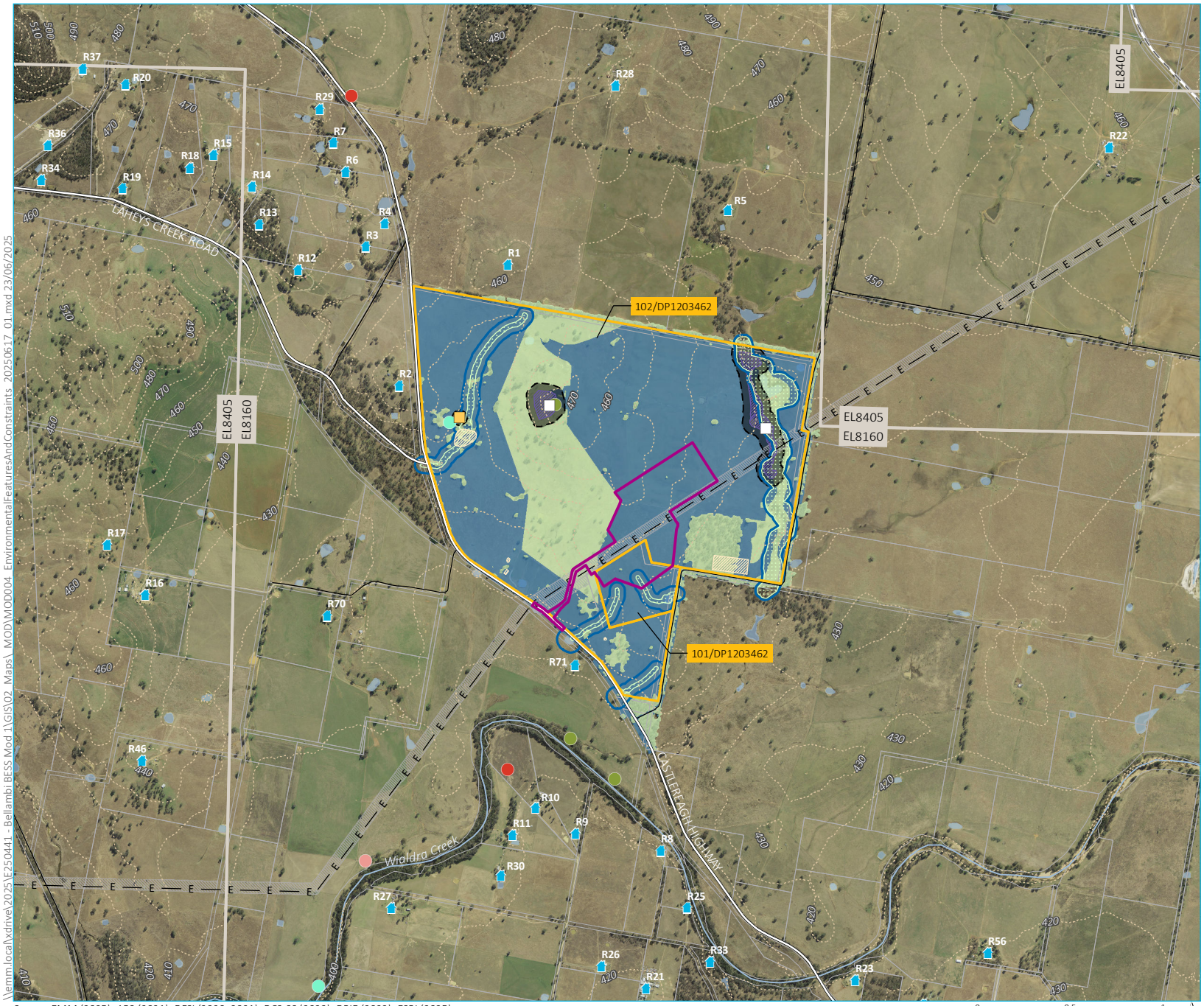
2.2 Site suitability

The modified development footprint is approximately 26.8 ha and is located adjacent to the existing 330 kV transmission line. The modification does not materially alter the location of project infrastructure compared to the approved development footprint. The location is suitable due to the absence of highly sensitive or important natural or built features, and the agricultural land use within and surrounding the project area is also favourable due to its compatibility with supporting a BESS.

The modified development footprint has been positioned within the site to avoid constraints that are present, notably category 2 land, Aboriginal heritage sites and waterways. The modification of the project will not result in any significant change in its position. Key features of the modified development footprint, site and surrounding area are described in Table 2.1 and shown in Figure 1.2. Environmental features and constraints within the site are shown in Figure 2.1

Table 2.1 Key features of the modified development footprint

Aspect	Description
LGA	The site is within the Mid-Western Regional LGA.
Land zoning	The site is zoned RU1 Primary production under the Mid-Western Regional LEP 2012.
Nearby townships	The site lies approximately 6.5 km north-west of the township of Gulgong, 31 km north-west of Mudgee, 54 km north-east of Wellington, and 79 km east of Dubbo.
Topography, landscape and natural features	The site and surrounding area is predominantly rural land. The site is flat to undulating and is mainly cleared for agricultural use. The main topographical feature is a central hill in the north-west portion of the site, from which land slopes away gently. Areas of native and remnant vegetation occur within the site in the form of remnant woodland, scattered trees and riparian vegetation along watercourses. The site includes watercourses classified as Strahler stream order 1st, 2nd, and 3rd, as well as several stock dams. Watercourses within the site are tributaries of Wialdra Creek, a 7th order watercourse, located approximately 500 metres (m) south of the project area.
Land use	Land use within the project has predominantly consisted of sheep grazing, cattle grazing, and dry land cropping.
Land ownership	The site consists of two land parcels, and two landowners. Lot 101 is owned by Electricity Transmission Ministerial Holding Corporation (ETMHC) and leased to Transgrid under a 99-year lease, and Lot 102 is owned by Vena. Lot 102 includes two easements for existing 60 m wide (the 330 kV transmission line) and future 45 m wide electricity transmission corridors.
Sensitive receptors	There are 72 sensitive receptors, being rural residential dwellings on surrounding properties not associated with the project, within approximately 4 km of the project area. A further two dwellings, R70 and R71, are associated with the project. Sensitive receptors are primarily located in loose clusters to the south, east and north-west of the project area, with most lying between 1 and 4 km from the nearest boundary of the project area. Fewer sensitive receptors are located to the north and east. The nearest non-associated residences are receptor 5 (R5) approximately 1,210 m north (measured from the BESS compound) and R10 approximately 1,170 m south (measured from the switching station).
Nearby infrastructure	The site is adjacent to and accessible from both the Castlereagh Highway and Puggoon Road. The 330 kV transmission line passes directly through the site. The Wallerawang-Gwabegar railway line is located 2.4 km east of the site. Beryl Solar Farm is located 2.5 km south of the project area.
Key risks or hazards for the project	The key risks and hazards considered during design development are: • Flooding – a primary hazard which has informed project refinement and final site selection is flooding, with a number of watercourses present within the site. The primary watercourse that presents a flood risk is located along the eastern side of the site, a third order watercourse and tributary of Wialdra Creek to the south of the site. • Hazards – no hazards were identified within the site, including mapped bushfire prone land, contaminated land, steep slopes, land subject to mine subsidence or other hazards.



KEY

- Modified development boundary
- Site boundary
- Mineral tenement
- Waterfront land
- Vegetated riparian zone (VRZ)
- Buffer for establishing avoidance
- Potential archaeological site

Area of archaeological resource

- Low density artefact scatter
- Isolated find
- Low density artefact scatter area

AHIMS site type

- Culturally modified tree; Potential Archaeological Deposit (PAD)
- PAD
- PAD; isolated find
- Undefined artefact site

Land category

- Category 1
- Category 2

Existing environment

- Sensitive receptor
- 330 kV transmission line
- Rail line
- Major road
- Minor road
- Topographic contour (10 m)
- Named watercourse
- Waterbody
- Transmission line easement
- Cadastral boundary

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Source: EMM (2025); ABS (2021); DFSI (2020, 2021); DCS-SS (2023); DPIE (2022); ESRI (2025)

0 0.5 1 km

GDA2020 MGA Zone 55

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Environmental features and constraints

Bellambi Heights Battery Energy Storage System
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Figure 2.1

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3 Description of the modification

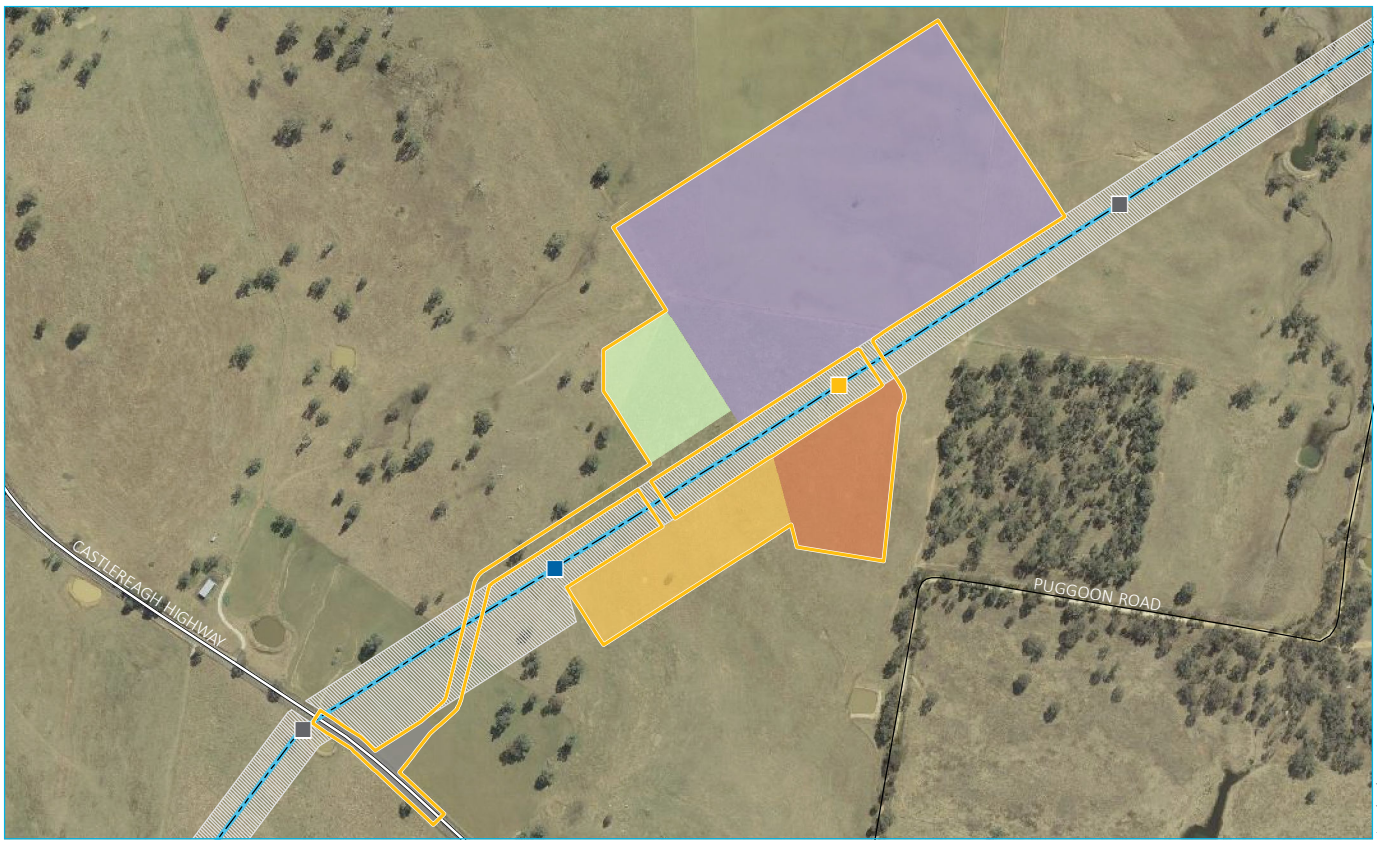
3.1 Overview of the modification

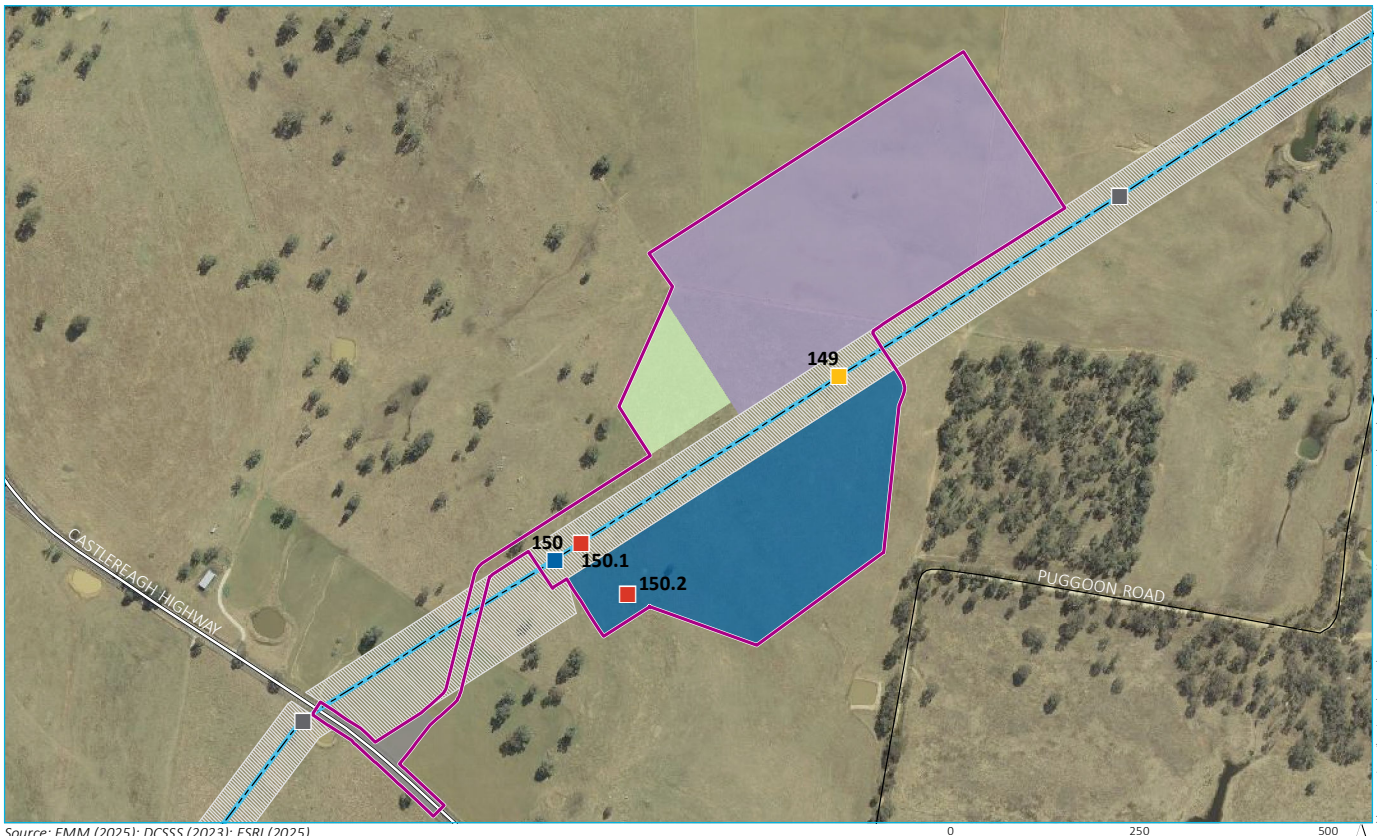
A comparison between the approved project and the modified project is provided in Table 3.1 and an updated project description is provided in Appendix A. The modified development footprint is provided in Figure 3.1.

Table 3.1 Changes to key project elements

Key aspects	Description as per EIS	Changes
Development footprint	The development footprint, comprising the extent of actual surface disturbance required for construction and operation of the project. The project will require a development footprint of approximately 25.3 ha during project construction. The project will have an operational footprint of approximately 23 ha in which permanent project infrastructure will be located.	The modified development footprint is approximately 26.8 ha, a minor increase of 1.5 ha compared to the approved project. The operational footprint will be up to 23 ha.
Delivery capacity	Delivery capacity of 408 MW.	No change.
BESS compound	The BESS compound will comprise: • battery containers (or pre-assembled outdoor battery enclosures), incorporating lithium-ion (or similar) battery cells, control systems, thermal management systems and safety systems, with heights of approximately 4 m • cabling (electrical, communications and earthing), underground cable pits and conduits • power conversion systems (PCS) including inverters, transformers and switchgear • ancillary infrastructure (including O&M buildings, spare parts warehouses, water tanks, security fencing, septic system). Specific component requirements are subject to selection of the battery technology provider, which will determine the number of battery containers, inverter stations and specific layout of the compound.	Reduction in footprint. The footprint of the BESS compound has been reduced slightly, resulting in a commensurate reduction of the development footprint for this component.
BESS substation	A substation including overhead transmission lines and underground cables, two 330/33 kV transformer bays including transformers, oil retention bunds, and high voltage switchgear, switch room and control room, lighting poles, and lightning protection masts approximately 20 m height.	No material change. Minor changes to the layout and development footprint. The BESS substation will now be within the same security fenced compound as the switching station.
Switching station	The switching station will comprise overhead transmission lines, high voltage switchgear, current and voltage transformers, a control room, lighting and other high voltage electrical equipment.	No material change. Minor changes to the layout, including provision of space for potential stormwater management infrastructure (e.g. a detention basin), resulting in the need for the revised development footprint including transmission line cut-in works (described in Section 3.3).
Ancillary infrastructure	The project will include the following ancillary components: • internal access tracks • drainage and stormwater management • security fencing, lighting and closed-circuit television • temporary construction facilities and laydown areas • dedicated firefighting water supplies.	No material change. No changes to ancillary infrastructure.

Key aspects	Description as per EIS	Changes
Site access intersection	A new, relocated site access is proposed on Castlereagh Highway, located approximately 720 m north-west of Puggoon Road and 240 m south-east of the existing access to the site.	No change.
Built design, materials and finishes	Project battery enclosure components and cabinets will be light in colour to assist with heat management, and made of steel. The operation and maintenance buildings are expected to be prefabricated with a height of approximately 6 m, comprising an office, lunch room and bathroom. The spare parts warehouse will be assembled onsite and be approximately 8.5 m tall. These buildings are expected to be made of Trimclad steel or similar and expected to be neutral or light in colour. The substation building(s) will house the substation switch room and control room and are expected to be containerised units principally made of steel, prefabricated, and then installed on site on steel columns approximately 2.5 m above finished surface level, for a total height of approximately 8.5 m.	No material change.
Construction		
Construction activities	Construction of the project will require an area of approximately 25.3 ha to facilitate the movement of plant and equipment (disturbance footprint). This area will incorporate a temporary construction compound and laydown area for the storage of materials and infrastructure prior to installation at the site.	Area required to undertake construction is increased to 26.8 ha. Construction activities will otherwise be undertaken generally in accordance with the EIS. No other material changes are anticipated.
Construction duration, staging, workforce, hours, vehicle movements and water demand will be undertaken generally in accordance with the EIS. No material changes are proposed.		
Operation		
Operational life, operational hours, operational employment and vehicle movements will be generally in accordance with the EIS. No material changes are proposed.		
Decommissioning		
Decommissioning timing and decommissioning works will be generally in accordance with the EIS. No material changes are proposed.		





Source: EMM (2025); DCSSS (2023); ESRI (2025)

0 250 500 m

GDA2020 MGA Zone 55

N

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KEY

- Approved development footprint
- Modified development footprint

Project component

- Proposed transmission tower
- Combined BESS substation and switching station
- BESS compound
- BESS substation
- Switching station
- Temporary construction laydown area
- Site access intersection

Existing environment

- Existing transmission tower - no works done
- Existing transmission tower to be strengthened
- Existing transmission tower to be decommissioned
- 330 kV transmission line
- Major road
- Minor road
- 330 kV transmission easement

Comparison of approved and modified development footprint

Bellambi Heights Battery Energy Storage System
Modification Report
Figure 3.1

EMM
creating opportunities

3.2 Changes to the development footprint

The modification requires alterations to the development footprint to facilitate changes to the project layout. Figure 3.1 shows the changes to the approved development footprint. The modified development footprint has been reduced on the northern boundary, with the temporary construction laydown area and BESS compound optimised and reduced, and increased to the south to accommodate infrastructure associated with the switching station/substation layout following further design. The easement along the 330 kV transmission line has been included in the development to facilitate cut-in works to connect to the 330 kV transmission line.

The modification facilitates an optimised layout and includes necessary the cut-in works to the 330 kV transmission line while avoiding areas with higher ecological value. A breakdown of the changes each part of the development footprint is provided in Table 3.2. Ecological constraints that are avoided are shown in Figure 2.1 and assessed in Section 6.1.

Table 3.2 Breakdown of changes to the modified development footprint

Change to development footprint	Justification
Reduction to the temporary construction laydown area in the north-west of the development footprint	To avoid mapped category 2 land and optimise the project based on further design.
Reduction in the BESS compound area in the north of the development footprint	To avoid mapped category 2 land and optimise the project based on further design.
Increase to include portion of easement along the 330 kV transmission line	To facilitate cut-in works, including the replacement and upgrade of electrical infrastructure that is part of the existing 330 kV transmission line, required to enable the project to connect to the electricity network (see Section 3.3). The merging of the two main areas of the development footprint will also facilitate efficient construction activities. A small area of category 2 land is not able to be avoided as existing tower 150 on the 330 kV transmission line, to be decommissioned, is located within this area.
Increase in the development footprint to the south	To facilitate revised layout switching station/substation infrastructure and ancillary project components. The new internal project layout remains substantially consistent with the assessments performed for the EIS and will be conducive to more effective construction and operation.

All changes to the development footprint will be contained within Lots 101 and 102 of DP1203462.

3.3 Switching station and transmission line cut-in works

The connection of the project to the NEM requires some minor modifications to the existing Transgrid network assets located within the project development footprint, referred to as cut-in works, as described in Table 3.1. The scope of this activity includes:

- construction of a new transmission tower (tower 150.1) and decommissioning of the existing tower (tower 150)
- strengthening of one transmission tower (tower 149) that is part of the existing 330 kV transmission line
- stringing of new conductor between tower 150.1 and tower 149
- the connection of the switching station to the Transgrid network via construction of a new tower (tower 150.2), and stringing of new conductor between the switching station, tower 150.2 and the existing transmission line
- testing and commissioning of the new connection.

The construction of the new transmission towers (tower 150.1 and 150.2) and decommissioning of the existing tower (tower 150) will involve:

- construction of the new transmission tower (tower 150.1) approximately 20 to 30 m to the north-east of the existing tower (tower 150)
- construction of the new tower (tower 150.2) within the development footprint as part of the switching station
- cutover of the conductors
- decommissioning, dismantling and removal of the existing tower
- rehabilitation of the land presently occupied by tower 150.

The locations of each of these towers are shown in Figure 3.1.

The strengthening of tower 149 will involve the installation of secondary bracing on the tower legs, and crossarms and leg connections to withstand higher mechanical loads arising from the installation of new conductors between tower 149 and tower 150.1.

These works can be completed while incurring minimal disruptions to the ongoing operation of the transmission line. The replacement and strengthening of these existing transmission towers will be undertaken as a part of the construction activities for the project and will allow the project to connect to the NEM.

3.4 Modification category

The modified project will be substantially the same development as the development for which consent was granted. The modification is necessitated by minor changes to the layout of the switching station and BESS substation as a result of further design, while the BESS compound will be reduced in area. There is a minor increase of approximately 1.5 ha in the total area of modified development footprint (compared to the approved development footprint), however there is not expected to be an increase in environmental impacts as a result of the change. Impacts are assessed in Chapter 6.

Key components of the project which will remain unchanged include the nature of the project as a BESS development and the project's delivery capacity. The internal layout changes are minor, and the construction, operational and decommissioning aspects of the project will remain substantially the same.

As such, it is considered that the modified development will remain substantially the same development for which consent was originally granted. Furthermore, as demonstrated in this modification report, the modification will result in minimal environmental impacts beyond the approved project. Consequently, the project is suitable to be assessed pursuant to section 4.55(1A) of the EP&A Act.

3.5 Conditions of consent

The following amendments to SSD-33344237 conditions of consent are required to reflect the modification:

- Condition B10 of Schedule 2: amend "The Applicant must not clear any native vegetation or fauna habitat located outside the approved disturbance areas **(the modified development footprint)** described in the ~~EIS~~ **modification report**.".
- Appendix 1 (general layout of development) – replace with modified general layout, as per Figure 3.1.

4 Statutory context

4.1 Introduction

This section describes the relevant Commonwealth and State legislation and regulatory framework under which the proposed modification will be assessed and determined. A detailed statutory compliance table is provided as Appendix B.

4.2 Power to grant approval

Under section 4.55 of the EP&A Act, a consent authority may modify a SSD consent provided the development to which the consent as modified relates is substantially the same as the development for which the consent was originally granted. A modification under section 4.55(1A) of the EP&A Act is the appropriate pathway given that:

- the nature of the project (being a grid-scale BESS) remains the same
- the delivery capacity remains the same
- the approved associated infrastructure and grid connection remains the same
- the operational lifespan of the project remains the same
- the development footprint remains substantially the same, with a net increase in area of approximately 1.5 ha
- as demonstrated in this modification report, the modification will result in minimal environmental impact beyond those previously assessed and approved under SSD-33344237.

As the modified development will remain substantially the same development for which consent was originally granted and the modification will result in minimal environmental impact, the modification can be considered under section 4.55(1A) of the EP&A Act.

The Minister for Planning is the consent authority for the modification application. However, the Minister has delegated this authority to officers within the Department of Planning, Housing and Infrastructure (DPHI) where no reportable political donations disclosures have been made. Vena has not made reportable political donations.

4.3 Permissibility

The development footprint in its entirety is zoned RU1 Primary production under the *Mid-Western Regional Local Environmental Plan 2012* (Mid-Western Regional LEP). The project is characterised as 'electricity generating works' under the Mid-Western Regional LEP and is permitted with consent on land zoned as RU1.

Section 2.36(9) of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) states that development for the purpose of an electricity generating works are permitted within 'prescribed zones' (i.e. RU1 under the SEPP). Therefore, the project is permissible with consent.

4.4 NSW Environmental Planning and Assessment Act 1979

Compliance of the proposed modification with the requirements of section 4.55(1A) of the EP&A Act is summarised in Table 4.1.

Table 4.1 Section 4.55(1A) requirements

Section 4.55(1A) requirement	Comment
Modification of consent – generally A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if—	
(a) it is satisfied that the proposed modification is of no or minimal environmental impact, and	The proposed modification to the project is minor and will incur minimal environmental impact. Chapter 6 provides a detailed breakdown of the impacts of the modification in the relevant technical areas, showing the insubstantial nature of the changes to the project's environmental impacts.
(b) it is satisfied that the development to which the consent as modified relates is the same or substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and	The proposed modification is consistent with the objectives of SSD-33344237, being the construction and operation of a BESS project. A comparison between the project as approved originally and the project as proposed to be modified is provided in Table 3.1 and demonstrates that the modified project is substantially the same as that which was originally approved.
(c) it has notified the application in accordance with— (i) the regulations, if the regulations so require, or (ii)a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a development consent, and	Section 105 of the NSW Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) relates to the notification requirements associated with section 4.55(1A).
(d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.	Any submissions made concerning the proposed modification will be reviewed by DPHI and forwarded to Vena to consider and respond to (via a submissions report).

4.5 NSW Environmental Panning and Assessment Regulation 2021

In accordance with section 99 of the EP&A Regulation, this modification report has been prepared in the approved form, contains all of the information and documents required by the approved form, the EP&A Act and the EP&A Regulation and will be submitted on the NSW Planning Portal. As the project is SSD, this modification report also includes the particulars of the nature of the proposed modification (Section 3) and has regard to *State Significant Development Guidelines – Preparing a Modification Report* (DPE 2022c).

Section 100 of the EP&A Regulation states the required information a modification application must include. An outline of where this information has been addressed is provided in Table 4.2.

Table 4.2 EP&A Regulation section 100 requirements

Consideration	Section in Modification
Content of modification application (1) A modification application must contain the following information—	
(a) the name and address of the applicant,	Section 1.4
(b) a description of the development that will be carried out under the development consent,	Chapter 3
(c) the address and folio identifier of the land on which the development will be carried out,	Chapter 1
(d) a description of the modification to the development consent, including the name, number and date of plans that have changed, to enable the consent authority to compare the development with the development originally approved,	Chapter 3
(e) whether the modification is intended to— (i) merely correct a minor error, misdescription or miscalculation, or (ii) have another effect specified in the modification application,	Section 3.1
(f) a description of the expected impacts of the modification,	Chapter 6
(g) an undertaking that the modified development will remain substantially the same as the development originally approved,	Table 4.1
(h) for a modification application that is accompanied by a biodiversity development assessment report—the biodiversity credits information,	N/A
(i) if the applicant is not the owner of the land—a statement that the owner consents to the making of the modification application,	The applicant is the owner of Lot 102 DP 1203462. ETMHC is the owner of Lot 101 DP 1203462 and consents to the making of the modification application. MWRC is the relevant authority relating to the portion of the development footprint in the Castlereagh Highway road corridor and consents to the making of the modification application.
(j) whether the modification application is being made to— (i) the Court under the Act, section 4.55, or (ii) the consent authority under the Act, section 4.56.	Chapter 4

5 Engagement

5.1 Introduction

This section describes the engagement that has been undertaken since the approval of the project and during preparation of the modification report, the key matters raised, how these matters have been addressed, and the plans for future stakeholder engagement.

5.2 Engagement carried out

Stakeholder consultation has continued to be carried out subsequent to project approval in accordance with the project's approved Engagement Management Strategy (EMS).

In relation to the modification, stakeholder engagement has been undertaken with:

- Mid-Western Regional Council – Vena has engaged with Mid-Western Regional Council to provide a project update, overview of the modification, and to request landowner's consent for the submission of the modification application. No specific matters were raised for consideration
- Registered Aboriginal Parties (RAPs) – EMM provided a summary of the modification to RAPs on 1 July 2025, outlining the changes to the development footprint, consideration of impacts to Aboriginal cultural heritage values and requesting any comments on the modification. One response was received, which raised no objections to the modification and provided support for the avoidance of identified Aboriginal heritage sites. No specific matters were raised for consideration
- Transgrid – Vena has engaged regularly with Transgrid during refinement of the design of the switching station and connection to the 330 kV transmission line, and to request landowner's consent for the submission of the modification application. No specific matters were raised for consideration.

The engagement undertaken reflects the minor nature of the modification to the project. This consultation has focused on providing an update of the status of the project and overview of the proposed modifications.

5.3 Engagement to be carried out

Consultation will continue to be undertaken in accordance with the approved EMS. Procedures that will be implemented to keep the local community and relevant agencies informed about the construction, operation and environmental performance of the development will include community notices, information, engagement opportunities and a feedback mechanism communicated via the Development webpage.

An internal Stakeholder Engagement Plan will also inform stakeholder engagement to effectively implement and manage the engagement and communications practices for the life of the project. This will include identification and analysis of additional relevant stakeholders, and the procedures and tools to inform and consult with stakeholders. The aim of this plan is to facilitate ongoing transparent, fair, and educational engagement during the construction, and operational phases of the Development.

The specific procedures that Vena will employ to keep the local community and relevant agencies informed about the operation and environmental performance of the development are outlined in Table 5.1. In addition to this, Vena will also make the following information publicly available on the project website:

- the EIS
- the final layout plans for the development
- current statutory approvals for the development

- approved strategies, plans or programs required under the conditions of this consent (other than the Fire Safety Study and Emergency Plan)
- the proposed staging plans for the development if the construction, operation and/or decommissioning of the development is to be staged
- a comprehensive summary of the monitoring results of the development, which have been reported in accordance with the various plans and programs approved under the conditions of this consent
- how complaints about the development can be made
- any independent environmental audit completed for the project.

This information will be kept up to date and the website will be maintained for the life of the development.

Table 5.1 Actions to ensure compliance with Condition C1 (d)(i) of the development consent

	Local community	Agencies
Purpose	• Continue engagement with the local community throughout the construction and operational phases via established channels. • Raise awareness of the development objectives, key milestones and methods to connect with the project team. • Introduce key project partners and communicate opportunities for collaboration. • Highlight opportunities for partnerships with local industry and employment seekers. • Communicate the complaints reporting system.	• Keep relevant agencies informed of key development milestones. • Demonstrate compliance against conditions of the Development Consent and legislative requirements. • Non-compliance regulatory notification.
Procedure	• Share newsletters, project factsheets and more in-depth project information as required. Including information on registering complaints and feedback. • Host community information sessions. • Conduct 1:1 in-person or virtual sessions. • Conduct procurement workshops, business workshops, and provide information on how local businesses may provide services relevant to the Development. • Utilise the internal Feedback Management system to respond to any concerns or feedback that are raised. • Maintain an active social media presence across local platforms to provide consistent and relevant Development updates, contact points and details on upcoming activities • Collaborate with relevant construction partners to generate local content and employment opportunities, providing facilitation support wherever necessary.	• Share newsletters, project factsheets and more in-depth project information where required. • Conduct 1:1 in-person or virtual sessions. • Submit management plans/designs/audit reports/notices to relevant agencies to comply with conditions of the Development Consent and legislative requirements. • Submit non-compliance notifications to regulator via phone/email/Major Projects/EPA or other relevant portal.

5.4 Summary

Consultation has continued to occur since the project received development consent in May 2024. Key stakeholders that continue to be consulted include the MWRC, RAPs, and Transgrid. Due to the minor changes to the project that are associated with the modification, no changes to the consultation practices laid out in the approved EMS are necessary. For this reason, consultation has continued to proceed in accordance with the approved EMS and the conditions of the development consent and will continue to be undertaken as per the measures stipulated in these documents.

6 Assessment of impacts

6.1 Biodiversity

A Biodiversity Development Assessment Report (BDAR) was prepared by EMM (EMM 2023a) for the Bellambi Heights BESS EIS. The BDAR provided an assessment of the potential impacts of the approved project on biodiversity in accordance with the Biodiversity Assessment Method (BAM) (DPIE 2020) under the *NSW Biodiversity Conservation Act 2016* (BC Act), the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the NSW *Fisheries Management Act 1994* (FM Act). It also documented strategies implemented to avoid and/or minimise impacts of the modification on threatened biodiversity and describe the biodiversity offset requirements, which have subsequently been satisfied.

This chapter presents explains the biodiversity assessment context and provides a supplementary biodiversity assessment (SBA) for the modification of the Bellambi Heights BESS.

The SBA has been conducted with consideration of key NSW biodiversity legislation and government policy, including:

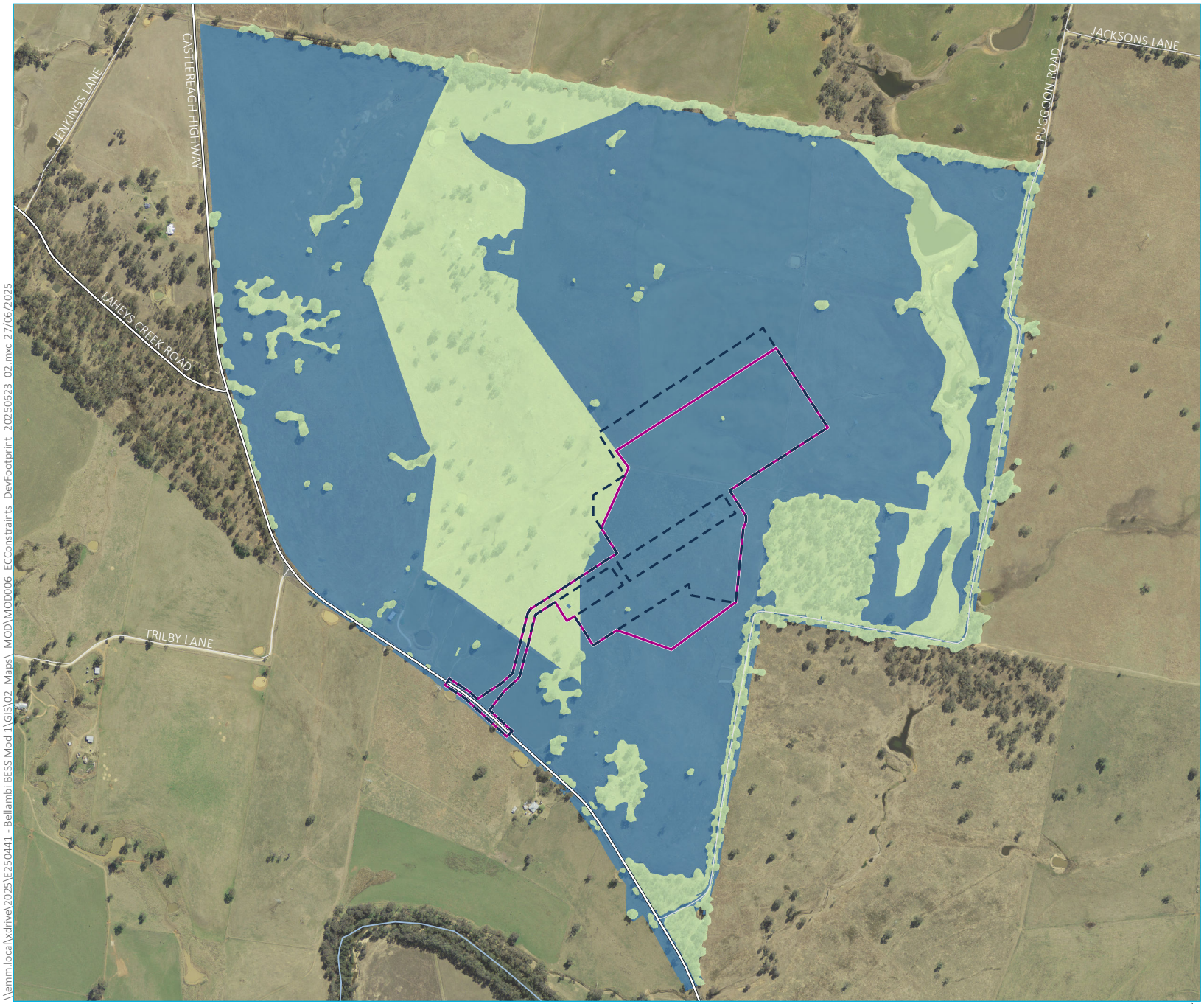
- EP&A Act
- BC Act
- FM Act
- *Local Land Service Act 2013* (LLS Act)
- *Biosecurity Act 2015.*

The BC Act is the key piece of legislation responsible for the conservation of biodiversity in NSW through the protection of threatened flora and fauna species, populations and ecological communities. Part 4 Division 7 sets out the approval pathway for modifications of SSD projects. In accordance with clause 7.17(2)(c), a BDAR (referred to as a further assessment report in the BC Act) is not required to be submitted with a modification application if the authority determining the application for modification is satisfied that the modification will not increase the impact on biodiversity values. As the modification will not increase the impact on biodiversity values, a BDAR prepared in accordance with the BC Act and the BAM is not required.

6.1.1 Existing environment

The modified development footprint is within the site. The BDAR mapped biodiversity values within the entirety of the site, including the modified development footprint. The landscape within the modified development footprint is dominated by agricultural land use, with a mix of grazing and cropping practices. Much of the surrounding landscape has been cleared, leaving the occasional small woodland patch or paddock trees.

The majority of the modified development footprint has been classified as Category 1 – Exempt land (under the Land Management Framework, and as defined under Section 60 H of the LLS Act. The woodland areas, scattered trees, riparian areas, and moderate condition native pasture in the site have been classified as Category 2 – Regulated land. Land category mapping is presented in Figure 6.1.



KEY

Approved development footprint

Modified development footprint

Land category

Category 1

Category 2

Existing environment

Major road

Minor road

Named watercourse

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Source: EMM (2025); DFSI (2020, 2021); ESRI (2025)

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GDA2020 MGA Zone 55

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Relevant ecological constraints and the modified development footprint - Land category mapping

Bellambi Heights Battery Energy Storage System
Modification Report
Figure 6.1

EMM
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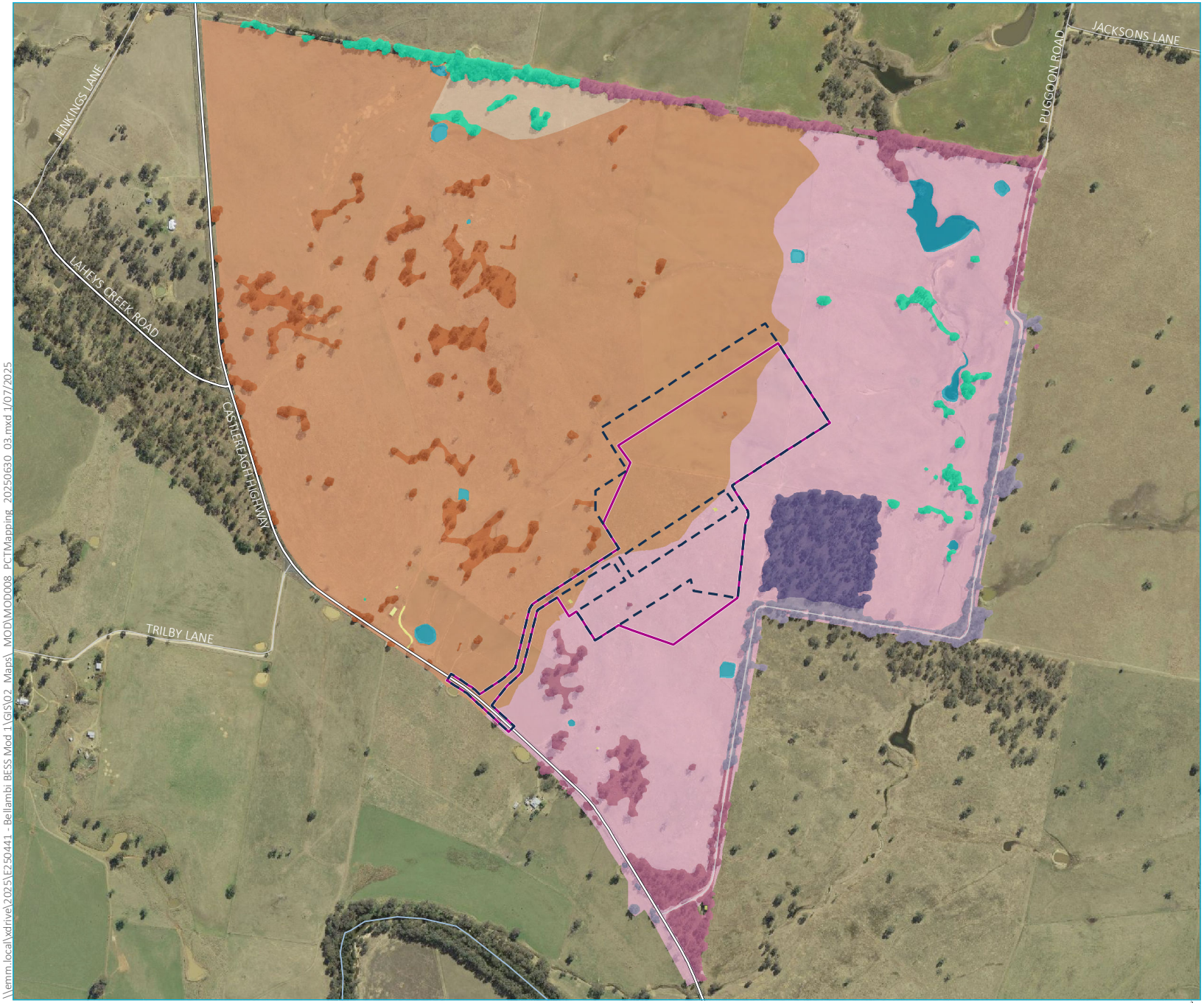
i Native vegetation

Native vegetation within the site was assessed and classified into Plant Community Types (PCTs) based on floristic composition and structure. Each vegetation zone was assigned a condition class and land category in accordance with the LLS Act and BAM requirements. Table 6.1 summarises the identified PCTs, their condition states, and corresponding land categories. The PCTs mapped within the site (including the approved and modified development footprint) are shown on Figure 6.2.

Table 6.1 Summary of PCTs, condition states, and assigned land categories

PCT ID	PCT name	Structure	Condition	Land category	Comments
266	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Derived native grassland (DNG)	Low	Category One – Exempt Land	This area has been classified as Category One – Exempt Land, therefore assessment under the BAM is not required (aside from addressing any prescribed impacts).
266	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	DNG	Low	Category Two – Regulated Land	Very few of trees of this vegetation zone occur within the subject land. This vegetation zones is Category Two – Regulated Land.
266	White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion	Woodland	Poor	Category Two – Regulated Land	This vegetation zone consists of three mature trees within the subject land. This area is Category Two – Regulated Land.
277	Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	DNG	Low	Category One – Exempt Land	This area has been classified as Category One – Exempt Land, therefore assessment under the BAM is not required (aside from addressing any prescribed impacts).
277	Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	DNG	Low	Category Two – Regulated Land	Very few of trees of this vegetation zone occur within the subject land. This vegetation zones is Category Two – Regulated Land.
277	Blakely's Red Gum – Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion	Woodland	Poor	Category Two – Regulated Land	Very few of trees of this vegetation zone occur within the subject land. This vegetation zones is Category Two – Regulated Land.
281	Rough-Barked Apple – red gum – Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion	Woodland	Poor	Category Two – Regulated Land	Some scattered trees of this vegetation zone within the site occurred on hillslopes and hillcrests.



KEY

- Approved development footprint
- Modified development footprint
- Dam
- Infrastructure

Plant community type (by condition)

PCT 281 | Rough-Barked Apple - red gum - Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion

- Poor

PCT 277 | Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes Bioregion

- Good EPBC
- Poor EPBC
- DNG
- Poor

PCT 266 | White Box grassy woodland in the upper slopes sub-region of the NSW South Western Slopes Bioregion

- DNG moderate
- DNG
- Poor

Existing environment

- Major road
- Minor road
- Named watercourse

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Source: EMM (2025); DFSI (2020, 2021); DCS-SS (2023); ESRI (2025)

0 200 400 m

GDA2020 MGA Zone 55

N

Relevant ecological constraints and the modified development footprint - PCT mapping

Bellambi Heights Battery Energy Storage System
Modification Report
Figure 6.2

EMM
creating opportunities

6.1.2 Impact assessment

i Avoidance, mitigation and offsetting

The avoidance of land with higher ecological value where possible has been a key objective of the modification of the project. While some additional Category 2 land is included in the modified development footprint, a greater area of Category 2 land was able to be avoided elsewhere. The additional Category 2 land is not able to be avoided as it occurs in the location of the existing transmission tower (tower 150), which is to be decommissioned. Mitigation and offsetting measures are also carried forward from the approved project to ensure adverse impacts are minimised.

ii Native vegetation

The PCTs mapped within the approved development footprint and the modified development footprint (excluding Category 1 land) are outlined in Table 6.2 and shown on Figure 6.2.

Table 6.2 PCTs within the approved development footprint area compared to modified development footprint (excluding Category 1 land)

PCT and condition	Approved development footprint (ha)	Modified development footprint (ha)	*Net biodiversity impact (ha)
266_DNG	1.04	0.66	-0.38
266_Poor	0.03	0.03	0
277_DNG	0.02	0.13	0.11
277_Poor	0.01	0.01	0
Total	1.10	0.83	-0.27

* Net biodiversity impact has been calculated by subtracting the modified development footprint from the approved development footprint. The result of this is a net reduction in impacts to PCTs of 0.27 ha.

iii Direct impacts

The modification will result in a minor change to the extent of direct impacts. Overall, there will be a net reduction of 0.27 ha of native vegetation, meaning that 0.27 ha of native vegetation will be avoided compared to the approved development footprint. The approved project will result in some loss and degradation of native vegetation and fauna habitat; however the modification will allow these impacts to be reduced.

iv Indirect impacts

There will be no change to indirect impacts relating to the modification.

The key measures to avoid, minimise and mitigate impacts, as outlined in Section 6 of the BDAR (EMM 2023) remain relevant to the modification.

v Threatened species

The modification will not result in additional impacts on biodiversity values, as:

- there has been no change to the key measures to avoid, minimise or mitigate impacts
- impacts to PCTs in the modified development footprint disturbance area are reduced (Section 6.1.2iii) compared to the approved project.

vi Serious and irreversible impacts

As the modified development footprint does not contain important habitat for SAII listed species, the project will not result in a serious adverse or irreversible impact on a species.

6.1.3 Management and mitigation

A Biodiversity Management Plan (BMP) (EMM 2025p) has been prepared by in accordance with Condition B13 of the development consent in consultation with Conservation Programs, Heritage and Regulation Group (CPHR) of the Department of Climate Change, Energy, Environment and Water (DCCEEW), and was submitted to DPHI on 15 May 2025. The BMP includes measures for mitigating impacts to native vegetation and fauna habitat during construction and operation consistent with the EIS. Given the relatively minor nature of the modification, no additional management measures are considered necessary beyond those already detailed in the BMP.

Vena has fulfilled its credit obligation for the approved project through the purchase and retirement of two ecosystem credits in accordance with B11 and B12 of the development consent. As outlined in Section 6.1.2i, the modification will result in a reduced impact on native vegetation. No change is proposed to biodiversity offset requirements. No additional biodiversity credits are required as a result of the modification.

6.1.4 Conclusion

The SBA has assessed the potential biodiversity impacts of the modification. The modification will not result in a net increase in overall impacts to biodiversity. As such, no additional biodiversity offset credits are required.

Given the relatively minor nature of the modification, and the reduction of impacts to biodiversity values, no additional management or mitigation measures are considered necessary beyond those outlined in the BMP.

6.2 Aboriginal heritage

6.2.1 Introduction

An Aboriginal Cultural Heritage Assessment (ACHA) was prepared by EMM (EMM 2023c) for the EIS in accordance with Heritage NSW guidelines. This included consultation with the Aboriginal community, desktop review of the regional archaeological record, and on-site investigations (field survey and test excavations) to identify and assess the cultural heritage within the study area. The entirety of Lots 101 and 102 of DP 1203462 were assessed during this process as part of the study area for the ACHA.

6.2.2 Existing environment

The environment within the modified development footprint can be characterised as an undulating plain proximal to several tributary streams and drainage lines that flow into Wialdra Creek. It possesses a variety of geologies and has a soil profile consisting of relatively shallow sandy loams, generally 10 to 40 centimetres (cm) before transitioning to clayey B horizons. Considering the shallow nature of the topography, this reduces the potential for subsurface cultural material. The study area has been subject to decades of agricultural use of varying intensity, further reducing the potential for buried cultural material.

The land use history indicates that past disturbance activities have largely been restricted to pastoralism. This has resulted in vegetation removal and soil destabilisation. Vegetation clearance, dam construction, and agricultural practices are other activities that would have caused extensive ground disturbance and affected any surface and subsurface archaeological material remaining within the modified development footprint.

The findings of the ACHA remain relevant as the modified development footprint is wholly contained within the area previously assessed.

Consultation with the RAPs regarding the project have been ongoing since the distribution of notification letters emailed/posted on 1 June 2022. The following ten RAPs registered an interest in the project and were consulted regarding the proposed modification in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (ACHCRs, DECCW 2010):

- Didge Ngunawal Clan
- Kamilaroi Yankuntjatatjara Working Group
- [Organisation name withheld at their request]
- Paul 'Midnight' Brydon
- Wellington Valley Wiradjuri Aboriginal Corporation
- Gallanggabang Aboriginal Corporation
- Murong Gialiinga Aboriginal & Torres Strait Islander Corporation
- North East Wiradjuri Company Ltd (NewCo)
- Mudgee Local Aboriginal Land Council
- Warrabinga Native Title Claimants Aboriginal Corporation (WNTCAC).

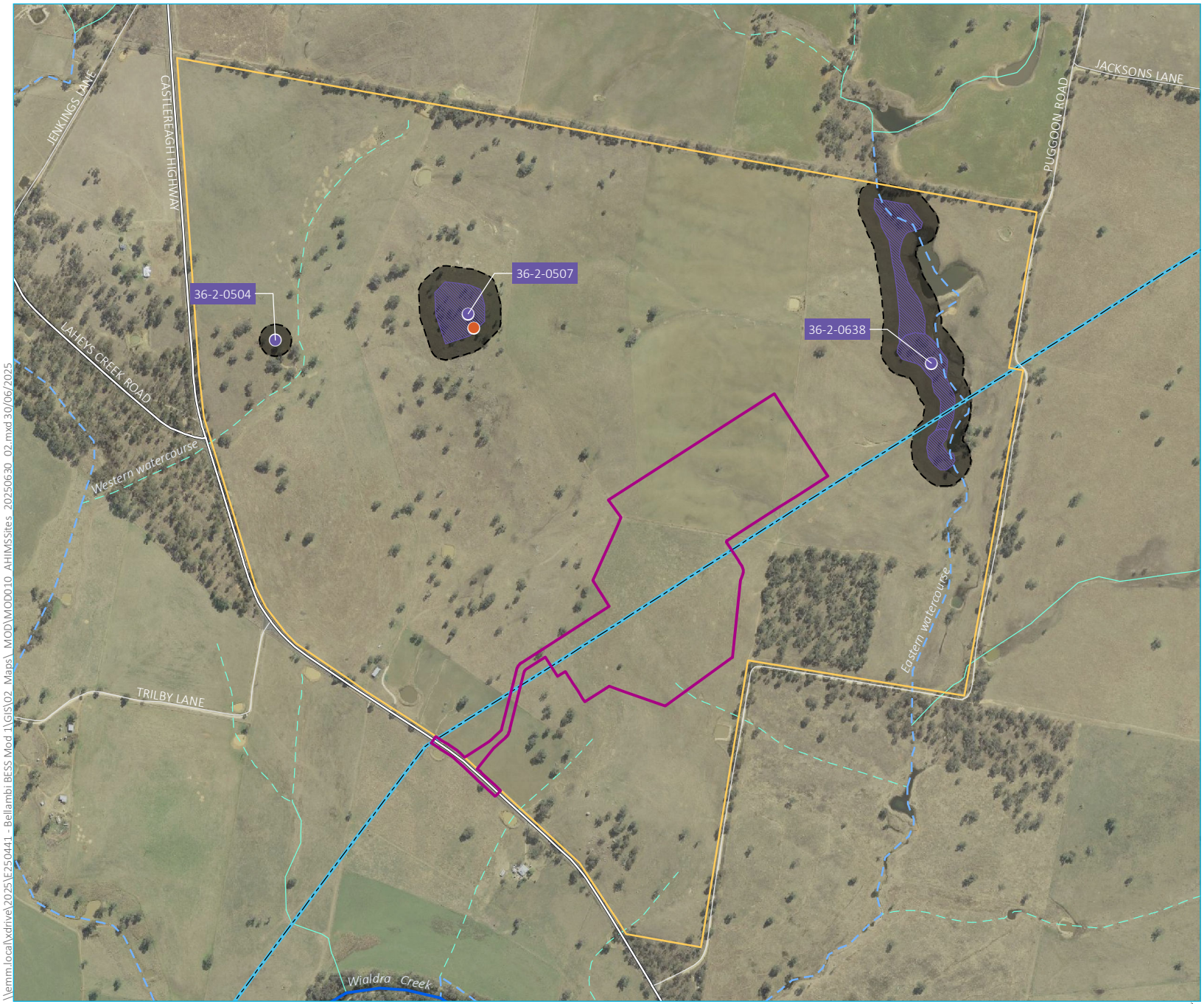
i Archaeological context

The desktop research of the ACHA found that this region has been extensively studied for over 30 years, initially for several major coal mines and more recently for renewable energy projects. While data remains constrained, these studies provide a robust model of cultural materials that may be expected across the study area.

Based on the regional information, cultural materials are dominated by various stone artefact densities, typically as isolated finds or clusters of <20, and indicative of ongoing but transient use of much of the study area. There are also significant occurrences of culturally modified trees and grinding grooves where remnant vegetation and/or suitable sandstone surfaces, respectively, are encountered. Spatially, these appear to focus on moderate sized creek lines, such as Wialdra, Laheys, Tallawang and Cudgegong River, but are found in a variety of landforms and contexts. Excavations in the region to date have been limited, but generally find few cultural materials – suggesting field survey is an effective investigative tool for this region – and dominated by shallow duplex soil profiles.

A review of Heritage NSW's Aboriginal Heritage Information Management System database identified 103 previously registered Aboriginal Cultural sites within the 25 km by 10 km search area. The search area indicated cultural material types present in the region are dominated by stone artefact assemblages of variable densities, typically as isolated finds or clusters of less than 20 (n=77, 74.75%). Other site types occurring within the wider region comprise areas of PAD (potential archaeological deposit), Culturally Modified Trees (CMTs), art sites, stone quarries, grinding grooves, and Aboriginal resource and gathering sites.

Three sites are within Lot 102 of DP 1203462 but outside the modified development footprint. These include two Aboriginal cultural heritage sites (AHIMS #36-2-0507, and #36-2-0504) and an area of archaeological sensitivity, defined as any land within 30 m of the eastern waterway, running in a north-south alignment along the eastern boundary of the study area within Lot 102 DP1203462. Neither of these sites, or the area of sensitivity, will be impacted by the proposed modification. Aboriginal cultural heritage sites are shown in Figure 6.3.



KEY

- Study area - area to which the ACHMP applies
- Modified development footprint
- Buffer for establishing avoidance
- Low density artefact scatter area
- Identified Aboriginal sites
- Proposed re-burial location

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 7th order

Existing environment

- 330 kV transmission line
- Major road
- Minor road

AHIMS Sites

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Figure 6.3

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ii Fieldwork findings

An archaeological field survey and an archaeological test excavation were completed as a part of the ACHA. During the field survey the two previously registered Aboriginal Heritage Information Management System (AHIMS) sites were relocated (#36-2-0507 & 36-2-0504), and the area of sensitivity within 30 m of the eastern waterway were determined to still demonstrate subsurface potential. One potentially Culturally Modified Tree was identified, which after specialist examination was subsequently classified as an isolated find. No new Aboriginal cultural heritage was recorded during the archaeological field survey.

During the test excavations, a total of 38 stone artefacts were excavated from 18 test pits. Stone artefacts were typically retrieved from 20 to 40 cm depths with an average extrapolated density of 0.57/m².

iii Summary

As a result of the ACHA process, three Aboriginal cultural heritage sites were identified within the site (#36-2-0504, #36-2-0507, and #36-2-0638). The findings of the ACHA indicate the low number of stone artefacts across the recorded sites to be part of the broader background scatter found across the region, reflecting the ephemeral use of the landscape over the late Holocene period. Discussion with the local Aboriginal community throughout the ACHA process did not identify any project-specific cultural places or values that would be affected by the project.

The ACHA findings concluded that the area in which the modified development footprint is located area does not include Aboriginal cultural heritage sites or areas of archaeological sensitivity.

6.2.3 Impact assessment

i Potential Aboriginal heritage impact

The proposed modified development footprint closely resembles the approved original development footprint and is presented in Figure 3.1.

Potential impacts to Aboriginal heritage can be direct and indirect. Direct impacts relate to the construction activities and their removal, truncation and/or disturbance of the ground surface. This would include the removal of vegetation, removal or modification of geological outcropping and the removal or disturbance of the upper soil profile. Indirect impacts are the result of both construction and post-construction activities that may result in environmental changes that would affect cultural material within, or near the project activities. A general example of indirect impact may include the burial of a soil profile resulting in its compression and indirectly damaging buried cultural material.

The approved project does not directly impact any identified archaeological sites and/or deposits. No previously recorded Aboriginal cultural heritage sites are present within the modified development footprint. The modified development footprint has been reduced on its northern boundary which increases the distance between the development footprint and two of the three previously registered AHIMS sites located within Lot 102 of DP 1203462 (AHIMS site #36-2-0504 and #36-2-0507). The distance between the third AHIMS site (AHIMS site #36-2-0638) and the development footprint will remain unchanged by the modification.

A summary of potential impacts to Aboriginal sites and objects in Table 6.3.

Table 6.3 Summary of potential impacts to Aboriginal sites and objects

AHIMS ID	Site name	Overall significance	Type of harm	Location and/or activity causing harm	Degree of harm	Consequence of harm
36-2-0504	BH IF 1	Low	None	-	None	No loss of value
36-2-0507	BH AS 1	Moderate	None	-	None	No loss of value
36-2-0638	BH AS 2	Low	None	-	None	No loss of value

Having been subject to previous fieldwork investigations under the ACHA, no further field investigations were undertaken due to the location of the proposed modification being outside the extents of previously registered sites, and areas of archaeological sensitivity. Therefore, the potential to impact previously unknown Aboriginal cultural heritage sites is low.

As such, the modification, including modified development footprint, is not anticipated encroach upon, or impact any identified Aboriginal sites, Aboriginal places or intangible values. The modified project is consistent with Condition B22 of the development consent.

6.2.4 Management and mitigation

The ACHA process identified three Aboriginal cultural heritage sites within the site comprising two low-density artefact scatters and one isolated stone artefact (AHIMS site #36-2-0504, #36-2-0507 and #36-2-0638). None of these sites would be directly impacted by the modification.

As identified in the ACHA, the project is within a landscape that contains cultural materials, and indirect impacts, as well as any design changes, need to be carefully managed. An Aboriginal Cultural Heritage Management Plan (ACHMP) (EMM 2025b) has been prepared in consultation with RAPs for the approved project. The measures in the ACHMP are adequate for the modified project. The ACHMP also includes a chance finds protocol, as required by Condition B23 of the development consent.

The ACHMP will continue to be implemented for the duration of the project. No additional management or mitigation measures are proposed.

6.2.5 Conclusion

The modified development footprint will not impact any identified Aboriginal cultural heritage sites within the modified development footprint. Therefore, no additional impacts are anticipated. Risks to Aboriginal cultural heritage values can continue to be mitigated through the implementation of the ACHMP.

6.3 Historical heritage

6.3.1 Introduction

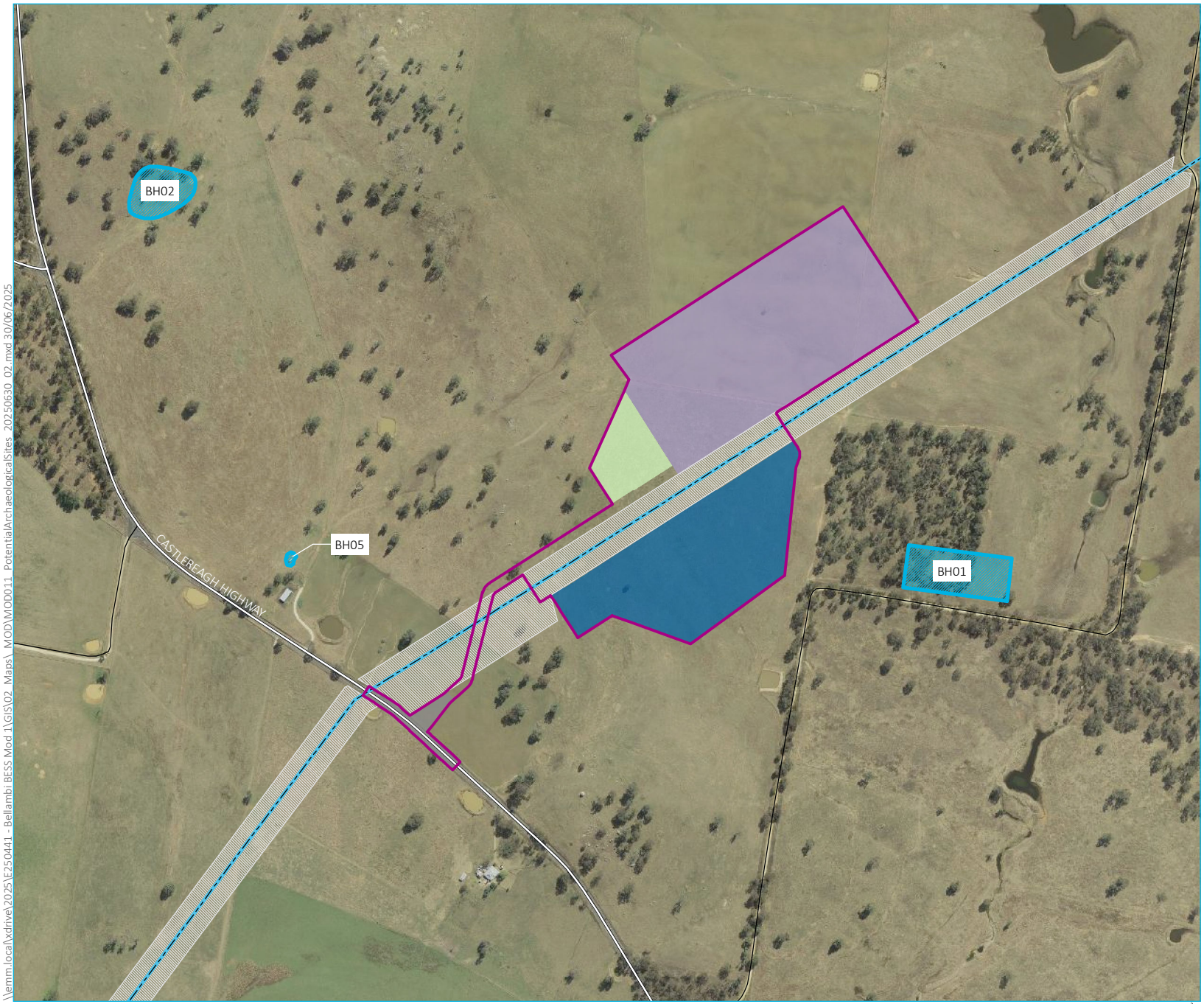
A Statement of Heritage Impact (SOHI) was prepared by EMM (EMM 2023d) to accompany the EIS. Investigations undertaken included field surveys and desktop reviews of relevant documentation and included the entirety of Lots 101 and 102 of DP 1203462.

6.3.2 Existing environment

There are no items listed on the National Heritage List, Commonwealth Heritage List or State Heritage Register (SHR) within 1 km of the new area included in the modified development footprint area. The town of Gulgong, 6.5 km south-east of the project, has several items listed in the LEP and in the SHR. In summary, within approximately 1 km of the modified development footprint there are:

- no heritage items on the National Heritage List
- no heritage items on the Commonwealth Heritage List
- no heritage items on the State Heritage Register
- no heritage items on the NSW Department of Education s170 register
- no items on the Mid-Western Regional LEP.

Field surveys completed as part of the SOHI identified five sites within Lot 102 of DP 1203462 which were considered in terms of potential historical significance. These are summarised in Table 6.4. Only two locations were identified with the potential to hold significance, these being BH01 (the site of a bark hut), and BH02 (the location of a former cottage). A third site, BH05, was observed on aerial imagery from 1963, but no evidence was observed in the field or on any plans. None of the features recorded during survey are within 170 m of the approved or modified development footprint, as shown in Figure 6.4.



KEY

- Modified development footprint
- Potential archaeological site

Project component

- Combined BESS substation and switching
- BESS compound
- Temporary construction laydown area
- Site access intersection

Existing environment

- 330 kV transmission line
- Major road
- Minor road
- 330 kV transmission easement

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Source: EMM (2023); ABS (2021); DFSI (2020, 2021); DCS-SS (2023)

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GDA2020 MGA Zone 55

N

Sites with potential historical heritage signficance

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Figure 6.4

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Table 6.4 Sites with potential historical significance

Site	Potential significance
BH01 – Bark hut	Potential for local significance. If evidence of this site survives, may be of local significance at a minimum.
BH02 – Cottage site	Potential for local significance. May meet the threshold for local significance.
BH03 – Hay shed	No significance. A modern structure; does not meet the threshold for significance.
BH04 – Grain store	No significance. Ubiquitous, no individual significance but contributes in a minor fashion to the surrounding rural landscape.
BH05 – Structure	Not assessed. Could not be located.

6.3.3 Impact assessment

The historical heritage assessment undertaken for the SoHI covered the full extent of the site, including the entirety of the modified development footprint. No sites were found to occur in the vicinity of the modified development footprint. No impacts to heritage items, be they built, archaeological or landscape values are predicted as a result of the modification of the project.

6.3.4 Management and mitigation

Mitigation measures as outlined in the EIS remain relevant to the mitigation of potential impacts to historical heritage. No additional mitigation measures are required.

6.3.5 Conclusion

There are no historical heritage items within the modified development footprint or that will potentially be impacted by the project. There is some potential for unexpected finds to occur, which can be suitably managed through implementation of management measures during construction and operation.

The modification is therefore not anticipated to impact any historical heritage sites and no additional mitigation measures are required.

6.4 Land and rehabilitation

6.4.1 Introduction

A land and rehabilitation assessment (LRA) was prepared by EMM (EMM 2023e) to accompany the EIS. The LRA assessed the development footprint and the wider environmental context of Lots 101 and 102 of DP 1203462. Methods employed included a desktop review of existing information on soils and soil environments as well as detailed soil field investigation.

6.4.2 Existing environment

The topography of the site is gently undulating and is mainly cleared for agricultural use. The main topographical feature is a central hill in the north-west portion of the site, from which land slopes away in all directions.

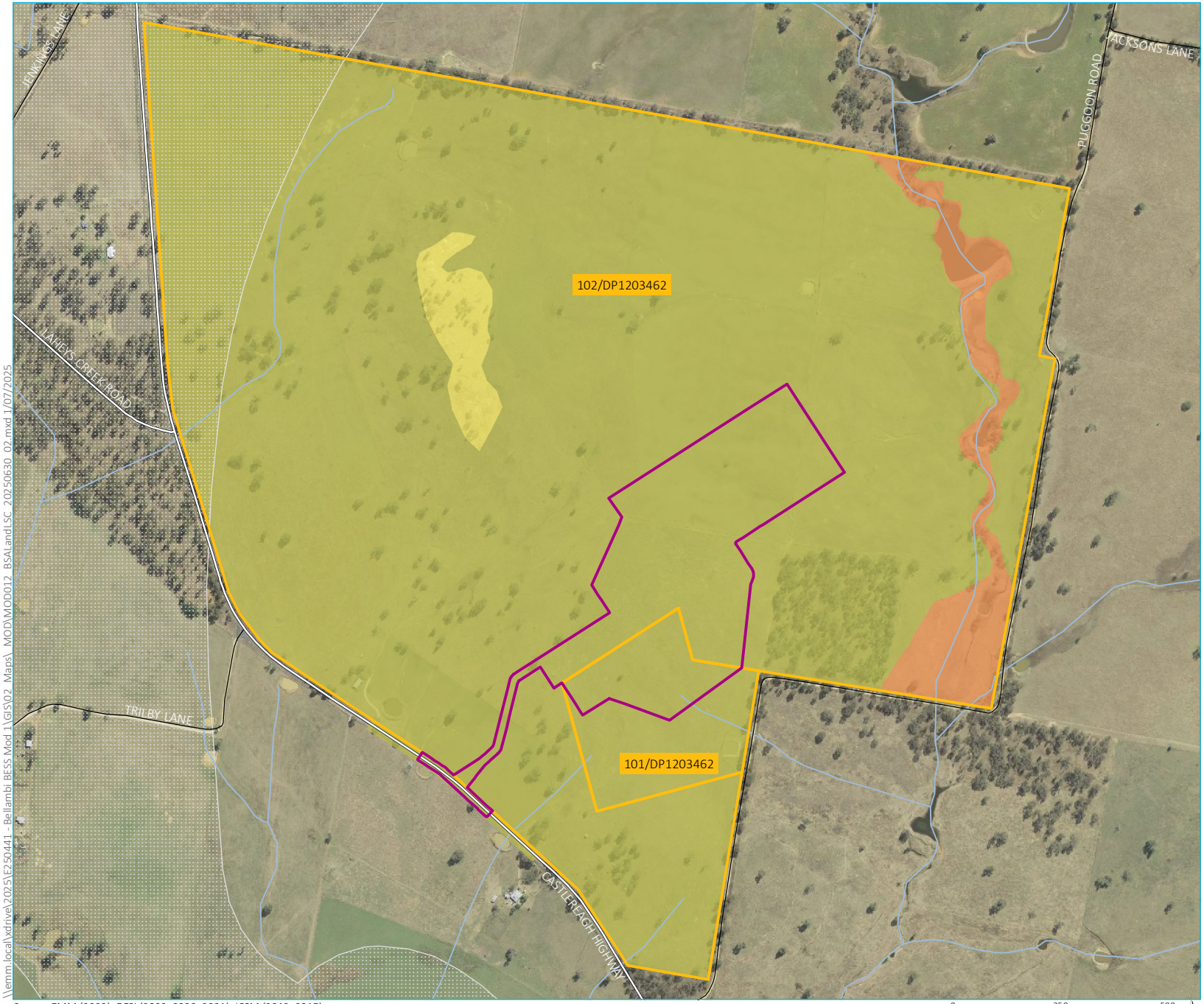
The LRA provided a detailed assessment of the soil and land characteristics, which are summarised in this section. The modified development footprint and surrounding areas are predominantly located on the Home Rule soil landscape with areas of the Tucklan soil landscape associated with the western end of Lot 102. Lots 101 and 102 have previously been used for grazing and dryland cropping and are zoned as RU1 – Primary production under the *Mid-Western Regional Local Environmental Plan 2012* (MWR LEP).

Soil landscapes present within the site are summarised in Table 6.5.

Table 6.5 Soil landscapes present within the study area

Soil landscape	Landscape	Soils	Vegetation and land use	Limitations and degradation
Home Rule (hr)	409 km^2 undulating low hills. Sediment derived from the Gulgong and Rouse Granites. Relief 30–60 m; slopes 4–8%.	Mainly Siliceous Sands (Uc1.42) and Earthy Sands (Uc4.21; Uc4.32) on upper and mid-slopes. Bleached sands (Uc2.21; Uc2.22), Yellow Podzolic Soils (Dy2.41; Dy2.21) and yellow Solodic Soils (Dy3.13; Dy3.42) on lower slopes and flats. Layered Siliceous Sands in some larger drainage lines.	A grey gum (*Eucalyptus punctata*), narrow-leaved red ironbark (*Eucalyptus crebra*) woodland community. A riverine community of river she-oak (*Casuarina cunninghamiana*) and rough-barked apple (*Angophora floribunda*) is common along perennial streams and main drainage lines. Land use includes grazing on improved and unimproved pastures.	Very low fertility; low available water holding capacity; acidic surface soils; seasonal waterlogging; sodic subsoils in lower slopes; high permeability on mid to upper slopes; moderate to high erosion hazard under cultivation. Existing minor sheet erosion with moderate to severe gully erosion. Some areas of very severe gully erosion.
Tucklan (tk)	213 km^2 undulating low hills. Andesite, basalt and associated shale, tuff and siltstone. Relief 40–80 m; slopes 3–15%.	Mainly Euchrozems (Gn3.12; Gn3.13). Rises of Red Podzolic Soils (Dr2.21) and Non-calcic Brown Soils (Dr2.22).	Open-woodland dominated by a grey-white box (*Eucalyptus macrocarpa – Eucalyptus albens*) association with scattered kurrajongs (*Brachychiton populneus*). Land use is dryland cropping including wheat, canola and legume crops, improved pasture and lucerne. Areas of native pasture and timber on crests.	Moderate to high erosion hazard under cultivation; moderate fertility; moderate to high water holding capacity; moderate to high shrink-swell potential. Existing minor to moderate sheet erosion.

State-wide mapping identifies that Lots 101 and 102 encompasses two soil orders; Sodosols and Ferrosols. Land soil capability (LSC) mapping completed for NSW shows the study area includes Classes 3 and 5, representing land with high, and moderate-low capabilities respectively. The modified development footprint is wholly contained within the area classified as Class 5 Sodosol (Home Rule) and has moderate-low capability. Land and soil capability mapping is shown in Figure 6.5.



KEY

- Modified development footprint
- Site boundary
- Major road
- Minor road
- Watercourse/drainage line
- Biophysical Strategic Agricultural Land

Project Land and Soil Capability (LSC)

- 4 - Moderate to severe limitation
- 5 - Severe limitation
- 7 - Extremely sever limitation

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Source: EMM (2023); DFSI (2023, 2020, 2021); ICSM (2012, 2015)

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Modelled LSC and BSAL mapping

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Figure 6.5

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6.4.3 Impact assessment

i Land and soil suitability

The modification will result in an overall increase in the development footprint of 1.5 ha; it includes a reduction in the north of the development footprint and an increase to the south of the development footprint. LSC mapping, as shown in Figure 6.5, indicates that LSC is homogeneous (LSC 4) across both the approved and modified development footprints. BSAL and SSAL areas which are present in the north-west of Lot 102 will not be impacted by the project.

The activities to be undertaken in the modified development footprint will be generally consistent with the EIS. The conclusions presented in the LRA remain applicable with regard to soil and land suitability. That is, that no impacts are anticipated to the site beyond the development footprint, to adjacent lands, to soil quality, or to the LSC is anticipated. Also, the LSC status of development footprint will be able to be reinstated following appropriate landform design, soil stripping and management and rehabilitation, as recommended in the management and mitigation measures.

ii Impacts on agricultural production

The modification will result in an increase in the development footprint of 1.5 ha.

As described in the LRA, the study area is presently only used for grazing. The development of the approved development footprint was estimated to incur $3,683 to $7,322 in forgone agricultural productivity. This equates to a minor reduction of 0.0037% and 0.0009% of the annual gross productivity of the Mid-Western Regional LGA and NSW Central Tablelands region respectively.

The resultant impacts on agricultural output that the additional 1.5 ha of land that will be occupied by the project as a result of the modification is quantified in Table 6.6.

Table 6.6 Estimated project land value

Area	Commodity sector	Estimated gross land value ($/ha)	Area (ha)	Project annual productivity ($)
Mid-Western Regional LGA	Livestock	$145.57	1.5	$218.36
	Cropping	$750.74	0	$0
	Total			**$218.36**
NSW Central Tablelands NRM region	Livestock	$289.42	1.5	$434.13
	Cropping	$566.51	0	$0
	Total			**$434.13**

Were this 1.5 ha to be developed (change of use) it would be valued between $218.36 to $434.13 in annual productivity based on calculated agricultural values for the Mid-Western Regional LGA and the NSW Central Tablelands NRM region respectively.

During construction, the full extent of the modified development footprint would be removed from agricultural production. During operation, the footprint would be reduced to an area generally consistent with the area described in the EIS, up to 23 ha.

Once the project reaches the end of its investment and operational life, the project infrastructure will be decommissioned and the area returned to its pre-existing land use, namely suitable for grazing of sheep and cattle, or another land use as agreed by the project owner and the landholder at that time. The minor forgone annual productivity resulting from the modification and the potential for the land to be returned to agricultural use indicate that there will be no significant impacts on agricultural production that arise from the modification.

iii Zoning

The full extent of Lots 101 and 102 are zoned RU1 Primary production under the Mid-Western Regional LEP 2012, which is compatible with the proposed land use.

iv Rehabilitation

No changes to rehabilitation timing or methodology are proposed as a part of the modification.

v Impacts to surrounding areas

With no planned disturbance to areas outside of the site, and disturbance areas predominantly located well within the site, impacts to soil quality or LSC of adjacent lands are not anticipated.

6.4.4 Management and mitigation

The management and mitigation measures identified in the LRA are adequate to manage impacts from the modification. No additional mitigation measures are required.

6.4.5 Conclusion

Overall, potential land and soil impacts during construction and operation of the modified project are considered minor due to the small additional amount of land that the modified development footprint will utilise (1.5 ha), and the homogeneity of the land that will be added to and removed from the development footprint as a result of the modification. Consequently, impacts can be adequately managed through the implementation of the mitigation measures identified in the LRA. No additional measures will be necessary.

6.5 Landscape and visual impact assessment

6.5.1 Introduction

A landscape and visual impact assessment (LVIA) was prepared for the approved project by Iris Visual Planning and Design (Iris) to accompany the EIS. This chapter presents an assessment of the changes to landscape and visual impacts of the modification compared to the approved project assessed in the original LVIA.

6.5.2 Existing environment

As described in the original LVIA (Iris 2023), the project is set in undulating, rural landscape characterised by pasture paddocks and dryland arable paddocks with associated rural dwellings. Wialdra Creek, located approximately 600 m south of the modified development footprint defines the low points in the landscape. From Wialdra Creek, the landform gently rises toward Barneys Reef, to the north. The elevation in the development footprint varies from 420 m along the southern project boundary to 460 m at the northern boundary.

The modified development footprint and its surrounds have been used for grazing and dryland cropping. Vegetation consists of grasses with clusters of trees in the paddocks surrounding the project site.

The original LVIA assessed impacts from 12 private receivers and four public viewpoints. The visual impacts at each of the private receivers was assessed as negligible. Of the public viewpoints, Viewpoint 1 was found to be negligible, and Viewpoints 2, 3 and 4 were rated as low.

6.5.3 Impact assessment

i Landscape character assessment

The LVIA (Iris 2023), assessed impacts to the landscape character by identifying two landscape character zones (LCZ). The LCZs identified are summarised below:

- LCZ1 Forested ridgelines and hills – the impact from the project was found to be negligible as the project would not disrupt the appreciation of any key landscape features.
    - The modification would not affect the sensitivity of the LCZ, nor would it increase the magnitude of the impact. Therefore, the impact on landscape character of LCZ1 remains negligible.
- LCZ2 Undulating rural plains – the impact from the project was found to be very low – negligible as the project would not have an impact on the key characteristics of the landscape, which is already highly modified.
    - The modification would not affect the sensitivity of the LCZ, nor would it increase the magnitude of impact. Therefore, the impact on landscape character of LCZ2 remains very low – negligible.

ii Visual assessment

The modification will result in alterations to the layout of the switching station and substation within the development footprint, replacement of one existing transmission tower (tower 150), and strengthening works on another existing transmission tower (tower 149). The existing transmission tower (tower 150) to be replaced is shown in Photograph 6.1.

The new replacement tower will be located a short distance (approximately 20 to 30 m) to the north-east of its existing location, further away from Castlereagh Highway and sensitive receptors. The height of the replacement transmission tower will increase by approximately 15 m compared to the existing tower (tower 150, approximately 33 m tall), with tower 150.1 having a total height of 47 to 50 m.

Alterations to the switching station include:

- moving the switching station components eastward (away from Castlereagh Highway) and co-locating with the substation
- one component of the switching station, a gantry tower connecting the switching station to the existing 330 kV transmission line, will increase in height to 28 m compared to assumptions adopted in the EIS visual impact assessment (22.5 m)
- a new 40 m high tower (tower 150.2) is introduced to connect the switching station to the existing transmission line. This will be located approximately where the previous gantry was located. This tower is taller than the previous gantry but has a reduced horizontal footprint.

This assessment focuses on the visual elements of the project that have changed. These are limited to the tower along the existing 330 kV transmission line that will be replaced (tower 150.1), the new tower between the switching station and the existing transmission line (tower 150.2), and the relocated switching station. The BESS and other elements of the project will have a reduced footprint or remain unchanged, and therefore the associated visual impact is expected remain unchanged.

Photograph 6.1 Existing 330 kV transmission tower (tower 150) looking north

Viewshed mapping is a method of mapping the theoretical visibility of a project across the surrounding landscape and is used to identify locations with potential views to project infrastructure. Using geographic information systems (GIS) technology, the topography of the land is combined with project infrastructure modelling to analyse the potential visibility of the project. The results are the zone of visual influence (ZVI).

The ZVI diagram is generated using a digital elevation model (DEM) that covers a radius of 4 km from the development footprint. The DEM is representative of the bare earth surface and only considers the topography of the landscape. In accordance with current NSW guidelines for visual impact assessments, the screening potential of vegetation and built structures is not considered in the mapping. This is important for viewpoints which are identified as having visibility of the project in the ZVI, but may in fact have no views, or obstructed views, towards project infrastructure due to intervening vegetation or other structures. As such, the ZVI only show where landforms obstruct views and represents a worst-case scenario in terms of project visibility.

The ZVI assists in determining where potential visual impacts will occur, and to what extent. The following should be noted when reading the ZVI:

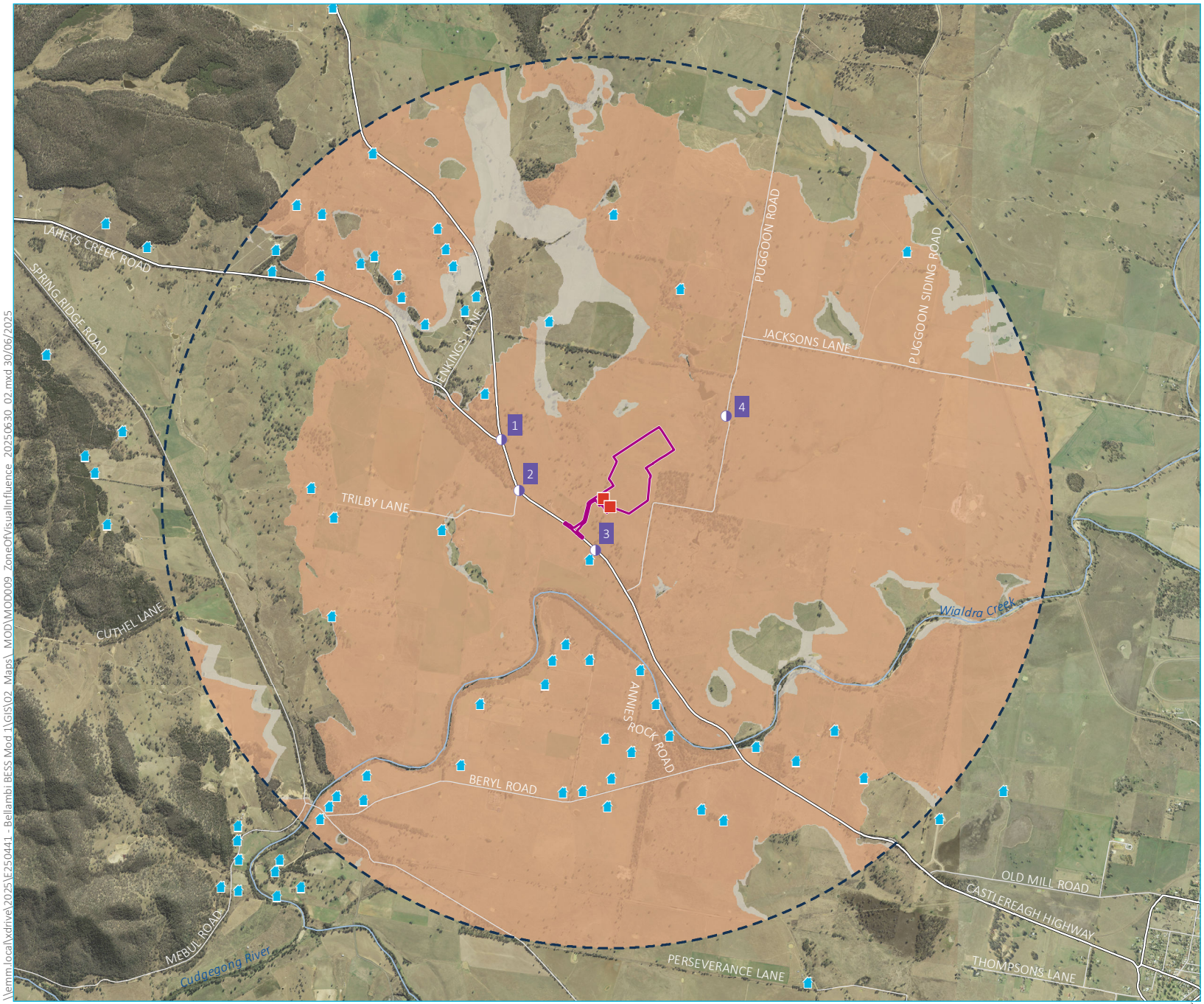
- the ZVI does not account for the diminishing size of project infrastructure as the viewer moves further away and only indicates where project infrastructure will be visible

- the ZVI figure uses coloured shading to indicate how many project elements may be visible from a particular location. It does not indicate specifically how many or which elements are visible from a particular location. Unshaded locations are not predicted to have any views
- where the ZVI figure indicates project elements may be visible, this should be considered a maximum possible number of elements that will be visible. Actual visibility could be lower or even negligible depending on the screening effect of existing vegetation and structures between each viewpoint and the project.

A ZVI has been prepared for the tallest elements proposed in the modification, namely the two transmission towers (towers 150.1 and 150.2).

The ZVI presented in Figure 6.6 shows the potential for views of infrastructure within the modified development footprint:

- to the west of Castlereagh Highway and extending to a distance of approximately 2.5 km from the development footprint
- to the north, with variable visibility to over 4 km (study area extent)
- to the south and east, with variable visibility to over 4 km.



KEY

- Modified development footprint
- Proposed transmission tower 4km buffer
- Proposed transmission tower
- Public viewpoint

Zone of visual influence

- 1 tower visible
- 2 tower visible

Existing environment

- Sensitive receptor
- Major road
- Minor road
- Named watercourse

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Source: EMM (2025); DFSI (2020, 2021); ESRI (2025)

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Zone of visual influence

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Figure 6.6

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iii Visual impact

This assessment of visual impacts from the modified project has assessed the closest viewpoints to the project to consider the impact the modification might have on the surrounding environment compared to the approved project. The original LVIA found that impacts to all private receivers were negligible.

The modification results in a decreased infrastructure footprint associated with the switching station/substation and BESS compound within the overall modified development footprint, and the location of infrastructure is slightly further away from the closest receivers compared to the approved project. Visual impacts are predicted to remain negligible. The focus of this assessment is the closest viewpoints, Viewpoints 2 and Viewpoint 3, assessed further below. The locations of these viewpoints are shown in Figure 6.6.

a Viewpoint 2: View east from Trilby Lane, at the Castlereagh Highway

The original LVIA describes the view as containing several pasture paddocks with scattered trees. The landform is gently undulating and rises to the east. The nearest project element would be the relocated tower (tower 150.1) located approximately 765 m from the viewpoint. Figure 6.7 presents an artist's impression of the proposed towers and switching station/substation.

Table 6.7 Viewpoint 2 assessment

Sensitivity – approved project – from original LVIA (Iris 2023)	Visual impact of approved project during operation – from original LVIA (Iris 2023)	Assessment of modified project	Rating
Trilby Lane is a local laneway extending west from the Castlereagh Highway, providing access to local properties in this part of Beryl. Rural views such as this are experienced by a low number of receivers, generally including residents and their visitors. The scenic quality of this view is moderate, with an undulating landform with some vegetation along Trilby Lane and the Castlereagh Highway and within paddocks. Development in the local area contains a rural character. This view is of very low visual sensitivity.	The upper part of the battery enclosures/containers and buildings within the BESS compound may be seen, rising above the intervening landform in the background of this view, at a distance of over 900 m. To the south (right of view), the upper structures of the proposed switching station, could also be visible, above the intervening hillside. The project would comprise a small part of this view and would not be prominent nor detract noticeably from the amenity of this view. Overall, there would be a low magnitude of change from this location, and a low visual impact.	No change to the sensitivity of the viewpoint. The BESS compound is expected to visually remain the same as in the original LVIA. The upper structures of the switching station will move further away from this viewpoint. However, the two proposed towers (one replacement tower 150.1 and one new tower 150.2) will be visible. They will be taller but narrower than the switching station gantries. The modification would not increase the magnitude of visual impact when compared to the approved LVIA. Therefore, the magnitude of change would remain low.	The visual impact rating would remain low.

b Viewpoint 3: view north-east from Castlereagh Highway

The original LVIA states that there are views to the development footprint from a short section of the Castlereagh Highway to the south and west of the development footprint. These views would be of broad pasture paddocks with scattered mature trees set on an undulating landform that rises toward the project.

The nearest project elements would be the new towers (tower 150.1 and 150.2), located approximately 400 m from the highway. Refer to Figure 6.8 for an artist's impression of the proposed towers and switching station.

Table 6.8 Viewpoint 3 assessment

Sensitivity – approved project – from original LVIA (Iris 2023)	Visual impact of approved project during operation – from original LVIA (Iris 2023)	Assessment of modified project	Rating
The Castlereagh Highway is a main route through the region. Although the highway is identified as one of the 'main entrance corridors' to Gulgong in the LSPS, this viewpoint is located over 5 km from the town and does not form part of this main entrance corridor. The viewer sensitivity level of this viewpoint is very low. The scenic quality of this view is low-moderate, with a rolling landform containing open pasture paddocks, some vegetation along the Castlereagh Highway and within paddocks, and development in the local area containing a rural character. This view is of very low visual sensitivity.	The upper most part of the taller structures of the switching station, located on the southern part of the site, would be visible from this location, rising above the ridge and behind the trees, about 300 m away. Further to the north, the upper section of the BESS compound may be visible from this location, about 700 m away, behind and partially screened by the ridge seen in this view. The project would be glimpsed from vehicles travelling along the Castlereagh Highway, moving at speeds of up to 100 km/hr so that any visible infrastructure would be seen for only a few seconds, obliquely from the direction of travel. The BESS compound and switching station would be set back from the highway and seen in the background of view. The project would comprise a very small part of this view and would not detract from the predominant character of the surrounding undulating rural paddocks. Overall, there would be a low magnitude of change from this location, and a low visual impact.	No change to the sensitivity of the viewpoint. The BESS compound is expected to visually remain the same as in the original LVIA. The upper structures of the switching station will move further away from this viewpoint – from approximately 300 m to 400 m. However, the two proposed towers will be visible. Tower 150 will be removed and its replacement tower 150.1 will be situated further from the highway. The new towers will appear taller but will be narrower than the switching station gantries assessed in the approved LVIA. The modification would not increase the magnitude of visual impact when compared to the approved LVIA. Therefore, the magnitude of change would remain low.	The visual impact rating would remain low.

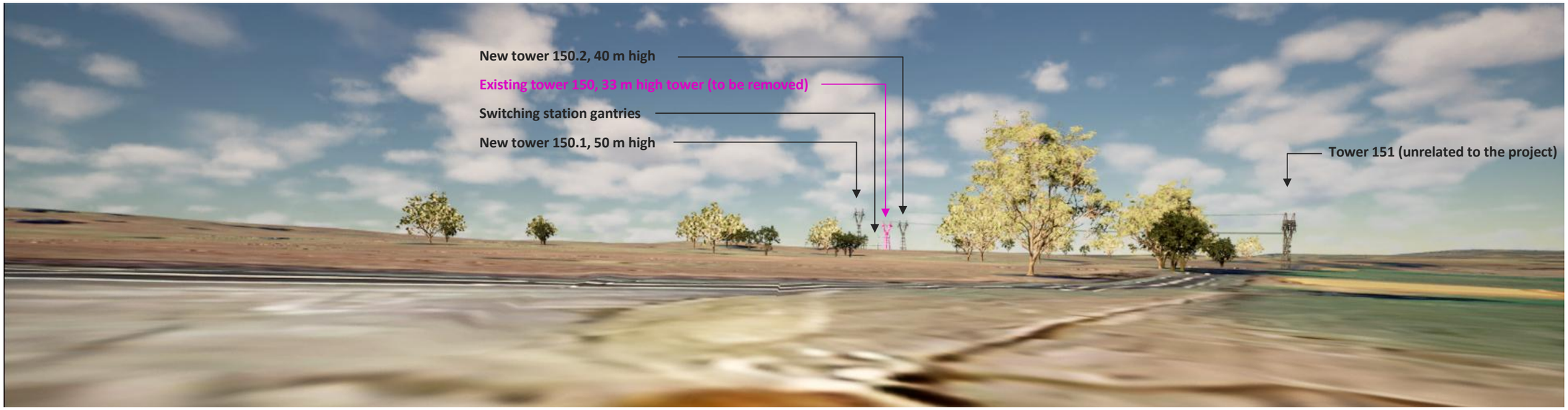

Figure 6.7 Viewpoint 2 – artist's impression of the proposed towers

Figure 6.8 Viewpoint 3 – artist's impression of the proposed towers, the tower to be removed (tower 150) is shown in pink

6.5.4 Management and mitigation

The project has been located in an area that minimises visual and landscape impacts due to the undulating landform and the existing land uses. The modification results in the project infrastructure being set back further from the Castlereagh Highway compared to the approved project. The recommendations from the original LVIA are sufficient to manage the impacts to the landscape and visual amenity.

6.5.5 Conclusion

The modification to the approved project could increase the visibility of the project and its impact on the landscape and visual amenity of the area. Alterations to the project that would affect the project's visibility include, moving the switching station components eastward (away from Castlereagh Highway), increases in the maximum heights of switching station components, introduction of a new 40 m high tower (tower 150.2) to connect the switching station to the existing transmission line, and replacement of existing tower 150 with a new tower (tower 150.1) approximately 20 to 30 m east of the existing location which will be taller than the existing tower.

This assessment has determined that the modification is not expected to increase the impacts to the landscape or visual amenity. Impacts of the modified project do not alter impacts to the landscape character, which remain negligible. Visual impacts were assessed for Viewpoints 2 and 3 due to their proximity to the project. The visual impact rating would remain low for each of these viewpoints.

6.6 Noise and vibration

6.6.1 Introduction

A noise and vibration impact assessment (NVIA) was prepared by EMM (EMM 2023g) to accompany the EIS. The key changes to the project proposed by the modification relevant to noise and vibration are:

- the change to the configuration of the BESS substation and switching station
- additional cut-in works to be undertaken in the 330 kV transmission easement.

6.6.2 Existing environment

The existing environment remains consistent with that described in the EIS for the project. Land use on the site and surrounds is predominantly agricultural, with background noise low and characterised by agricultural equipment and machinery associated with agricultural production activities and vehicle movements along the local and regional road network.

6.6.3 Impact assessment

i Construction noise and vibration

Construction noise was in the EIS in accordance with the *Interim Construction Noise Guideline* (ICNG) (DECC 2009) and included assessment of noise emission predictions from construction activities at the nearest assessment locations, and assessment against ICNG recommended noise levels noise management levels (referred to as NMLs).

Construction methods will remain generally in accordance with those described in the EIS. Noise and vibration impacts are not anticipated to be altered by the modification.

The modification does not result in a change in the proximity of noise generating plant and equipment relative to the closest receivers.

Construction noise levels are predicted to satisfy NMLs for all non-associated assessment locations. Exceedance of relevant vibration criteria is also not expected at any assessment locations.

ii Operational noise

Operational activities will not be impacted by the modification of the project. The BESS compound will be reduced in size, and hence its separation distance from receivers will increase or remain the same for all receivers.

Operational noise modelling undertaken for the NVIA considered the project battery containers, inverters, transformers, the switching station/substation and maintenance activities. Operational noise is predicted to satisfy applicable project noise trigger levels (PNTLs) for all non-associated assessment locations.

iii Road traffic noise

Traffic impacts from the project will not be impacted by the modification of the project, and the modified project will remain compliant with conditions B1 to B6 of its development consent (see Section 6.7).

6.6.4 Management and mitigation

Mitigation measures as outlined in the EIS and NVIA remain relevant to the mitigation of potential noise and vibration impacts. No additional mitigation measures are required for the modification.

6.6.5 Conclusion

The modified project is not anticipated to generate noise or vibration impacts beyond those which were assessed in the NVIA. As such, it is expected that construction noise, operational noise emissions and road traffic noise will comply with all relevant criteria. The noise management measures identified in the consent conditions, EIS and NVIA are considered appropriate and no additional mitigation measures are required.

6.7 Traffic and transport

6.7.1 Introduction

A traffic impact assessment (TIA) was prepared by EMM (EMM 2023h) to accompany the EIS. The modification will not alter traffic impacts from the project.

6.7.2 Existing environment

The existing environment remains consistent with that described in the EIS for the project. The Castlereagh Highway will be the main transport route used by regionally based traffic during both construction and operation periods.

6.7.3 Impact assessment

The changes to the project resulting from the modification will not impact traffic requirements, and as such the project will be constructed and operated as per the traffic conditions stipulated in development consent conditions B1 to B6. As such, no management or mitigation measures are required beyond those presented in the EIS and TIA.

6.7.4 Management and mitigation

Mitigation measures as outlined in the EIS and TIA remain relevant to the mitigation of potential traffic impacts on the road network. No additional mitigation measures are required for the modification.

6.7.5 Conclusion

The modified project is not anticipated to generate traffic impacts beyond those which were assessed in the EIS and TIA. Traffic movements from the modified project will comply with relevant development consent conditions. The traffic management measures identified in the EIS and TIA are considered appropriate and no additional mitigation measures are required.

6.8 Water resources

6.8.1 Introduction

A water resources assessment was prepared by EMM (2023i) to accompany the EIS. This section provides an assessment of potential impacts to water resources associated with the modification.

6.8.2 Existing environment

The project is located within the Macquarie catchment, predominantly within existing agricultural land. The southern boundary of the site is approximately 500 m upslope of Wialdra Creek, a seventh order watercourse, which is a tributary of the Cudgegong River. The development footprint is approximately 5 km upstream of the Wialdra Creek's confluence with the Cudgegong River.

There are two clearly defined, unnamed watercourses on the site but outside the development footprint; a third order creek within the eastern portion of the site, and a first order creek in the western portion of the site. Three smaller and less significant first order creeks are present in the southern part of the site. These are shown in Figure 2.1. All watercourses ultimately contribute runoff to Wialdra Creek.

The modified development footprint will an additional area of 1.5 ha. The new areas within the modified development footprint fall to the south and south-east. The average slope is 4.8%, flattening to the south-east.

The modified development footprint will result in an interaction a mapped first order watercourse, which overlaps the development footprint by 40 m.

Flooding impacts were assessed for the approved project, which included the preparation of a two-dimensional flood model using rain-on-grid methodology. Flood predictions were prepared for the 5% and 1% Annual Exceedance Probability (AEP) events as well as the Probable Maximum Flood event, with flood depth, velocity and hazard assessed.

Only areas associated with flooding in the PMF event overlap with the modified development footprint, as shown in Figure 2.1. These areas of flooding are generally of minor depth (0.1 and 0.2 m) and low hazard (H1). Based on review of the available flooding predictions, it is unlikely that the modified development footprint would introduce any specific additional flood risks to the project.

A qualitative assessment of how the project may change drainage patterns has been considered in this section.

6.8.3 Impact assessment

An impact assessment of water resources during construction and operational phases of the modified project are outlined in the sections below.

i Waterfront land

The modified development footprint will include waterfront land associated with a mapped first order watercourse, an unnamed tributary of Wialdra Creek (refer to Figure 6.9). Works may occur in the footprint of the mapped watercourse. Impacts to waterfront land are unlikely to be significant given the area has been cleared of riparian vegetation through past agricultural land uses, based on review of publicly available aerial imagery. The area drains to a local farm dam within the site, located approximately 120 m to the south-east. Aerial imagery also indicates that agricultural activities have included some minor reshaping of the mapped watercourse towards the farm dam. No additional mitigation and management measures are required as a result of the modification.

ii Erosion and sediment control

The erosion hazard for the area associated with the modified development footprint was assessed as part of the approved project within the LRA. Based on slope and flow length, the erosion hazard is likely to be low, however due to the presence of dispersive soils, a high hazard exists.

The EIS described drainage, erosion and sediment control management strategies to address the identified impacts to LSC and erosion and sedimentation impacts. No additional mitigation and management measures are required as a result of the modification.

iii Flooding

The risk of flooding within the modified development footprint is considered minor even in extreme events such as the PMF. The modified project is not expected to have any measurable impact on water quality and downstream receptors. No additional mitigation and management measures are required as a result of the modification.

iv Water demand

There is no additional demand for water as a result of the modification.

v Groundwater

The modification is will not add any additional groundwater interacting activities to the project and hence has not been assessed further.

vi Operation

The approved project is likely to increase the runoff potential of the development footprint due to replacement of currently vegetated areas with hardstand areas or similar, and this was assessed in the EIS. Any increase in stormwater runoff may adversely impact adjoining and/or downstream properties. The project also has the potential to increase stormwater pollutant loads leaving the development footprint due to the change in land use.

The modification will not substantially alter the operational area associated with the project. No additional mitigation and management measures are required during operation as a result of the modification.

KEY

- Modified development footprint

Strahler stream order

- 1st order
- 2nd order
- 3rd order
- 7th order

Existing environment

- Dwelling
- 330 kV transmission line
- Major road
- Minor road

\\emm.local\xdrive\2025\E250441 - Bellambi BESS Mod 1\GIS\02 Maps\ MOD\MOD015 SurfaceWaterFeatures 20250731 02.mxd 31/07/2025

Source: EMM (2025); DFSI (2020, 2021); DCSSS (2023); GA (2011); ESRI (2025); DPI (2013)

0 250 500 Meters

GDA2020 MGA Zone 55

N

Surface water features

Bellambi Heights Battery Energy Storage System
Modification Report
Figure 6.9

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6.8.4 Management and mitigation

Mitigation measures as outlined in the EIS and water resources assessment remain relevant to the mitigation of potential impacts to water resources. No additional mitigation measures are required for the modification.

6.8.5 Conclusion

Potential water related impacts associated with the modification have been assessed. Overall, the potential surface water and groundwater impacts during construction and operation for the project remain minor and can be adequately managed through the implementation of the recommended management and mitigation measures provided as part of the approved project.

6.9 Hazards and risk

6.9.1 Introduction

A preliminary hazard analysis (PHA) was prepared by Sherpa Consulting Pty Ltd (Sherpa 2023) to accompany the EIS. Key project components assessed include the BESS compound, BESS substation and switching station.

6.9.2 Existing environment

The existing environment remains consistent with that described in the EIS. The surrounding area is primarily cleared land used for grazing or dry land cropping, with scattered rural residences, agricultural buildings and infrastructure.

There are multiple renewable energy generation projects (proposed and approved) in the vicinity of the project site. Existing infrastructure within the modified development footprint includes the Wollar to Wellington 330 kV transmission line orientated south-west to north-east.

6.9.3 Impact assessment

The PHA included an assessment of potential hazards, including hazards arising from the BESS layout, electric and magnetic fields, BESS equipment, hazardous substances, operations and maintenance activities, and external factors.

One way in which the modified project differs from the approved project that is relevant to potential hazards and risks is the change in the layout of BESS compound and the co-location of the switching station and BESS substation.

The modified development footprint has a smaller area allocated to the BESS compound than the approved project. The BESS compound in the modified development footprint has an area of approximately 12 ha, compared to approximately 16 ha in the approved project. This decrease in area will not prevent the BESS units from being positioned in a safe arrangement. The area required for the BESS technology assessed in the EIS is approximately 4.2 ha, approximately 34% of the BESS compound in the modified development footprint. As such, the designated land area is determined to be sufficient to safely accommodate the proposed BESS units, including the manufacturer specified clearances.

Separation distances between BESS units and receivers will increase or remain unchanged in all instances, with the closest sensitive receiver being greater than 1.2 km from the BESS compound.

The co-location of the switching station and BESS substation does not alter the outcomes of the PHA, and the modified project remains consistent with the PHA. The infrastructure will be generally consistent with the EIS, and designed and constructed in accordance with the manufacturer's specifications and relevant standards where applicable.

6.9.4 Management and mitigation

The modified project does not alter the potential hazards which were assessed in the PHA. As such, the management measures identified in the consent conditions, EIS and PHA are considered appropriate and no additional mitigation measures are required.

6.9.5 Conclusion

Changes to the project as a result of the modification will not result in the emergence of risks and hazards beyond those which were assessed in the PHA. As such, the findings of the PHA remain applicable. Significant off-site impacts are not expected due to the rural character of the area and the large separation distance to the nearest sensitive receptor.

6.10 Bushfire

6.10.1 Introduction

A bushfire assessment report was prepared by Cool Burn Pty Ltd (Cool Burn) (Cool Burn 2023) to accompany the EIS. The modified development footprint extends into land with the same bushfire susceptibility as the land use and vegetation in the is common with adjacent areas in the development footprint.

6.10.2 Existing environment

The existing environment remains consistent with that described in the EIS for the project. The project is situated on existing agricultural land which is not mapped as bushfire prone; however, the potential for bushfire and grassfire risk remains present. Vegetation classifications in the modified development footprint consists of:

- managed grasslands for agricultural and rural enterprise (non-native vegetation/cropping)
- managed grassland within powerline easement (preventing potential woody vegetation regrowth)
- derived native grasslands
- grassy woodland remnants.

6.10.3 Impact assessment

Bushfire impacts will be minimized through the implementation of mitigation measures consistent with the EIS. Offsite consequences of a bushfire within the development footprint will not change as a result of the modification. The project is situated in a rural area and there is a large separation distance to the nearest dwellings. The project will incorporate an asset protection zone (APZ), as well as design and construction standards and mitigation measures to manage bushfire risk.

6.10.4 Management and mitigation

Bushfire risk will not be materially altered by the modification of the project. For this reason, the management measures identified in the consent conditions, EIS and bushfire assessment report are considered appropriate and no additional mitigation measures are required. The proposed bushfire protection measures such as APZ, access provisions, water supplies, construction standards and emergency management planning will reduce the impact to life and property from a grassland fire risk to a reasonable and acceptable level that is commensurate with the bushfire risk. With the application of these mitigation measures, bushfire risk will be reduced to an acceptable level and comply with the aims, objectives and specific performance criteria of the Rural Fire Service's *Planning for Bushfire Protection 2019*.

6.10.5 Conclusion

There will be no change to the bushfire risks associated with the proposed modification. The existing bushfire mitigation and management measures are considered to be satisfactory for bushfire risk mitigation purposes.

6.11 Social

6.11.1 Introduction

A social impact assessment (SIA) was prepared by EMM (EMM 2023j) to accompany the EIS. The findings of the SIA are considered to remain applicable as the modification of the project is unlikely to result in a change to social impacts from the project. Key matters include a characterisation of the social baseline, a summary of engagement outcomes, and an assessment of social impacts such as accommodation availability, public safety impacts, ease of transport, economic impacts, and changes to the visual landscape.

6.11.2 Existing environment

The existing environment remains consistent with that described in the EIS and SIA.

6.11.3 Impact assessment

The modification of the project will not affect the social impact assessment completed for the approved project. This is due to the nature of the modification, which does not change the ways that the public will be impacted by the project (positively or negatively).

6.11.4 Management and mitigation

The modified project is not anticipated to generate social impacts beyond those which were assessed in the SIA. As such, the management measures identified in the EIS and SIA are considered appropriate and no additional mitigation measures are required.

6.11.5 Conclusion

Changes to the project as a result of the modification are unlikely to result in a change in of social impacts compared to those which were assessed in the SIA. As such, the findings of the SIA remain applicable and no further management or mitigation measures are necessary.

6.12 Other matters

Impacts of the project relating to waste, contamination, air quality, and rehabilitation were assessed in the approved EIS. Impacts to air quality, waste, and rehabilitation are not anticipated to be impacted by the modification of the project.

6.12.1 Waste

Waste will be managed in accordance with the waste hierarchy of priorities and sent to appropriately licensed resource recovery or waste management facilities, or where possible, reused on site. Waste streams are not anticipated to be materially impacted by the modification of the project, and are anticipated to be managed in accordance with the measures identified in the EIS.

6.12.2 Contamination

There is no evidence to suggest potential contamination within the modified development footprint. Prior land use of the study area has predominantly consisted of dry land cropping and grazing by sheep and cattle. Activities commonly associated with contamination, such as industrial or chemical works or storages, are not known to have occurred at the study area or in the surrounding area. There are no contaminated land records within 1 km of the site.

6.12.3 Air quality

Assessment of the approved project determined that the construction phase of the project has potential for emissions to air from activities such as earthworks, land clearing and the movement of vehicles along unpaved roads. Exhaust emissions will also be generated by plant and equipment required for constriction of the project. Sources of operational phase air pollutant emissions from the project will be negligible. Emissions to air are not likely to result in significant impacts to amenity or air quality during construction or operation.

Air quality impacts will not be influenced by the modification of the project, as such these findings remain applicable.

6.12.4 Rehabilitation

While the modified development footprint is approximately 1.5 ha larger than the approved development footprint, permanent infrastructure will only occupy up to 23 ha, consistent with the approved project. The infrastructure used will also generally be in accordance with that which has been approved. For this reason, rehabilitation requirements are not anticipated to materially differ.

7 Justification of the modified project

This section provides a justification and evaluation of the modified project as a whole, having regard to the economic, environmental, and social impacts and benefits of the modified project and the principles of ecologically sustainable development (ESD).

7.1 Evaluation

Vena has approval to develop the Bellambi Heights BESS, a major grid-scale battery and associated infrastructure. Based on the impact assessment findings for the modification, presented in Chapter 6, the proposed modification will result in minimal changes to the environmental impact of the approved project and is considered to be substantially the same development for which consent was originally granted.

The potential impacts are summarised as follows:

- Biodiversity – a net reduction in impacts to biodiversity values. Approximately 0.27 ha of native vegetation will be avoided compared to the approved development footprint. No additional biodiversity offset credits are required.
- Aboriginal heritage – the modified development footprint will not impact any identified Aboriginal cultural heritage sites. Therefore, no additional impacts are anticipated based on the original ACHA findings.
- Historical heritage – there several sites in Lot 102 that have potential heritage values, however these will not be encroached upon by the modified development footprint. Therefore, no additional impacts are anticipated based on the original SoHI findings.
- Land and rehabilitation – the increase in area of the modified development footprint is minor (approximately 1.5 ha) and will not encompass differing soil types or high-capability soils. No additional land or rehabilitation constraints are present. Therefore, no additional impacts are anticipated based on the original LRA findings.
- Landscape and visual – the modification may increase the visibility of the project due to changes to the heights and positioning of electrical infrastructure. However, the change in project layout will result in visual impacts of this infrastructure being reduced by increasing its setback from the Castlereagh Highway. The modification is not expected to increase the impacts to the landscape or visual amenity. No additional mitigation measures are necessary.
- Noise and vibration – no changes to noise and vibration impacts are anticipated as a result of the modification.
- Traffic and transport – no changes to traffic and transport impacts are anticipated as a result of the modification.
- Water resources – the potential surface water and groundwater impacts during construction and operation for the project remain minor. No additional mitigation measures are necessary.
- Hazards and risk – no changes to hazards and risks are anticipated as a result of the modification.
- Bushfire – no changes to bushfire risks are anticipated as a result of the modification.
- Social – no changes to social impacts are anticipated as a result of the modification.
- Other matters – no changes to other impacts are anticipated as a result of the modification.

7.2 Benefits

Benefits arising from the project are also unlikely to be impacted by the modification. As such, the project's benefits are considered to remain consistent with those presented in the EIS, including:

- facilitating Commonwealth and State governments to achieve their respective renewable energy and greenhouse gas (GHG) emission reduction targets
- contributing to the continued growth of renewable energy generation and storage capacity in the CWO REZ
- the provision of dispatchable capacity to support renewable energy generation in the NEM
- job creation in the region
- increased energy security
- the creation of economic benefits, both direct and indirect, that would be attained by local businesses and suppliers.

The project will contribute to energy security and reliability in NSW and help to prepare for the retirement of large-scale coal-fired power generation. The project will also provide local economic stimulus and local employment opportunities during construction, which will have economic benefits for both the local economy within the Mid-Western LGA and the regional economy more broadly.

7.3 Conclusion

The Bellambi Heights BESS will provide an important contribution to the objectives of the CWO REZ by contributing to the continued growth of renewable energy generation and storage capacity. It will complement nearby existing and proposed renewable energy generation assets by smoothing out fluctuations in electricity supply from these intermittent power sources while contributing to the overall storage capacity and reliability of the NEM. The project will also provide economic benefits for the local economy within the Mid-Western Regional LGA.

The modification will result in minimal environmental impacts beyond the approved project. The assessment of impacts in this modification report demonstrates that the project can be developed and operated within acceptable limits through the application of existing mitigation measures. The project (as modified) will not result in significant impacts to the environment or the local community.

The project (as modified) will remain substantially the same development for which consent was originally granted. As such, it is considered that the modification can be approved pursuant to section 4.55(1A) of the EP&A Act.

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Appendix A
Updated project description

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A.1 Project description

This project description reflects the approved project description from the EIS (EMM 2023), with changes proposed as a result of the modification, and is prepared to address the requirement of the *State significant development guidelines – preparing a modification report: Appendix E to the state significant development guidelines* (DPE 2022).

A.1.1 Overview

The project consists of the construction and operation of a major grid-scale battery project immediately adjacent to Transgrid's Wollar to Wellington 330 kV transmission line. The project is expected to use lithium-ion or similar battery technology, and have a delivery capacity of 408 MW.

A summary of the key aspects of the project is provided in Table A.1and presented in Figure A.1. The works described in these sections are subject to detailed design.

Table A.1 Key aspects of the project description

Key aspects	Description
Address and legal description	Lots 101 and 102 of DP 1203462 at 696 Castlereagh Highway and 79 Puggoon Road, Beryl, NSW 2852.
Development footprint	The extent of actual surface disturbance required for construction and operation of the project. The project will require a development footprint of approximately 26.8 ha during project construction. The project will have an operational footprint of up to 23 ha in which permanent project infrastructure will be located.
Delivery capacity	Approximately 408 MW.
BESS compound	The BESS compound will comprise: • Battery containers (or pre-assembled outdoor battery enclosures), incorporating lithium-ion (or similar) battery cells, control systems, thermal management systems and safety systems, with heights of approximately 4 m. • Cabling (electrical, communications and earthing), underground cable pits and conduits. • Power conversion systems (PCS) including inverters, transformers and switchgear. • Ancillary infrastructure (including O&M buildings, spare parts warehouses, water tanks, security fencing, septic system). Specific component requirements are subject to selection of the battery technology provider, which will determine the number of battery containers, inverter stations and specific layout of the compound.
BESS substation	A substation including overhead transmission lines and underground cables, two 330/33 kV transformer bays including transformers, oil retention bunds, and high voltage switchgear, switch room and control room, lighting poles, and lightning protection masts approximately 20 m height. The BESS substation will be co-located within the same fenced compound as the switching station.
Switching station	The switching station will comprise overhead transmission lines, high voltage switchgear, current and voltage transformers, a control room, lighting and other high voltage electrical equipment.

Key aspects	Description
Cut-in works	The connection of the project to the existing transmission network requires some minor modifications to the existing Transgrid network assets located within the development footprint, referred to as cut-in works. The scope of this activity includes: • construction of a new transmission tower (tower 150.1) and decommissioning of the existing tower (tower 150) • strengthening of one transmission tower (tower 149) that is part of the existing 330 kV transmission line • stringing of new conductor between tower 150.1 and tower 149 • the connection of the switching station to the Transgrid network via construction of a new tower (tower 150.2), and stringing of new conductor between the switching station, tower 150.2 and the existing transmission line • testing and commissioning of the new connection.
Ancillary infrastructure	The project will include the following ancillary components: • internal access tracks • drainage and stormwater management • security fencing, lighting and closed-circuit television • temporary construction facilities and laydown areas • dedicated firefighting water supplies.
Site access intersection	A new, relocated site access is proposed on Castlereagh Highway, located approximately 720 m north-west of Puggoon Road and 240 m south-east of the existing access to the site.
Built design, materials and finishes	Project battery enclosure components and cabinets will be light in colour to assist with heat management and made of steel. The operation and maintenance buildings are expected to be prefabricated with a height of approximately 6 m, comprising an office, lunch room and bathroom. The spare parts warehouse will be assembled onsite and be approximately 8.5 m tall. These buildings are expected to be made of Trimclad steel or similar and expected to be neutral or light in colour. The substation building(s) will house the substation switch room and control room and are expected to be containerised units principally made of steel, prefabricated, and then installed on site on steel columns approximately 2.5 m above finished surface level, for a total height of approximately 8.5 m.
Design elements subject to change during detailed design	Detailed design for the project is yet to be completed. The following design elements may be amended during the detailed design process, which will not affect the assessment of environmental impacts in this EIS: • the layout of the BESS containers, inverter stations and substation infrastructure • the buildings (dimensions, features, material, finishes) • the route of the internal site access track • works on Transgrid land associated with the switching station to accommodate project connection.
Construction	
Construction activities	Construction of the project will require an area of approximately 26.8 ha to facilitate the movement of plant and equipment (disturbance footprint). This area will incorporate a temporary construction compound and laydown area for the storage of materials and infrastructure prior to installation at the site.
Construction duration, scheduling and staging	Construction may be undertaken in either one or two stages, which will determine the construction schedule. Construction in a single stage will take 13–20 months. If constructed in two stages, the first stage construction period will be 13–18 months, followed by a second construction period of 12–15 months (commencing approximately 6–12 months after the initial stage).
Construction workforce	Peak workforce of approximately 100 employees and contractors if constructed in a single stage, with a reduced peak of 80 employees and contractors for a staged construction scenario.

Key aspects	Description
Construction hours	Construction of the project will be undertaken in accordance with the recommended standard/normal hours as defined by the Interim Construction Noise Guideline (DECC 2009) and Draft Construction Noise Guideline (EPA 2020) being: • Monday to Friday: 7:00 am to 6:00 pm • Saturday: 8:00 am to 1:00 pm • no works of Sunday and public holidays. Exceptions may be made for low impact works and extraordinary circumstances.
Vehicle movements	The following construction vehicle movement limits are approved: • 40 heavy vehicle movements a day during construction, upgrading, or decommissioning • 20 light vehicle movements and 4 heavy vehicle movements during the AM (6:00 to 7:00 am) or PM (5:00 to 6:00 pm) project peak hours during construction, upgrading, or decommissioning • four movements of heavy vehicles requiring escort during construction, upgrading, or decommissioning.
Transport	Project components (batteries, enclosures, PCS components, cables and substation components) will be transported to the site from Sydney/Newcastle via the Castlereagh Highway. Construction materials are likely to be sourced from surrounding concrete batching plants and hard rock quarries.
Water demand	Water used directly on site for construction is estimated at approximately 10.3 megalitres (ML) for dust suppression and amenities and will be sourced primarily from a licenced groundwater bore.
Operation	
Operational life	The BESS is expected to operate for 25 years. At the end of operational life, this may be extended subject to market conditions, technology availability and replacement of components.
Operational hours	The BESS will operate 24 hours a day, 7 days a week and be operated remotely, depending on and responding to market conditions.
Operational employment	No permanent workforce on site during operations. Approximately 6 to 10 staff will complete routine operations and maintenance activities approximately one full week each month throughout the operational life of the project.
Vehicle movements	Vehicle movements to and from the site will occur infrequently, primarily during monthly routine operations and maintenance activities.
Decommissioning	
Decommissioning timing	At the end of the 25-year operational life of the BESS the project will either be replaced and upgraded or built infrastructure will be removed and the site rehabilitated.
Decommissioning works	Works undertaken during decommissioning will not exceed intensity associated with construction works.

The project is at concept design stage and therefore subject to further detailed design, pending receipt of planning modification approval and contractor selection. Aspects of the project (including the siting of project elements and construction methodology) are subject to change during the detailed design process but will be within the development footprint identified on Figure A.1. This EIS is based on consideration of reasonable worse case environmental impacts to allow flexibility in design and construction methodology.

Source: EMM (2023); DCSSS (2023); ERSI (2025)

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KEY

- Modified development footprint

Project component

- Proposed transmission tower
- Switching station and substation
- BESS compound
- Temporary construction laydown area
- Site access intersection

Existing environment

- Existing transmission tower - no works done
- Existing transmission tower to be strengthened
- Existing transmission tower to be decommissioned
- 330 kV transmission line
- Major road
- Minor road
- 330 kV transmission easement

Project layout

Bellambi Heights Battery Energy Storage System
Modification Report
Figure A.1

EMM
creating opportunities

A.1.2 Development footprint

i Development footprint and location

The development footprint constitutes approximately 26.8 ha of agricultural land which has previously been used for grazing and dryland cropping, and is within the broader site comprised of Lots 101 and 102 of DP 1203462, known as 696 Castlereagh Highway and 79 Puggoon Road, Beryl. The existing Wollar to Wellington 330 kV transmission line traverses the development footprint. The development footprint comprises the extent of potential surface disturbance required for construction and operation of the project.

ii Physical disturbance

During construction, the development footprint will cover approximately 26.8 ha. Vegetation clearing, cut and fill and bulk earthworks will be required to establish ground levels and surfaces to facilitate project infrastructure. Gravel cover will be established in some areas to allow for a managed surface that is partially permeable. Project infrastructure and equipment is expected to be established on concrete pads or piles. Depending on detailed design, piled foundations may be required in certain areas to accommodate project infrastructure. Unsealed internal access roads will be constructed between the site access point and the BESS compound, BESS substation.

A temporary construction compound/laydown area is included in the development footprint for storing equipment, materials and plant used during construction.

Areas disturbed during construction and not required for the operation of the project will be rehabilitated following completion of construction. An asset protection zone will be established and maintained on an ongoing basis for bushfire protection purposes. Permanent project infrastructure will occupy an area of up to 23 ha.

A.1.3 Physical layout and design

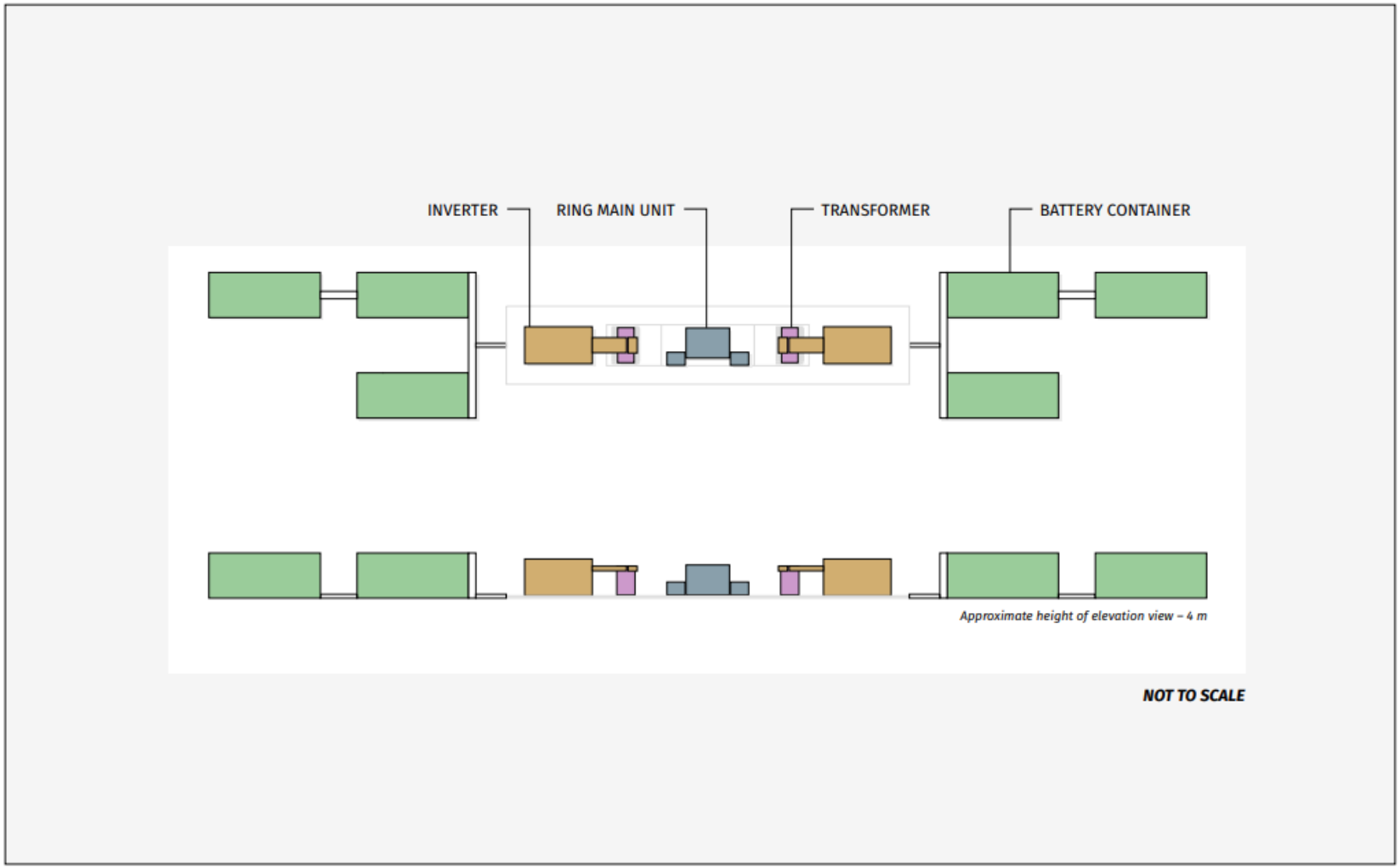
i BESS compound

The project is expected to use lithium-ion or similar battery technology. The BESS compound will comprise battery enclosures or outdoor battery containers. Battery enclosures will be integrated with a power conversion system (PCS). Each PCS will contain equipment such as inverters and transformers and will function to convert the power flow between battery and grid. The PCS will also house the required control and monitoring components such as voltage sensing units and thermal management of power electronics components. A typical conceptual arrangement of a PCS is shown in Figure A.2.

If battery enclosures are chosen, the largest enclosure type (a containerised option) will entail containers of approximately 6 m x 2.5 m x 4 m (length x width x height). The exact number of enclosures required will be subject to the technology provider selected.

Battery enclosures will be arranged in rows and comprise:

- racks of lithium-ion type or similar batteries
- a battery management system to protect cells from harmful excesses of voltage, temperature, and current
- an energy management system that is responsible for system power flow control
- a thermal management system that controls all functions related to the heating, ventilation, and air-conditioning of the enclosure system.



Typical conceptual arrangement of a power conversion station and BESS

Bellambi Heights Battery Energy Storage Systenm
Environmental Impact Statement
Figure 3.2

Figure A.2 Typical conceptual arrangement of a PCS within BESS compound

The BESS compound will be supported by ancillary infrastructure, including:

- an O&M building, spare parts warehouse and associated parking for operational staff and visitors
- connection to utilities
- drainage and stormwater management
- lighting
- closed-circuit television cameras (CCTV)
- security fencing.

Battery enclosures will be arranged in rows within the BESS compound, mounted on concrete footings, steel piles or potentially compacted gravel. The battery containers will be approximately 4 m in height and installed next to a PCS across the BESS compound. Containers are expected to be arranged in groups of approximately four units per inverter and supported by either concrete pads, strip footings or piers, and compacted gravel.

The compound will be surrounded by security fencing.

VEA has developed a conceptual design for the BESS compound based on engagement with technology providers and currently available products. Detailed design of the project will be conducted following contractor selection. This approach will allow for the rapid technology advancements currently underway in the BESS industry.

ii BESS substation

A BESS substation will be established within the development footprint to convert electricity between the high voltage transmission network and medium voltage BESS equipment. The BESS substation will be co-located within the same fenced compound as the switching station.

The substation and switching station will have an indicative footprint defined after further design and will be established on a compacted bench. The location of the BESS substation is shown in Figure A.1. The BESS substation will include:

- two 330/33 kV transformer bays
- substation buildings to accommodate indoor 33 kV switchgear, secondary protection systems, AC/DC distribution equipment, fire detection systems, a supervisory control and data acquisition (SCADA) system, system dispatch control, CCTV, and intrusion detection
- 33/0.440 kV auxiliary transformers
- high voltage connections between 330 kV outdoor switchgear
- other ancillary components including security fencing, lightning protection, lighting poles, security poles and cabling.

The BESS substation will connect to infrastructure within the BESS compound by way of underground 33 kV cables. The substation will be separated from the BESS compound infrastructure by security fencing. Transformers will be bunded and subject to separation distances in accordance with manufacturer requirements and Australian Standards.

iii Switching station and transmission line cut-in works

The project will connect to the adjoining 330 kV transmission line by way of a new 330 kV switching station that will be co-located with the BESS substation. The required works for the switching station are subject to detailed design but are expected to require the connection of overhead conductors and 330 kV switchgear and switch bays. Works will include construction of:

- a new transmission tower (tower 150.1) approximately 20-30 m to the north-east of the existing tower (tower 150)
- decommissioning, dismantling and removal of the existing tower (tower 150)
- stringing of new conductor between tower 150.1 and tower 149
- a new tower (tower 150.2) within the development footprint as part of the switching station
- switching station bench
- 330 kV gantry columns and beams, busbar supports, busbars, disconnectors, circuit breakers, current transformers, voltage transformers, surge arresters
- a new tower (tower 150.2) within the development footprint as part of the switching station and stringing of new conductor between the switching station, tower 150.2 and the existing transmission line
- cutover of the conductors
- overhead or underground cables as required for the new 330 kV switch bay
- control building
- ancillary infrastructure
- security fencing.

iv Operation and maintenance facilities

O&M buildings and spare parts warehouses will be established within the BESS compound. The buildings will be established during construction and maintained throughout the project's operational life. O&M buildings will likely be prefabricated (although they may be constructed on site) and comprise an office, lunch room and ablutions room and will also house the following equipment:

- AC power distribution boards and UPS (uninterruptible power supply) units
- ventilation and air conditioning systems
- fire detection systems and portable extinguishers.

The buildings will have a height of approximately 6 m. The O&M facilities will also include a spare parts warehouse, approximately 6 m in height, for spare parts storage including roller doors for access by a forklift vehicle.

v Utilities and services

Power and telecommunications will be established as part of construction. Auxiliary power will be sourced from 33/0.440 kV station auxiliary transformers at the BESS compound during operation. Diesel back-up generator units may be installed to provide back-up AC power supply at the BESS substation. Protection and control systems will be supplied by duplicate DC auxiliary supplies and associated station batteries.

Amenities on site will generate sewage which will be treated in septic tanks.

vi Site access and internal road network

A new, relocated site access is proposed on Castlereagh Highway, located approximately 720 m north-west of Puggoon Road and 240 m south-east of the existing access to the site.

An internal gravelled road will be constructed to facilitate the access and egress of vehicles during construction. This road will be maintained during operation to allow for the access and egress of maintenance and operational vehicles.

vii Lighting

Lighting will be provided via pole mounted installations across the BESS compound, BESS substation and switching station for security purposes, and for emergency maintenance operations at night if required. Building and battery enclosures will be fitted with internal lighting which will include emergency lighting. All lighting will be designed and operated in accordance with AS/NZS 4282:2019 *Control of the obtrusive effects of outdoor lighting*.

viii Built design, materials and finishes

Battery enclosures will likely resemble shipping containers will be light in colour for thermal regulations and longevity purposes. The O&M buildings are expected to be prefabricated with a height of approximately 6 m, comprising an office, lunch room and bathroom. The spare parts warehouse will be assembled onsite and be approximately 8.5 m tall. These buildings are expected to be made of Trimclad steel or similar and expected to be neutral or light in colour.

The BESS substation switch room and control room buildings are expected to be containerised units principally made of steel, prefabricated, and then installed on site on steel columns approximately 2.5 m above finished surface level, for a total height of approximately 8.5 m.

Where possible, suitable colours and finishes will be chosen to minimise visual impacts, including glare/reflectivity.

A.1.4 Uses and activities

i Construction

a Construction activities

Key construction activities that will be undertaken as a part of the proposed BESS will comprise:

- installation and maintenance of environmental controls including drainage and sediment controls
- mobilisation and establishment of temporary construction facilities and temporary laydown area
- establishment of a new site access off the Castlereagh Highway and internal access tracks
- vegetation clearing to accommodate project infrastructure and asset protections zones

- cut, fill, and compaction activities to desired design levels
- construction of security fencing
- construction of concrete pads, strip footings or piers to support batteries, PCSs and substation
- delivery and installation of battery modules and enclosures, PCSs, cabling and transformers
- underground cable installation including trenching, bedding sand filling, cable laying and trench backfilling
- substation and switching station bench
- construction of the BESS substation including delivery and installation of transformers, outdoor switchgear, and other ancillary infrastructure, including associated footings
- delivery and installation of substation buildings housing indoor switchgear and control systems on pre-installed steel or concrete columns
- construction of switching station including 330 kV gantry columns and beams, busbar supports, busbars, disconnectors, circuit breaker, current transformers, voltage transformers, surge arresters and control room
- installation of overhead line spans or underground cabling between the BESS substation and the switching station
- decommissioning, removal and replacement of one electrical transmission tower from the 330 kV transmission line
- strengthening works on electrical tower 149 in the 330 kV transmission line
- construction of the new transmission tower 150.2
- installation of overhead cables and a gantry tower as required to connect the 330 kV switching station to the existing adjacent transmission line
- pre-commissioning and commissioning
- removal of construction equipment and rehabilitation of disturbance areas.

b Construction program and workforce

Construction is expected to commence in Q4 2025. The project will be constructed and commissioned in line with battery supply availability, labour and equipment availability, and electricity demand. This may occur in a single stage. Alternatively, it may occur over two stages, with construction of Stage 2 commencing approximately 6 to 12 months following completion of Stage 1 works. The two construction scenarios are described in Table A.2 and presented in Figure A.3.

Under a single stage scenario, construction will be completed over a period of 13 to 20 months and be undertaken in five phases. If construction is staged, the first 204 MW will be completed over a 13 to 18 month period, with the remaining 204 MW (the second stage) over a period of 12 to 15 months. The activities of the two stages in the BESS areas will be largely the same but the second stage construction will have a shorter duration and a reduced workforce as the substation and switching station will already have been completed as part of the first stage.

Table A.2 Construction program scenarios

Activities	Scenario one – single stage		Scenario two – stage 1		Scenario two – stage 2	
	Construction month	Peak workforce	Construction month	Peak workforce	Construction month	Peak workforce
Enabling works: access construction, temporary site establishment, clear and grubbing, laydown etc).	Months 1–4	20 personnel (average 8–10)	Months 1–4	20 personnel (average of 8–10 people)	-	-
Construction: civil, structural and electrical works: • Internal roads, trenching, preparation works for foundations for electrical components. • Preparation for slabs and cable trenching. • Cable trenching, cable pulling, conduits, BESS and PCS landing, electrical terminations, communication infrastructure, substation and switching station construction.	Months 5–12	100 personnel (average 55)	Months 5–10	80 personnel (average 40)	Months 1–6	80 personnel (average 40)
Quality assurance and completion works.						
Pre-commissioning	Months 13–15	8–10 personnel	Months 11–13	8–10 personnel	Months 7–9	8–10 personnel
Commissioning	Months 16–20	8–10 personnel	Months 14–18	8–10 personnel	Months 10–15	8–10 personnel
Demobilisation	Month 20	15–20 personnel	Month 18	15–20 personnel	Month 15	15–20 personnel

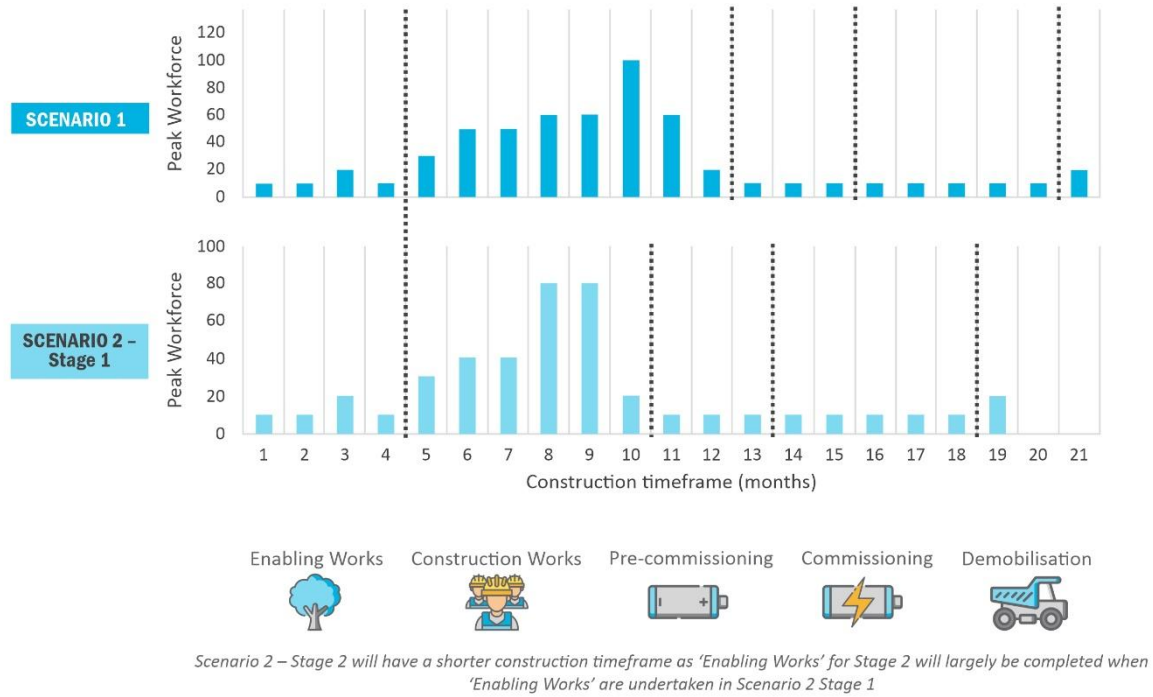


Figure A.3 Construction workforce and scheduling

c Construction hours

Construction hours for the project will be consistent with the *Interim Construction Noise Guideline* (DECC 2009) recommended standard construction hours for normal construction and the and *Draft Construction Noise Guideline* (EPA 2021) being, namely:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturday: 8:00 am to 1:00 pm
- no works of Sunday and public holidays.

Certain activities may be required outside of the standard construction hours. These activities potentially include:

- delivery of plant and equipment for safety reasons (e.g. oversize overmass vehicles)
- commissioning and testing activities that must align with demands of the electricity grid
- situations where agreement is reached with nearby affected receivers and local council.

d Plant and equipment

The typical plant and equipment required for construction will include items listed in Table A.3.

The majority of the plant and equipment will be delivered to site on rigid and semi-trailer low-loaders. Construction materials will be delivered on rigid concrete agitators, truck and dog, and semi-trailer dump trucks.

Table A.3 Typical construction plant and equipment

Construction phase	Plant type	
Enabling works	• Front end loaders • Dump trucks • Road trucks (including B-doubles) • Water trucks • Excavators (35 t)	• Graders • Compactors and rollers • Light vehicles • Scissor lifts • Franna cranes
Construction and commissioning works	• Front end loaders • Dump trucks • Road trucks (including B-doubles) • Water trucks • Concrete trucks and pumps • Excavators • Graders • Compactors and rollers • Scrapers • Backhoe	• Concrete saws and grinders • Light vehicles • Scissor lifts • Franna cranes • Mobile cranes • Generators • Welding equipment • Compressors • Air track drill
Commissioning	None	
Demobilisation	• Road trucks (including B-doubles) • Water trucks • Concrete saws and grinders • Excavators	• Franna cranes • Backhoes • Compactors and rollers

e Construction materials

Construction materials will be sourced locally where practicable, with quantities subject to detailed design. Materials likely to be required for the construction of the project include:

- structural steel
- concrete
- cabling
- prefabricated enclosures and buildings
- sand (for cable bedding), gravel, and bitumen.

f Water supply

Approximately 10.4 ML/yr of water (10.3 ML non-potable and 0.1 ML potable water) will be required during construction for dust suppression and amenities. The non potable water can be sourced from a licenced groundwater bore. Potable water will be purchased.

g Sewage management

Amenities on site will generate sewage which will be either managed on-site or trucked off off-site for disposal at Gulgong Sewage Treatment Plant. Approximately 283 kilolitres (kL)of sewage loading (for a single stage construction scenario) is estimated to be generated. If treated on site, an irrigation area equivalent to 0.5 ha will be excluded from agricultural use within the site to allow for irrigation of treated effluent during the construction phase. Treatment will be through a proprietary Aerated Wastewater Treatment System, wet weather storage tank storage of approximately 15 kL and above ground irrigation system. The irrigation area will lie outside of development footprint and be restored to agricultural use once construction is complete.

h Construction traffic

Daily traffic generation

The following construction vehicle movements are approved:

- 40 heavy vehicle movements a day during construction, upgrading, or decommissioning
- 20 light vehicle movements and 4 heavy vehicle movements during the AM (6:00 to 7:00 am) or PM (5:00 to 6:00 pm) project peak hours during construction, upgrading, or decommissioning
- four movements of heavy vehicles requiring escort during construction, upgrading, or decommissioning.

Peak hour traffic generation

The following assumptions have been made to anticipate peak hour construction vehicle movements:

- 20 light vehicle trips during the morning and evening peak hour (20 in and 20 out) assuming all construction workers will arrive and depart the site during the AM and PM peak hours
- four heavy vehicle trips during the peak hour (four in and four out) assuming 10% of heavy vehicles will arrive and depart the site during the AM and PM peak hours. Shuttle bus operation is expected to occur outside the peak hours.

Passenger vehicles are expected to arrive at the site prior to commencement of construction shifts. Peak heavy vehicle trips are expected to occur during delivery of materials, plant and equipment. Deliveries of batteries and enclosures are anticipated to occur in batches. Approximately four oversize overmass (OSOM) vehicles (in total) during the construction works phase.

ii Operation

The BESS will operate 24 hours a day, seven days a week and will be operated remotely with no permanent staff on site. The BESS is expected to be on standby for the majority of the time and undergo one to two full cycles of charging and discharging per day. Regular maintenance activities, including vegetation management, pest control and general maintenance, will be required throughout the project's operational life. Maintenance of plant and equipment may potentially include the replacement of BESS components from time to time. Light vehicles will access the site as required throughout the operations phase for maintenance activities. Heavy vehicles may also occasionally access the site to replace larger components as necessary.

Over the operational life of the project, components may need to be repaired, replaced or upgraded. These works, if required, will not be intensive and are likely to be significantly lower than the construction works assessed in this EIS. Upgrade works may also provide additional generation capacity without increasing the disturbance area/impacts associated with the project, and will depend on technologies available at the time.

The operation of the project is expected to commence from Q2 2027 for a period of approximately 25 years. The operation of the project may be extended if the facilities are repowered at a later date.

iii Decommissioning

At the end of the economic life, VEA will evaluate the future use of the site (either to repower or to decommission the project).

Appendix B
Statutory compliance table

EMM
creating opportunities

Table B.1 Statutory compliance table

Statutory document	Reference	Requirement	Section
Commonwealth Acts			
Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)		The EPBC Act provides the legal basis to protect and manage internationally and nationally important flora, fauna, ecological communities, heritage places and water resources which are deemed to be matters of national environmental significance (MNES). MNES, as defined under the EPBC Act, are: 1. world heritage properties 1. places listed on the National Heritage Register 2. wetlands of international significance listed under the Ramsar Convention 3. threatened flora and fauna species and ecological communities 4. migratory species 5. Commonwealth marine areas 6. Great Barrier Reef Marine Park 7. nuclear actions (including uranium mining) 8. water resources, in relation to coal seam gas or large coal mining development. Under the EPBC Act, actions that will, or are likely to, have a significant impact on a MNES are deemed to be controlled actions and can only proceed with the approval of the Commonwealth Minister for the Environment. An action that may potentially affect a MNES has to be referred to the Department of Agriculture, Water and the Environment for determination as to whether it is a controlled action.	Modification report Section 6.1 Biodiversity EIS Section 6.1 Appendix E of the EIS Biodiversity Development Assessment Report

Statutory document	Reference	Requirement	Section
The Commonwealth Native Title Act 1993 (NT Act)		The NT Act recognises and protects native title rights in Australia. It allows a native title determination application (native title claim) to be made for land or waters where native title has not been validly extinguished, for example, extinguished by the grant of freehold title to land. Applications for compensation for extinguishment or impairment of native title rights can also be made. All native title claims are subjected to a registration test and will only be registered if claimants satisfy a number of conditions. A register of native title claims is maintained by the National Native Title Tribunal. Proposed activities or development that may affect native title are called 'future acts'. Claimants whose native title claims have been registered have the right to negotiate about some future acts, including mining and granting of a mining lease over the land covered by their native title claim. Where a native title claim is not registered, a development can proceed through mediation and determination processes, though claimants will not be able to participate in future act negotiations.	EIS Section 6.2 EIS Appendix F Aboriginal Cultural Heritage Assessment
NSW Acts			
Environmental Planning and Assessment Act 1979 (EP&A Act)	Section 1.3	Relevant objects of the Act	The objects of the EP&A Act were considered in the EIS Section 7.4. The project (as modified) will be consistent with the objects of the Act.
	Section 4.15(1)	(1) Matters for consideration—general In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the development application—	
		(a) the provisions of— (i) any relevant environmental planning instruments, and … (iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph) That apply to the land to which the development application relates	The provisions of relevant environmental planning instruments have been considered in the preparation of the modification report.
		(b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	Modification report Chapter 6 Assessment of impacts

Statutory document	Reference	Requirement	Section
		(c) the suitability of the site for the development	Modification report Section 2.2 Site suitability
		(e) the public interest	Modification report Chapter 2 Strategic context
Biodiversity Conservation Act 2016 (BC Act)	Section 7.14	(2) The Minister for Planning, when determining in accordance with the *Environmental Planning and Assessment Act 1979* any such application, is to take into consideration under that Act the likely impact of the proposed development on biodiversity values as assessed in the biodiversity development assessment report. The Minister for Planning may (but is not required to) further consider under that Act the likely impact of the proposed development on biodiversity values. (3) If the Minister for Planning decides to grant consent or approval and the biodiversity offsets scheme applies to the proposed development, the conditions of the consent or approval may require the applicant to retire biodiversity credits to offset the residual impact on biodiversity values (whether of the number and class specified in the report or other number and class). The residual impact is the impact after the measures that are required to be carried out by the terms or conditions of the consent or approval to avoid or minimise the impact on biodiversity values of the proposed development. (4) A condition to retire biodiversity credits is required to be complied with before any development is carried out that would impact on biodiversity values. If the retirement of particular biodiversity credits applies to a stage of the development, compliance with the condition for their retirement is postponed until it is proposed to carry out that stage of the development.	Modification report Section 6.1 Biodiversity EIS Section 6.1 Biodiversity EIS Appendix E Biodiversity Development Assessment Report Vena has fulfilled its credit obligation for the approved project through the purchase and retirement of two ecosystem credits in accordance with B11 and B12 of the development consent.
	Section 7.17	(1) Subsection (2) applies to an application for the modification of a development consent, or State significant infrastructure approval, that was granted after the commencement of this Division. (2) The provisions of this division relating to applications for development consent or State significant infrastructure approval apply to the application for modification as follows— (a) the provisions apply in relation to the original development as proposed to be modified (the proposed modified development), (b) if this division applies to the proposed modified development, a biodiversity development assessment report (a further assessment report) must be submitted with the application for modification and taken into consideration, even if—	Part 4 Division 7 of the BC Act sets out the approval pathway for modifications of SSD projects. In accordance with clause 7.17(2)(c), a BDAR (referred to as a further assessment report in the BC Act) is not required to be submitted with a modification application if the authority determining the application for modification is satisfied that the modification will not increase the impact on biodiversity values. As the modification will not increase the impact on biodiversity values, a BDAR prepared in accordance with the BC Act and the BAM is not required.

Statutory document	Reference	Requirement	Section
		(i) a biodiversity development assessment report was submitted in connection with the application for the original development, or (ii) this division did not apply to the original development, including because the modification results in the development exceeding the biodiversity offsets scheme threshold, (c) however, a further assessment report is not required to be submitted with the application for modification if— (i) the authority or person determining the application for modification, or determining the environmental assessment requirements for the application, is satisfied that the modification will not increase the impact on biodiversity values, or (ii) the application would, if it were an application for a development consent for the proposed modified development, be exempt from the requirement to be accompanied by a biodiversity development assessment report under an order made under section 7.7(3), (d) if a further assessment report must be submitted with the application for modification—the further assessment report must take into account any measures already taken to avoid, minimise and offset the impact on biodiversity values in connection with the consent or approval before the proposed modification, (e) if a further assessment report is not required to be submitted with the application for modification and the relevant authority proposes to change any offset obligations as part of granting the modification application—sections 7.14(3A) and (3B) apply as if— (i) a further assessment report was required to be submitted with the application for modification, and (ii) the relevant authority is proposing to impose a condition to retire biodiversity credits of a number and class that differs from the number and class required to be retired under the original approval or consent, (f) if an application for a development consent, or State significant infrastructure approval, for the proposed modified development would have been required to be refused because of serious and irreversible impacts on biodiversity values—the application for modification must also be refused.	

Statutory document	Reference	Requirement	Section
Water Act 1912 and *Water Management Act 2000*		The NSW Water Act 1912 (Water Act) and WM Act regulate the management of water by granting licences, approvals for taking and using water, and trading groundwater and surface water. The WM Act applies to those areas where a water sharing plan has commenced. Alternatively, if a water sharing plan has not yet commenced, the Water Act applies. The WM Act is progressively replacing the Water Act as relevant water sharing plans are introduced across the State. Water sharing plans have commenced for most of NSW. Licensing of monitoring bores continues under the Water Act until a regulation for aquifer interference gives a mechanism to approve these activities.	EIS Appendix M Water resources impact assessment
Contaminated Land Management Act 1997 (CLM Act)		The CLM Act aims to promote the better management of contaminated land. The objectives of this Act are to establish a process for investigating and, where appropriate, remediating land areas where contamination presents a significant risk of harm to human health or some factor of the environment.	EIS Section 6.4 Land and rehabilitation
Roads Act 1993	Section 138	Approval will be required under Section 138 of the Roads Act from the Council for works in, on or over a public road, or to connect a road to a classified road.	EIS Chapter 4 Statutory context

Statutory document	Reference	Requirement	Section
NSW Regulations			
Environmental Planning and Assessment Regulation 2021	Clause 98	(1) A modification application may be made by— (a) the owner of the land to which the modification application relates, or (b) another person, with the consent of the owner of the land. (2) The consent of the owner is not required if the original development application was made, or could have been made, without the consent of the owner. (3) The consent of the owner of the land is not required for a modification application made by a public authority, or a modification application for public notification development, if the applicant complies with subsections (4) and (5). (4) The applicant must give notice of the modification application— (a) to the owner of the land before the modification application is made, or (b) by publishing, no later than 14 days after the modification application is made. a notice in a newspaper circulating in the area in which the development will be carried out. (5) If the applicant gives notice under subsection (4)(b), the applicant must also, no later than 14 days after the application is made— (a) if the applicant is a public authority—publish the notice on the public authority's website, or (b) for public notification development—arrange for the consent authority to publish the notice on the NSW planning portal.	The applicant is a partial owner of the relevant land. The modification application has been made with the consent of the owners of the other relevant plots of land (ETMHC and MWRC).
	Clause 99	Making a modification application	
		(1) A modification application must— (a) be in the approved form, and (b) contain all the information and documents required by— (i) the approved form, and (ii) the Act or this Regulation, and (c) be submitted on the NSW planning portal.	The Modification report will be submitted via the NSW planning portal and has been prepared in the approved form.

Statutory document	Reference	Requirement	Section
		(2) If the modification application is for State significant development— (a) the application must also include particulars of the nature of the modification, and (b) the applicant must have regard to the State Significant Development Guidelines in preparing the application.	The Modification has been prepared in accordance with the *State significant development guidelines – preparing a modification report* (DPE 2022b).
	Clause 100	Content of modification application (1) A modification application must contain the following information—	
		(a) the name and address of the applicant,	Section 1.4
		(b) a description of the development that will be carried out under the development consent,	Section 1.3, Chapter 3, and Appendix A
		(c) the address and folio identifier of the land on which the development will be carried out,	Section 1.2, Section 1.3, Chapter 3, Appendix A
		(d) a description of the modification to the development consent, including the name, number and date of plans that have changed, to enable the consent authority to compare the development with the development originally approved,	Section 3.5
		(e) whether the modification is intended to— (i) merely correct a minor error, misdescription or miscalculation, or (ii) have another effect specified in the modification application,	Section 3.1
		(f) a description of the expected impacts of the modification,	Chapter 6
		(g) an undertaking that the modified development will remain substantially the same as the development originally approved,	Section 4.2
		(h) for a modification application that is accompanied by a biodiversity development assessment report—the biodiversity credits information,	N/A

Statutory document	Reference	Requirement	Section
		(i) if the applicant is not the owner of the land—a statement that the owner consents to the making of the modification application,	The applicant is the owner of Lot 102 DP 1203462. ETMHC is the owner of Lot 101 DP 1203462 and consents to the making of the modification application. MWRC is the relevant authority relating to the portion of the development footprint in the Castlereagh Highway road corridor and consents to the making of the modification application.
		(j) whether the modification application is being made to— (i) the Court under the Act, section 4.55, or (ii) the consent authority under the Act, section 4.56.	Vena proposes to modify the consent under section 4.55(2) of the Act.
	clause 77	Notice of development applications (1) As soon as practicable after a development application is lodged with the consent authority, the consent authority must— (a) publish notice of the application on the consent authority's website, and (b) give notice of the application to— (i) the public authorities (other than relevant concurrence authorities or approval bodies) that, in the opinion of the consent authority, may have an interest in the determination of the application, and (ii) in the case of a development application other than designated development—the persons that, in the opinion of the consent authority, own or occupy the land adjoining the land to which the application relates (unless the notice is in respect of an application for public notification development).	Completed by the consent authority.

Statutory document	Reference	Requirement	Section
	clause 82	Additional requirements for State significant development (1) The Planning Secretary is to provide to an applicant for State significant development the submissions, or a summary of the submissions, received in relation to the application during the submission period. (2) The Planning Secretary may, by notice in writing, require the applicant to provide a written response to any issues raised in those submissions as the Planning Secretary considers necessary. (3) For the purposes of section 4.39(d) of the Act, the Planning Secretary is to make the following documents that relate to a development application for State significant development available on the NSW planning portal— (a) the Planning Secretary's environmental assessment requirements under Part 2 of Schedule 2, (b) the development application, including any accompanying documents or information and any amendments made to the development application, (c) any submissions received during the submission period and any response provided under subclause (2), (d) any environmental assessment report prepared by the Planning Secretary, (e) any development consent or modification to a development consent, (f) any application made for a modification to a development consent, including any accompanying documents or information, (g) any documents or information provided to the Planning Secretary by the applicant in response to submissions.	Undertaken as part of the submissions stage of the EIS.
	schedule 2(6)	Form of environmental impact statement An environmental impact statement must contain the following information—	
		(a) the name, address and professional qualifications of the person by whom the statement is prepared,	EIS certification page.
		(b) the name and address of the responsible person	EIS certification page.
		(c) the address of the land— (i) in respect of which the development application is to be made, or	EIS certification page.

Statutory document	Reference	Requirement	Section
		(ii) on which the activity or infrastructure to which the statement relates is to be carried out,	
		(d) a description of the development, activity or infrastructure to which the statement relates,	EIS certification page. Modification Report Chapter 3 Description of the modification. Appendix A
		(e) an assessment by the person by whom the statement is prepared of the environmental impact of the development, activity or infrastructure to which the statement relates, dealing with the matters referred to in this Schedule,	EIS certification page and this table
		(f) a declaration by the person by whom the statement is prepared to the effect that— (i) the statement has been prepared in accordance with this Schedule, and (ii) the statement contains all available information that is relevant to the environmental assessment of the development, activity or infrastructure to which the statement relates, and (iii) that the information contained in the statement is neither false nor misleading.	EIS certification page
	schedule 2(7)	Content of environmental impact statement: (1) An environmental impact statement must also include each of the following—	
		(a) a summary of the environmental impact statement,	Modification Report Summary – ES1
		(b) a statement of the objectives of the development, activity or infrastructure,	Modification Report Section 1.3 Project objectives
		(c) an analysis of any feasible alternatives to the carrying out of the development, activity or infrastructure, having regard to its objectives, including the consequences of not carrying out the development, activity or infrastructure,	Modification Report Section 2.1 Justification for the project
		(d) an analysis of the development, activity or infrastructure, including— (i) a full description of the development, activity or infrastructure, and	Modification Report Chapter 3 Description of the modification

Statutory document	Reference	Requirement	Section
		(ii) a general description of the environment likely to be affected by the development, activity or infrastructure, together with a detailed description of those aspects of the environment that are likely to be significantly affected, and	EIS Section 2.4 Key features of the site and surrounds Modification Report Chapter 6 Assessment of impacts
		(iv) a full description of the measures proposed to mitigate any adverse effects of the development, activity or infrastructure on the environment, and	Modification Report Chapter 6 Assessment of impacts Appendix D Mitigation measures table
		(v) a list of any approvals that must be obtained under any other Act or law before the development, activity or infrastructure may lawfully be carried out,	Modification Report Chapter 4 Statutory context EIS chapter 4 Statutory context
		(e) a compilation (in a single section of the environmental impact statement) of the measures referred to in item (d)(iv),	EIS Appendix D Mitigation measures table
		(f) the reasons justifying the carrying out of the development, activity or infrastructure in the manner proposed, having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development set out in subclause (4).	Modification Report Chapter 7 Justification of the modified project
Environmental Planning Instruments			
State Environmental Planning Policy (Planning Systems) 2021	Schedule 1, Section 20	The project is SSD as it is a type of electricity generating works that has a capital investment value of more than $30 million.	EIS Section 4.5 Approval pathway
State Environmental Planning Policy (Resilience and Hazards) 2021	Section 3.7	Consideration of Departmental guidelines In determining whether a development is— (a) a hazardous storage establishment, hazardous industry or other potentially hazardous industry, or (b) an offensive storage establishment, offensive industry or other potentially offensive industry, consideration must be given to current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development. The project is a type of hazardous industry. A PHA has been prepared (Appendix N)	Modification Report Section 6.9 Hazards and risk EIS Section 6.9 Hazards and risk EIS Appendix N Preliminary hazard analysis

Statutory document	Reference	Requirement	Section
	Section 3.12	In determining an application to carry out development to which this Part applies, the consent authority must consider (in addition to any other matters specified in the Act or in an environmental planning instrument applying to the development)— (a) current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development, and (b) whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply, and (c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and (d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application), and (e) any likely future use of the land surrounding the development.	Modification Report Section 6.9 Hazards and risk EIS Section 6.9 Hazards and risk
	Section 4.6	A consent authority must not consent to the carrying out of any development on land unless— (a) it has considered whether the land is contaminated, and (b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and (c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.	Modification Report Section 6.12.2 Contamination Modification Report Section 6.4 Land and rehabilitation

Statutory document	Reference	Requirement	Section
State Environmental Planning Policy (Transport and Infrastructure) 2021	Section 2.48	Before determining a development application for development immediately adjacent to an electricity substation, the consent authority must— (a) give written notice to the electricity supply authority for the area in which the development is to be carried out, inviting comments about potential safety risks, and (b) take into consideration any response to the notice that is received within 21 days after the notice is given.	There is electricity infrastructure within the vicinity of the modified development footprint and the project will require connection to the electricity transmission network. TransGrid is the relevant electricity supply authority.
	Section 2.118(2)	The consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that— (a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and (b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of— (i) the design of the vehicular access to the land, or (ii) the emission of smoke or dust from the development, or (iii) the nature, volume or frequency of vehicles using the classified road to gain access to the land, and (c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.	Modification Report Section 6.7 Traffic and transport EIS Section 6.7 Traffic and transport EIS Appendix L Traffic impact assessment
State Environmental Planning Policy (Biodiversity and Conservation) 2021		Chapter 3 and Chapter 4 of this SEPP aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline.	Modification Report Section 6.1 Biodiversity EIS Section 6.1 Biodiversity EIS Appendix E Biodiversity Development Assessment Report
Mid-Western Regional Local Environmental Plan 2012	Clause 2.3(2)	The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.	EIS Section 4.4 Permissibility

Statutory document	Reference	Requirement	Section
	Clause 6.3 Earthworks	(3) Before granting development consent for earthworks, the consent authority must consider the following matters— (a) the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality, (a) the effect of the proposed development on the likely future use or redevelopment of the land, (b) the quality of the fill or of the soil to be excavated, or both, (c) the effect of the proposed development on the existing and likely amenity of adjoining properties, (d) the source of any fill material or the destination of any excavated material, (e) the likelihood of disturbing Aboriginal objects or other relics, proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area.	Modification Report Section 6.4 and EIS Appendix H – Land and rehabilitation EIS Section 6.4 and Appendix H – Land and rehabilitation Modification Report Section 6.2 – Aboriginal heritage EIS Section 6.2 – Aboriginal heritage Modification Report Section 6.8 – Water resources EIS Section 6.8 – Water resources

Australia

SYDNEY
Level 10 201 Pacific Highway
St Leonards NSW 2065
T 02 9493 9500

NEWCASTLE
Level 3 175 Scott Street
Newcastle NSW 2300
T 02 4907 4800

BRISBANE
Level 1 87 Wickham Terrace
Spring Hill QLD 4000
T 07 3648 1200

CANBERRA
Suite 2.04 Level 2
15 London Circuit
Canberra City ACT 2601

ADELAIDE
Level 4 74 Pirie Street
Adelaide SA 5000
T 08 8232 2253

MELBOURNE
Suite 9.01 Level 9
454 Collins Street
Melbourne VIC 3000
T 03 9993 1900

PERTH
Suite 3.03
111 St Georges Terrace
Perth WA 6000
T 08 6430 4800

Canada

TORONTO
2345 Yonge Street Suite 300
Toronto ON M4P 2E5
T 647 467 1605

VANCOUVER
2015 Main Street
Vancouver BC V5T 3C2
T 604 999 8297

CALGARY
700 2nd Street SW Floor 19
Calgary AB T2P 2W2

linkedin.com/company/emm-consulting-pty-limited

emmconsulting.com.au